A Mentalizing-based Approach to the Understanding of Functional Somatic Disorders in the Context of Romantic Relationships

Yingying Ho

Thesis Submitted for the Degree of Doctor of Philosophy

Psychoanalysis Unit

Department of Clinical, Educational and Health Psychology

University College London (UCL)

I, Yingying Ho confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

The term Functional Somatic Disorders (FSD) is often used to describe persistent, somatic symptoms in which patients show dysregulation in neurobiological systems and neural circuits related to fatigue and pain processing. These heterogeneous symptoms significantly impact personal well-being and public health due to their association with high levels of disability. This thesis investigates, from an interpersonal-systemic perspective, the interplay between attachment styles, mentalizing capacities, and FSD symptom severity within romantic relationships using a mixed-methods approach.

A quantitative study involving 74 Taiwanese couples examined associations between attachment styles, mentalizing impairments, and FSD severity. Within each couple, the individual reporting a higher level of FSD symptoms was considered the 'index person', and the other individual was referred to as the 'partner'. The findings revealed significant associations between insecure attachment, mentalizing impairments, and the severity of FSD symptoms. Importantly, the index person's mentalizing impairments mediated the association between both partners' attachment anxiety and the index person's FSD symptom severity. The index person's mentalizing impairments also mediated the association between their own attachment avoidance and FSD symptom severity. Moreover, from a person-centered perspective, distinct subgroups characterized by specific attachment and mentalizing patterns were identified, highlighting the complex interplay between these variables and FSD severity in romantic couples.

Complementing the quantitative findings, qualitative interviews with nine couples in which the index person experienced elevated FSD symptoms, provided important new insights into the lived experiences of couple dynamics associated with FSD symptoms within couples. In particular, findings further emphasized the importance of understanding FSD symptoms within the context of romantic relationships, as evidenced by findings concerning the dyadic nature of mentalizing and the reciprocal influence of each partner's attachment style and mentalizing capacity in shaping their symptom-related experiences.

Overall, the studies reported in this PhD thesis suggest a key role for reciprocal interactions between attachment and mentalizing within couples and the significant impact these dynamics may have on FSD symptoms. These findings suggest that therapeutic interventions targeting interpersonal aspects could enhance treatment outcomes for individuals with FSDs. Directions for future research are discussed together with the limitations of the studies reported in this PhD thesis.

Impact Statement

Functional Somatic Disorders (FSDs) are prevalent conditions characterized by persistent physical symptoms that result in significant distress, impairment, and healthcare utilization. FSDs pose substantial personal and societal burdens, including reduced quality of life, increased disability, and high healthcare costs. Despite their impact, FSDs remain poorly understood and challenging to treat effectively, highlighting the need for innovative research to inform evidence-based interventions.

This mixed-methods thesis aims to address critical gaps in our current understanding of FSD symptoms within the context of romantic relationships. By focusing on the interpersonal dimensions of FSDs, the studies reported in this PhD thesis seek to offer valuable insights that could benefit individuals with FSDs, their partners, healthcare professionals, and the broader public.

Taken together, the major findings reported in this study have potentially several important implications:

1. **A More Comprehensive Understanding of FSDs:** The mixed-methods approach and the integration of quantitative and qualitative findings at the core of this PhD thesis offer a more comprehensive understanding of the complex interplay between attachment, mentalizing, and FSDs within romantic relationships. The quantitative findings establish significant relationships and mediating effects among the studied variables, while the qualitative interviews provide rich, detailed insights into the lived experiences of couples struggling

with FSD symptoms. This integrated methodology ensures a robust and nuanced understanding of the factors contributing to FSDs, with the potential to inform targeted interventions.

2. **Cultural Context:** The study's focus on Taiwanese couples provides insights into FSDs within an Asian context, addressing an important gap in the literature. The findings can inform culturally sensitive adaptations of FSD models and interventions, considering specific relational norms, values, and expressions of distress in East Asian cultures. This understanding may help promote more inclusive and diverse approaches to FSD care that can benefit individuals and communities across different cultural backgrounds.

3. **Development and Adaptation of Interventions:** Findings reported in this PhD thesis suggest the potential need for a more systemic, relationally-attuned approach to FSD care. By demonstrating the interdependency of mentalizing abilities within couples and the impact of attachment anxiety on FSD severity, in particular, the studies reported in this PhD thesis could inform the development and adaptation of couple-based interventions targeting insecure attachment patterns and mentalizing difficulties. Engaging partners as active participants in FSD treatment might enhance social support, reduce interpersonal stress, and promote more secure and reflective relationship functioning, potentially improving FSD outcomes and overall well-being for both individuals and couples.

4. **Long-Term Benefits:** Findings from this PhD thesis could lead to improved patient outcomes, enhanced relationship quality, and reduced healthcare costs

associated with FSDs. By providing a deeper understanding of the relational dynamics that influence FSD symptoms, this study might pave the way for interventions that not only address individual symptoms but also improve the overall quality of romantic relationships. This holistic approach may lead to sustained improvements in mental and physical health, potentially reducing the chronic burden of FSDs on healthcare systems.

By examining power imbalances and struggles within couples dealing with FSDs, the research sheds light on the complex relational processes that may perpetuate or exacerbate symptoms. These findings highlight the importance of assessing and addressing couples' dynamics in clinical practice, potentially through integrating mentalization-based approaches and interpersonal interventions. By providing healthcare professionals with a deeper understanding of the interpersonal context of FSDs, this research can contribute to more effective, tailored treatments that account for the unique challenges faced by couples.

Table of Content

List of Tables

List of Figures

Chapter 1 Introduction

1.1 Background

Our everyday language reveals the intricate interplay between physical, psychological, and social distress. Emotional loss is often metaphorically referred to as 'heartache,' while feeling 'drained' may encompasses a state characterized by fatigue, low motivation, and a sense of powerlessness over circumstances. ‘Tightness in the chest’ signifies stress, anxiety, or sadness, manifesting as a physical sensation in that area. The idea of ‘a weight on the shoulders’ is frequently used to describe a burden or responsibility that causes stress or pressure.

The prevalence of these expressions reflects the interplay between physical, psychological, and social distress and is mirrored in the high proportion of primary care patients presenting with persistent somatic complaints that cannot be fully explained by conventional medical diagnoses (Budtz-Lilly et al., 2015a; Fink and Schröder, 2010; Fink et al., 2007). These persistent and distressing somatic complaints last several months or more, regardless of their cause. They represent a major burden for patients, healthcare professionals, and society due to their substantial disability and prevalence (Lowe et al., 2024). A comprehensive meta-analysis (Haller et al., 2015) covering 32 studies across 24 countries (total N=70,085 patients) reported that around 30% of

primary care patients meet criteria for somatic symptom disorder, with up to 50% presenting with at least one somatic complaint. However, the conceptualization and classification of this phenomenon remain inconsistent, particularly within a primary care context, and our knowledge and understanding of these patients and their symptoms is still limited (Burton et al., 2020; Olde Hartman et al., 2008).

1.2 Functional Somatic Disorder (FSD)

Various terms, such as Medically Unexplained Somatic Symptoms (MUSS) or Psychosomatic Disorder, have been used to describe persistent bodily complaints resistant to conventional treatment. The term Functional Somatic Disorder (FSD) is commonly employed to depict symptoms that are persistent and not fully understood, with patients exhibiting dysregulation in bodily systems and psychological processes (Luyten et al., 2019b). Contemporary literature adopts the term FSD as an umbrella term, encompassing various conditions characterized by troublesome physical symptoms coupled with impairment or disability. These conditions result from a complex interplay of biological and psychosocial factors, highlighting the integration of bodily and brain functions and dysfunctions (Burton et al., 2020). Biological factors often implicated in FSD include dysfunctions in the immune system, the autonomic nervous system, hypothalamo-pituitary-adrenal axis, and mitochondrial function (Burton et al., 2020). Psychosocial factors include maladaptive processing and

perception of bodily signals, central sensitization, and dysfunctional psychological adaptations (McAndrew et al., 2018). As noted, in this thesis, the focus is on possible psychosocial factors from a mentalizing approach to FSDs.

FSDs manifest a significant diversity in their nature and symptom presentation. There is a growing acknowledgment that FSDs do not represent distinct diseases but rather diverse collections of common functional symptoms that fluctuate, with unclear boundaries between health and disorder (Burton et al., 2020; Petersen et al., 2020b; Rosmalen, 2010; Wessely et al., 1999; Wessely and White, 2004). Individuals with FSDs often report challenges in daily activities and a diminished perception of their own health, underscoring FSDs as a significant public health concern (Jørgensen et al., 2022). The association of FSDs with increased healthcare utilization and substantial personal and economic burden contributes to the overall public cost within the healthcare system (Abbass et al., 2021; Lowe et al., 2024).

Due to the inconsistencies in the terminology and definition, there is limited data in the literature regarding the true prevalence of FSDs or somatoform disorders. For instance, studies indicate that 10-15% of the population in Denmark meet the criteria for FSDs (Jørgensen et al., 2022), 10.2% meet the criteria for somatoform disorder in Norway (Leiknes et al., 2007), and in Germany, the prevalence of Somatic Symptom Disorders (SSD), a related condition characterized by persistent and distressing

somatic symptoms accompanied by excessive thoughts, feelings, or behaviours related to the symptoms, was 4.5% in a study (Hauser et al., 2020). The prevalence of FSDs in Asian countries has not been extensively explored (Huang et al., 2023). A 2019 study in Taiwan, using telephone-based sampling and interviews with 3,161 participants representative of the population, revealed a 5% prevalence of SSD. Researchers assessed participants using the Patient Health Questionnaire-15 (PHQ-15) and Health Anxiety Questionnaire (HAQ). Individuals with a PHQ-15 score of at least 4 and an HAQ score of at least 17 were considered to have SSD (Huang et al., 2023).

Due to inconsistent terminologies, obtaining accurate epidemiological data remains challenging, highlighting the need for further research efforts (Rosmalen, 2010). However, there is growing acknowledgment that the development of FSD is influenced by a combination of biological, psychological, and social factors (Budtz-Lilly et al., 2015a; Burton et al., 2020; Lowe et al., 2024; Schovsbo et al., 2021; Tak and Rosmalen, 2010). This complex etiology underscores the need for a holistic understanding of these conditions. This thesis focuses on potential psychological factors in FSDs from a mentalizing approach.

1.3 Mentalizing and FSDs

Previous studies have highlighted mentalizing problems as a potential mediator between insecure attachment and FSDs (Riem et al., 2018), prompting the formulation of integrative models emphasising the interplay among these factors (Fonagy et al., 2016; Koelen et al., 2014; Luyten and Meulemeester, 2017). Mentalizing, defined as the ability to understand and interpret human behaviour in terms of underlying mental states (Luyten et al., 2012a), involves both cognitive and affective processes and encompasses the capacity to understand both one's own and others' emotions, thoughts, and intentions.

Embodied mentalizing refers to the ability to interpret and reflect on bodily experiences and link them to mental states (Luyten et al., 2019b). The concept of embodied mentalizing is related to earlier constructs such as alexithymia and emotional awareness. Alexithymia, a term coined by psychiatrist Peter E. Sifneos (Sifneos, 1973), describes difficulties in identifying and describing emotions, as well as a tendency towards externally oriented thinking. Emotional awareness, as defined by Lane and Schwartz (Lane and Schwartz, 1987b), refers to the ability to recognize and describe emotions in oneself and others. These constructs capture important aspects of mentalizing and have been found to be relevant in the context of FSDs (De Gucht and Heiser, 2003; Subic-Wrana et al., 2010). The concept of mentalizing has

roots in various traditions, including the Paris Psychosomatic School, which emphasizes early developmental deficits and impaired symbolization capacity in understanding psychosomatic phenomena. Marty (1968) and collogues were the first in his context to introduced ideas such as 'mechanical functioning' and 'essential depression' in patients with these problems, focusing on how difficulties in symbolizing emotions could lead to their expression through physical symptoms (Aisenstein, 2006). These foundational ideas, further influencing contemporary models of embodied mentalizing, are discussed in more detail in later sections.

Mentalizing plays a crucial role in expressing, communicating, and managing emotions and beliefs associated with an individual's wants and desires (Asen and Fonagy, 2017). Building upon the concept of mentalizing and its role in emotion regulation, the mentalizing-based approach to FSDs offers a framework for understanding the development and maintenance of these conditions. The mentalizing-based approach to FSDs highlights three key areas that either predispose, precipitate, or perpetuate conditions: attachment style, mentalizing ability (i.e., to understand and interpret the mental states of oneself and others), and the capacity for epistemic trust (i.e., trusting others as a source of knowledge) (Luyten and Fonagy, 2020). Attachment issues can lead to difficulties in mentalizing, as individuals with insecure attachment may struggle to understand and regulate their own emotions and

those of others. This, in turn, can contribute to the development and maintenance of FSDs. Additionally, a lack of epistemic trust may hinder individuals from accepting and integrating information that could help them better understand and manage their symptoms. The mentalization-based approach provides a holistic framework that offers insights into the complex interplay among these factors in individuals with FSDs.

These core areas appear to be linked to interpersonal factors in FSD patients. There has been increasing literature on the role of interpersonal factors in FSDs, including relationships with health professionals. Clinicians treating individuals with FSDs often observe tendencies such as catastrophizing, externalizing issues, rigidly adhering to somatic explanations, and displaying demanding and clinging behaviour. Moreover, these patients may also exhibit emotional avoidance, distancing, and persistent criticism of those aiding them, leading clinicians to experience feelings of irritation, helplessness, and anger (Luyten and Van Houdenhove, 2013; Maunder and Hunter, 2008). These interpersonal issues, which may exist before the onset of FSDs or be caused by the symptoms, or a combination of both, tend to create additional stress in patients and their close relationships, further exacerbating the symptoms.

1.4 Rationale for the Present Study

Exploring the context and impact of romantic relationships may be helpful for better understanding FSDs. This is especially relevant when considering stress

regulation and pain modulation, both of which are important components of FSD experiences. The proximity of attachment figures can help regulate stress, and the spatial proximity of supportive others has been found to help ease the pain (Krahe et al., 2013). Previous studies indicate that romantic partners constitute the primary attachment figure for adults (Carli et al., 2019; Doherty and Feeney, 2004; Hazan and Zeifman, 1994). Moreover, there is evidence for the importance of social support offered by partners in the course of FSDs (Demange et al., 2004; Picardi et al., 2003; Rapoza et al., 2016). However, despite the increasing research interest in the interpersonal relationships of FSD patients, there has been very little research that attempts to understand FSDs in the context of close attachment relationships, and none has utilized the rapidly evolving mentalization-based approach. Compared to other factors, research on the interpersonal factors in FSDs remains limited, especially considering that mentalizing is always embedded within specific attachment relationships, which can vary considerably from one relationship to another (Luyten et al., 2012a). Considering the dyadic and reciprocal nature of mentalizing, as well as the interpersonal issues that FSD patients typically experience, the role of partners becomes important. Relationship partners may provide individuals with corrective experiences to improve their mentalizing or exacerbate their mentalizing lapses, which may lead to downward spirals characterized by worsening symptoms (Luyten et al.,

2012a). Just as the quality of mentalizing within patient-therapist pairs may exhibit a reciprocal relationship, wherein the therapist's level of mentalizing influences the patient's, and conversely, the patient's level of mentalizing affects the therapist's (Diamond et al., 2003), couple relationships may be characterized by a similar pattern.

1.5 Research Objectives and Design

To address this gap in the current literature, the primary objective of this study is to understand FSDs in the context of romantic relationships using a mentalization-based approach. A mixed-methods research design is adopted to gain a more comprehensive understanding of subject by integrating both quantitative and qualitative data sources, allowing for the triangulation of findings (Creswell and Plano Clark, 2018).

Specifically, an online survey was conducted with couples in Taiwan, and a subsample of these couples also participated in a qualitative interview study. Below, we briefly introduce the rationale, design, and methods of both studies.

Quantitative Study: An online survey on Taiwanese couples

The survey study aimed to investigate the potential reciprocal effects between romantic partners' attachment dimensions, mentalizing impairments, and the severity

of FSD symptoms in a non-clinical sample of 74 Taiwanese heterosexual couples. Within each couple, the individual reporting more severe somatic symptoms, as indicated by a higher score on the Patient Health Questionnaire-15 (PHQ-15) than their partner, was designated as the 'index person,' and the other was designated as the 'partner.' Somatic symptom severity referred to the severity of physical symptoms experienced by individuals, as measured by the PHQ-15. Mentalizing impairments were assessed using the Toronto Alexithymia Scale (TAS-20), specifically to evaluate problems with embodied self-mentalizing. This involves an individual's capacity to reflect on their bodily sensations and link them to emotional states (Luyten et al., 2012a), as the mentalization-based approach emphasizes the role of impairments in embodied mentalizing in FSDs.

The data analysis consisted of both a variable-centered and a person-centered approaches. By combining these two approaches, we aimed to provide a more comprehensive understanding of the interplay between attachment, mentalizing, and FSDs within romantic relationships. The variable-centered approach involved path analysis based on the Actor-Partner Interdependence Model (APIM) (Cook and Kenny, 2005) and examined the effect of both partners' attachment dimensions and mentalizing on the index person's somatic symptom severity. In the person-centered approach, Latent Class Analysis (LCA) was used to identify distinct subgroups based

on the index person's attachment and mentalizing profiles. Subsequent linear regression analyses further examined whether there were significant differences in somatic symptom severity between these subgroups. By combining these two approaches, we aimed to provide a more comprehensive understanding of the complex relationships between attachment, mentalizing, and FSDs within romantic relationships.

Qualitative Study: An in-depth Interview study in Taiwanese couples

We also conducted a qualitative study based on online in-depth couple interviews with nine couples reporting elevated severity of somatic symptoms. These interview data were subsequently analysed using the Interpretative Phenomenological Analysis (IPA) approach to gain a deeper understanding of the relationship between attachment, mentalizing and FSDs symptoms. These qualitative findings sought complement and elucidated the findings of the survey study, providing a more nuanced understanding of the multifaceted and dynamic nature of FSDs within the context of relationships (Creswell and Plano Clark, 2018; Guetterman et al., 2015).

By combining findings from a quantitative survey and qualitative couple interviews, this research seeks to provide a holistic understanding of the topic. This approach enables the triangulation of findings and offers valuable insights that may inform the incorporation of an interpersonal perspective in the understanding and

treatment of FSDs. Specifically, we aim to provide insights from a systemic perspective that could inform more effective treatment and management strategies. Gaining a deeper understanding of the contextual factors influencing FSDs may contribute to improving patient outcomes and alleviating the personal and public burden associated with FSDs. The findings of this research could also inform the development of couple-based interventions or the adaptation of existing treatment approaches to better address the interpersonal aspects of FSDs. Expanding beyond the conventional intrapersonal approach to an interpersonal one may alleviate the fixation on symptoms and allow for a broader comprehension of the dynamics within the couple relationship.

Individuals suffering from FSDs often feel invalidated and isolated due to the complex and fluctuating nature of their symptoms, compounded by previous relationship issues. By targeting mentalizing capacity and attachment-related dynamics within couples, such interventions could potentially enhance treatment outcomes and foster more supportive and understanding relationships for individuals with FSDs.

Finally, the studies reported in this thesis were conducted in Taiwan with Taiwanese participants, allowing us to explore the relationships between attachment, mentalizing, and FSDs within a specific cultural context. High levels of alexithymia, a construct that is closely related to mentalizing impairments, have been reported in

Taiwan (Lin and Chan, 2006). Studies have consistently found higher alexithymia scores in healthy adults from Taiwan (Lin and Chan, 2006), China (Zhu et al., 2007), Japan (Fukunishi et al., 1997), Korea (Lee et al., 1996), and India (Pandey et al., 1996), compared to those from individualistic cultures. Moreover, there is a scarcity of FSD-related research in Asian countries (Huang et al., 2023). Conducting this research in an Asian context may address this gap and provide insights into the cultural factors influencing FSDs. The findings from this study may contribute to the growing body of research on cross-cultural differences in attachment and mentalizing (Aival-Naveh et al., 2022; Aival-Naveh et al., 2021; Campbell and Allison, 2022; Lee, 2021; Lee et al., 2023), as well as their implications for FSDs. Consequently, these findings have the potential to enhance our understanding of the cultural factors that may influence FSD development and maintenance.

1.6 Thesis Outline

The first chapter outlined the background, relational and research objectives of this PhD thesis. Chapter 2 reviews relevant literature and locates this research within existing theoretical paradigms and current understanding, identifying areas for further research. Chapter 3 details the design and methodology, including participant recruitment and procedures, for both the quantitative and qualitative studies. Chapter

4 presents the survey study, outlining hypotheses, data collection and analysis tools, procedures, and statistical results using both variable-centered and person-centered approaches, followed by a discussion of these findings. Chapter 5 covers the interview study, including methods, procedures, analysis of emerging themes, and discussion of the main findings. Chapter 6 integrates results from the quantitative and qualitative studies, discusses main findings, limitations, clinical implications, and suggests areas for future research.

Chapter 2 Literature Review: FSD from an Interpersonal Perspective

Functional Somatic Disorders (FSDs) are prevalent conditions characterized by persistent physical symptoms that significantly impact patients' quality of life and healthcare costs (Burton et al., 2020). Patients with these conditions often exhibit dysregulation in bodily systems and psychological processes (Luyten et al., 2019b). While FSDs are notably heterogeneous regarding the psychological and biological factors implicated in their development (Luyten and Fonagy, 2020), psychosocial stress is widely believed to play a role in these persistent and insufficiently understood symptoms (Deary et al., 2007; Mayer et al., 2001; Tak and Rosmalen, 2010).

Despite the integrative models that explore the relationship between attachment, mentalizing, and stress regulation systems (Fonagy et al., 2016; Koelen et al., 2014; Luyten and Meulemeester, 2017), limited effort has been placed on studying FSD patients within the context of their interpersonal relationships, despite the interpersonal nature of attachment and mentalizing. While considerable research has focused on the intrapersonal factors of FSDs, such as individual psychological and biological aspects (Lowe et al., 2024), there is a need to understand the interpersonal factors that include the influence of significant others and the interdependency effect between patients and their partners.

This chapter provides a comprehensive review of FSDs from an interpersonal

perspective. It begins by examining the nature, prevalence, and psychological aspects of FSDs, such as stress, emotional dysregulation, and patient distress. Additionally, it explores complexities related to costs, comorbidity, familial aggregation, and gender differences, setting the foundation for understanding the multifaceted nature of these conditions.

The chapter then discusses the assessment of FSDs, including tools like the PHQ-15, and recent methods such as the SSD-12 and Ecological Momentary Assessment (EMA). These approaches provide a more comprehensive evaluation of symptom presentation and offer insights into the interplay between somatic symptoms, psychological distress, and broader psychosocial factors.

Following this, the chapter integrates psychoanalytic perspectives, highlighting how emotional and psychological factors contribute to the development and maintenance of FSDs. This includes an analysis of various risk factors and etiopathological mechanisms, integrating genetic, biological, psychological, and social influences. Concepts from psychoanalytic theories, such as Marty's 'mechanical functioning' and 'essential depression,' are discussed to offer deeper insights into the psychosomatic aspects of FSDs.

Next, the chapter explores the relationship between FSDs and key components of the interpersonal approach, such as attachment, embodied mentalizing, and epistemic trust. It concludes with an examination of the role of romantic partners, incorporating psychoanalytic and systemic views on couple dynamics, and offering

cross-cultural perspectives to highlight how interpersonal and cultural factors shape the experience of FSDs.

2.1 Functional Somatic Disorder (FSD)

Before exploring the nature of FSD, it is essential to discuss the various terms used to describe these persistent bodily complaints, as they highlight the multifaceted approaches within this field. Various terms, such as Medically Unexplained Somatic Symptoms (MUSS) or Psychosomatic Disorder, have been used to describe persistent bodily complaints resistant to conventional treatment. Each term and definition suggest a different perspective on how these symptoms are assessed and attributed (Budtz-Lilly et al., 2015a; Huang, 2021).

These disorders, which are often chronic, take many forms and impair everyday functioning and quality of life, and are associated with high personal and socio-economic costs (Roenneberg et al., 2019). The heterogeneity of classification and definition reflects the complexity and interdisciplinarity of FSDs. It also indicates that symptom treatment and management approaches may differ depending on how the patient and clinician conceptualize the causes and factors affecting the symptoms.

Somatic Symptom Disorder (SSD)

With the release of the Diagnostic and Statistical Manual of Mental Disorders, 5th ed. (DSM-5), the diagnostic category previously known as somatoform disorders was relabeled somatic symptoms and related disorders. These include somatic

symptom disorder, conversion disorder, illness anxiety disorder, and factitious disorder. The diagnostic criteria for Somatic Symptom Disorder noted in DSM-5 are as follows:

A. One or more somatic symptoms that are distressing or result in the significant disruption of daily life.

B. Excessive thoughts, feelings, or behaviours related to the somatic symptoms or associated health concerns as manifested by at least one of the following:

1) Disproportionate and persistent thoughts about the seriousness of one's symptoms.

2) Persistently high levels of anxiety about health or symptoms.

3) Excessive time and energy devoted to these symptoms or health concerns.

C. Although any one somatic symptom may not be continuously present, the state of being symptomatic is persistent.

One of the changes between the DSM-IV and the DSM-5 is in the conceptualization of somatic symptoms: 'somatoform disorders' are now termed 'somatic symptom and related disorders'. Whereas the emphasis of the DSM-IV was on the 'medically unexplained,' nature of these disorders, in DSM-5 the emphasis is on the 'distress' associated with somatic symptoms (Rief and Martin, 2014). The broadened scope emphasizes the subjective experiences of suffering, focusing on the distress caused by the symptoms rather than merely listing them.

As the criteria for SSDs have evolved over the years to increase their utility in the primary care settings, the latest definition may not wholly reflect the biological, psychological, and social/contextual factors that are part of developing and perpetuating these disorders. The definition still emphasizes patients' disproportionate cognitive and emotional responses; however, these responses may be understandable given the chronic nature of their symptoms (Luyten and Fonagy, 2016). Furthermore, it does not sufficiently reflect the evidence suggesting that FSDs may be associated with severe stress dysregulation due to complex interactions between genetic and environmental factors (Ablin et al., 2010; Tak et al., 2010). This evidence underscores the importance of understanding FSDs from a systemic perspective. Investigating biological and relationship factors in FSDs, in addition to features specific to the patients, may aid in better management and treatment.

Medically Unexplained (Somatic) Symptoms (MUS)/(MUSS)

Most of the early research of FSD used the term ‘Medically Unexplained Somatic Symptoms’ (MUSS), referring to symptoms that cannot be or are insufficiently explained by any known physical dysfunctions after a thorough bodily examination (Jansman et al., 2019). These terms can also apply to patients who do not have an underlying disease that can explain the presence of physical symptoms, but with a symptom burden out of proportion to what would typically be clinically expected (Isaac and Paauw, 2014).

The concept of MUSS has been criticized because of the ambiguity inherent in

declaring a symptom unexplained and the importance of including diseases that may have psychological underpinnings under the broad heading of medical illness (Henningsen et al., 2007). Furthermore, with the implication that there is no 'real' cause of the symptoms, the term often results in the constant invalidation of patients' experiences, and generates interpersonal alienation, increasing physical and psychological distress. As a patient once said helplessly, 'the pain is real' (L. Tsou, personal communication, January 2022).

Functional Somatic Disorder (FSD)

The term 'functional somatic disorder' (FSD) is often used to refer to persistent and insufficiently understood symptoms, with patients exhibiting dysregulation in bodily systems and psychological processes (Luyten et al., 2019b). Commonly involved bodily systems include disturbances in the gastrointestinal (e.g., irritable bowel syndrome), musculoskeletal (e.g., fibromyalgia), and cardiopulmonary systems (e.g., palpitations, chest pain). Psychological symptoms and behaviours frequently associated with FSDs include heightened health anxiety, maladaptive coping behaviours, and impairments in emotion regulation (Henningsen et al., 2018). Contemporary literature adopts the term FSD as an umbrella term, encompassing various conditions characterized by troublesome physical symptoms coupled with impairment or disability. These conditions are thought to result from a complex interplay of biological and psychosocial factors, highlighting the integration of bodily and brain functions and dysfunctions (Burton et al., 2020). This definition of FSD

informs the approach used in this thesis, as it refers to a broad category of conditions marked by ongoing and distressing physical symptoms that lead to functional impairment, rather than a specific diagnosis.

2.1.1 Nature

FSDs manifest a significant diversity in their nature and symptom presentation. For illustrative purposes, the three most common FSDs are irritable bowel syndrome (IBS), fibromyalgia syndrome (FMS), and chronic fatigue syndrome (CFS), with respective prevalences (which vary with population and diagnostic criteria) of approximately 10%, 2.5%, and 0.2% (Hyland et al., 2019). FSDs are more complex than a single diagnosis or symptom presentation. Ambiguous symptom classification is one of the distinguishing features of FSDs. The term ‘FSD symptom’ refers to a broad spectrum of symptomatic patterns of varying severity (Roenneberg et al., 2019):

- **Persistent unspecific symptoms:** These symptoms are burdensome enough for the patient to consult a doctor but are not classified as a disease ('medically unexplained symptoms' or 'persistent physical symptoms'). Despite not being classified as a disease, they can significantly impair the patient's everyday functioning.
- **Defined symptom clusters:** These are present over an extended period in the form of functional somatic syndromes (such as fibromyalgia syndrome or irritable bowel syndrome). These syndromes are primarily associated with significant limitations to everyday functioning.

- **Conditions meeting criteria for pronounced (multi)somatoform disorders and newly defined somatic stress disorders:** These conditions presuppose considerable impairment of everyday functioning and are also associated with psycho-behavioural symptoms (Roenneberg et al., 2019).

FSDs can be related to any bodily system. There are three main types of bodily complaints generally associated with FSD: pain (in different locations, such as back, head, muscles or joints, abdomen, or chest); functional disturbance in different organ systems (e.g., palpitations, dizziness, constipation or diarrhoea, movement, sensation); and complaints centering around fatigue and exhaustion. The use of a single FSD as a diagnostic term typically signifies the main affected area such as with chronic pelvic pain, but definitions usually include other bodily complaints as well, and some FSDs are named not according to the main affected area but according to the implied cause, such as multiple chemical sensitivity (Henningsen et al., 2007).

Different FSD symptoms often tend to be considered in isolation, although some researchers suggest they may encompass a continuum of syndromes with common risk factors (Wessely et al., 1999; Wessely and White, 2004). The literature review reveals that there was substantial overlap between these conditions, and the occurrence of multiple syndromes was more frequent than would be expected by chance (Wessely et al., 1999; Wessely and White, 2004). Factors that were common across syndromes include female gender, health anxieties (such as health worries and reassurance-seeking behaviour), reporting of other somatic symptoms, and reporting

of adverse life events (Aggarwal et al., 2006).

Although the diagnostic interview is still the gold standard in assessing for FSDs, a systematic review has found that the Patient Health Questionnaire (PHQ-15) is the most psychometrically valid and helpful of all somatic symptom questionnaires among all available research instruments (Liao et al., 2016). Moreover, the PHQ-15 has also been used in studies of functional disorders (such as fibromyalgia, irritable bowel syndrome, and chronic pelvic pain), other psychiatric disorders (such as depressive disorders and anxiety disorders), and physical diseases (such as benign prostate hypertrophy) (Liao et al., 2016; Liao et al., 2019).

2.1.2 Prevalence

Due to inconsistencies in terminology and definitions, there is limited data in the literature regarding the true prevalence of FSDs (Bateman et al., 2018; Luyten and Fonagy, 2016; Luyten and Fonagy, 2020). Around 10% of the general population and around one third of adult patients in clinical populations are estimated to suffer from FSDs (Roenneberg et al., 2019). In primary care, the prevalence is thought to be between 10% and 30%; in secondary care the prevalence is even higher, with presentations of FSD accounting for between 35% and 55% of all new medical outpatient referrals (Creed et al., 2012). Most studies suggest that more than 50% of patients presenting to primary care clinics with physical symptoms have no diagnosable organic disease, with approximately 30% of these patients fulfilling the criteria for functional somatic disorder (Fink et al., 1999; Kroenke and Mangelsdorff,

1989).

Based on the estimation of a worldwide meta-analysis(Haller et al., 2015), encompassing 32 studies in 24 countries (total N=70,085 patients), prevalence for the strict diagnosis of FSD ranged from 0.8% to 5.9%, with a higher estimated prevalence in the studies that applied less restrictive diagnostic criteria. At least one type of FSD was diagnosable by DSM-IV and/or ICD-10 criteria in a fraction of primary care patients, ranging from 26.2% to 34.8%. The percentage of patients complaining of one functional somatic symptom ranged from 40.2% to 49%. In other words, up to half of the patients in primary care may present with at least one somatic complaint that cannot be readily explained medically.

In addition to the complexity of classification and diagnosis, the assessment approach may also lead to underdiagnosis. Although the diagnostic interview is the gold standard for diagnosing a DSM or ICD psychiatric disorder (Liao et al., 2016), the prevalence of FSDs diagnoses was much lower in studies using diagnostic interviews than in studies using self-reported questionnaires, mainly due to the clinical evaluation of symptom attribution and impairments (Petersen et al., 2021).

2.1.3 Assessment of FSDs

The assessment of Functional Somatic Disorders (FSDs) has evolved, with current approaches emphasising both physical symptoms and associated cognitive and emotional processes. The Patient Health Questionnaire-15 (PHQ-15) is one of the most widely used tools for assessing somatic symptom severity and was employed

in the current study. The PHQ-15 captures a range of common physical symptoms, such as stomach pain and headaches, and quantifies their impact on the individual's daily life, offering valuable insights into the burden of FSDs in clinical and research settings (Kroenke et al., 2002).

Recent literature has introduced the Somatic Symptom Disorder - B Criteria Scale (SSD-12) as a more comprehensive tool for evaluating somatic symptom burden. The SSD-12 assesses not only physical symptom severity but also cognitive factors such as symptom-related beliefs and emotional distress, reflecting a biopsychosocial approach to understanding FSDs (Toussaint et al., 2016). This differs from the PHQ-15, which focuses primarily on physical symptoms.

In addition to standard assessment tools like the PHQ-15 and SSD-12, psychosomatic assessments may consider the patient's mentalization capacity and the presence of mechanical functioning or essential depression. Furthermore, assessing the patients' capacity for embodied mentalizing and identifying features of 'mechanical functioning' can offer valuable insights into the psychosomatic aspects of FSDs. This allows clinicians to better understand the patient's difficulties in processing and symbolizing emotional experiences (Aisenstein and Smadja, 2010).

Ecological Momentary Assessment (EMA) is a method of collecting data in real time through repeated sampling of individuals' current behaviours and experiences in their natural environments. This approach has been employed in recent research to capture real-time data on symptom fluctuations, offering a dynamic understanding of

patients' experiences (Armey et al., 2015; Bos et al., 2015). By incorporating both self-report scales like the PHQ-15 and advanced methods such as EMA, contemporary assessment strategies can provide a more nuanced evaluation of FSDs, offering insights into the complex interplay between somatic symptoms, psychological distress, and environmental factors.

The conceptualization of FSD has expanded beyond the psychosomatic perspective to include a more integrated approach that incorporates biological, psychological, and interpersonal factors. This broader view emphasizes mentalizing difficulties, attachment dynamics, and the complex interplay of these elements in the onset and maintenance of FSD symptoms. This holistic framework aligns with the thesis's focus on the importance of understanding FSDs within the context of individual experiences and relational dynamics.

2.1.4 Risk Factors and Etiopathology of FSDs

FSDs involve a complex interplay of biological, psychological, and social factors. Research has identified several risk factors contributing to their development and persistence (see Löwe et al., 2024 for a comprehensive review). This section discuss dominant theoretical approaches, key etiological factors, and underlying mechanisms.

2.1.4.1 Dominant Theoretical Approaches

Biopsychosocial Model

Initially introduced by Engel (1977), the biopsychosocial model is widely applied to understand FSDs. It posits that FSDs arise from interactions among biological,

psychological, and social factors. This model emphasizes that symptoms are not merely physical or psychological but reflect a dynamic interplay among bodily systems, emotional regulation, and social environments. More recent adaptations propose a dynamic biopsychosocial model, which considers contextual influences such as environmental stressors, health behaviours, and the time-dependent nature of interactions between these factors. This perspective underscores that genetics, early life experiences, and social contexts collectively contribute to symptom development and persistence (Creed et al., 2012; Engel, 1977; Gatchel et al., 2007)

Studies adopting this model emphasize a comprehensive understanding of health, where symptoms are expressions of complex interactions across multiple levels. This model explains why addressing factors such as stress, trauma, and interpersonal dynamics is essential in treating FSDs, advocating for integrated strategies that target all contributing aspects (Creed et al., 2012; Hyphantis et al., 2009; Kitselaar et al., 2023; Roenneberg et al., 2019). One dominant theoretical perspective in this regard is based on predicting coding theory. This theoretical approach suggests that the brain interprets sensory input by generating predictions about bodily states. Symptoms arise when there is a mismatch between sensory inputs and the brain's predictions, leading to heightened awareness and misinterpretation of normal bodily sensations (Edwards et al., 2012; Roenneberg et al., 2019). This model helps explain why patients with FSDs might experience significant distress even without clear physical causes, as the brain's predictive mechanisms can amplify symptom perception.

2.1.4.2 Etiological Factors: Biological and Psychosocial Interactions

Research has identified several key etiological factors that may contribute to FSDs' development and persistence. Understanding these requires considering both biological predispositions and psychosocial influences.

Genetic Vulnerability and Early Life Adversity

There is evidence of a heritable component to FSDs, though specific genetic markers remain unidentified. Twin studies suggest a heritable component to FSDs, although specific genetic markers remain unidentified (Kato et al., 2009). Furthermore, childhood trauma, abuse, and neglect are consistently linked to an increased risk of developing FSDs in adulthood. For instance, in a meta-analysis of 71 studies with control or comparison groups, individuals with a history of trauma were found to be 2.7 times more likely to develop a functional somatic syndrome (Afari et al., 2014). These findings underscore the importance of considering genetic predispositions alongside early environmental factors, and possibly the interaction (Kitselaar et al., 2023).

Personality Traits

Personality traits such as neuroticism and alexithymia are associated with higher rates of somatic symptoms (Taylor et al., 1997). Alexithymia, a trait commonly observed in FSD patients, is linked to Marty's concept of ‘mechanical functioning’ (Aisenstein and Smadja, 2010) and the notion of (embodied) mentalizing (Luyten et al., 2019b; Luyten and Fonagy, 2016). Recent findings show neuroticism may

influence cognitive dysfunctions, such as difficulties with visual memory and planning, contributing to how bodily sensations are processed and managed (de Vroege et al., 2022; Roenneberg et al., 2019). Furthermore, individuals with high levels of neuroticism and lower levels of agreeableness experience more severe somatic symptoms, underscoring the significance of personality in FSDs (Mostafaei et al., 2019). Hence, these findings highlight the role of personality in shaping symptom perception and persistence as well as problems with mentalizing emotional experiences.

Cognitive and Behavioural Factors

Cognitive factors like catastrophizing, hypervigilance to bodily sensations, and intolerance of uncertainty may predispose individuals to FSDs (Rief and Broadbent, 2007). Emotional stability, dominance, and vigilance have also been shown to influence somatic symptoms. For instance, individuals with lower emotional stability are more prone to somatization. This aligns with the idea that a history of somatic illness can sensitize individuals to bodily sensations, leading them to interpret minor or ambiguous symptoms as severe, thus reinforcing maladaptive illness behaviours (Roenneberg et al., 2019; Wongpakaran and Wongpakaran, 2014), which is also consistent with predictive coding theory.

Maladaptive illness behaviours are often another significant factor in the perpetuation of FSDs. Cognitive-behavioral models suggest that excessive worry about health and hypervigilance to bodily sensations can create a feedback loop that

amplifies symptom perception (Rief and Broadbent, 2007; Roenneberg et al., 2019). Patients may develop heightened anxiety over bodily sensations, which increase their focus on symptoms and exacerbates distress. This cycle of worry and hypervigilance may make maladaptive illness behaviours more resistant to change.

Furthermore, avoidance behaviours, often driven by fear of exacerbating symptoms, contribute significantly to the maintenance of FSDs. While avoidance is intended to prevent discomfort, it can lead to physical deconditioning over time. Consequently, patients may experience worsening symptoms, diminishing their ability to engage in meaningful life activities and further solidifying maladaptive coping strategies (Henningsen et al., 2007; Roenneberg et al., 2019).

Previous Somatic Illness

Previous somatic illness seem to play a critical role in shaping symptom perception. Recent research suggests that individuals with a history of physical illness become more attuned to bodily sensations, often interpreting them as signs of new illness. This learned sensitivity can create a cycle in which minor or ambiguous sensations are perceived as severe, increasing the risk of developing FSDs (Mewes, 2022). Patients with FSDs who have a history of somatic illness often report a higher number of somatic symptoms, correlating with greater health impairments (Creed et al., 2013). Additionally, patients with persistent functional somatic symptoms are more likely to receive a formal FSD diagnosis, as their previous illness experiences influence symptom reporting and the diagnostic process (Kingma et al., 2013).

Social and Cultural Influences

Social and cultural factors play a significant role in FSDs' manifestation. Cultural attitudes toward health, illness, and social support networks influence how patients perceive and report their symptoms. Relationship difficulties, social isolation, and problematic illness behaviours within the family system may also contribute to symptom persistence in FSDs. These issues often lead to interpersonal problems, heighten symptomatic distress, and challenges in treatment (Creed et al., 2012; Hunter and Maunder, 2001; Luyten and Van Houdenhove, 2013; Luyten et al., 2012b).

2.1.4.3 Mechanisms of Symptom Development and Maintenance

The processes involved in explaining the persistence of symptoms in FSDs similarly reflect a complex interplay of biological, psychological, and social mechanisms. These mechanisms do not operate independently but interact dynamically, creating self-reinforcing feedback loops that sustain and often exacerbate symptoms.

Biological Mechanisms

At the biological level, dysregulation in systems such as the hypothalamic-pituitary-adrenal (HPA) axis and the immune response have been shown to play a significant role in sustaining symptoms. Chronic stress is known to lead to a hyperactive HPA axis, resulting in heightened sensitivity to otherwise benign stimuli. This hyperactivity can cause individuals with FSDs to perceive even minor sensations as painful or distressing. Research indicates that stress-induced neuroendocrine

changes can predispose individuals to an exaggerated stress response, potentially leading to a cycle where stress and symptom perception feed into each other (Löwe et al., 2024; Roenneberg et al., 2019).

Additionally, immune system abnormalities, such as chronic low-grade inflammation, have been observed in patients with conditions like fibromyalgia and irritable bowel syndrome (IBS). These immune changes may contribute to fatigue, pain, and other somatic symptoms, reinforcing the persistent nature of FSDs (Kano et al., 2020). This connection between stress, immune function, and symptom perception illustrates how biological processes can perpetuate FSDs long after the initial triggers have subsided (Creed et al., 2012).

Psychosocial Mechanisms

Psychological and social factors also contribute significantly to the maintenance of FSD symptoms. From a cognitive perspective, individuals with FSDs often exhibit hypervigilance and catastrophizing, where normal bodily sensations are perceived as severe and indicative of serious health issues. This cognitive bias leads to heightened anxiety, prompting individuals to monitor their bodies more closely, increasing the likelihood of noticing and interpreting minor sensations as symptoms (Henningsen et al., 2018). Such maladaptive thought patterns create a feedback loop where anxiety and physical symptoms reinforce each other (Rief and Broadbent, 2007).

Social factors further influence these cognitive mechanisms. Interpersonal stressors, such as relationship conflicts, social isolation, and experiences of

stigmatization, can exacerbate stress responses. These psychosocial stressors not only affect mental health but also have a direct impact on physical symptoms by activating the body's stress pathways. The resulting increase in stress hormones affect the perception of pain and discomfort, further entrenching the symptoms (Roenneberg et al., 2019).

Dynamic Interactions and Feedback Loops

The persistence of FSD symptoms is best understood through the concept of dynamic feedback loops, where biological, psychological, and social mechanisms continuously interact to sustain and potentially worsen the condition. For example, early life adversities can lead to long-term changes in the body's stress-regulation systems, increasing an individual's sensitivity to stress. This heightened sensitivity, when coupled with maladaptive cognitive patterns such as hypervigilance, creates a self-perpetuating cycle. Individuals remain overly focused on bodily sensations, interpreting them through a lens of anxiety, which in turn activates the body's stress response and amplifies the physical experience of discomfort (Çetin and Sözeri Varma, 2021; Kitselaar et al., 2023)

The Dynamic biopsychosocial model emphasizes in this context that persistent symptoms may arise from the time-dependent interactions between biological predispositions, psychological processes, and environmental factors. For instance, someone with a genetic predisposition to heightened stress sensitivity may encounter environmental stressors that trigger maladaptive cognitive patterns, thereby sustaining

FSD symptoms over time. This interplay suggests that understanding FSDs requires attention to how these elements interact across different contexts, rather than focusing on isolated factors alone (Creed et al., 2012; Löwe et al., 2024).

2.1.5 Stress and Emotion Dysregulation

As noted, current studies suggest that severe stress dysregulation due to complex interactions between genetic and environmental factors may play a key role in many, if not all, FSDs (Ablin et al., 2010; Tak and Rosmalen, 2010). Variations in genes associated with the hypothalamic-pituitary-adrenal (HPA) axis, as well as serotonergic and dopaminergic pathways, have been linked to heightened stress responses and susceptibility to somatic symptoms (Kato et al., 2009; Offenbaecher et al., 1999). Twin studies provide further evidence, indicating that while there is modest heritability in FSDs, environmental factors, especially those involving interpersonal stress, play a dominant role in symptom manifestation(Kato et al., 2010).

This dysregulation may lead to an increased allostatic load—referring to the cumulative 'wear and tear' from chronic stress exposure—which disrupts the balance in stress-regulating systems (McEwen, 2007). The allostatic load disrupts the dynamic equilibrium that typically characterizes stress regulation systems and related neurobiological systems such as the immune and pain-regulating systems. Patients may then exhibit a ‘sickness response’: feelings of lethargy, increased stress and pain sensitivity, mild fever, and cognitive problems (Dantzer et al., 2008; Watkins and Maier, 2005). In other words, the patient’s distress could thus be understood as a physical

reaction to unregulated stress. For example, a study (Hinz et al., 2017) found that low socioeconomic status was associated with a higher prevalence of various somatic complaints, while conditions like obesity correlated with specific symptoms such as shortness of breath and musculoskeletal pain. These findings illustrate how broader environmental and lifestyle factors can intersect with stress regulation, contributing to the manifestation and persistence of FSDs.

Additionally, individuals with FSDs often experience difficulties in emotional regulation, such as reduced awareness of emotions, problems in processing and reflecting on emotional states, and atypical autonomic responses (Riedl et al., 2023; Waller and Scheidt, 2006). These emotional disturbances, often exacerbated by interpersonal stress, play a significant role in the persistence and development of FSDs. Emotional dysregulation in FSDs can often be traced to interpersonal difficulties, which may arise either before or after the onset of persistent, burdensome somatic symptoms. Since co-regulation—where emotional regulation is supported by social interactions—is crucial, the interpersonal context plays an essential role as both a predisposing and perpetuating factor in FSDs.

Despite these findings, there remains considerable uncertainty in the field regarding the specific mechanisms through which stress dysregulation and emotional difficulties contribute to FSDs. Further research is needed to replicate findings across diverse populations and refine our understanding of these complex interactions.

2.1.6 Patient's Distress

Reduced social functioning and low quality of life are the primary concerns of patients (Liao et al., 2019; Verdurmen et al., 2017). FSD patients suffer not only from chronic, disabling symptoms that detrimentally affect their well-being, but also from frustration due to the lack of an identifiable etiology for their symptoms, which complicates treatment prospects. A recent study indicated the burden caused by somatic symptoms in terms of impaired physical quality of life, with the PHQ-15 total score strongly correlating with the physical component of quality of life ($r = -0.58$), fatigue ($r = 0.56$), anxiety ($r = 0.54$), and sleep problems ($r = 0.54$) (Hinz et al., 2017).

In addition to the significant impact on patients' well-being and quality of life, FSDs are also associated with an increased risk of suicidal thoughts and behaviors. These risks may be exacerbated by the chronic and debilitating nature of the disorders, as well as the interpersonal conflicts that often arise in patients' lives. Systematic reviews indicate that more than half of FSD patients (56%) report passive death wishes. Furthermore, somatic symptoms and related disorders are linked to an increased risk of suicidal ideation and suicide attempts. Estimates suggest that 24% to 34% of participants report current active suicidal ideation, while 13% to 67% report a prior suicide attempt (Roenneberg et al., 2019; Torres et al., 2021).

2.1.7 Cost Associated with FSDs

The cost of FSDs is high in terms of healthcare resource utilization (outpatient costs, hospitalization costs, prescription costs) and employer costs (Kalantar et al.,

2003; Sandler et al., 2002; Talley et al., 1995). Individuals with FSDs are often considered difficult to treat and have high rates of disability, increasing the direct and indirect costs to patients and healthcare systems due to the frequent visits to healthcare professionals (Barsky et al., 2005; Konnopka et al., 2013; Roenneberg et al., 2019). The persistent, burdensome symptoms cause excess costs in healthcare comparable to mental health problems like depression or anxiety disorders (Konnopka et al., 2013). Compared to patients with mental health problems, patients with FSDs use twice as many outpatient and inpatient recourses and accrue double the average healthcare costs per year (Barsky et al., 2005). Patients with FSDs have average 6-month direct costs of 1098 EUR and indirect costs of 7645 EUR. For direct costs, outpatient physician visits are the most expensive single cost category (36%), followed by pharmaceuticals (25%) and hospital stays (19%). Indirect costs are predominantly caused by productivity reduction at work (56%) followed by early retirement (29%) and acute sickness absence (14%) (Konnopka et al., 2013).

2.1.8 Comorbidity

Research shows considerable comorbidity between various FSDs, and patients with one FSD have a higher probability of developing symptoms characteristic of other functional disorders (Aaron and Buchwald, 2001; Aaron and Buchwald, 2003; Henningsen et al., 2003; Janssens et al., 2015; Wessely and White, 2004). Some researchers have suggested that many so-called functional somatic syndromes such

as chronic fatigue syndrome, irritable bowel syndrome, and fibromyalgia should be considered to be part of the FSD spectrum (Aggarwal et al., 2006). In addition, tinnitus, a common symptom in otolaryngologic practice, has been associated with increased rates of psychological distress. A large population-based cohort study found that the prevalence of depression, anxiety, and somatic symptom disorders was significantly higher among participants with tinnitus compared to those without tinnitus. Regression analyses showed that participants with tinnitus were more likely to suffer from depression, anxiety, or somatic symptom disorders (Hackenberg et al., 2023).

Comorbid emotional disorders are common in FSD patients, particularly major depressive disorder, generalized anxiety disorder, and panic disorder (Abu-Kaf and Shahar, 2017; Creed et al., 2012; Huang et al., 2016; Raphael et al., 2004). Patients with mood disorders tend to have comorbid somatic symptoms and related conditions and vice versa. With a rate of around 50%, comorbidity occurs just as frequently as the overlap of different functional syndromes (Fink et al., 2007; Henningsen et al., 2003; Kohlmann et al., 2016; Lieb et al., 2007; Löwe et al., 2008). These high rates of comorbidity suggest that FSDs may also be part of a spectrum of affective disorders (Hudson et al., 2003).

The comorbidity with mental disorders further highlights the crucial psychosocial components of FSDs. One study shows that depression, anxiety, medical illness, and health anxiety demonstrate an exposure-response relationship with several somatic symptom complexes. These may be core features of all FSDs and explain why the

number of bodily symptom complexes predicts subsequent health status (Creed et al., 2018). These comorbidities may be part of the FSD spectrum. For example, one study found that depression may not simply be a consequence of the symptoms (Lopez-Pousa et al., 2013) .

2.1.9 Familial Aggregation

Since FSDs could potentially be part of the spectrum of affective disorders (Hudson et al., 2003), exploring the patient's social environment may be essential. Research has been focused on FSD patients' intrapersonal traits; however, high familial aggregation and co-aggregation among the syndromes in FSD (Aggarwal et al., 2006; Hudson et al., 2003) support a genetic or intrafamilial environment component, along with intrapersonal factors. There are limited studies on familial aggregation in FSD patients in general. In the case of irritable bowel syndrome (IBS), a symptom complex characterized by abdominal pain or discomfort with disturbed defecation, without structural or biochemical abnormalities that can be identified utilizing currently available tests (Thompson et al., 1999), there is a significant increase in the prevalence of IBS in the patient's family members versus a spouse's family members. The difference was not affected by adjustment for age and sex (Kalantar et al., 2003). IBS is also independently associated with a family history of psychiatric illness and may be linked to a family history of alcohol/substance abuse (Knight et al., 2015).

Similarly, a community-based study on fibromyalgia syndrome (FMS) provides

further evidence for familial aggregation in FSDs. FMS includes multiple symptoms such as pain, fatigue, sleep disorders, morning stiffness, loss of functional capacity, mood alterations, and problems with cognition, memory, and concentration (Fitzcharles and Yunus, 2012). Comorbid with major depression disorder (MDD), FMS shows no specific physical or pathological evidence. One study investigated whether FMS is a depression spectrum disorder or whether the depression is a consequence of living with FMS. The results show that FMS is a depression spectrum disorder, in which FMS and MDD are characterized by shared, familial mediated risk factors (Lopez-Pousa et al., 2013). These gene-environment interactions would likely affect phenotypic expression and partly explain the variation in symptoms and severity of FSDs. It also highlights the importance of further exploration of the patient's social environment, such as attachment styles, different and similar symptom presentations among close family members, and how they mentalize and react to the symptoms.

2.1.10 Gender Difference

Investigating gender differences in FSDs through an interpersonal lens may be important. Women, both in samples of medical patients and the community, report more intense, numerous, and frequent bodily symptoms than men (controlling for gynecological and reproductive symptoms), whether all physical symptoms or only medically unexplained ones are examined (Barsky et al., 2001; Hinz et al., 2017; Hinz et al., 2022). Although common belief and literature findings suggest that women are more emotionally intelligent and possess greater emotional awareness and

expression than men (Cabello et al., 2016; Śmieja et al., 2014), research suggests women tend to experience more bodily symptoms. The higher prevalence in women may highlight the importance of seeing FSDs as potentially the result of a complex interplay of biological, psychological, and environmental/relationship factors.

Women outnumber men in suffering from affective disorders, which have high comorbidity with FSDs (Henningsen et al., 2003). However, the high rate of female patients with affective disorders does not entirely explain the rate of female patients with FSDs. There are still differences among women with FSDs, which may be attributed to various factors, including biological, psychological, and social influences. For example, chronic fatigue syndrome (CFS) is one of the common FSDs (Hyland et al., 2019), and at the same time, fatigue is a frequent complaint accompanying depressive disorders and somatic symptoms. In one study on fatigue, women with depression reported higher levels of general and mental fatigue than women with FSDs, which was explained by their higher levels of depression (Doerr et al., 2021). This finding suggests that while fatigue is a common symptom in both depression and FSDs, there may be distinct underlying mechanisms contributing to fatigue in these conditions. Given the strong association between FSDs and factors such as stress and emotion dysregulation, it is important to consider the role of interpersonal relationships in the development and maintenance of these disorders. Gender differences in interpersonal dynamics may be related to the higher prevalence of FSDs among women, as women may be more likely to experience relationship stressors and have different coping mechanisms compared to men.

2.1.11 Psychoanalytic Perspectives on FSDs

Psychoanalytic understanding of FSDs has evolved significantly since the early ideas of Freud, who laid the foundation for exploring the link between psychological distress and physical symptoms (Breuer and Freud, 2009; Freud, 1895). Freud's initial concept of 'actual neurosis' focused on how physical symptoms could arise in response to an excess of unprocessed internal tension, a notion that later influenced psychosomatic medicine (Hartocollis, 2002). A key development in the mid-20th century was Alexander's (1950) work, which emphasised the unity of the organism and the central nervous system's role in regulating both internal processes and external relations. Building on Freud's initial formulations, he distinguished between conversion symptoms, which symbolically express psychological content through voluntary muscle control, and vegetative neuroses, which were assumed to manifest as physiological responses to emotional tension (Alexander, 1950). This distinction laid the groundwork for later psychoanalytic theories of functional somatic symptoms. psychoanalytic approaches have historically contributed to understanding FSDs, emphasizing the role of unconscious conflicts, emotional repression, and early attachment experiences in the development of somatic symptoms. While these perspectives offer valuable insights, empirical support for these models has been relatively limited, as systematic research has not consistently validated many of their key concepts (Aisenstein and Smadja, 2010; Alexander, 1950; Fonagy and Bateman, 2008).

In the 1970s, however, two major developments took place in psychoanalytic thinking and practice concerning patients with functional somatic symptoms. Based on clinical observation, Sifneos argued that traditional psychodynamic psychotherapy might be challenging for patients with psychosomatic disorders due to their limited ability to verbalize emotions, highlighting the need for modified therapeutic approaches. He later introduced the concept of alexithymia, characterized by difficulties in identifying and describing feelings, distinguishing between feelings and bodily sensations, constricted imaginative processes (i.e. a lack of fantasy), and an externally oriented cognitive style (Sifneos, 1973; Sifneos, 2010). This concept provided a new conceptual framework for understanding the typical cognitive-affective styles often observed in patients with was then labelled as psychosomatic disorders (Taylor et al., 1991). The notion of alexithymia emphasized that deficits in emotional processing could play a crucial role in the development and maintenance of somatic symptoms, which led to decades of empirical reseach concerning the role of alexithymia in explaining the development and the course of somatic symptoms.

Empirical support for these concepts has steadily accumulated, with numerous studies using measures such as the Toronto Alexithymia Scale (TAS-20) consistently identifying higher rates of alexithymia in individuals with various somatic and psychiatric disorders compared to healthy controls in various somatic and psychiatric disorders compared to healthy controls (Sriram et al., 1987). These findings underscore the importance of addressing difficulties in emotional awareness and mentalizing capacities, which are essential in the psychoanalytic understanding and

treatment of FSDs.

Although research has consistently found associations between alexithymia and various psychosomatic and psychiatric disorders, there has been criticism regarding the limited systematic research specifically validating the early psychoanalytic theories linking alexithymia to somatic symptom disorders. While these early perspectives may not have been extensively tested through empirical studies, they have nonetheless paved the way for more nuanced explorations of the interplay between mind and body. Today, the concept of alexithymia continues to be integrated into contemporary models, combining insights from neuroscience, cognitive psychology, and psychoanalysis, to enhance our understanding of how deficits in emotional awareness can impact physical health (Catrone, 2021; Duquette, 2020; Taylor and Bagby, 2013). This body of research has also played an important role in the development and empirical evaluation of mentalization-based approaches to FSDs which are the central focus of this PhD thesis.

Concurrently, the Paris Psychosomatic School, led by Marty and colleagues, developed influential concepts such as mentalisation, which heavily influenced later mentalizing approaches formulated by Fonagy and colleagues (Fonagy and Bateman, 2008; Fonagy and Target, 2007; Luyten et al., 2012b), as well as 'mechanical functioning' and 'essential depression.' These concepts emphasized early developmental deficits and impaired symbolization capacity in psychosomatic patients. ‘Mechanical functioning’ describes a mode of mental functioning where patients focus

more on external events than on internal emotional experiences. On the other hand, 'essential depression' refers to a state characterized by a lack of desire and emotional life, without typical depressive symptoms (Aisenstein, 2006). According to Marty's (1968) concept, as further elaborated by Aisenstein (2010), patients exhibit a factual, non-metaphorical focus on physical sensations due to a deficit in symbolic representation. This leads to the expression of emotional distress through bodily symptoms. The Paris Psychosomatic School emphasized this as an ‘anti-thought’ strategy—a defence mechanism to avoid engagement with internal emotional experiences (Aisenstein and Smadja, 2010). Their approach built upon earlier psychoanalytic theories, furthering the understanding of how emotional development influences the etiology of somatic conditions (Hartocollis, 2002).

Although the concepts from the Paris Psychosomatic School provided a clinically rich approach to understanding psychosomatic symptoms, it did not lead to systematic empirical research. This changed when the notion of mentalizing was further developed by Fonagy, Luyten, and colleagues (Fonagy and Bateman, 2008; Luyten et al., 2020a; Luyten and Fonagy, 2016), who expanded on these ideas and integrated them into a broader, more empirically grounded framework. Their work emphasized how the ability to understand and reflect on the mental states of oneself and others (i.e., mentalization) may play a crucial role in emotional regulation and the development of psychosomatic symptoms .

In parallel, Richard Lane's concept of levels of emotional awareness has also

contributed to understanding the development and persistence of psychosomatic symptoms. Lane proposed that emotional awareness is a cognitive skill that develops through a hierarchical process, similar to cognitive development. This model helps explain how deficits in recognizing and differentiating emotions might lead to difficulties in regulating emotional states, which can, in turn, manifest as physical symptoms (Lane and Schwartz, 1987a; Lane and Schwartz, 1987b; Lane and Smith, 2021). The integration of these frameworks has enriched the field, providing a more comprehensive understanding of the interplay between emotional processing and physical health.

More recent psychoanalytic perspectives, including Taylor's psychobiological dysregulation model, conceptualize humans as self-regulating systems where emotional and physiological responses are interconnected (Taylor, 1992; Taylor, 2022). This model aligns with the broader trend in psychoanalysis towards relational approaches, linking psychopathology to deficits in psychic structures and functions, including emotional regulation (Mitchell, 1988). It underscores the role of dysregulated affect in the genesis of somatic symptoms, emphasizing the interplay between psychological processes and bodily experiences.

Contemporary approaches, such as the mentalizing-based model proposed by Luyten et al., integrate attachment theory with neuroscientific findings, highlighting the role of impaired (embodied) mentalizing in the development and persistence of somatic symptoms (Luyten et al., 2012b). Within this framework, alexithymia refers to

a basic difficulty in identifying and describing feelings, which is seen as a core feature of problems with embodied mentalizing. While alexithymia highlights specific deficits in emotional awareness and expression, (embodied) mentalizing is a broader, multidimensional, and relational concept that involves understanding both one's own and others' mental states across various contexts. Therefore, challenges in alexithymia can reflect underlying issues in the embodied aspects of mentalizing, but mentalizing as a whole encompasses a wider range of cognitive and social processes (Luyten et al., 2012b; Taylor et al., 1997).

These theoretical perspectives have driven a substantial body of empirical research, which is reviewed in Section 2.2. This research serves as the basis for the current thesis, guiding the exploration of how attachment, mentalizing capacities, and relational factors contribute to the understanding of FSDs.

2.2 Mentalizing-based Approach to FSDs

Mentalizing refers to the human ability to understand the actions of others and oneself in terms of intentional mental states (Allen et al., 2003). It refers to the capability to comprehend one another as conscious individuals influenced by emotions, desires, needs, and wants, and to recognize these motivating factors during social interactions (Fonagy et al., 2002; Luyten et al., 2012a).

Recent research presents an integrative model for understanding patients with FSDs through the relationship between attachment, mentalizing, and the stress

regulation system (Fonagy et al., 2016; Koelen et al., 2014; Luyten and Meulemeester, 2017). A study by Riedl et al. found that improvement in mentalizing was a critical success factor in psychosomatic inpatient rehabilitation, partially mediating the relationship between psychological distress before and after treatment. The study also highlighted the role of epistemic trust, mistrust, and credulity in predicting improved mentalizing (Riedl et al., 2023). The mentalizing-based model is a fundamentally interpersonal approach to FSDs, focusing on three related factors: attachment, mentalizing (embodied mentalizing in particular), and impairments in epistemic trust. A recent systematic review provided further evidence that mentalizing may be a mediator of change in psychotherapy and may moderate treatment outcomes across different treatment modalities. This supports the idea that mentalizing might be a transtheoretical and transdiagnostic concept that is implicated in psychotherapeutic change (Luyten et al., 2024).

However, despite growing evidence for the mentalizing-based approach, there are also some critical limitations and areas in need of further research, particularly concerning the interpersonal nature of the approach. Indeed, most studies so far, with some critical exceptions (Fonagy et al., 2016; Luyten et al., 2019b; Luyten and Meulemeester, 2017; Okur Güney et al., 2022), have focused on individuals with FSDs, but not as much on their relational and broader systemic context.

2.2.1 Attachment and FSDs

Studies have established the association between insecure attachment and FSDs in adults (McWilliams, 2017; Stuart and Noyes, 1999; Waller and Scheidt, 2006). Attachment theory allows for a deeper understanding of the development and maintenance of FSDs. The theory assumes an insecure internal working model developed in childhood influences an individual's interpersonal behaviour and relationships in adult life (Ainsworth et al., 1978). Based on this theory, a substantial body of evidences in recent years has indicated that attachment styles may be associated with physical health (Maunder and Hunter, 2008).

Some researchers have formulated the disorder process from the perspective of attachment insecurity, embodied cognition, and somatic markers of emotion (Dalgleish, 2004; Schore, 2001; Smith and Gasser, 2005). Schore (2001) described how the attachment relationship between infant and carer influences sympathetic and parasympathetic nervous system development. Exposure to traumatic stress, including severe disruptions to the attachment relationship, interferes with the development of the prefrontal cortex, which regulates unconscious inputs from the parasympathetic nervous system, thus potentially affecting the gut, cardiac system, endocrine system, and muscles (Schore, 2001). More specifically, emotions are hypothesized to be experienced first in the body, acting as unconscious 'somatic markers' for cognitive feelings. These emotions are communicated to the brain via the parasympathetic system and then elaborated by the neocortex into the feelings we

consciously appreciate (Damasio et al., 1996). These studies emphasize the role of the frontal cortex in organizing and managing somatic experience within entire framework of self-experience. The right orbitofrontal cortex appears vital for correctly identifying bodily perceptual experience (Damasio et al., 1996; Schore, 2001).

The development of the attachment system may influence the risk of later FSDs in various ways: for example, greater susceptibility to stress in adulthood, increased use of external sources of affect regulation, and altered help-seeking behaviour (Hunter and Maunder, 2001). In the context of interpersonal relationships, attachment theory also provides a better picture of FSD patients' responses when facing physical and psychological distress, shaped by their attachment history (Luyten and Fonagy, 2016).

Insecure attachment styles, mainly anxious and avoidant, have been found to be common in different types of FSD patients (Ciechanowski et al., 2002; Kani et al., 2018; Liu et al., 2011; Sherry et al., 2014). Meta-analytic studies suggest that 40% of the population have insecure attachment patterns, which are relatively equally divided between ambivalent and avoidant attachment (Bakermans-Kranenburg and Van, 2009). Extensive studies show patients who presented with functional somatic symptoms are 2.47 times more likely to have an insecure attachment, and insecure attachment styles were related to frequent attendance in primary care (Taylor et al., 2000b; Taylor et al., 2012). The high prevalence of insecure attachment in FSDs may suggest a potential vulnerability in effective stress and distress management

(Adshead and Guthrie, 2018), a prominent feature in FSD patients. However, insecure attachment styles such as anxiety and avoidance may also be the response to chronic symptoms. As the psychological and biological factors in the development and perpetuation of FSDs vary in each patient, the secondary attachment strategies may be both a cause and a consequence, which is further intensified by FSDs.

Early adversity

Early adversity seems to play a crucial role in the insecure attachment style in FSD patents. Childhood adversity is strongly associated with insecure adult attachment, as it alters the relational world of the child and inhibits the development of secure attachment bonds (Maunder and Hunter, 2008). Research has associated early adversity with greater vulnerability to stress-related disorders, including FSD (Bakermans-Kranenburg et al., 2008; Gunnar and Quevedo, 2007). Evidence shows that FSD patients tend to have higher levels of early adversity and insecure attachment styles (Luyten et al., 2006; Maunder and Hunter, 2008; Waller and Scheidt, 2006).

One specific form of early adversity that has been linked to FSDs is childhood maltreatment. Previous research suggests a link between experiences of childhood maltreatment and adult somatic symptom distress (Creed et al., 2012). The contributing mechanisms were not well understood until a study was published identifying shame as a mechanism for the effects of emotional abuse and neglect (Kealy et al., 2018). Childhood emotional abuse or neglect can leave the child convinced of their worthlessness. It may foster identification with the rejecting

caregiver along with a representation of the self as fundamentally defective and unworthy. This form of shame referred to as ‘bad me’ shame (Benau, 2018) may, in turn, be represented in bodily symptoms that concretely mirror the individual's sense of inadequacy and deficiency. Reactions to one's body might be specific forms of shame that contribute to somatization in the context of sexual trauma or emotional neglect (Andrews, 1998).

Moreover, FSDs may physically represent what cannot be readily mentalized: the profound betrayal, confusion, and violation of personal and physical boundaries involved in abuse and neglect (Kealy et al., 2018). Neglectful or abusive caregivers cannot provide consistent empathy for the child's emotional experience. This chronic lack of empathy can lead to feelings of shame in the child, such as a sense of inadequacy for experiencing emotions that seem to be unrelatable to others. It also routinely deprives the child of a significant source of learning and understanding regarding their emotional life (Fonagy and Allison, 2012). Furthermore, children whose emotional needs are ignored may find that the only way to obtain care or attention is through some physical ailment, potentially setting the stage for later somatization tendencies (Kealy et al., 2018).

Interpersonal Problems

FSD patients' attachment patterns may potentially negatively impact the patient's interpersonal relationships, whether or not the relationship problems existed premorbidly. The disorders may also increase interpersonal conflicts in the patient's

support system or with health professionals. It could also hinder the formation of a working alliance with healthcare professionals, effective stress dysregulation with attachment figures, or getting actual care from the patient's support system. Repetition of an insecure attachment pattern can lead to dysfunctional relationships with healthcare professionals that influence illness management and treatment adherence. Maunder et al. found that patients' attachment styles relate to doctors' experiences of patients as difficult (Maunder et al., 2006). The dysfunction in the caring relationship goes both ways: there is extensive literature on the negative response of doctors to patients who do not or will not get better. Examples from general practice include the 'heartsink' patient' (O'Dowd, 1988) and the 'hateful patient' (Groves, 1978). Unfriendliness from healthcare professionals may negatively impact the care of patients with FSDs. Moreover, health professionals' attachment styles will influence what they provide to FSD patients.

Such dysfunction can also affect a patient's close relationships. An individual with a secure attachment strategy will seek attachment figures to downregulate their stress. As FSD patients suffer from prolonged symptoms and constant invalidation, they may be angry, distrustful of, or disappointed with their attachment figures, such as romantic partners, who fail to understand, empathize, or relieve their distress. This dysfunction in the relationships could also be bi-directional, similar to the dysfunction observed with healthcare professionals. However, the literature on the attachment styles of relationship partners of patients with FSD is limited. There is evidence of a transmission of somatizing behaviours and health beliefs across the generations

(Craig et al., 2002; Marshall et al., 2007). Children who frequently attend primary care tend to have parents who have complex relationships with healthcare providers (Little et al., 2001). An adult FSD patient's romantic partner is likely to be their primary carer. Similar to evidence found in the relationship with health professionals, the partner's attachment style may also influence and be influenced by the patient's attachment style. This will be the focus of the following empirical studies.

2.2.2 Embodied Mentalizing and FSDs

The capacity to mentalize acts as a protector against somatic complaints (Ballespi et al., 2019). Recent research (Riem et al., 2018) has further identified problems in mentalizing as a potential mediator between insecure attachment and FSDs in patients. Specifically, patients are assumed to struggle to clarify their own emotions, while having fewer difficulties understanding others' mental states. This may contribute to their tendency to experience emotional distress in terms of somatic distress.

Alexithymia, which overlaps with self and affective mentalizing (Luyten et al., 2012b), refers to a general deficit in emotion identification and expression (Taylor et al., 1997). Alexithymia is a multifaceted concept encompassing: (a) deficits in the ability to identify one's emotions, (b) difficulty in describing emotions, (c) an externally oriented cognitive style, and (d) constricted imaginal processes (Nemiah et al., 1976). Studies have found higher levels of alexithymia in patients with various FSDs, such as fibromyalgia (a chronic pain condition) (Di Tella and Castelli, 2016), and irritable bowel

syndrome, (a functional gastrointestinal disorder) (Kano et al., 2018), compared to healthy controls. However, recent evidence suggests that only 15-22% of FSD patients exhibit clinical levels of alexithymia and lack emotional awareness (Pedrosa Gil et al., 2008a; Pedrosa Gil et al., 2008b). Furthermore, alexithymia is associated with various medical and psychiatric disorders besides FSDs (Taylor et al., 1997). While alexithymia can indicate impairment in embodied mentalizing, its connection to insecure attachment, often due to early trauma and/or neglect, cannot be generalized to all FSD patients (Pedrosa Gil et al., 2008b).

Embodied mentalizing refers to the specific ability to interpret the body as a seat of emotions, to be aware of bodily experiences, and link them to the mental states (Luyten et al., 2019b). Marty's concept of mentalisation and 'mechanical functioning,' as interpreted by Aisenstein (2006) suggests that patients experience physical symptoms due to a lack of symbolic representation of their emotions. This deficit in the ability to mentalize emotions can result in the expression of distress through bodily symptoms. This view resonates with contemporary understandings of FSDs, highlighting how difficulties in embodied mentalizing, particularly in relation to bodily experiences, may contribute to the onset and maintenance of these disorders. Studies suggest that impairments in mentalizing, including embodied mentalizing, may contribute to the onset of FSDs and also affect patients' ability to regulate emotional distress within interpersonal relationships (Aisenstein and Smadja, 2010; Luyten et al., 2012b).

Furthermore, the ability to mentalize bodily sensations forms a crucial part of self-definition and self-image. Long-lasting somatic distress often damages or even distorts the FSDs patient's capability to be aware of and reflect on what happens within the body, instead dealing with it as a constant internal threat. FSDs patients' impaired body mentalizing makes it difficult to link their emotional states to the body (Luyten et al., 2019b). Effective mentalizing involves a balance and flexible movement between different dimensions of mentalizing (automatic vs. controlled, self vs. others, cognitive vs. affective, internal vs. external), and ineffective mentalizing, characterized by imbalances in these dimensions, is considered a transdiagnostic feature of mental disorders (Luyten et al., 2024).

The contemporary mentalizing-based approach suggests that rather than viewing FSD patients as broadly 'alexithymic,' their (embodied) mentalizing impairments are more specific. These impairments are linked to particular experiences and symptoms and are associated with interpersonal situations that involve high levels of arousal or stress (Luyten et al., 2013). Impairments in embodied mentalizing often cause FSD patients to oscillate between excessive mentalizing and total denial of the importance of inner mental states (Luyten et al., 2019b). Consequently, the way they mentalize stressful bodily experiences may impede their ability to seek or adhere to proper self-care or treatment. It creates tension and disbelief in patients' interpersonal relationships, either with someone in their life or with health professionals. As a result, many FSD patients feel misunderstood, invalidated, and bitter (Blom et al., 2012b), leading to more stress and loneliness for each partner in the relationship. In a way,

patients are locked in with the symptoms, disconnected from themselves and others.

The impairments in embodied mentalizing experienced by FSD patients manifest in various ways. For instance, FSD patients may be less accurate in identifying bodily sensations (Bogaerts et al., 2010), and have negative beliefs about expressing emotions (Hambrook et al., 2011). These difficulties can lead patients to ignore or attempt to 'silence' their bodily feelings, striving to regain the power to 'control' their own body, rather than listening to and caring for it. They may constantly try to find ways to 'tame' the distress through persistent worrying and seeking different remedies, even resenting their body for not being fixed or resenting those who fail to fix it. Low self-compassion, characterized by being harshly self-critical rather than being kind and understanding towards oneself (Neff, 2003), is associated with a higher number of symptoms and lower health-related quality of life in individuals with somatoform disorders (Dewsaran-van der Ven et al., 2018). This suggests that impairments in embodied mentalizing may not only contribute to the development of FSDs but also exacerbate the severity of symptoms and their impact on patients' well-being.

Moreover, the interpersonal nature of attachment and mentalizing is crucial to understanding FSDs, as these disorders are associated with severe stress dysregulation resulting from complex genetic and environmental factors (Ablin et al., 2010; Tak et al., 2011). Stress regulation usually involves the co-regulation of stress with attachment figures (Sbarra and Hazan, 2008). However, FSD patients' insecure attachment strategies, impaired (embodied) mentalizing, and emotional regulation

difficulties strain their interpersonal relationships, serving as both a cause and a consequence of FSDs (Fonagy et al., 2016; Okur Guney et al., 2019). This highlights the importance of considering both the intrapersonal and relational factors in FSD patients' mentalizing difficulties and how these difficulties perpetuate a cycle of interpersonal stress and symptom exacerbation.

2.2.3 Epistemic Distrust and FSDs

Epistemic trust is defined as the capacity to trust others as a reliable source of knowledge about the world. For FSD patients, this may include knowledge and understanding of their symptoms. Patients with FSDs, particularly those with a history of early adversity, may have had problems with epistemic trust before the onset of their symptoms (Luyten et al., 2020b). As discussed in the previous sections, dysfunctional relationships could be the cause and/or consequence of FSDs. These patients' distrust of others, including health professionals who argue that their complaints are wholly psychosomatic, further erodes their epistemic trust (Luyten and Fonagy, 2020). As a result, many patients feel misunderstood and invalidated (Blom et al., 2012a). Epistemic trust may be expressed in cycles, from over-trust of others to complete epistemic distrust (Luyten and Fonagy, 2016).

Such disruptions in epistemic trust, along with the fluctuating nature of FSDs between illness and normal, can make it challenging for individuals to develop an effective working alliance with health professionals. Epistemic distrust could also discourage patients from relying on significant others for care and support, while

others may feel rejected. These interpersonal problems could further damage the patient's already vulnerable relationships and worsen their symptoms, creating a vicious circle. Unfortunately, a stable and supportive relationship is what the patient needs to better manage FSDs, as further outlined below.

2.3 FSD in the Context of Relationships

After discussing the fundamental elements of the interpersonal approach to understanding FSD through the literature on attachment, (embodied) mentalizing, and epistemic trust, this section will further emphasize how relationships and attachment figures may impact FSD patients and their symptoms. Since cultural codes affect how individuals mentalize themselves and others, embodied mentalizing and FSD will also be explored from a cross-cultural perspective

2.3.1 Emotion and Stress Regulation in FSD

In a relationship, our mood state may influence or be influenced by another person, either silently in the background or through direct interaction. Emotional co-regulation is a bidirectional linkage of oscillating emotional channels (subjective experience, expressive behaviour, and autonomic physiology) between partners, contributing to both partners' emotional and physiological stability in a close relationship (Butler and Randall, 2012). This stability encourages individuals to look for the proximity of loved ones for comfort when in pain or distress. However, patients suffering from different forms of FSDs often experience difficulties such as reduced

emotional awareness and reflective capacity, rigid emotional attention, or aberrant autonomic activity that can undermine the relational process that supports emotion regulation. Despite patients often reporting greater emotional suppression, observational studies indicated they are more expressive of negative emotions, primarily through bodily behavior. These patients often have more difficulty identifying their own emotions compared to their partners' emotions. Consequently, if their partner exhibits negative emotions and communication, patients may respond less constructively. (Okur Guney et al., 2019). A study by Riem et al. (2018) found that patients often struggle more with identifying their own emotions than their partner's, leading to less constructive responses to their partner's negative emotions and communication (Riem et al., 2018).

Limited but promising research has explored social or partner support for patients with FSDs and related factors (Ali et al., 2010; Aragona et al., 2012; Cohen et al., 2000; Luyten et al., 2012b; Marszal and Janczak, 2018). Existing studies generally indicate that relationship dynamics influence symptoms (Cano et al., 2008; Cano et al., 2012; Cano et al., 2000). For example, spouse criticism and hostility—whether actually expressed or perceived—may worsen chronic lower back pain in patients (Burns et al., 2018). Empirical evidence also demonstrates a strong and consistent relationship between marital satisfaction and psychological distress in populations enduring chronic pain (Leonard et al., 2006). However, more detailed research on the mechanisms involved is needed. In a related domain, a study on the co-regulation of stress in the relationship between perceived partner responsiveness (PPR) and binge-

eating found a significant direct association regarding both actor and partner effects of PPR on co-regulation between romantic partners (Tosyali and Harma, 2021).

However, this body of literature is not without its limitations. One significant limitation is that studies in this area have rarely investigated the role of (embodied) mentalizing in an interpersonal context. Therefore, to better understand FSD patients' mentalizing, it may be necessary to investigate the context of interpersonal relationships.

Indeed, research suggests that mentalizing may be, in-part, relationship- and context-specific, similar to how attachment contributes to relational patterns. Individuals may have different thoughts, feelings, beliefs, and behaviors towards different attachment figures. Relationship-specific attachment styles are probably related to, but not identical to, global attachment styles (Cozzarelli et al., 2000; Klohnen et al., 2005). Later findings also indicate that the link between attachment quality and mentalizing is relationship-specific (Bączkowski and Cierpiałkowska, 2015).

2.3.2 Psychoanalytic Perspectives on Couple Dynamics in FSDs

Psychoanalytic understanding of couple dynamics in FSDs has been informed by various theoretical perspectives, building on the foundational work of earlier psychoanalytic thinking (Bion, 1962; Bowlby, 1973; Freud, 2016; Freud et al., 1991; Hartocollis, 2002; Klein, 1946) . While early theories primarily focused on individual psychodynamics, contemporary approaches consider the complex interplay between individual and relational factors within FSDs (Berk and Andersen, 2000; Brody, 1988;

Clulow, 2017; Kernberg, 2011; Lanman and Grier, 2003; Meehan and Levy, 2009; Scharff and Scharff, 2018).

Object relations theory, and the views of Klein (1946) in particular, has played an important role in this regards to understand how early relational patterns can influence adult relationships (Klein, 1946), including responses to illness and caregiving roles in the context of FSDs. Although her theories did not specifically address FSDs, her concept of projective identification helps to explain the transfer of emotions and anxieties between partners. For example, in the context of FSDs, a person may unconsciously project their anxiety about their symptoms onto their partner, leading the partner to mirror this anxiety through heightened caregiving behaviors. This can reinforce illness behaviors, as the partner's overprotectiveness confims the patient's perception of vulnerability. Additionally, difficulties in expressing emotional needs can result in physical symptoms that act as a form of miscommunication, causing both partners to experience stress and symptom focus, further entrenching the cycle of distress and dependence.

More recent psychoanalytic perspectives have further developed our understanding of these dynamics. For example, the concept of projective identification has been used to explain emotional exchanges between couples dealing with FSDs. Ruszczynski (1993) emphasizes shared unconscious fantasies in couple relationships, such as fantasies about the meaning of illness or caregiving expectations (Ruszczynski, 1993; Ruszczynski, 2018). Morgan introduces the idea of a 'couple

state of mind,' highlighting how partners co-create a shared psychological space, which is particularly relevant when navigating FSD-related challenges. (Morgan, 2018).

Bion's concept of containment, in turn, describes a process in which one partner helps absorb and process the distressing emotions of the other (Bion, 1962). In the context of FSD, a partner's capacity for containment can either alleviate or amplify the patient's symptoms. When the patient's distress is contained and made sense of, it may facilitate emotional regulation and symptom alleviation. A failure in this containment process may also contribute to the development of mechanical functioning in the partner with FSD, reinforcing the difficulty in processing internal emotional experiences (Aisenstein and Smadja, 2010).

Attachment theory has significantly contributed to our understanding of couple dynamics in FSDs, emphasising how adult attachment patterns influence stress regulation and health behaviours (Bowlby, 1973; Bowlby, 2008). This perspective supports viewing the couple as a regulatory unit, aligning with the concept of the organism as a unified system. This perspective is explained in more detail in Section 2.2.1.

The concept of alexithymia, already discussed, also has implications for couple dynamics. If one or both partners struggle with identifying and expressing emotions, this difficulty may hinder their ability to provide emotional support and regulate affect within the relationship (Taylor et al., 1997). This idea is particularly pertinent when one partner has an FSD, as difficulties in emotional processing linked to alexithymia can

complicate how couples cope with the illness together. Alexander's (1950) exploration of the specificity of emotional factors can in this context also be applied to couple interactions, illustrating how different emotional responses, such as withdrawal ('vegetative retreats') or aggressive tendencies ('sympathetic hyperactivity') (Alexander, 1950), may shape the dynamics in relationships involving FSDs.

Building on the earlier discussion of ‘mechanical functioning’ and ‘essential depression’ (Aisenstein, 2006), these concepts provide insight into couple dynamics where one partner has an FSD. The partner with the FSD may exhibit a constricted emotional and fantasy life, focusing on external events rather than internal experiences, potentially creating challenges in emotional intimacy and mutual understanding within the couple.

These perspectives suggest that psychoanalytic approaches to couples affected by FSDs should focus on enhancing mutual regulatory capacities, addressing potential alexithymic features, exploring unconscious fantasies and projections related to illness, and fostering a containing ‘couple state of mind’ (Morgan, 2018; Ruszczynski, 1993; Ruszczynski, 2018). Treatment may need to address not only the individual's difficulty in processing and expressing emotions but also how this impacts the couple's ability to communicate and cope with the FSD. These views give rise to a more systematic perspective on FSDs, which is discussed in the next section.

2.3.3 Systemic View

Systems theorists have suggested that family functioning plays an important role

in the development and maintenance of somatic symptoms and that such symptoms are associated with unresolved family conflicts. Somatic symptoms may help maintain family balance by allowing the identified patient to express emotional needs without disrupting family functioning. The perpetuation of symptoms is a way to cope with a family relationship and is silently agreed upon by everyone (Bowen, 1978; Minuchin, 1974; Minuchin et al., 1978b). Minuchin (1974) developed the concept of the somatic family, noting that families with somatically ill children tend to display greater rigidity, enmeshment, and avoidance of negative communication. According to Minuchin, somatic symptoms in children serve as expressions of emotional distress within families where deviation, rebellion, or open communication are not allowed. These symptoms provide a way to express distress without contravening the rules of such families (Minuchin, 1974).

Waring (Waring, 1983) introduced the idea of the ‘psychosomatic marriage’. Similar to Minuchin's views, Waring suggested that physical symptoms serve as a way to communicate emotional distress within marriages characterized by excessive closeness, inflexibility, and avoidance of open communication. In these marriages, changes in roles, distance, or negative emotions are not accepted, and physical symptoms arise to express distress without fundamentally disrupting the marriage structure. From a family systems perspective, physical symptoms may arise from the couple's struggle to find a balance between being together and maintaining individuality. These conflicting forces create stress that exceeds individual coping abilities, leading to anxiety manifested through physical symptoms (Goldenberg and

Goldenberg, 2000).

In this systems perspective, close relationships may play a crucial role in the development and perpetuation of FSD, and the assumption is partly aligned with the attachment and mentalizing approach adopted in this study. As system theory suggests, relationship problems may exist both in patients and their close relationships. However, the nature and quality of relationships influence how people interpret and communicate their physical sensations and feelings, as the capacity to mentalize has both ‘trait’ and ‘state’ aspects that may vary in quality in relation to emotional arousal and the interpersonal context. A supportive relationship facilitates mentalization while a troubled one inhibits it (Ballespi et al., 2019).

The systemic perspective offers a broader sense of FSD patients' clinical features, considering the dynamics and interdependencies within the relationship. Previous study results suggest that expressing emotions leads to a better relationship adjustment. A partner who struggles with emotional awareness and expression may have more difficulty developing a sense of intimacy, which is crucial for relationship satisfaction (Moore et al., 2001). Dyadic adjustment refers to the quality of the intimate relationship defined as the perceived satisfaction of each partner. Dyadic adjustments in women seem to be more affected by their partner's global alexithymia, including difficulty in identifying feelings (Cordova et al., 2005). In other words, women may be less satisfied than men with a less expressive partner in the relationship (Eid and Boucher, 2012). This is likely to make women more stressed and susceptible to

dynamic changes within the relationships through their interactions with their partners.

Although the systemic view may contribute to a better understanding of FSDs, there is a paucity of empirical studies investigating patients' close relationships and the reciprocal impact of these relationships on FSD symptoms. According to one study on FSD patients and their spouses (Sayre, 2002), couples experiencing FSDs are characterized by avoidance, rigidity, enmeshment, and interpersonal polarization around these factors. More research on FSDs from a systemic view may be needed for this multi-component and insufficiently understood disorder, which is the focus of this study. Systemic practitioners typically refrain from asking individuals about their present emotional states. Instead, they tend to concentrate more broadly on the reciprocal influence of each person's behaviours and belief systems, as well as how family dynamics and other contextual elements contribute to individuals' actions and interactions (Boscolo et al., 1987). The mentalizing approach employed in this study examines how individuals perceive and feel experiences within their relationships (i.e., their mentalizing). It also explores how these experiences shape core assumptions about the mental states influencing partners' behaviours and, collectively, how the couple jointly perceives or experiences these dynamics (Asen and Fonagy, 2017).

2.3.4 The Role of Romantic Partner

Supportive and loving relationships can assist in the management of painful experiences, whether physical or psychological. Social support minimizes physical threats and protects the immune system (Cohen et al., 1997). Interpersonal

interactions during an experience of pain may function as social, predictive signals for contextual threats or safety and influence the salience of noxious stimuli (Krahe et al., 2013). Conversely, increased pain sensitivity has been associated with increased distress after social rejection (Eisenberger et al., 2006). Meta-analyses have associated social and relationship stress and dissatisfaction with increased pain-related disability. Social and physical pain may share common physiological pathways (Robles et al., 2014).

In terms of physiological well-being in adulthood, probably no one person is as influential as the significant other (Doherty and Feeney, 2004). People who appraise their partners as supportive during stressful experiences have been found to be less likely to develop emotional and somatic problems (Cohen et al., 2000). A meta-analysis indicates negative spouse responses are consistently related to pain-specific marital functioning and psychological distress. The evidence on spousal support was mixed, most likely due to the great variation across studies in the measurement of spousal support (Leonard et al., 2006).

One study of the longitudinal impact on symptoms and disability of the significant other's responses to illness behaviour with symptoms and disability among those with chronic fatigue syndrome (CFS) indicates the importance of partner's response (Band et al., 2014; Schmaling et al., 2020). The participants had an improving trajectory of CFS-related symptom severity over time. However, patients who perceived that their partners responded negatively to their illness behaviour violated this overall pattern of

improving CFS symptoms and instead evidenced increased impairment due to bodily pain, worse physical functioning, poorer mental health, and greater CFS symptom severity over time (Schmaling et al., 2020). More negative significant other's responses were associated with more pain, poorer physical and mental health, and more fatigue-related symptoms (Schmaling et al., 2020).

Partners' solicitous responses, which refer to the partner's caring, empathetic, and attentive behaviours towards the patient, such as expressing concern, providing practical assistance, or offering comfort, have been found to be associated with less activity and less disability in patients (Band et al., 2016). This suggests that solicitousness in the form of encouragement may reduce disability, whereas other forms of solicitous responses, such as overprotection, may reduce activity and be unhelpful for patients' recoveries. Overprotection may be understood as the emotional expression construct of overinvolvement, but further research is needed for a better understanding of patient interpretations of significant other's responses.

In addition, how partners' interpretations of patients' symptoms may be significant in terms of the effect on improving patients' functioning. A study (Kindt et al., 2019) on individuals with chronic pain (ICP) finds that partners' helping motivations and ICPs' psychological needs seem to be important to consider when investigating the role of spousal responses, such as providing emotional, instrumental, and informational support, because they could (indirectly) predict changes in the well-being and psychological distress of ICPs over time. Another study (Burns et al., 2019)

revealed that spouses' judgments of the patient's pain as a mystery were related to patients' perceptions of critical or invalidating responses during a discussion about coping with pain, highlighting how partners' interpretations of patients' symptoms can significantly impact the couple's interactions and the patient's well-being. The findings suggest that how partners mentalize the chronic disorders may be as important potentially as the mentalization of the FSD patient.

Loneliness within a relationship is another critical factor. Loneliness has been found to increases perceived stress, fear, anxiety, anger, and depressive symptoms and is associated with impaired cellular immunity (Hawkley and Cacioppo, 2010). Being lonely relates to the quality of people's social bonds and networks (Hawkley et al., 2008), particularly romantic relationships, which have a significant tactile component (Dunbar, 2010). A recent population-based cohort study found that loneliness predicted more severe anxiety symptoms and suicidal ideation in long-term childhood cancer survivors over a two-year period, even when controlling for baseline symptom levels (Ernst et al., 2021). On the other hand, physical touch decreases feelings of loneliness, with the effects being particularly strong among single individuals. This suggests that the regular availability of physical contact in married couples may contribute to lower levels of loneliness (Heatley Tejada et al., 2020).

Despite the potential benefits of relationships, people in a relationship may still experience loneliness. Like other interpersonal issues, loneliness in a relationship could be considered both a cause and a consequence of FSDs. Among significant

relationships, FSD patients' romantic relationships are the strongest predictor of life satisfaction (Ali et al., 2010), which has been found to moderate the effects of stress on symptoms of psychological distress (Chioqueta and Stiles, 2007).

In a relationship, both partners play crucial roles. Similarly, to better understand FSD patients, it may be equally important to investigate the role of the patient's partner. In particular, the relationship between the patient and partner's mentalizing capacities, attachment styles, and the patient's symptoms should be examined. This is important as we already know that emotionally expressive behaviors, such as holding hands or touching, effectively relieve perceived pain. It may also be insightful to investigate the partner's perception and attitude towards the patient's chronic, 'medically unexplained' disorders, as skepticism and conflict may further increase the patient's stress levels and impair mentalizing ability. However, only a limited number of studies on FSDs to date have investigated the patient's partner and the potential interplay between their respective attachment styles and mentalizing capacities. Understanding the FSD patient and their partner within the romantic relationship may provide us with a more complete picture of the perpetuating factors in the patient's social environment.

2.3.5 Cross-cultural Perspectives

Examining FSDs and mentalizing cross-culturally may be also important for understanding the interplay between cultural factors, psychological processes, and somatic experiences. Cultural norms and values can shape how individuals express and interpret emotions, attach meaning to somatic sensations, and interact with others,

including romantic partners and healthcare providers (Gureje, 2004; Skapinakis et al., 2003).

Research suggests that while FSDs occur across cultures, there may be differences in specific features of FSD between cultural groups (Aragona et al., 2012). These differences may be influenced by cultural variations in attachment styles, emotion expression, and mentalizing profiles (Aragona et al., 2012; Gureje, 2004; Kirmayer, 1989; Le et al., 2002; Murata et al., 2013; Skapinakis et al., 2003). A systematic review indicates that mentalizing profiles may vary between cultures, with a focus on self > other mentalizing in individualistic cultures and self < other mentalizing in collectivistic cultures (Aival-Naveh et al., 2019). This notion is further supported by a study by Thomas et al. (2020), which found that individuals from individualistic cultures more frequently depicted emotionally expressive drawings compared to those from collectivistic cultures (Thomas et al., 2020).

Alexithymia, which captures several aspects of mentalizing (Aival-Naveh et al., 2019), has been consistently found to be higher in healthy samples from collectivistic cultures compared to those from individualistic cultures (Aival-Naveh et al., 2019). Specifically, cultural comparisons have yielded higher alexithymia scores in healthy adults from Taiwan (Lin and Chan, 2006), China (Zhu et al., 2007), Japan (Fukunishi et al., 1997), Korea (Lee et al., 1996), and India (Pandey et al., 1996). In a study that examined the relationship between culture and alexithymia, Asian groups (Asian American and Malaysian students) showed higher alexithymia levels than the

European American group (Le et al., 2002). Further, somatization was more strongly associated with alexithymia in the Asian groups than in the European American group. These findings suggest that the interpersonal relational environment may be more strongly associated with FSDs than language, physical considerations, or the social environment (Le et al., 2002).

Cultural differences in attachment styles, emotion expression, and mentalizing profiles may have implications for the interpersonal dynamics in couples affected by FSDs. In collectivistic cultures, where the harmony of the family and the group is particularly central to individual well-being (Kirmayer, 1989), relationship problems may put FSD patients in a more difficult position, undermining social support networks, their sense of self-validation, and treatment adherence..

These cultural differences in mentalizing have practical implications for how FSDs are experienced and handled in medical contexts. In contrast to the traditional medicine's awareness of both physical and psychological factors in somatic symptoms, some Asian patients, and even clinicians, may find it more manageable to focus on the biological attributions of FSD rather than digging into the complex interplay of factors contributing to the symptoms. In many Asian cultures, it is more acceptable for psychological distress to be expressed through the body than through the mind (Chun et al., 1996; Gaw, 1993; Kleinman, 1982; Tseng, 1975). Social stigma, shame, and saving face often prevent Asians from seeking mental healthcare (Kramer et al., 2002), or being willing to acknowledge the mental and relational factors of FSDs.

One manifestation of how FSD is mentalized is in how it is communicated. Autonomic reactivity is one of the possible biomarkers of FSDs, and it has frequently been suggested that dysfunction of the autonomic nervous system contributes to functional somatic symptoms. For instance, in Taiwan, a culture with a high Alexithymia score (Lin and Chen, 2003), ‘autonomic dysfunction’ is widely used to communicate with patients about their symptoms. Even the terminology is informal, and whether or not the somatic symptom diagnoses have an autonomic basis is unclear (Huang, 2021). This communication approach may reflect how people choose to mentalize the disorder.

2.4 Summary

Functional somatic disorders (FSDs) are prevalent conditions characterized by persistent physical symptoms that significantly impact patients' quality of life and healthcare costs. These persistent and often elusive conditions pose significant challenges for both patients and healthcare systems worldwide. FSDs are regarded as 'difficult to treat,' and these persistently elusive conditions pose challenges for both patients and the global healthcare system. The recent emergence of a mentalizing-based approach offers an integrative framework for understanding and managing these complex symptoms by exploring the nexus between attachment, embodied mentalization, and epistemic trust. Relationship discord may serve as both a cause and a consequence of these symptoms. Patients' secondary attachment strategies, compromised mentalizing, and epistemic distrust can jeopardize their social support

networks and therapeutic alliances with healthcare providers.

Despite the growing body of evidence supporting an interpersonal approach to FSDs, significant gaps appear to remain in our understanding of the role of romantic partners and cultural differences. Existing studies predominantly focus on individual-level factors afflicted with FSDs, with less emphasis on examining their relational and broader systemic contexts. Specifically, there is a lack of understanding regarding the reciprocal influence of patients' and partners' attachment styles, embodied mentalizing, and their collective impact on the severity of patients' somatic symptoms. Future research should focus on these areas to develop more effective management and treatment strategies for FSDs. Upcoming empirical studies aim to address these gaps by adopting a systemic perspective when examining FSDs. These studies will investigate the potential interplay between attachment dimensions and mentalizing capacity among couples dealing with FSDs, as well as the reciprocal effects of these variables within the dyad.

Chapter 3 Methodology

3.1 Introduction

This chapter presents an overview of the research design and methodology utilized in the two studies conducted for this thesis. The primary overarching objective of this research was to investigate Functional Somatic Disorder (FSD) within the context of romantic relationships using a mentalizing-based approach. To achieve this objective, a mixed-methods research design was employed, integrating both quantitative and qualitative approaches.

3.2 Research Design

The mixed methods research design was chosen to capture the complex nature of FSD within romantic relationships. The approach integrates statistical findings from the quantitative study with in-depth insights from the qualitative study. The use of mixed methods in health research is increasingly recognized as valuable for addressing complex questions and providing evidence from multiple perspectives (Johnson et al., 2007). Creswell et al. highlight that mixed methods research prevents loss of data in health research by allowing researchers to collect both quantitative and qualitative data alone. The combination of closed-ended quantitative data and open-ended qualitative data provides a more complete understanding of a research problem than either quantitative or qualitative data (Creswell and Creswell, 2017; Creswell and Plano Clark, 2018). This approach combines diverse evidence to inform healthcare delivery and practice (Pope et al., 2007).

The research was conducted in two phases:

1. A quantitative study (online survey) to examine the associations between attachment dimensions, mentalizing capacity, and somatic symptom severity among couples.
2. A qualitative study (online in-depth interviews) to explore couples' lived experiences and the impact of FSDs on their relationship dynamics.

The quantitative and qualitative studies were sequentially combined to enhance the understanding of each other's findings (Creswell and Plano Clark, 2018). The rationale for the selection of variables used in the survey study was derived from current literature on the role of attachment and mentalizing in FSD (Luyten and Fonagy, 2020). By combining variable-centered and person-centered approaches, the quantitative study aimed to provide a comprehensive understanding of the relationship between attachment dimensions, mentalizing impairments, and FSD symptoms within romantic couples. Variable-centered analyses offered insights into general patterns of association across the respondents, while person-centered analyses identified specific attachment and mentalizing profiles that may be at increased risk for FSD-related difficulties.

Subsequently, in-depth interviews were conducted with couples reporting elevated severity of FSD symptoms. These interviews explored how the study variables and their interactions manifested in the day-to-day interactions of couples. This combination of approaches allowed for a more nuanced understanding of the

relationships between attachment, mentalizing, and FSDs within romantic relationships (Biggerstaff, 2012; Robson and Chichester, 2011).

Online formats were adopted for both the survey and interviews, allowing for broader reach and convenience for participants. These methods were also suitable given the Covid-19 related restrictions at the time of data collection.

3.3 Study 1: Survey

The first study employed a quantitative survey design to investigate the associations between attachment dimensions, mentalizing impairments, and somatic symptom severity among couples. Participants were recruited through a local market research company, and data were collected using validated online questionnaires. The data were analyzed using variable-centered approaches, complemented by person-centered approaches, including path analysis and latent class analysis with regression analysis, to provide a comprehensive understanding of the relationships between the variables of interest. Detailed information on the specific analyses used in this study can be found in Chapter 4.

3.4 Study 2: In-Depth Interviews

The second study utilized a qualitative approach, conducting in-depth interviews with couples where at least one partner reported elevated levels of FSD symptoms.

Participants were recruited from the previous survey study and through personal contacts. The interviews were conducted online, focusing on the couples' relationship dynamics and the impact of FSDs. The study followed the Interpretative Phenomenological Analysis (IPA) approach, a well-established method for exploring respondents' lived experiences and the meanings they attribute to them (Smith and Nizza, 2022). Detailed information on the specific analyses used in this study can be found in Chapter 5. By combining these quantitative and qualitative approaches, this thesis aims to provide a more comprehensive understanding of the complex interplay between attachment, mentalizing, and FSDs in romantic relationships.

3.5 Ethical Considerations

Both studies received ethical approval from the UCL Ethics Committee (Project ID: 20247/001). All participants were fully informed about the nature of the study, the data protection measures in place, and their right to withdraw at any point. Informed consent was obtained from all participants prior to their involvement in the study. Measures were taken to ensure participant confidentiality and data protection throughout the research process, in accordance with the principles of ethical research conduct (Bryman, 2016; Shah et al., 2000).

An additional ethical consideration involves data interpretation. Since the role of researchers in an IPA study extends beyond merely describing the data to a more interpretative one (Smith and Nizza, 2022), the data collection, analysis, and write-up

adhere to IPA's fundamental principles and systematic series of steps. These processes are documented in a manner that allows an independent researcher to review the audit trail of the process. Advice from experienced IPA researchers and thesis committee members was also sought to ensure methodological integrity in the study.

Chapter 4 Quantitative Study: Attachment, Mentalizing, and FSD: Associations and Implications

Given the scarcity of interpersonal perspectives on Functional Somatic Disorder (FSD) in the current literature, this study aimed to investigate the potential reciprocal effects between romantic partners' attachment dimensions, mentalizing capacity, and the severity of somatic symptoms in a non-clinical sample of 74 Taiwanese couples. By employing both variable-centered and person-centered approaches, this study sought to provide a more comprehensive understanding of the relationships between these psychological processes.

A variable-centered approach using path analysis initially sought to examine the associations between the variables of interest. This approach was then complemented by a person-centered approach, which utilized latent class analysis (LCA) and linear regression to identify distinct subgroups of respondents based on patterns of attachment and mentalizing in the index person. The study then explored how these subgroups potentially differed in terms of somatic symptom severity.

In the following sections, we will discuss the nature and prevalence of FSD, as well as contemporary attachment and mentalizing approaches to these conditions. We will then present the research design, including participants, procedures, measures, data analysis techniques, and hypotheses. The results section will detail the findings from both the variable-centered and person-centered analyses, followed by a

discussion of the implications of these findings for understanding FSDs within the context of romantic relationships. Finally, we will address the limitations of this study and suggest directions for future research.

4.1 Background

4.1.1 FSD in Interpersonal Context

What we now call functional somatic disorder (FSD) has been identified by various names over the years, including somatoform, psychophysiological, psychosomatic, and somatic symptom disorders, as well as 'medically unexplained' symptoms. Contemporary literature defines FSD as a broad category encompassing conditions marked by persistent and distressing physical symptoms that lead to impairment or disability (Burton et al., 2020). These disorders result from a complex interplay of biological and psychosocial factors, highlighting the integration of bodily and brain functions and dysfunctions (Abbass et al., 2021; Burton et al., 2020). This definition of FSD informs the approach used in this thesis, as it refers to a broad category of conditions marked by ongoing and distressing physical symptoms that lead to impairment or disability, rather than a specific diagnosis.

The persistent physical symptoms associated with FSD are distressing and can last several months or more, regardless of their cause (Lowe et al., 2024). These conditions, such as irritable bowel syndrome, fibromyalgia, and chronic fatigue syndrome, affect approximately 10% of the general population and one-third of adult patients in clinical settings (Ablin et al., 2010; Roenneberg et al., 2019). Despite their

prevalence and impact, the etiology of FSD remains unclear, and individuals often experience frustration with the lack of effective treatments (Roenneberg et al., 2019).

Current studies indicate that FSDs are associated with dysregulation of the stress system due to interactions between genetic and environmental factors (Ablin et al., 2010; Tak and Rosmalen, 2010). The dysregulation has been hypothesized to lead to a state of increased allostatic load (McEwen, 2007), disrupting the dynamic equilibrium that typically characterizes stress regulation systems and related neurobiological systems such as the immune and pain-regulating systems. As a result, patients may then exhibit a 'sickness response': feelings of lethargy, increased stress and pain sensitivity, mild fever, and cognitive problems (Dantzer et al., 2008; Watkins and Maier, 2005).

Moreover, patients suffering from different FSDs have been found to present with similar emotional regulation difficulties, such as reduced emotional awareness and capacity to reflect, rigid emotional attention, or aberrant autonomic activity (Waller and Scheidt, 2006). Emotional dysregulation may arise from or contribute to interpersonal difficulties before and/or after the persistent, burdensome somatic symptoms. FSDs not only negatively affect the patient's wellbeing and social functioning, but also lead to further feelings of helplessness and frustration due to experiences of invalidation in relation to others, including health professionals (Roenneberg et al., 2019; Torres et al., 2021).

Attachment theory offers a comprehensive framework for understanding the

development and maintenance of FSDs (Luyten et al., 2012b). From an attachment perspective, internal working models of self and others are developed from childhood onwards, influencing an individual's interpersonal behaviour and relationships in adulthood, including their stress and emotion regulation (Ainsworth et al., 1978; Mikulincer and Shaver, 2019; Pietromonaco and Powers, 2015). Hence, insecure attachment contributes to disease risk through various mechanisms, such as disturbances in stress regulation and via physiological links between social relationships, stress, and immunity (Maunder and Hunter, 2008).

Individuals with a secure attachment strategy seek attachment figures to downregulate their stress. However, the complex and fluctuating nature of FSDs may considerably strain the patient's attachment relationships, potentially leading to additional emotional distress. This dysfunction in the relationship can be bi-directional, as the emotional distress experienced by one partner might also disrupt the other's mental state during their interactions. Research exploring the role of social or partner support in FSDs and related conditions (Ali et al., 2010; Aragona et al., 2012; Cohen et al., 2000; Luyten et al., 2012b; Marszal and Janczak, 2018) generally indicates its importance in predicting the cause and prognosis of FSDs. However, more detailed research on the mechanisms involved is needed.

A broader, systemic view may be helpful for better understanding FSDs; however, few empirical studies have investigated the dynamics and interdependencies within romantic relationships in relation to FSDs. According to the limited number of studies

on FSD patients and their spouses (Sayre, 2002), these couples were found to show greater avoidance, rigidity, enmeshment, and interpersonal polarization around the above factors. In a related domain, for instance, in a study on the co-regulation of stress in the relationship between perceived partner responsiveness (PPR) and binge-eating, researchers found a significant direct association regarding both actor and partner effects of PPR on co-regulation between romantic partners (Tosyali and Harma, 2021).

4.1.2 Attachment and FSDs

The association between attachment and FSDs has been explored in previous studies (McWilliams, 2017; Stuart and Noyes, 1999; Waller and Scheidt, 2006). Insecure attachment styles, particularly anxious and avoidant attachment strategies, appear to be common among different types of FSD patients, according to several studies (Ciechanowski et al., 2002; Kani et al., 2018; Liu et al., 2011; Sherry et al., 2014). The development of insecure attachment might increase the risk of later FSD in various ways, such as a greater susceptibility to stress in adulthood, increased usage of external sources for affect regulation, and altered help-seeking behaviour (Hunter and Maunder, 2001).

Studies have established that patients suffering from FSDs are more likely to have an insecure attachment style, which is also related to frequent attendance in primary care (Taylor et al., 2000b; Taylor et al., 2012). However, it is important to consider the possibility that insecure attachment may not only be a predisposing factor

for FSDs but can also emerge as a response to the experience of chronic symptoms. The persistent and often debilitating nature of FSDs can put a significant strain on an individual's coping resources and ability to manage stress and distress effectively (Adshead and Guthrie, 2018). As a result, living with FSDs may activate or exacerbate attachment insecurities, leading to secondary attachment strategies as a means of coping with the emotional and physical challenges associated with the condition.

Given the complex nature of FSDs, the relationship between attachment insecurity and these disorders is likely bidirectional and may vary considerably across individuals. Insecure attachment may be a pre-existing vulnerability factor contributing to the development and perpetuation of FSDs. Conversely, the onset and persistence of functional somatic symptoms may trigger or intensify attachment insecurities, influencing the course and management of the disorder.

4.1.3 Mentalizing and FSDs

Mentalizing, defined as an individual's capacity to understand and interpret human behaviours in terms of underlying mental states (Bateman and Fonagy, 2016), develops in the context of attachment relationships and is closely tied to these relationships (Luyten et al., 2012a). Mentalizing is proposed to serve as a key process in modulating stress and emotional arousal, with the origins of this link established in early attachment relationships (Luyten et al., 2020a). Recent research has also identified mentalizing problems as a potential mediator between insecure attachment and FSDs in patients. Patients with FSDs are assumed to have difficulties identifying

their emotions, while having less difficulty understanding other's mental states, which may contribute to their tendency to experience emotional distress in terms of somatic distress (Riem et al., 2018). The ability to mentalize may act as a protective factor in the context of somatic complaints (Ballespi et al., 2019). For instance, several studies suggest that patients with FSDs have high levels of alexithymia, indicative of problems with mentalizing with regards to the self and affective mentalizing in particular (Luyten et al., 2012b; Taylor et al., 1997).

Studies also suggest that impairments in mentalizing often cause patients to alternate between excessive mentalizing and almost complete denial of the importance of inner mental states (Luyten et al., 2019b). The way patients mentalize their stressful bodily experiences may impede them from either seeking or adhering to proper self-care or treatment. As a result, many FSD patients feel misunderstood, invalidated, and bitter (Blom et al., 2012b), leading to more stress and isolation in relationships.

The recent development of the mentalizing-based approach to FSDs has provided an integrative way to understand and manage the complex symptoms associated with FSDs by investigating the relationship between attachment, mentalizing, and epistemic trust. From this perspective, relationship difficulties may be the cause and/or consequence of symptoms (Luyten and Fonagy, 2016; Luyten and Fonagy, 2020; Luyten and Meulemeester, 2017). Patients' secondary attachment strategies, impaired mentalizing, and epistemic distrust may also negatively influence

their social support networks and relationships with health professionals.

4.1.4 The Present Study

Given the scarcity of interpersonal perspectives on FSD symptoms in the current literature, this study aims to investigate the potential reciprocal effects between romantic partners' attachment styles, mentalizing capacity, and the severity of FSD symptoms in a non-clinical sample of 74 Taiwanese couples. Within each couple, the individual reporting more severe somatic symptoms, as indicated by a higher score on the PHQ-15 than their partner, was designated as the ‘index person’, and the other was designated as the ‘partner’. In this study, somatic symptom severity refers to the levels of somatic symptoms reported, as measured by the PHQ-15. Attachment dimensions, anxiety, and avoidance are measured using the ECR. Mentalizing impairments are assessed by the TAS-20, primarily reflecting problems with affective, embodied self-mentalizing, which involves an individual's capacity to reflect on their bodily sensations and link them to emotional states.

Specifically, this study aimed to

1. Examine the associations between both partners' insecure attachment dimensions and the severity of somatic symptoms in the index person.
2. Investigate the potential mediating effect of each partner's mentalizing on the above associations.

To address the above aims, we propose the following hypotheses. (Figure 1).

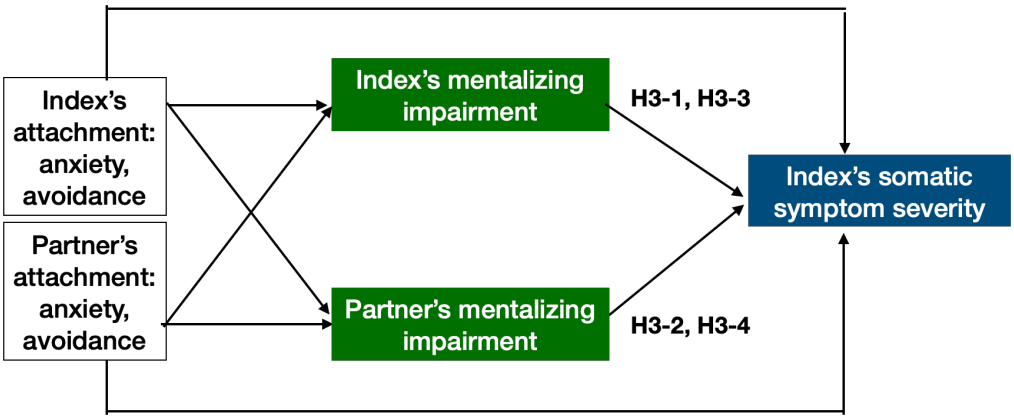

Figure 1. The mediating effect of the couple's mentalizing

H1: Both the index person's and partner's attachment anxiety and avoidance are expected to be positively associated with the index person's somatic symptom severity.

H2: Index person's and partner's attachment anxiety and avoidance are expected to be positively associated with mentalizing impairments. This leads to the following sub-hypotheses:

- **H2-1:** Index person's attachment anxiety and avoidance are positively associated with their own mentalizing impairments.
- **H2-2:** Index person's attachment anxiety and avoidance are positively associated with partner's mentalizing impairments.
- **H2-3:** Partner's attachment anxiety and avoidance are positively associated with index person's mentalizing impairments.
- **H2-4:** Partner's attachment anxiety and avoidance are positively associated with their own mentalizing impairments.

H3: The associations of index person's and partner's attachment anxiety and avoidance with index person's somatic symptoms are mediated by impairments in their mentalizing capacity.

- **H3-1:** The association of index person's attachment anxiety and avoidance with index person's somatic symptom severity is mediated by index person's mentalizing impairments.
- **H3-2:** The association of the index person's attachment anxiety and avoidance with index person's somatic symptom severity is mediated by partner's mentalizing impairments.
- **H3-3:** The association of partner's attachment anxiety and avoidance with index person's somatic symptom severity is mediated by index person's mentalizing impairments.
- **H3-4**: The association of partner's attachment anxiety and avoidance with index person's somatic symptom severity is mediated by partner's mentalizing impairments.

4.2 Methods

This study investigated the relationships between romantic partners' attachment dimensions, mentalizing capacity, and somatic symptom severity using two complementary approaches. The variable-centered approach employed path analysis to identify direct and indirect effects among these variables. The person-centered approach utilized Latent Class Analysis (LCA) and linear regression to identify distinct

subgroups based on attachment and mentalizing profiles, exploring their relation to somatic symptom severity.

By combining these two approaches, this study sought to provide a comprehensive understanding of the associations between the variables of interest. While the variable-centered approach offered insights into general patterns and relationships within couples, the person-centered approach may reveal specific subgroups and their unique characteristics.

4.2.1 Participants and Procedure

The study recruited 74 Taiwanese heterosexual couples from multiple locations through a local market research company. One of the significant features of FSDs is the difficulty in differentiating their symptoms clinically from those caused by medical disease. It is also challenging to list all the exclusive medical conditions. To minimize the possibility of recruiting people whose symptoms are caused by physical factors or a combination of physical and psychological factors, we excluded potential participants who were currently diagnosed with a medical illness or condition, taking medication, undergoing any treatment, or visiting doctors regularly at the time of the study. These stringent exclusion criteria were applied to minimize the potential confounding effects of medical conditions on the observed relationships between the study variables. However, it is important to acknowledge that this approach may limit the generalizability of the findings to individuals with functional somatic symptoms who also have comorbid medical conditions.

An advertisement was sent to a market research company, which then distributed it to their database of potential participants. The recruitment campaign reached approximately 300 couples, of which 123 couples clicked the recruiting link and completed the initial screening questionnaire. Those interested were directed to screening questions to ensure they met the inclusion criteria. Eligible couples, who had been in a romantic relationship for more than two years and had no medical conditions, were then redirected to the information sheet and consent form. Ultimately, 74 couples met all criteria and agreed to participate.

Most participants were married (93.2%) and relatively well-educated, with 93.9% having completed an undergraduate degree or higher. The age distribution indicates that the majority of participants were between 30 and 49 years old, with 39.9% in the 30-39 age group and 48.0% in the 40-49 age group. Using the midpoints of the age ranges to estimate central tendency, the approximate mean age was 39.54 years for females (most of whom were index persons) and 42.82 years for males, suggesting that males were typically slightly older than their female partners. A t-test confirmed a significant difference in age between males and females ($p = 0.004$). Additionally, the calculated average age of the index persons was 40.77 years, while the average age of the partners was 41.59 years, with no significant difference observed ($p = 0.477$). Education levels between index persons and their partners also showed no significant differences ($p = 0.802$).

Participation in the study was voluntary, and the confidentiality of the data was

communicated and assured. The study was approved by the Ethical Committee of University College London.

4.2.2 Measures

Somatic Symptom Severity

Participants' somatic symptom severity was measured by the Chinese version of the Patient Health Questionnaire (PHQ-15) (Liao et al., 2016). The PHQ-15 assesses the presence and severity of common somatic symptoms within the last 4 weeks using 15 items (Kroenke et al., 2002) . Higher scores indicate a higher self-rated symptom burden. The PHQ-15 can be used as a screening tool for somatoform disorders, with a sensitivity of 80% and specificity of 59% in the primary care settings (de Vroege et al., 2012). The 15 somatic symptoms or symptom clusters of PHQ-15 represent over 90% of the symptoms observed in primary care (exclusive of self-limited upper respiratory symptoms such as cough, nasal symptoms, sore throat, and earache)(Kroenke et al., 2002). The participants were asked to rate the severity of each of these symptoms during the previous month on a 3-point scale as either 0 ('not bothered at all'), 1 ('bothered a little'), or 2 ('bothered a lot').

The total symptom severity score ranges from 0 to 30. The classification of somatic symptom severity is as follows: minimal (0–4), low (5–9), medium (10–14), and high (15–30) (Kocalevent et al., 2013). For determining prevalence rates, a cut-off score of ≥10 is used on the PHQ-15, as the range of ≥10 to 30 reflects medium and high somatic symptom severity, respectively (Kocalevent et al., 2013; Kroenke et al.,

2002). This cut-off score has shown a sensitivity of 80.2% and a specificity of 58.5% for somatoform disorder in previous studies (Körber et al., 2011). In a previous study, individuals with a PHQ-15 score of at least 4 were considered to have an elevated severity of somatic symptoms (Huang et al., 2023).

A systematic review has found that the PHQ-15 is the most psychometrically valid of all somatic symptom questionnaires among available research instruments (Zijlema et al., 2013). The internal reliability of the PHQ-15 is high (Kroenke et al., 2002) . Validity studies have assessed the applicability of the Chinese version of the PHQ-15 questionnaire in Taiwan for evaluating somatic symptoms and related disorders according to the DSM-5 (Huang et al., 2023; Liao et al., 2016). The PHQ-15 has also been used in studies of functional disorders (fibromyalgia, irritable bowel syndrome, and chronic pelvic pain) (González-Ramírez et al., 2011; Häuser et al., 2014; Hauser et al., 2020; Häuser et al., 2009; Koh et al., 2014; Mussell et al., 2008; Spiller et al., 2010), psychiatric disorders (depressive disorders and anxiety disorders) (Grover et al., 2012; Jeong et al., 2014; Löwe et al., 2008), and physical diseases (benign prostate hypertrophy) (Um et al., 2014; Yang et al., 2014).

In the present study, Cronbach's α was 0.812, suggesting good internal consistency. Participants' scores ranged from minimal to high levels of symptom severity. Specifically, 55.4% of the participants reported a minimal level of somatic symptom severity, 29.7% reported low severity, and 14.9% reported medium to high levels of symptom severity.

Attachment Dimension

The Chinese Version of the Experiences in Close Relationships Scale (ECRS-C) (Mallinckrodt and Wang, 2004) was administered to participating couples to assess attachment dimensions. The scale was translated from the Experiences in Close Relationships Scale (ECRS), one of the most widely used self-report adult attachment measures (Brennan et al., 1998; Shi et al., 2013). ECRS-C was validated using back-translation and dual-language split-half (DLSH) quantitative methods at the University of Missouri-Columbia (Mallinckrodt and Wang, 2004).

Participants self-reported their scores on a 7-point scale for the 36 items, which consist of two 18-item subscales: anxiety and avoidance. The anxiety subscale assesses fear of rejection, preoccupation with abandonment, and negative feelings prompted by a partner's perceived lack of responsiveness. The avoidance subscale measures fear of intimacy and discomfort with getting close to others. Responses range from 'Disagree Strongly' to 'Agree Strongly'; for example, 'I need a lot of reassurance that I am loved by my partner.' The ECRS-C has demonstrated high reliability and strong validity (Mallinckrodt and Wang, 2004). In this study, Cronbach's alphas were 0.90 for all 36 items and 0.88 and 0.90 for the anxiety and avoidance subscales, respectively, across all participants.

Mentalizing Impairments with Regard to the Embodied Self

The Toronto Alexithymia Scale-20-Taiwan (Lin and Chen, 2003) was used to assess couples' mentalizing impairments with regard to the embodied self. This self-

report instrument measures difficulties identifying and labelling emotions using 20 items that are scored on a 5-point Likert scale (e.g., 'I don't know what's going on inside me'). Alexithymia is a multifaceted construct encompassing difficulty in identifying subjective emotional feelings, distinguishing between feelings and the bodily sensations of emotional arousal, describing feelings to other people, an impoverished fantasy life, and a stimulus-bound, externally oriented cognitive style (Nemiah et al., 1976). It conceptually overlaps with self and affective mentalizing (Luyten et al., 2012b), particularly in terms of emotion identification and expression (Taylor et al., 1997).

A validation study using confirmatory factor analysis showed that the Taiwanese version of the TAS-20-Taiwan has similar psychometric characteristics to the original scale (Lin and Chen, 2003). As in the English version, the TAS-20-Taiwan has a three-factor structure that corresponds to the theoretical construct of alexithymia: Factor 1 assesses difficulty identifying feelings; Factor 2 assesses difficulty describing feelings to others; Factor 3 assesses externally oriented thinking (Bagby et al., 1994). Given that the TAS-20 measures two distinct facets of alexithymia, difficulty identifying feelings and difficulty describing feelings, which may have different implications for the development and maintenance of FSDs (Bagby et al., 1994; Taylor et al., 1997), we examined these subscales separately in our analyses.

However, the third factor does not exhibit internal reliability in most cultures where English is not the dominant language. This might be due to cultural differences

or a response bias as this scale contains several negatively keyed items (Taylor et al., 2003). Since our participants were a Mandarin-speaking population and the third factor demonstrated low internal reliability, it was excluded from this study.

In the present study, Cronbach's alpha was 0.83 for all 20 items. Cronbach's alphas for the two factors were 0.83 for difficulty identifying feelings and 0.68 for difficulty describing feelings, respectively, across all participants.

4.2.3 Data Analysis

A variable-centred and person-centered approach was adopted in this study to provide a more complete understanding of the research questions.

Variable-centered Analyses

Descriptive statistics, Pearson's correlations, and path analysis were conducted to investigate the relationships among attachment dimensions, mentalizing impairments, and somatic symptom severity.

Path analysis was used to test the proposed model depicted in Figure 1. To examine the interdependency of both partners' influence on the index person's symptom severity, the actor-partner interdependence model (APIM) was utilized. APIM not only examines the simultaneous effects of the index person and their partner, but also explores their reciprocal effects (Kenny and Ledermann, 2010). The goodness of fit for the path analysis was primarily assessed using the following indices: the Root Mean Squared Error of Approximation (RMSEA), which should be close to 0.05 for a good fit; the Standardized Root Mean Squared Residual (SRMR), which

should be lower than 0.08; the Comparative Fit Index (CFI), which should be equal to or higher than 0.90 for an acceptable fit and close to or higher than 0.95 for a good fit; and the Tucker-Lewis Index (TLI), which should be close to or higher than 0.95 for a good fit (Hooper et al., 2008; Hu and Bentler, 1999).

To arrive at the final models, we first tested the fully saturated models, which included all possible paths between the variables of interest. These fully saturated models, by definition, have perfect fit indices. We then trimmed the non-significant paths from these models to improve parsimony and clarity. The removal of non-significant paths can potentially reveal previously obscured significant relationships and enhance the interpretability of the models.

We examined the robustness of these final models across gender to determine whether the relationships between attachment dimensions, mentalizing impairments, and somatic symptom severity were similar for both males and females. In the final models, we used the index person's PHQ-15 score as the outcome variable. In the gender-specific models, we used either the men's or women's PHQ-15 score. This approach allowed us to verify if the associations between attachment dimensions, mentalizing impairments, and somatic symptom severity were robust across gender

Person-centered Analyses

Latent Class Analysis (LCA)

Latent Class Analysis (LCA) was employed to identify distinct subgroups within the population based on attachment dimensions and mentalizing profiles. This

approach acknowledges the potential heterogeneity within the sample and provides insights into how different patterns of attachment and mentalizing may be associated with somatic symptom severity in couples (Muthén and Muthén, 2000; Weller et al., 2020; Wolke et al., 2013).

Same as in the variable-centered approach, we used the index person's responses to identify subgroups in the person-centered approach. We based this decision on the sample size limitation of 74 couples, which restricted the use of multiple indicators, and the potential within-couple associations regarding attachment and mentalizing. Path analyses indicated significant associations between the partner's attachment anxiety and the index person's somatic symptom severity, as well as the influence of both partners' attachment dimensions on mentalizing impairments. Correlation analyses also revealed significant partner effects, emphasizing the importance of considering both partners' characteristics. Although LCA is not designed to determine reciprocal effects, this approach allowed for a more comprehensive understanding of the relational dynamics and their impact on somatic symptom severity when complemented with other methods such as the Actor-Partner Interdependence Model (APIM).

LCA assumes that an underlying latent categorical variable (i.e., class membership) can explain the associations among observed indicator variables (Weller et al., 2020). The index person's attachment dimensions (anxiety and avoidance) and mentalizing impairments (difficulty identifying and describing feelings) were the

indicator variables used to identify distinct subgroups. By examining the patterns of these indicators, LCA and subsequent regression analyses aimed to uncover subgroups with similar characteristics that may be differentially associated with the index person's somatic symptom severity.

To determine the optimal number of subgroups, we compared models with different numbers of classes using fit indices and theoretical interpretability. In assessing model fit, we employed the following widely used criteria:

1. **Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC):** Lower values of these indices indicate a better balance between model fit and parsimony (Nylund et al., 2007).
2. **Theoretical interpretability:** The identified class solutions should be meaningful and interpretable, with each class having a sufficient number of individuals (Muthén and Muthén, 2000). In the context of attachment dimensions in our study, we expected the identified subgroups to align with the theoretical attachment types described in the literature, such as secure (low anxiety, low avoidance), anxious (high anxiety, low avoidance), dismissing-avoidant (low anxiety, high avoidance), and fearful-avoidant (high anxiety, high avoidance) (Bartholomew and Horowitz, 1991).

Linear Regression

Following the classification, we used Ordinary Least Squares (OLS) regression to examine the associations between the identified subgroups and the index person's

levels of somatic symptom severity. OLS regression was chosen because it provides the Best Linear Unbiased Estimators (BLUE) of the model parameters, ensuring reliable and unbiased results under standard assumptions such as linearity, homoscedasticity, and no perfect multicollinearity (Wooldridge, 2019). This approach allows us to explore the association between the identified subgroups (based on attachment style or mentalizing capacity) and levels of somatic symptom severity in the index person.

Chi-Squared Test of Independence

Subsequently, a chi-squared test of independence was conducted to explore the relationship between different attachment styles (secure, anxious, fearful) and levels of mentalizing impairments (low, high). The test results provided insights into the distribution of mentalizing impairments across the identified attachment styles, revealing patterns that complement the findings from the LCA and regression analyses.

4.3 Results

The following analyses were conducted to the understanding of the role of attachment dimensions and mentalizing capacity in FSDs within the context of romantic couples:

1. Path analysis was used to examine the relationships between attachment dimensions, mentalizing impairments, and somatic symptom severity (Hypotheses 1-3).

- Models 1 and 2 examined the association of attachment anxiety and avoidance with somatic symptom severity through difficulty identifying feelings.
- Models 3 and 4 examined the association of attachment anxiety and avoidance with somatic symptom severity through difficulty describing feelings.
- The Actor-Partner Interdependence Model (APIM) was utilized to account for the interdependence between partners' scores.
- Model fit was assessed using standard fit indices (CFI, TLI, RMSEA, SRMR).
- After formulating the final models, gender-specific analyses were conducted to test the robustness of the models across gender.

2. Latent class analysis (LCA) was used to identify potential subgroups of couples based on the attachment dimensions and mentalizing impairments.
   - LCA was used to classify couples based on index person's insecure attachment using the ECR anxiety and avoidance subscales. Model selection was based on fit statistics and theoretical interpretability.
   - LCA was also used to classify couples based on index person's mentalizing impairments using the TAS-20 difficulty identifying feeling and describing feelings subscales. Model selection was based on statistical criteria.
3. Linear regression analyses were conducted to examine differences in the

index person's somatic symptom severity between the identified latent classes.

4. A chi-squared test of independence was performed to examine the relationship between attachment styles and mentalizing impairments.

4.3.1 Descriptive statistics

Table 1 shows each scale's means, standard deviations, range, and internal consistency (Cronbach's α value).

Table 1: Descriptive Statistics

(N=148)

Variable	Mean	SD	Min	Max	Cronbach's α
Somatic	4.9	4.2	0	19	0.812
Index	6.01	5.33	0	19	-
Partner	3.33	1.85	0	17	-
ECR	2.8	0.8	1	5	0.896
Avoidance	2.5	0.9	1.00	5.39	0.901
Anxiety	3.1	1.0	1.11	6.67	0.879
TAS-20	45.3	10.4	24	80	0.830
Identify	14.5	5.1	7	35	0.828
Describe	11.6	3.7	5	21	0.681

SD: Standard deviation; **Somatic**: Somatic Symptom Severity; **ECR:** Experiences in Close Relationships. **TAS-20:** Toronto Alexithymia Scale-20; **Identify:** Difficulties identifying feelings; **Describe:** Difficulties describing feelings. *Note: Same legends were used across the following tables.

Table 2 shows the distribution of somatic symptom severity, with 14.9% of participants reporting medium to high levels of symptom severity. The cutoff points are categorized as follows: minimal (0–4), low (5–9), medium (10–14), and high (15–30) (Kocalevent et al., 2013; Körber et al., 2011; Kroenke et al., 2002).

Table 2: Descriptive Statistics of Somatic Symptom Severity

(N=148)

Symptom Severity	PHQ-15 Score	Frequency	Percent
Minimal: 55.4%	0	20	13.5
	1	14	9.5
	2	16	10.8
	3	17	11.5
	4	15	10.1
Low: 29.7%	5	15	10.1
	6	8	5.4
	7	9	6.1
	8	5	3.4
	9	7	4.7
Medium: 12.1%	10	3	2.0
	11	7	4.7
	12	2	1.4
	13	3	2.0
	14	3	2.0
High: 2.8%	15	1	0.7
	17	2	1.4
	19	1	0.7

4.3.2 Zero order Correlations

In line with Hypothesis 1 (H1), we expected a positive association between attachment anxiety and avoidance of both the index person and their partner, and the severity of somatic symptoms in the index person (Table 5). The results showed a significant correlation between the partner's attachment anxiety and the index person's somatic symptom severity. However, no significant correlations were found between the index person's own attachment dimensions and their somatic symptom severity (Table 3), while the partner's attachment anxiety correlated with their own somatic symptom severity (Table 4). The index person's avoidant attachment also correlated with their partner's insecure attachment, both anxiety and avoidance (Table 5).

For Hypothesis 2 (H2), we investigated the relationship between the couple's mentalizing and attachment dimensions. The index person's difficulty identifying feelings significantly correlated with their partner's anxious attachment. The index person's difficulties identifying and describing feelings correlated with their partner's impaired mentalizing. The insecure attachment in the index persons and their partner significantly correlated with their own difficulty identifying and describing feelings. Furthermore, the index person's anxious and avoidant attachment positively correlated with their own impaired mentalizing (Tables 3, 4 and 5).

Regarding Hypothesis 3 (H3), there was a significant correlation between the index person's and partner's somatic symptom severity (Table 5). The index person's difficulty describing feelings correlates with their partner's somatic symptom severity, while their difficulty identifying feelings does not show a significant correlation (Table 5). The index person's difficulty identifying feelings correlated with their own symptoms (Table 3). However, no significant correlation between the partner's difficulty identifying feelings and their own somatic symptom severity (Table 4).

Pearson’s correlations revealed significant relationships between the partner's attachment anxiety and the index person's somatic symptoms. Additionally, associations were found between both partners' insecure attachment and mentalizing impairments, and between the index person's mentalizing difficulties and both partners' somatic symptoms. However, expected correlations between the index person's attachment dimensions and their own somatic symptom severity were not

observed. In addition, both partner's attachment avoidance did not correlate as expected with their own somatic symptom severity, or with their partner's.

Table 3: Correlations between index person variables

(Female = 43; Male = 31)

	1	2	3	4	5	6	7
1. Somatic-I							
2. ECR-I	0.166						
3.Avoidance-I	0.078	0.757**					
4. Anxiety-I	0.172	0.745**	0.128				
5. TAS-I	0.206	0.479**	0.453**	0.264*			
6. Identify-I	0.291*	0.517**	0.455**	0.321**	0.822**		
7. Describe-I	0.220	0.468**	0.528**	0.171	0.811**	0.583**	1

*p<0.05, **p<0.01(**I**: Index person)

Table 4: Correlations between partner variables

(Female=31; Male=43)

	1	2	3	4	5	6	7
1. Somatic-P							
2. ECR-P	0.196						
3.Avoidance-P	0.045	0.799**					
4. Anxiety-P	0.265*	0.849**	0.360**				
5. TAS-P	0.071	0.606**	0.532**	0.427**			
6. Identify-P	0.118	0.638**	0.502**	0.548**	0.891**		
7. Describe-P	0.040	0.527**	0.518**	0.361**	0.840**	0.689**	1

*p<0.05, **p<0.01 (**P**: partner)

Table 5: Correlations between index person and partner variables

	Somatic-I	ECR1-I	Avoidance-I	Anxiety-I	TAS-I	Identify-I	describe-I
Somatic-P	0.551**	0.167	0.121	0.13	0.221	0.188	0.286*
ECR-P	0.186	0.466**	0.502**	0.195	0.301**	0.336**	0.257*
Avoidance-P	0.022	0.383**	0.386**	0.188	0.206	0.248*	0.204
Anxiety-P	0.270*	0.386**	0.439**	0.138	0.286*	0.303**	0.219
TAS-P	0.062	0.167	0.174	0.076	0.059	0.071	0.011
Identify-P	0.07	0.207	0.203	0.108	0.212	0.191	0.127
Describe-P	0.063	0.278*	0.2	0.218	0.046	0.066	-0.004

*p<0.05, **p<0.01 (**I:** Index person; **P:** partner)

The correlation analysis revealed a substantial association between the somatic symptom severity of the index person and their partner ($r = .551$, $p < .01$), as shown in Table 5. This finding suggests that the severity of somatic symptoms reported by one partner significantly relates to the severity of somatic symptoms reported by the other partner. The strong correlation highlights the potential interdependence of somatic symptom experiences within romantic relationships, emphasizing the importance of considering the dyadic nature of FSDs.

Interestingly, the results indicated a significant correlation between attachment avoidance of the index person and their partner ($r = .386$, $p < .01$), but no significant correlation was found for attachment anxiety between partners. This finding may suggest that couples tend to exhibit similar levels of attachment avoidance. Alternatively, one partner may exhibit avoidance while the other displays anxiety, potentially contributing to a dynamic where one or both partners engage in emotional distancing or suppression, leaving the anxious-attached partner feeling ignored. The correlation in attachment avoidance, and the lack of a significant correlation in attachment anxiety between partners, is noteworthy and was further explored in the path analysis and qualitative study (Chapter 5), as it may provide insights into the complex interplay of attachment styles within couples experiencing FSDs.

Another notable finding from the correlation analysis is the absence of significant associations between the partners' embodied mentalizing capacities at the trait level, as measured by the TAS-20 (see Table 5). This lack of correlation may suggest that,

within these couples, the individual differences in identifying and describing feelings are independent between partners. This observation implies that difficulties in mentalizing, as stable traits, are not necessarily shared or directly influenced by the partner's corresponding difficulties. Consequently, this finding highlights the potential importance of exploring how dynamic and context-specific interactions within couples might influence mentalizing capacities beyond individual traits.

4.3.3 Path Analysis

In this section, we present the results of the path analysis conducted to test the hypothesized model using the Actor-Partner Interdependence Model (APIM). For each model, we examine the association between reported levels of attachment dimensions and somatic symptom severity, mediated by difficulties in identifying or describing feelings. We also examined the robustness of the final models across gender.

The results are presented as follows:

- **Section 4.3.3.1: Final models** using the index person's score as the variable for somatic symptom severity.
- **Section 4.3.3.2: Gender-specific models** using the male score as the variable for somatic symptom severity.
- **Section 4.3.3.3: Gender specific models** using the female score as the variable for somatic symptom severity.
- **Section 4.3.3.4:** Summary of the findings from the above analyses.

4.3.3.1 Analysis with Index Person's PHQ-15 Score

In this section, we present the results of the path analysis using the index person's PHQ-15 score as the variable for somatic symptom severity. The index person was defined as the partner reporting the higher PHQ-15 score within each couple. By focusing on the index person's score, we aimed to examine the associations between attachment dimensions, mentalizing impairments, and somatic symptom severity in the partner experiencing more severe FSD symptoms. This approach allowed us to investigate the potential role of both partners' attachment and mentalizing difficulties in contributing to the index person's symptom severity.

The results were organized into two main categories:

1. Association of attachment dimensions with somatic symptom severity through difficulty identifying feelings (Models 1 and 2).
2. Association of attachment dimensions with somatic symptom severity through difficulty describing feelings (Models 3 and 4).

For each category, we first present the fully saturated model, followed by the final model after trimming non-significant paths. The findings are then discussed in relation to our hypotheses.

<u>Association of attachment dimensions with somatic symptom severity through difficulty identifying feelings</u>

Model 1: Attachment Anxiety, Difficulty Identifying Feelings, and Somatic Symptom Severity

We first examined the association between the index person and the partner's attachment anxiety, difficulty identifying feelings, and the index person's symptom severity. As shown in Figure 2, this fully saturated model, by definition, shows a perfect fit (χ^2 (9) = 51.35, $p < 0.005$; CFI = 1.00; TLI = 1.00; RMSEA = 0.00; SRMR = 0.00). There were significant paths between both the partner's anxious attachment and their own difficulty identifying feelings. The cross-lagged path between the partner's anxious attachment and the index person's difficulty identifying feelings and symptom severity was also significant. However, the association between the index person's difficulty identifying feelings and their own somatic symptom severity was not significant. Next, we deleted non-significant paths in the fully saturated models presented above. In each model, non-significant paths were removed. The deletion of these non-significant paths potentially improves the statistical power and clarity, which could reveal previously obscured significant relationships. We applied the same approach in all subsequent analyses. After removing non-significant paths, the model still showed a good fit (χ^2 (9) = 51.35, $p < .005$; CFI = 1.00; TLI = 1.13; RMSEA = 0.00; SRMR = 0.03). In addition, the association between the index person's difficulty identifying feelings and their own somatic symptom severity became significant (β = 0.23, $p < 0.05$).

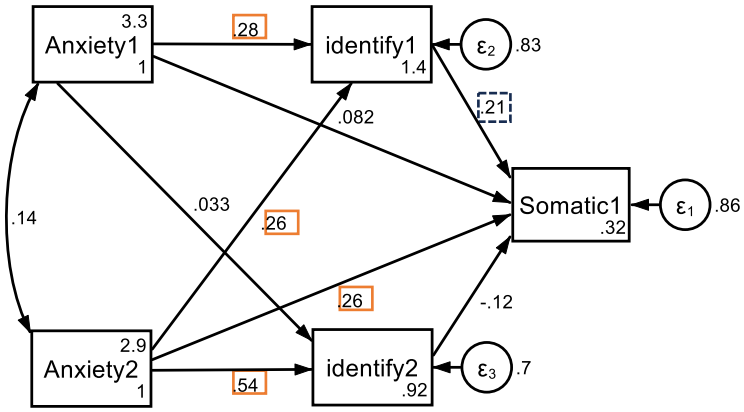

Figure 2. Standardized coefficient between the couple's attachment anxiety, difficulty identifying feelings, and somatic symptom severity.

*Note: The legends used in Figures 2 to 17 are consistent across all figures. **1:** Index Person; **2**: Partner; **Anxiety:** Attachment anxiety; **Avoidance**: Attachment Avoidance; **Identify:** Difficulties identifying feelings; **Describe:** Difficulties Describing feelings; **Somatic**: Somatic Symptom Severity. Solid-line rectangles indicate significant paths ($p < 0.05$); Dotted-line rectangles indicate paths with relatively small p-values ($0.05 < p < 0.10$), indicating a trend.

Figure 3 presents the final Model 1. Partially consistent with our hypotheses, attachment anxiety in the partner was significantly associated with somatic symptoms reported by the index person and this association was in part mediated by the index person's difficulty in identifying feelings. Furthermore, the partner's attachment anxiety was also related to the index person's somatic symptom severity both directly ($\beta = 0.20$, $p < 0.01$) and indirectly ($\beta = 0.26$, $p < 0.05$) via its impact on difficulty identifying feelings in the index person. Thus, the partner's attachment anxiety seemed to increase the index person's difficulties in identifying feelings, which in turn led to higher levels of somatic symptoms in the index person.

However, the non-significant path between the index person's attachment anxiety and their own somatic symptom severity was unexpected. Also contrary to the

hypotheses, the final model did not include cross-lagged paths between the index person's attachment anxiety/avoidance and the partner's difficulty identifying feelings. This may be due to sample size limitation, unmeasured variables affecting this relationship, or the complexity of the relationship, which will be further discussed in the later sections.

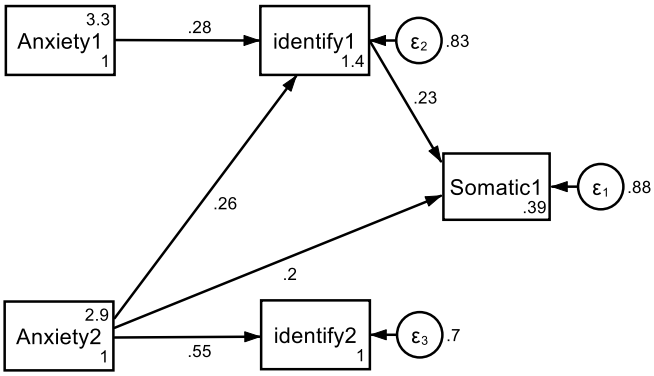

Figure 3. Final model 1: The Association between Attachment anxiety, Difficulty identifying feelings, and Somatic symptom severity.

Model 2: Attachment Avoidance, Difficulty Identifying Feelings, and Somatic Symptom Severity

We then tested the theoretical model concerning the association between the index person and partner's attachment avoidance, difficulty identifying feelings, and the index person's symptom severity. As shown in Figure 4, this fully saturated model, by definition, shows a perfect fit (χ^2 (9) = 46.84, $p < .005$; CFI = 1.00; TLI = 1.12; RMSEA = 0.00; SRMR = 0.01). There were significant paths between the index person's and partner's attachment avoidance. Additionally, significant paths were found between both the index person's and partner's attachment avoidance and their

own difficulty identifying feelings. However, the association between the partner's difficulty identifying feelings and the index person's somatic symptom severity was not significant.

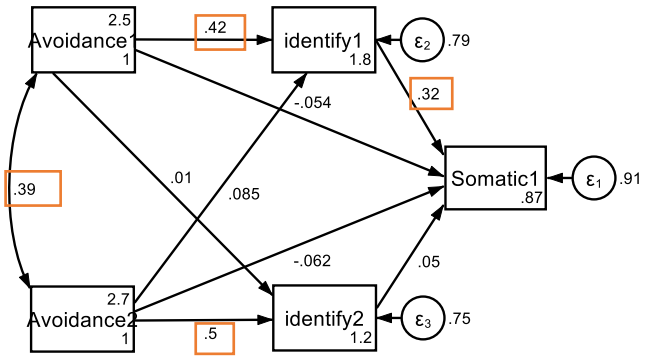

Figure 4. Standardized coefficient between the couple's attachment avoidance, difficulty identifying feelings and somatic symptom severity.

After trimming the model and removing non-significant paths, the final Model 2 in Figure 5 (χ^2 (9) = 46.84, $p < .005$; CFI = 1.00; TLI = 1.12; RMSEA = 0.00; SRMR = 0.01) shows that the index person's attachment avoidance was positively associated with their somatic symptoms, mediated by their own difficulty identifying feelings (β = 0.29, $p < 0.05$). In this model, the levels of attachment avoidance of the index person and the partner were also significantly correlated (r = 0.39).

These results in part align with our hypotheses, indicating that the index person's attachment avoidance contributes to their somatic symptom severity through difficulty identifying feelings. However, the partner's attachment avoidance did not have a

significant direct or indirect effect on the index person's somatic symptom severity. The non-significant path between the partner's difficulty identifying feelings and the index person's somatic symptom severity was also unexpected.

Furthermore, contrary to the hypotheses, there were no significant cross-lagged paths between the couple's attachment avoidance and their difficulty identifying feelings. These unexpected findings may be due to sample size limitations, unmeasured variables affecting these relationships, or the complexity of the associations between attachment avoidance, difficulty identifying feelings, and somatic symptom severity. Potential explanations will again be further discussed in the later sections.

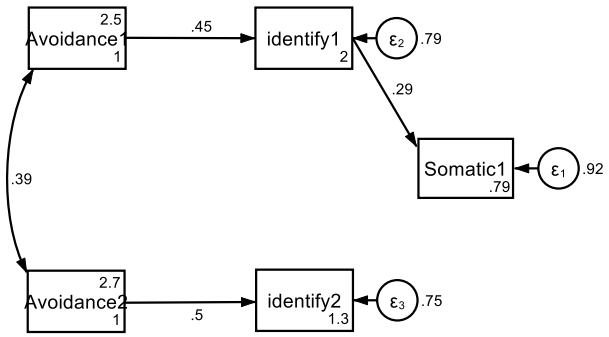

Figure 5. Final Model 2: Attachment Avoidance, Difficulty Identifying Feelings, and Somatic Symptom Severity

Association of Attachment Dimensions with Somatic Symptom Severity through Difficulty Describing Feelings

Model 3: Attachment Anxiety, Difficulty Describing Feelings, and Somatic Symptom Severity

We then examined the association between attachment anxiety, difficulty describing feelings, and symptom severity within the couple. The relationship between attachment dimensions and difficulty describing feelings is shown in Figure 6. This model (χ^2 (9) = 51.36, $p < .005$; CFI = 1.00; TLI = 1.21; RMSEA = 0.00; SRMR = 0.00) shows a cross-lagged path between the partner's attachment anxiety and index person's symptom severity. There was also a significant path between the partner's anxiety and their difficulty describing feelings. The cross-lagged path between the partner's anxious attachment and the index person's difficulty describing feelings was not significant but substantial.

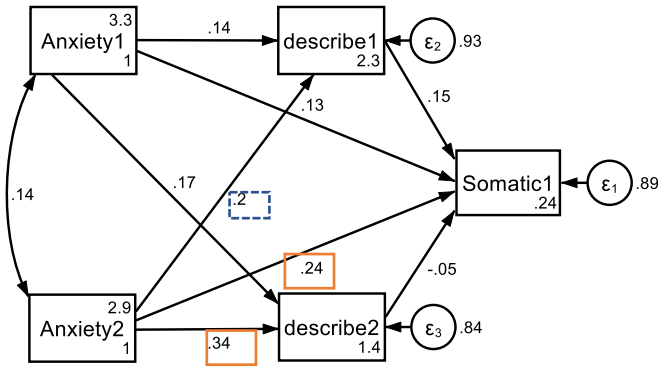

Figure 6. Standardized coefficient between the couple's anxious attachment, difficult describing feelings, and somatic symptom severity.

After trimming the non-significant paths, the final Model 3 (χ^2 (6) = 22.42, $p < .005$; CFI = 1.00; TLI = 1.02; RMSEA = 0.00; SRMR = 0.06) showed that the partner's attachment anxiety has a direct effect on the index person's ability to describe feelings ($\beta = 0.22$, $p < 0.05$). No mediating effect of difficulty describing feelings was found for

the association between attachment anxiety and somatic symptom severity. Additionally, no significant path was found between the index person's attachment anxiety and their difficulty describing feelings, nor between the index person's attachment anxiety and their somatic symptom severity (Fig.7). These findings suggest that the index person's difficulty in describing feelings may be influenced more by their partner's attachment anxiety than by their own attachment anxiety. While these results partially support our hypotheses by highlighting the role of the partner's attachment anxiety, the lack of a mediating effect for difficulty describing feelings for both partners was unexpected.

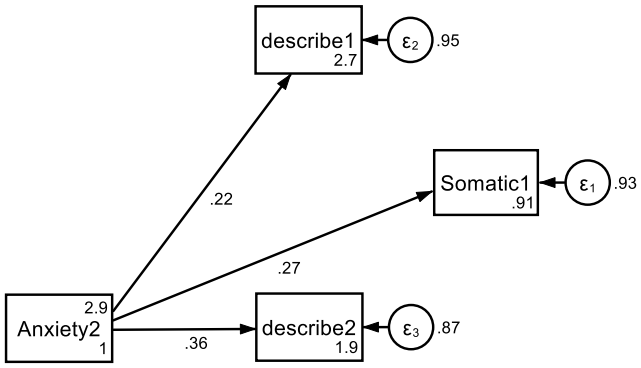

Figure 7. Final model 3: Attachment Anxiety, Difficulty Describing Feelings, and Somatic Symptom Severity.

Model 4: Attachment Avoidance, Difficulty Describing Feelings, and Somatic Symptom Severity

As shown in Figure 8, there is a significant correlation between the attachment avoidance of the index person and the partner (r = 0.39). The path diagram illustrates that attachment avoidance influences difficulty in describing feelings, with coefficients

of 0.53 for the index person and 0.52 for the partner. Difficulty in describing feelings has a small direct effect on somatic symptoms, with a significant path coefficient of 0.26 for the index person, while the path coefficient for the partner is 0.11 and not significant. The model fit indices indicate an excellent fit (χ^2 (9) = 46.8, p < .005; CFI = 1.00; TLI = 1.12; RMSEA = 0.00; SRMR = 0.02).

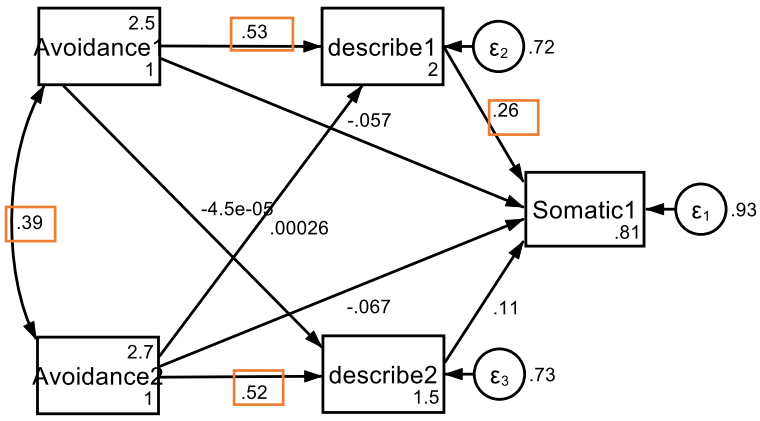

Figure 8. Standardized coefficient between the couple's attachment avoidance, difficulty describing feelings and somatic symptom severity.

Model 4 (see Figure 9) (χ^2 (9) = 53.6, p < .005; CFI = 1.00; TLI = 1.12; RMSEA = 0.00; SRMR = 0.03) shows that the index person's somatic symptom severity was positively associated with their attachment avoidance, mediated by difficulty describing feelings (β = 0.22). The attachment avoidance levels were correlated between the partners (r = 0.39). These findings partly supported our hypotheses, indicating that the index person's attachment avoidance contributes to their somatic

symptom severity through difficulty describing feelings. However, the partner's attachment avoidance did not significantly influence the index person's difficulty describing feelings and somatic symptom severity. The non-significant path between the partner's difficulty describing feelings and the index person's somatic symptom severity was unexpected. Contrary to expectations, there was no evidence that the index person's problems with describing feelings mediated the association between the partner's avoidance and the index person's somatic symptoms. Additionally, there were no significant cross-lagged paths between the couple's attachment avoidance and their difficulty describing feelings.

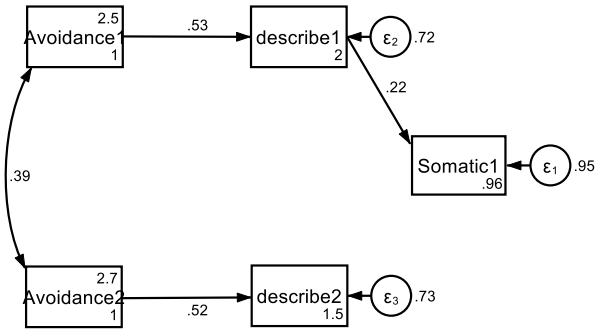

Figure 9. Final model 4: Attachment Avoidance, Difficulty Describing Feelings, and Somatic Symptom Severity.

Gender-Specific Models

For the gender-specific analyses, we used the somatic symptom severity of the male or the female within each couple, reported in the PHQ-15, as the outcome variable to test the final models. We aimed to determine if the patterns observed in the final models held true when the focus was shifted to the male or female somatic symptom severity. These analyses were conducted to investigate whether gender

impacts the relationship between attachment dimensions, mentalizing impairments, and somatic symptom severity.

In the following section, we used the same procedure to test model robustness across gender by using the male's PHQ-15 score. For each model, we examined and discussed the prominent results of the relationships between attachment anxiety/avoidance, difficulties in identifying/describing feelings, and somatic symptom severity, comparing the results with those from the previous models.

4.3.3.2 Analysis with Male PHQ-15 Scores

Association of Attachment Dimensions with Somatic Symptom Severity through Difficulty Identifying Feelings

Gender-Specific Model: Male 1

The results of the gender-specific model for males were largely consistent with the findings from the final models. As illustrated in Figure 10, the male's attachment anxiety influenced their own somatic symptom severity indirectly through their difficulty in identifying feelings. However, there were notable differences between the models. Male anxiety influenced female difficulty in identifying feelings ($\beta = 0.24$, $p < .05$), and there was a correlation between the couple's levels of attachment anxiety ($r = 0.13$). Additionally, the female attachment anxiety did not have a significant direct or indirect effect on the male's somatic symptom severity, unlike what was observed in the final model 1 (Figure 3).

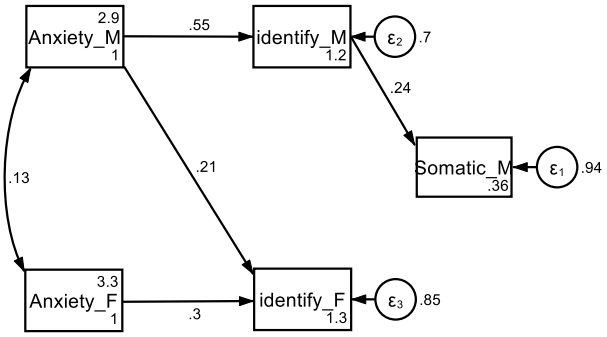

Figure 10. Male model 1.

Gender-specific Model: Male 2

The results for the male model 2 in Fig.11 were consistent with those in final model 2 presented in Figure 5. In this model, male avoidance influenced their own somatic symptom severity indirectly through their difficulty in identifying feelings (β = 0.24, p < .05). However, there were notable differences between the models. There was a correlation between the couple's levels of attachment avoidance (r = 0.39). No other significant associations were observed.

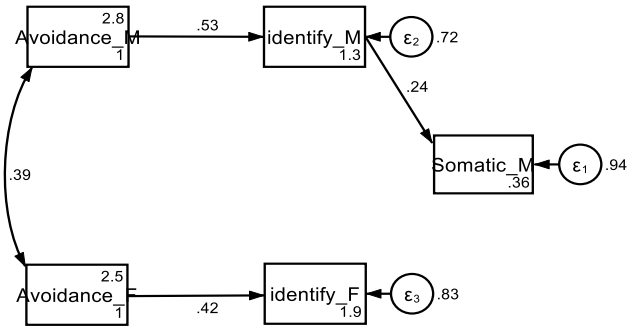

Figure 11. Male model 2.

Association of Attachment Dimensions with Somatic Symptom Severity through Difficulty Describing Feelings

Gender-specific Model: Male 3

When using the male's score to investigate the relationship between attachment anxiety and somatic symptom severity through difficulty describing feelings, there were differences between male model 3 and the final model 3 depicted in Figure 7. As shown in Figure 12, male attachment anxiety directly influenced the female difficulty describing feelings ($\beta = 0.24$, $p < .05$), and there was a correlation between the couple's levels of attachment anxiety ($r = 0.13$). Both partners' attachment anxiety predicted their own difficulty describing feelings (for males, $\beta = 0.35$; for females, $\beta = 0.20$, $p < .05$). Similar to the findings in final model 3, there was a trend suggesting that the female attachment anxiety predicted the somatic symptom severity in the male ($\beta = 0.18$, $p = .112$). However, the female attachment anxiety level did not predict difficulty describing feelings in the male, as observed in model 3.

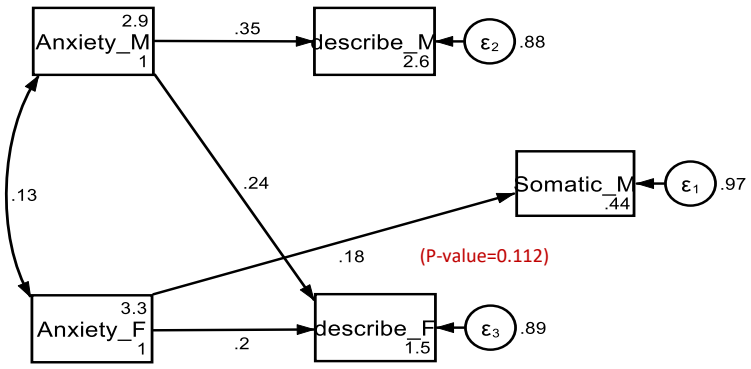

Figure 12. Male model 3.

Gender-specific Model: Male 4

We used the male's PHQ-15 score to investigate the relationship between attachment avoidance and somatic symptom severity through difficulty describing feelings, as shown in Figure 13. In the final model 4 presented in Figure 9, the index person's difficulty describing feelings mediated the association between their avoidance and somatic symptom severity. In contrast to these findings, there was no association between the male's difficulty describing feelings and their somatic symptom severity in Figure 13. Additionally, there was no evidence ($p = 0.22$) suggesting that the female difficulty in describing feelings acted as a mediating factor between the female avoidance and the male symptom severity. Although this path is not significant, the size of the association was similar to that in Figure 9, potentially reflecting a problem with statistical power. Future research with larger sample sizes is needed to further investigation. Same as in final model 4, both partners' attachment avoidance levels were associated with their own difficulty in describing feelings ($\beta =$

0.65 for male; β = 0.41 for female). Their levels of attachment avoidance were correlated (r = 0.39).

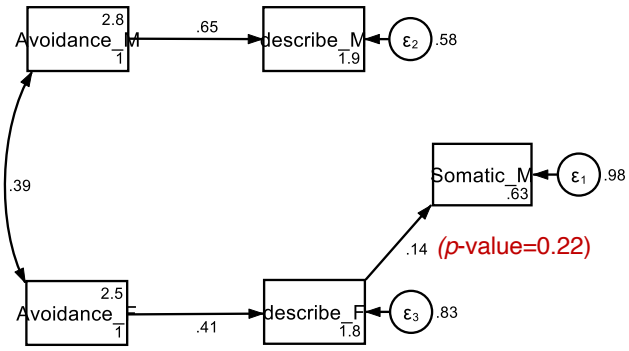

Figure 13. Male model 4.

4.3.3.3 Analysis with Female PHQ-15 Scores

We then repeated the same procedure to test model robustness across gender by using the female PHQ-15 score as the outcome variable. We examined the relationship between attachment dimensions, mentalizing impairments, and somatic symptom severity in the female within the couple and compared the results with those from the final models and the male models.

Association of Attachment Dimensions with Somatic Symptom Severity through Difficulty Identifying Feelings

Gender-specific Model: Female 1

In female model 1 (Fig. 14), consistent with the male model 1 (Fig. 10) and different from final model 1 (Fig. 3), there was a significant association between the

male attachment anxiety and the female difficulty identifying feelings (β = 0.55, p < 0.001). In addition, although the path was not significant, there was a trend (p = 0.099) suggesting a potential mediating role of female difficulty identifying feelings in the association between male attachment anxiety and female somatic symptom severity (β = 0.19).

In contrast to the final model 1 (Fig. 3), both partners' attachment anxiety showed a correlation in this particular scenario (r = 0.13). This correlation between the couple's levels of attachment anxiety was consistent with male model 1 (Fig. 10). One notable difference in this model was the direct relationship between the female level of attachment anxiety and her somatic symptom severity. This path was not significant in either final model 1 or male model 1.

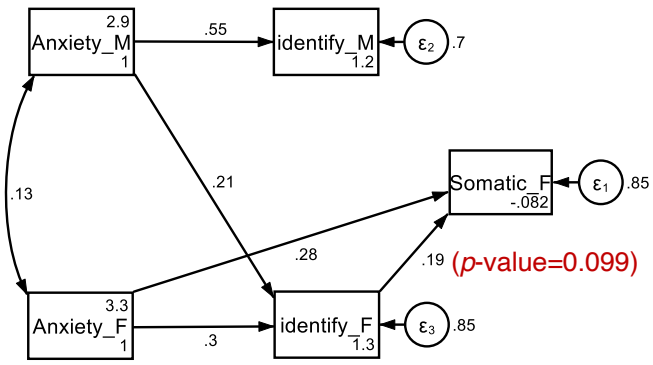

Figure 14. Female model 1.

Gender-specific Model: Female 2

As shown in Fig. 15, when examining attachment avoidance, female model 2 was consistent with final model 2 (Fig. 5) and male model 2 (Fig. 11). The female

difficulty identifying feelings mediated the association between her own attachment avoidance and somatic symptom severity (β = 0.28). The correlation between the male and female attachment avoidance was significant (r = 0.39), similar to final model 2 and male model 2. Consistent with final model 2 and male model 2, no significant cross-lagged paths were found in female model 2.

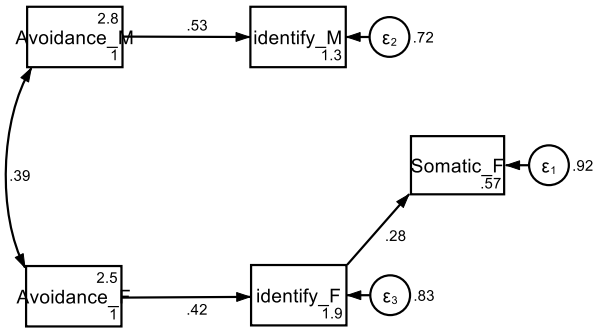

Figure 15. Female model 2.

Association of Attachment Dimensions with Somatic Symptom Severity through Difficulty Describing Feelings

Gender-specific Model: Female 3

As illustrated in Figure 16, the female difficulty in describing feelings was found to be influenced by the male's attachment anxiety (β = 0.24), similar to the association observed in male model 3 (Fig. 12). In the final model 3, the association was between the index person's attachment anxiety and the partner's difficulty describing feelings. In female model 3, each partner's level of attachment anxiety correlated (r = 0.13) as in male model 3 (Fig. 12), which is not shown in the final model 3 (Fig. 7).

In contrast to the final model 3 and male model 3, the association between the female attachment anxiety and their own somatic symptom severity was significant. The paths from the female attachment anxiety to their difficulty describing feelings (p = 0.064) and from their difficulty describing feelings to their somatic symptoms (p = 0.065) were not significant. These results were similar to the findings of the final model 3 and male model 3, suggesting no mediating effect.

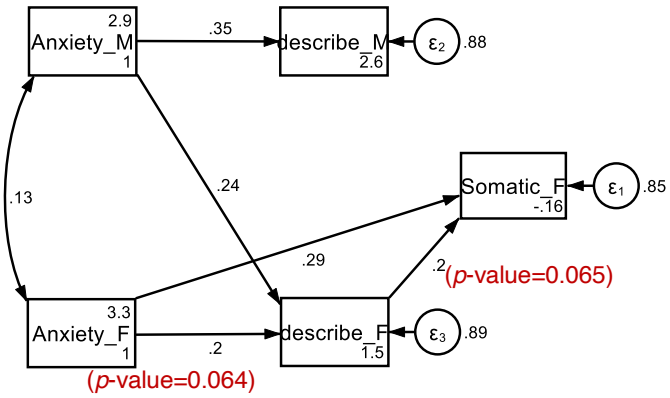

Figure 16. Female model 3.

Gender-specific Model: Female 4

The results in female model 4 (Fig. 17) were consistent with the final model 4 (Fig. 9) and male model 4 (Fig. 13). The female difficulty describing feelings mediated the association between their attachment avoidance and somatic symptom severity (β = 0.27). The attachment avoidance levels were correlated between the partners (r=0.39).

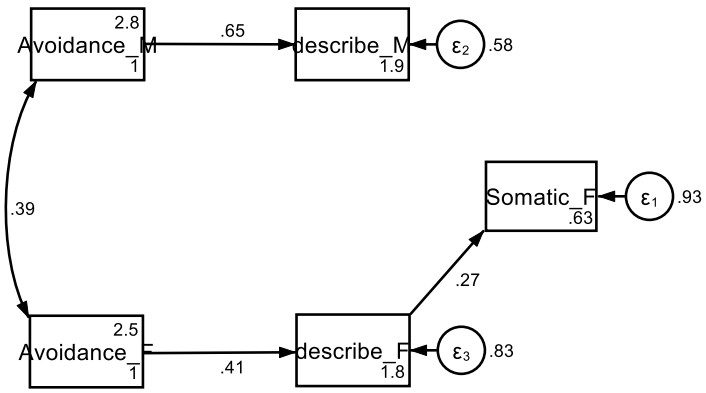

Figure 17. Female model 4.

4.3.3.4 Interim Summary and Discussion

In this study, we investigated the associations between attachment dimensions, mentalizing impairments, and the severity of somatic symptoms within romantic couples. The path analysis results revealed several key findings which are summarized in Table 6:

Table 6: Summary of Path Analysis Findings

Model	Hypothesis	Key Findings	Gender-Specific Observations
Model 1	Attachment Anxiety, Difficulty Identifying Feelings, and Somatic Symptom Severity	Partner's anxious attachment significantly associated with their difficulty identifying feelings. Index person's difficulty identifying feelings mediated relationship between partner's attachment anxiety and index person's somatic symptom severity. Unexpected non-significant path from index person's attachment anxiety to own somatic symptoms.	Male: Male anxiety predicted own somatic severity, mediated by identifying feelings. Female: Male anxiety was associated with female difficulty identifying feelings.
Model 2	Attachment Avoidance, Difficulty Identifying Feelings, and Somatic Symptom Severity	Index person's avoidance positively associated with somatic severity, mediated by difficulty identifying feelings. Partner's avoidance had no significant effect on index person's symptoms. Significant correlation between both partner's levels of avoidances.	Male: Male avoidance predicted own somatic severity, mediated by difficulty identifying feelings. Female: Female difficulty identifying feelings mediated somatic severity.
Model 3	Attachment Anxiety, Difficulty Describing Feelings, and Somatic Symptom Severity	Partner's anxiety directly affects index person's ability to describe feelings, influencing somatic symptoms. No significant mediating effect found for index person's anxiety.	Male: Male anxiety directly influenced female describing feelings. Female: Female difficulty describing feelings influenced by male anxiety.
Model 4	Attachment Avoidance, Difficulty Describing Feelings, and Somatic Symptom Severity	Index person's avoidance positively associated with symptom severity, mediated by difficulty describing feelings. Partner's avoidance did not significantly influence index person's symptoms directly. Significant correlation between both partner's levels of avoidances.	Male: Both partners' avoidance predicted difficulty describing feelings, correlated avoidance. Female: Female difficulty describing feelings mediated symptom severity.

The main results from the final models, as well as the gender-specific analyses, are summarized below:

1. **Model 1: Attachment Anxiety, Difficulty Identifying Feelings, and Somatic Symptom Severity**
    - **Final Model:**
        - Consistent with expectations, there were significant paths between the

partner's attachment anxiety, their own difficulty identifying feelings, and the index person's somatic symptom severity, with the index person's difficulty identifying feelings mediating the relationship between the partner's attachment anxiety and the index person's somatic symptom severity.

- **Male Model:**
    - Male attachment anxiety predicted their somatic symptom severity mediated by their own identifying feelings.
    - Male attachment anxiety influenced female difficulty identifying feelings.
- **Female Model:**
    - Male attachment anxiety influenced female difficulty identifying feelings. Additionally, there was a trend ($p = 0.099$) suggesting that the female's difficulty identifying feelings may have played a mediating role in the association between the male's attachment anxiety and the female's own somatic symptom severity

2. **Model 2: Attachment Avoidance, Difficulty Identifying Feelings, and Somatic Symptom Severity**

- **Final Model:**
    - As expected, there were positive associations between the index person's attachment avoidance, their own difficulty identifying feelings, and their somatic symptom severity
    - Partner's avoidance had no significant effect for the index person's

difficulty identifying feelings or somatic symptom severity.

- The levels of attachment avoidance in both partners were significantly correlated.

- **Male Model:**
  - Male avoidance predicted their own somatic symptom severity mediated by their own identifying feelings.
- **Female Model:**
  - Female avoidance predicted their own somatic symptom severity mediated by their own identifying feelings.

3. **Model 3: Attachment Anxiety, Difficulty Describing Feelings, and Somatic Symptom Severity**

- **Final Model:**
  - Partner's attachment anxiety directly impacts on the index person's difficulty describing feelings and somatic symptom symptoms.
  - No significant mediating effect found for the index person's attachment anxiety**.**
- **Male Model:**
  - Male attachment anxiety directly influenced female difficulty describing feelings.
- **Female Model:**
  - Female difficulty describing feelings influenced by male attachment anxiety.

4. **Model 4: Attachment Avoidance, Difficulty Describing Feelings, and Somatic Symptom Severity**
    - **Final Model:**
        - Index person's avoidance positively associated with somatic symptom severity mediated by their own difficulty describing feelings.
        - Partner's avoidance did not significantly influence the index person's difficulty describing feelings and symptom severity.
        - The levels of attachment avoidance in both partners were significantly correlated.
    - **Male Model:**
        - Both partners' avoidance predicted difficulty describing feelings, and their levels of attachment avoidance were significantly correlated. However, in contrast to the final model, there was no association between the male's difficulty describing feelings and their somatic symptom severity in the male model.
    - **Female Model:**
        - Female difficulty describing feelings mediated somatic symptom severity.
5. **Comparison of Male/Female Models to Final Models**
    - **Similarities:**
        - Relatively consistent model structures across male, female, and final models.

- Mediating role of mentalizing impairments was common across all models.

- **Differences:**
  - Male attachment anxiety significantly influenced female difficulty identifying feelings.
  - In the female models, female attachment anxiety had a direct impact on their own somatic symptom severity, which was not observed in the final or male-specific models.
  - The final model highlighted some non-significant paths, which were further explored in gender-specific analyses to reveal nuanced differences.

4.3.4 Results of Person-centered Analyses

Next, we proceeded to investigate the research questions further using a person-centered approach with Latent Class Analysis (LCA) and linear regression. Participants were classified based on the index person's attachment style and mentalizing capacity, using index person's responses scores from the subscales Experiences in Close Relationships (ECR) and the Toronto Alexithymia Scale (TAS-20), respectively.

The results are presented as follows:

1. **Section 4.3.4.1:** The LCA results for the classification of couples based on the index person's attachment dimensions (anxiety and avoidance), followed

by the regression results for the association between the identified attachment-based subgroups and somatic symptom severity.

2. **Section 4.3.4.2:** The LCA results for the classification of couples based on the index person's mentalizing impairments using the TAS-20 scores, followed by the regression results for the association between the identified mentalizing-based subgroups and somatic symptom severity.
3. **Section 4.3.4.3:** The chi-squared test results exploring the relationship between attachment styles and mentalizing impairments.
4. **Section 4.3.4.4:** Results summary and discussion.

4.3.4.1 Classification by Attachment Style

LCA was used to classify individuals based on attachment dimensions. Participants were categorized into distinct subgroups according to the index person's scores on the subscales of attachment anxiety and avoidance from the ECR questionnaire. After identifying the subgroups, we further examined differences in somatic symptom severity across these subgroups using linear regression analysis.

There is no clear consensus on the best criteria for comparing latent class solutions (Weller et al., 2020). Table 7 shows the model fit statistics for the 2-, 3-, and 4-class solutions. To determine the best-fitting model, we considered statistical criteria for model fit and the theoretical interpretability of the classes. Theoretical interpretability refers to how well the identified classes align with established theories

and concepts of attachment styles. According to attachment theory, individuals can generally be classified into secure, anxious, and fearful attachment styles. Secure attachment is characterized by low anxiety and low avoidance, anxious attachment by high anxiety and low avoidance, and fearful attachment by high anxiety and high avoidance (Bartholomew and Horowitz, 1991). As shown in Table 8, the secure attachment group consisted of individuals with low attachment anxiety and avoidance, the anxious group included individuals with high anxiety and low avoidance, and the fearful attachment group comprised individuals with high anxiety and high avoidance. The three-class solution of LCA results matches these theoretical attachment styles, providing the lowest Akaike Information Criterion (AIC) and aligning with theoretical expectations. Ultimately, the three-class model was chosen as it provided the lowest AIC and aligned with theoretical expectations (Weller et al., 2020; Wolke et al., 2013).

Table 7: AIC and BIC of LCA analysis of attachment dimensions

	N	**LL (model)**	**df**	**AIC**	**BIC**
2-class	74	-203.1936	7	420.3872	436.5157
3-class	74	-197.9181	10	415.8361	438.8768
4-class	74	-196.7732	13	419.5464	449.4992

AIC: Akaike's information criterion; BIC: Bayesian information criterion

Table 8: Three-class solution classified by anxiety and avoidance.

Attachment			**Anxiety**		**Avoidance**	
Style	N	%	Mean	SD	Mean	SD
Secure	55	74.32	2.81	0.69	2.27	0.68
Anxious	10	13.51	4.79	0.47	1.98	0.73
Fearful	9	12.16	3.64	0.76	4.4	0.64
Total	74	100	3.18	0.97	2.49	0.99

Then linear regression analysis was conducted to examine the relationship between these attachment styles and somatic symptom severity. The model was specified as:

Somatic symptom severity = $\beta_0 + \beta_1 \times Class2 + \beta_2 \times Class3 + \epsilon$

Where:

- Class1: Secure attachment (reference category)
- Class2: Anxious attachment
- Class3: Fearful Attachment
- β_0 is the intercept,
- β1 represents the coefficient for anxious attachment,
- β2 represents the coefficient for fearful attachment,
- ϵ is the error term.

The results of the regression analysis are summarized in Table 9.

Table 9: The association between attachment style and symptom severity (n = 74)

Symptom severity	**β**	**Std. error**	**t**	**P**	**Lower 95%**	**Upper 95%**
Attachment Style						
Secure	Ref					
Anxious	2.82	1.41	2.00	0.049*	0.01	5.63
Fearful	0.31	1.47	0.21	0.84	-2.63	3.24
Intercept	6.58	0.55	11.92	0.00	5.48	7.68

Note: $R^2 = 0.05$; *p<0.05

As seen in Table 9, the coefficient for anxious attachment (β = 2.82) is significant at the 0.05 level, indicating that individuals with anxious attachment have significantly higher somatic symptom severity compared to those with secure attachment. The coefficient for fearful attachment (β = 0.31) is not significant, indicating no significant difference in somatic symptom severity compared to those with secure attachment. The model's R-squared value of 0.05 suggests that attachment style explains 5% of the variance in somatic symptom severity.

4.3.4.2 Classification by Mentalizing Capacity

We used the same approach to classify participants based on mentalizing impairments, using the index person's scores on the 'difficulty identifying feelings' and 'difficulty describing feelings' subscales of the TAS-20. There are no existing theoretically interpretable criteria for mentalizing impairments. Therefore, considering statistical criteria, we used the Bayesian Information Criterion (BIC), the most commonly used indicator of model fit (Nylund et al., 2007; Vermunt and Magidson, 2002; Weller et al., 2020). This led us to adopt a 2-class model (Table 10), which distinguishes between high mentalizing impairments and low mentalizing impairments, as shown in Table 11.

Table 10: AIC and BIC of LCA analysis of mentalizing impairments

Model	N	LL (model)	df	AIC	BIC
2-class	74	-405.0892	7	824.1784	840.3069
3-class	74	-401.049	10	822.0979	845.1386
4-class	74	-398.4727	13	822.9455	852.8983

AIC: Akaike's information criterion; BIC: Bayesian information criterion

Table 11: Two-class solution classified by difficulty identifying/describing feelings

Mentalizing			**Identify**		**Describe**	
Impairments	N	%	Mean	SD	Mean	SD
Low	58	78.4	13.48	3.90	10.38	2.35
High	16	21.6	20.31	4.05	16.69	2.30
Total	74	100	3.18	4.82	11.74	3.50

Then regression analysis was conducted to assess the impact of mentalizing capacity on somatic symptom severity. The model was specified as:

$$\text{Somatic Symptom Severity} = \beta 0 + \beta 1 \times \text{Class2} + \epsilon$$

Where:

- Class 1: Low impaired mentalizing (as reference category)
- Class 2: High impaired mentalizing
- $\beta 0$ is the intercept,
- $\beta 1$ represents the coefficient for high mentalizing impairment,
- ϵ is the error term.

Table 12 shows that the coefficient for high mentalizing impairment ($\beta = 2.39$) is significant at the 0.05 level ($p = 0.04$), indicating that individuals with high mentalizing impairments have significantly higher somatic symptom severity compared to those with low mentalizing impairments. The model's R-squared value of 0.06 suggests that mentalizing capacity explains 6% of the variance in somatic symptom severity, representing a modest but significant proportion.

Table 12: The association between mentalizing impairments and symptom severity (n = 74)

Symptom Severity	β	Std. error	t	P	Lower 95%	Upper 95%
Mentalizing Impairments						
Low	Ref					
High	2.39	1.15	2.09	0.04*	0.10	4.68
Intercept	6.48	0.53	12.16	0.00	5.42	7.54

Note: $R^2 = 0.06$; *p<0.05

4.3.4.3 Relationship between Attachment Style and Mentalizing Impairments

To further explore the relationship between attachment style and mentalizing impairments, a chi-squared test of independence was conducted. The analysis aimed to determine whether there was a significant association between different attachment styles (secure, anxious, fearful) and levels of mentalizing impairments (low, high).

As presented in Table 13, the chi-squared test revealed a significant association between attachment style and mentalizing impairments ($\chi^2 = 19.33$, $p < 0.001$). This indicates that the distribution of mentalizing impairments significantly differs across the different attachment styles. The results show that individuals with a secure attachment style are less likely to have high mentalizing impairments, with only 12.73% of securely attached individuals falling into the high impairment category. In contrast, individuals with a fearful attachment style are much more likely to report high mentalizing impairments, with 77.78% of fearful individuals reporting high impairments. Those with an anxious attachment style show a moderate level of high mentalizing impairments (20%).

Table 13 Chi-squared test of Attachment Style and Mentalizing Impairments

Attachment Style	Low Impairments	High Impairments	Total
Secure	48 (87.27%)	7 (12.73%)	55
Anxious	8 (80.00%)	2 (20.00%)	10
Fearful	2 (22.22%)	7 (77.78%)	9
Total	58 (78.38%)	16 (21.62%)	74

Note: Pearson $\chi^2 = 19.33$; $p < 0.001$

The reason anxious attachment is associated with somatic symptom severity but not significantly with high mentalizing impairments may be due to the different natures and mechanisms of attachment anxiety and avoidance. Individuals with anxious attachment are preoccupied with fears of rejection and abandonment, which can manifest as heightened physical symptom reporting due to their need for attention and reassurance. This constant vigilance and stress may directly contribute to somatic symptoms.

On the other hand, individuals with fearful attachment exhibit high levels of both anxiety and avoidance. The nature and mechanism of their attachment style involve an internal conflict between their desire for closeness and their fear of it, leading to significant difficulties in understanding and processing their own emotions. This could result in higher mentalizing impairments, as they oscillate between these conflicting feelings, making it harder for them to mentalize effectively. However, the avoidance aspect of fearful attachment might lead them to suppress or underreport somatic

symptoms, which could explain why there is no significant association between fearful attachment and somatic symptom severity. While recognizing that the sample size could reflect issues of statistical power, these findings echo our previous analysis results regarding attachment dimensions and will be further discussed in later sections.

4.3.4.4 Interim Summary and Discussion

Summary of Person-centered Analyses Results

A person-centered approach with the classification based on attachment style and mentalizing capacity has provided more insights into the relationship between these psychological constructs and somatic symptom severity. The findings highlight the following key points:

1. Attachment Style and Somatic Symptom Severity:

- Anxious attachment is significantly associated with higher somatic symptom severity compared to secure attachment.
- Fearful attachment, despite high anxiety and avoidance, does not significantly affect somatic symptom severity, potentially due to the tendency to suppress or underreport symptoms.

2. Mentalizing Capacity and Somatic Symptom Severity:

- High mentalizing impairments are significantly associated with increased somatic symptom severity.
- Mentalizing capacity accounts for a modest but significant proportion of the variance in somatic symptom severity.

3. Attachment Style and Mentalizing Impairments:

- There is a significant association between attachment style and mentalizing impairments.
- Secure attachment is associated with lower levels of mentalizing impairments.
- Fearful attachment is strongly associated with higher levels of mentalizing impairments.
- Anxious attachment shows moderate levels of high mentalizing impairments.

Comparison of Person-centered and Variable-centred Analyses

Person-centered analyses provide a complementary perspective to the variable-centered analyses. While the path analysis and correlations examine the relationships between attachment dimensions, mentalizing impairments, and somatic symptom severity at a global level, the LCA and subsequent regression analyses reveal distinct subgroups based on the index person's attachment and mentalizing profiles, showing how these subgroups potentially differ in terms of somatic symptom severity.

The path analysis results suggest that the partner's attachment anxiety and the index person's difficulty identifying and describing feelings are potential key factors influencing the severity of somatic symptoms in the index person. These findings are consistent with the person-centered results, which show that couples classified as having an anxious attachment style and high mentalizing impairments report higher levels of somatic symptom severity in the index person.

However, the person-centered analyses also reveal some differences from the

variable-centered analyses. For example, while the path analysis indicates that the index person's attachment avoidance is positively associated with their somatic symptom severity (mediated by their difficulty identifying and describing feelings), the LCA results suggest that fearful attachment (characterized by high anxiety and high avoidance) is not significantly associated with higher somatic symptom severity compared to secure attachment. This discrepancy may be due to the different approaches used in these analyses, with the person-centered approach potentially capturing more nuanced patterns of attachment and mentalizing within subgroups.

The chi-squared test of independence further supports the link between attachment style and mentalizing impairments, showing that fearful attachment is strongly associated with higher levels of mentalizing difficulties. This finding aligns with the path analysis results, which suggest that insecure attachment dimensions are potentially related to greater mentalizing impairments.

Overall, the person-centered analyses complement the variable-centered findings by providing a more detailed understanding of how specific patterns of attachment and mentalizing possibly relate to somatic symptom severity, while also highlighting some potential differences that warrant further investigation.

4.4 Discussion

This study aimed to investigate the relationship between attachment dimensions, mentalizing capacity, and somatic symptom severity within romantic couples using

both a variable centered and person-centered approach. Based on the findings from data analyses, the following hypotheses were partially supported:

H1 (partially supported)

- The partner's attachment anxiety was positively associated with the index person's somatic symptom severity.
- No partner effect of attachment avoidance was observed.

H2 (partially supported)

- **H2-1**: The index person's attachment anxiety and avoidance were positively associated with their own mentalizing impairment, specifically difficulty identifying and describing feelings.
- **H2-3**: The partner's attachment anxiety was positively associated with the index person's difficulty identifying feelings.
- **H2-4:** The partner's attachment anxiety and avoidance were positively associated with their own mentalizing impairment, specifically difficulty identifying and describing feelings.

H3 (partially supported)

- **H3-1**: The association between the index person's attachment avoidance and their somatic symptom severity was mediated by their own difficulty identifying and describing feelings.
- **H3-3**: The association between the partner's attachment anxiety and the index person's somatic symptom severity was mediated by the index person's

difficulty identifying feelings.

- **Additional Findings**: The partner's attachment anxiety directly affected the index person's difficulty in describing their own feelings. The index person's ability to describe feelings may be more strongly influenced by their partner's attachment anxiety than their own attachment anxiety (final model 3).

The path analysis results suggested that the index person's attachment avoidance and the partner's attachment anxiety were associated with the severity of the index person's somatic symptoms. This relationship was mediated by the couple's mentalizing impairments, particularly the index person's difficulty in identifying and describing feelings. The partner's attachment anxiety also directly affected the index person's difficulty in describing their own feelings, suggesting that the index person's mentalizing impairments may be more strongly influenced by their partner's insecure attachment than their own.

The findings partially supported the proposed hypotheses, highlighting the potentially significant role of attachment dimensions and impaired mentalizing in understanding FSDs within romantic couples. The partner's attachment anxiety and the index person's mentalizing impairments appear to be key factors influencing the severity of FSDs in the index person. The complementary person-centered results indicated that the index person’s somatic symptom severity was significantly higher in the subgroup classified as having an anxious attachment style and high mentalizing impairments. Additionally, the chi-squared test of independence provided further

evidence for the potential link between attachment style and mentalizing impairments.

In summary, the study findings suggest significant associations between attachment dimensions, mentalizing impairments, and somatic symptom severity, emphasizing the potential dyadic nature of these relationships. In the next section, we will discuss the main findings in relation to existing research on the topic.

4.4.1 The Role of Attachment Dimensions in Couples Experiencing FSDs

Attachment Anxiety

The partner's attachment anxiety not only directly influences the index person's somatic symptom severity but also indirectly affects it through its impact on the index person's mentalizing abilities (Fig. 3). This finding suggests that in the relationship between attachment and somatic symptoms, the partner effect may be as significant as the individual's intrapersonal factors. It highlights the importance of considering additional contextual and relational factors in understanding FSDs (Riem et al., 2018).

Results of the person-centered analysis also underscore the potential role of attachment anxiety in influencing somatic symptom severity. Anxiously attached individuals' desires for proximity and attention during periods of illness may be associated with increased levels of tension and conflict within the couple, potentially exacerbating somatic symptoms (Krahe et al., 2013). This suggests that the mechanisms linking anxious attachment to FSD severity may not be solely dependent on mentalizing difficulties but could also involve other factors such as hyperactivation of the attachment system and emotional dysregulation.

The partner's attachment anxiety directly impacts the index person's symptom severity and both partners' difficulty describing feelings (Fig. 7). The index person's difficulty in describing feelings may be more strongly influenced by their partner's attachment anxiety than by their own attachment. Results from the person-centered analyses further support these findings, showing that anxious attachment is associated with more severe somatic symptoms, indicating that anxious attachment aggravates the symptoms more significantly than fearful attachment (Table 9). These results are in line with those from the path analysis, suggesting that attachment anxiety within the couple appears to be particularly influential in increasing symptom severity in the index person.

The specific aspects of attachment anxiety that contribute to increased impairments in mentalizing and, subsequently, FSD symptoms may be related to the hyperactivation of the attachment system and the associated emotional dysregulation. Individuals with high attachment anxiety tend to have a strong fear of abandonment and a persistent need for proximity and reassurance from their attachment figures (Mikulincer and Shaver, 2019). This hyperactivation can lead to heightened emotional arousal and a decreased capacity to regulate emotions effectively (Pietromonaco and Powers, 2015). Moreover, anxiously attached individuals might misinterpret their anxiety as a form of care or concern, which can further complicate their emotional responses and relationship dynamics. These findings also align with previous studies on affect regulation in avoidant and anxious attachment styles. According to Stevens (2014), individuals with an anxious-attached style demonstrate higher levels of

emotional awareness than those with an avoidant-attached style. However, anxious-attached individuals face challenges in accurately identifying their emotions and effectively regulating their impulses (Stevens, 2014).

The emotional dysregulation may impair the individual's ability to mentalize, particularly in close relationships. The constant preoccupation with the availability and responsiveness of the attachment figure can hinder the anxiously attached individual's capacity to reflect on their own and their partner's mental states (Luyten et al., 2012b). The inability to process and regulate emotions effectively, coupled with a reduced capacity to understand and communicate internal experiences, may lead to the expression of emotional distress through somatic symptoms (Luyten et al., 2012b). Our findings on the potential influence of attachment anxiety within couples experiencing FSDs also expand on previous research findings, which indicated that anxious attachment was significantly associated with more severe somatic symptoms (Falahatdoost et al., 2020), in the context of romantic couples.

Attachment Avoidance

The study results distinguished the different effects of attachment anxiety and avoidance in predicting somatic symptom severity. The index person's attachment avoidance was positively associated with their own symptom severity, mediated by their difficulty identifying and describing feelings (Fig. 5 and Fig. 9). Contrary to our hypotheses, no partner effect was found for attachment avoidance, suggesting that the index person's symptom severity was not associated with their partner’s avoidance.

Additionally, there was no association between each partner's avoidance and the other partner's mentalizing impairments. The models also indicated a correlation between the couples' avoidance, suggesting that couples with shared attachment avoidance may tend to evade affect-laden interactions, decreasing the chance of direct influence on the index person's symptoms.

However, person-centered results suggest that avoidant attachment does not contribute significantly to increasing symptoms (Table 9). While the path analysis indicates that the index person's attachment avoidance is positively associated with their own symptom severity, mediated by their own difficulty in mentalizing, attachment avoidance does not emerge as a defining characteristic of the subgroups with higher somatic symptom severity in the LCA and the following regression tests.

Notably, the chi-squared test results showed that the combination of high anxiety and high avoidance in fearful attachment was associated with the highest levels of mentalizing impairments. This finding highlights the cumulative impact of different insecure attachment dimensions on mentalizing capacity. The avoidance dimension in fearful attachment may contribute to more severe mentalizing difficulties compared to anxious attachment alone, possibly due to the conflicting desires for closeness and distance leading to greater emotional confusion and suppression. Moreover, the interplay between anxiety and avoidance in fearful attachment might lead to more complex or inconsistent patterns of mentalizing and FSD symptoms, as individuals oscillate between seeking proximity and withdrawing from their partners.

While there was a strong association between fearful attachment and high mentalizing impairments (Table 14), anxious attachment, rather than fearful attachment, was associated with higher somatic symptom severity (Table 9). Additionally, Table 5 shows a significant correlation between the partner's attachment avoidance and the index person's difficulty identifying feelings. This finding suggests that the partner's avoidant attachment strategy may relate to the index person's mentalizing impairments, particularly in identifying and processing emotions.

These results suggest a more intricate interplay between attachment avoidance, mentalizing, and FSDs than our model proposed. Methodological factors, such as defensive reporting or a lack of insight in self-report measures (Gratz and Roemer, 2004; Luyten et al., 2012a), may contribute to the inconsistencies observed. Avoidant individuals may have more difficulty acknowledging their emotional needs or the impact of their avoidant strategies on their relationships. Previous research has shown that individuals with avoidant attachment styles have less awareness of their emotional states and are less responsive to their emotions (Stevens, 2014). When one partner in the relationship is avoidant, the other partner may have difficulty identifying both their own feelings and those of the avoidant partner, as the avoidant partner's strategies can create a superficial sense of peace that masks underlying emotional issues.

It is conceivable that attachment avoidance may lead individuals to suppress or underreport somatic symptoms, despite high levels of mentalizing impairments. A

study on dyadic patterns of anxiety and avoidance in relationship functioning found that the effects of attachment anxiety on lower relationship satisfaction and commitment were weaker when partners were more anxious and stronger when partners were more avoidant. Conversely, the effects of attachment avoidance on lower trust and satisfaction were stronger when partners were more anxious (Rodriguez et al., 2021). Another study showed that relationships involving avoidant men and anxious women were surprisingly stable, despite both partners giving these relationships relatively poor ratings (Kirkpatrick and Davis, 1994). This stability may be attributed to the avoidant partner's emotional regulation strategies, which can create a superficial sense of emotional equilibrium while masking underlying issues. Additionally, the correlation between each partner's level of attachment avoidance in our models aligns with the previous study, indicating that one partner's avoidance is more strongly negatively related to commitment in the presence of a more avoidant partner (Rodriguez et al., 2021).

While the study findings suggest potential associations between attachment avoidance, mentalizing impairments, and somatic symptom severity, the inconsistencies between variable-centered and person-centered analyses highlight the need for further research to better understand the complex interplay of these factors within romantic relationships. These relationship dynamics and the potential reciprocal effects will be further explored in the in-depth interviews in the next chapter.

Bidirectional Relationship between Attachment Dimensions

These results of this study seem to reflect the complex, bidirectional relationship between attachment anxiety and avoidance in couples experiencing somatic symptoms. For instance, when one partner exhibits high attachment avoidance, the other partner may develop heightened attachment anxiety in response to emotional unavailability and lack of responsiveness (Shaver and Mikulincer, 2007). Conversely, a partner with high attachment anxiety may trigger avoidant behaviours in the other partner as a defensive response to excessive demands for proximity and reassurance (Campbell et al., 2005). These reciprocal influences between attachment dimensions may contribute to a complex interplay of mentalizing and dynamics within a couple, ultimately impacting the experience and expression of FSDs. Further longitudinal research could be beneficial in this context. Additionally, ecological momentary assessment studies and qualitative studies, like the one reported in Chapter 5 of this thesis, may shed more light on these dynamics.

The current findings suggest that higher levels of attachment anxiety in one partner may be associated with difficulties in the co-regulation of distress and impairments in the index person's capacity to mentalize, which could potentially elevate symptom severity. Additionally, the observed correlation between the couple's attachment avoidance suggests that there may be a complex interplay between partners' attachment strategies, but further research is needed to establish the specific dynamics and directionality of these relationships.

These results partly align with our hypotheses regarding the impact of attachment dimensions on relationship dynamics and their potential influence on somatic symptom severity through the couple's mentalizing capacity. They are also consistent with the findings from Brennan and Shaver (1995), who demonstrated that attachment styles significantly influence relationship dynamics and emotional processing capabilities (Brennan and Shaver, 1995). The correlation between the couple's attachment dimension also partly aligns with a previous study on FSD patients and their spouses (Sayre, 2002), indicating couples were characterized by avoidance, rigidity and enmeshment, and interpersonal polarization around these factors. This correlation could result from couples accommodating each other over long-term interaction or from couples with particular attachment styles tending to pair together and maintain relatively stable relationships, as suggested in previous research (Kirkpatrick and Davis, 1994).

4.4.2 The Couple's Mentalizing Capacity

Reciprocal Nature and Interdependency of Mentalizing within Couples

The results of this study suggest the potential mediating effect of both partner's mentalizing impairments (i.e. both difficulty identifying and describing feelings) and the partner effect of difficulty identifying feelings on the index person's symptom severity. Path analysis results suggest that the index person's difficulty describing feelings was predicted by the partner's attachment anxiety, but not by their own anxiety (Fig. 7).

The person-centered analyses findings showed that the subgroup characterized

by the index person's high mentalizing impairments reported greater somatic symptom severity than those in the low impairment subgroup. The current study's findings align with previous research suggesting that mentalizing impairments in FSD patients lead to a fluctuation between hypermentalizing and hypomentalizing states (Luyten et al., 2019b). This study's findings provide evidence for the potential role of couple-level mentalizing in the association between attachment and FSDs, a possibility that will be further explored in the qualitative study reported in Chapter 5.

Previous studies have indicated FSD patients have trouble identifying their own emotions, but less difficulty in identifying their partner's (Riem et al., 2018). Our results suggest that the index person's difficulty describing feelings was only associated with the partner's attachment anxiety. It appears that, when approached by a partner with an insecure attachment strategy, the index person's capacity for mentalizing may weaken, and symptoms may worsen.

If replicated, the current findings provide evidence for the potential reciprocal nature and interdependency of mentalizing within couples experiencing FSDs. The actor-partner effects observed in the path analysis suggest that each partner's mentalizing difficulties may not only affect their own well-being, but also impact their partner's mentalizing and, in turn, the index person's FSD symptoms. Our findings align with current literature suggesting that mentalizing serves as a protective factor against FSDs (Luyten et al., 2020a; Luyten and Fonagy, 2020). Furthermore, these results suggest that the capacity to understand and regulate one's own mental state,

as well as to understand the mental states of the other, may have a reciprocal effect in heightening the association between attachment insecurity and FSD symptoms, especially in specific relational contexts. This highlights the potential importance of considering mentalizing at a couple level, in addition to an individual level, for better understanding of the management of FSDs.

Mentalizing and Emotion Co-regulation

The association between attachment quality and mentalizing is relationship-specific(Bączkowski and Cierpiałkowska, 2015), emphasizing the potential importance of considering the systemic nature of mentalizing in understanding FSDs. Empirical and clinical reports frequently indicate an association between disturbances in emotion regulation processes and FSDs (Brown et al., 2013; Di Tella and Castelli; Koechlin et al.). A systematic narrative review found that 21 out of 23 studies showed greater dysfunctional beliefs about emotions or negative self-efficacy expectations regarding the regulation of emotions in the population experiencing Somatic Symptom Disorder and related conditions (Schnabel et al., 2022). These dysfunctional beliefs about emotions may impact individuals' ability to co-regulate emotions, as they undermine confidence in managing emotional experiences and lead to maladaptive regulation strategies. However, the underlying mechanisms of this association remain unclear (Okur Guney et al., 2019).

The study results suggest the potential mediating role of the couple's mentalizing capacity in the relationship between attachment dimensions and somatic symptom

severity. As such, mentalizing capacity may serves a pivotal role in modulating stress and emotional arousal (Luyten et al., 2020a), along with other contributing factors. Couples' responses to each other's attachment behaviours may largely depend on how they mentalize these interactions. Consequently, the level of emotion co-regulation, based on their mentalizing capacity and associated attachment strategies, could influence the relationship dynamics, potentially contributing to the maintenance or aggravation of FSD symptoms (Campbell et al., 2012; Yang et al., 2013). While stress and emotion co-regulation are crucial when dealing with chronic distress, couples experiencing FSDs often face challenges in regulating emotions (Waller and Scheidt, 2006).

The person-centered analyses results (Table 11) indicate that high levels of mentalizing impairments are associated with greater somatic symptom severity in the index person. The path analysis model underscores the importance of considering the potentially dyadic nature of mentalizing and its impact on FSD outcomes. When each member of a couple has difficulty in understanding and regulating their own emotions, their overall capacity for co-regulation may be compromised, creating a more stressful and less supportive relational environment that can exacerbate FSD symptoms (Ablin et al., 2010; Tak and Rosmalen, 2010). Simultaneously, relationship conflict may further hinder mentalizing within the couple (Fonagy and Luyten, 2009), creating a vicious cycle.

This potential association also aligns with the literature on the role of perceived

social support and co-regulation in the context of various functional somatic symptoms (Gerber et al., 2019; Grigaitytė and Söderberg, 2021; Reig-Garcia et al., 2021). Couples with better mentalizing skills may be more attuned to each other's emotional states and needs, enabling them to provide more effective support and co-regulate distress during challenging times (Goldstein et al., 2022; Skerrett, 2015). In the context of FSDs, a couple's capacity for emotion and stress co-regulation, which is closely tied to their mentalizing capacity, may play a crucial role in buffering the negative impact of the distressing symptoms and in promoting resilience (Goldstein et al., 2016).

The current study's emphasis on the potential role of mentalizing in emotion and stress co-regulation within couples lays the groundwork for the next chapter, which will explore these dynamics in greater depth through in-depth couple interviews and observing how couples mentalize and co-regulate in the face of FSD challenges.

4.4.3 Gender Differences

Regarding the distinguishability of the index and partner effect, the models were relatively stable across gender with some notable differences. In both male and female models, the partner's attachment anxiety predicted female impaired mentalizing, in both difficulty identifying and describing feelings. Conversely, the impaired mentalizing in men was not related to their partner's attachment. Interestingly, male attachment anxiety predicted the female mentalizing impairments, in both difficulties identifying feelings and describing feelings (Fig.10, Fig.12, Fig.14, Fig.16), but not the female somatic symptom severity. Although not statistically significant, there was a trend

suggesting that female attachment anxiety predicted the somatic symptom severity in males (Fig. 12, Fig. 14), but not the male mentalizing impairments.

The path analysis results also indicated that the levels of attachment anxiety were correlated between partners, as were the levels of attachment avoidance, in the separate male and female models. However, in the final models, only attachment avoidance was correlated between the couple. These findings suggest that the interplay between specific attachment dimensions may vary across gender.

While the models are relatively stable across genders, these findings may also reflect gender differences in prominent stress response within couple relationships. Contemporary literature indicates that FSDs are positively associated with perceived stress (Petersen et al., 2023), resulting from negative vicious cycles involving person-environment interactions (Luyten et al., 2012b). These results align with previous research suggesting that men and women may react differently to stress (Verma et al., 2011).

The findings also suggest that women may be more sensitive to the attachment dynamics in their relationships, leading to impairments in mentalizing. Conversely, although not reaching statistical significance, there was a trend showing that men may be influenced by women's anxiety, resulting in an increase in somatic symptoms. As research suggests that complex interactions among biological and psychological factors are involved in both the causation and maintenance of FSDs (Heim et al., 2009; Luyten et al., 2012b), the observed gender differences in our results may be attributed

to the effects of biological, psychological, and social factors (Connelly et al., 2021; Verma et al., 2011). However, it is important to note that these results were based on a small sample size and should be interpreted with caution. Further replication is needed.

A study analyzing gender differences in stress responses to relationship conflicts by examining cortisol samples found that while both men and women exhibit physiological responses to relationship conflict, the response is more pronounced in men and involves different attachment dimensions. Anxiety was a strong predictor of response in men, whereas in women, significant cortisol changes were observed only in those with high levels of attachment avoidance (Powers et al., 2006). Additionally, a dyadic relationship study indicated that women might experience lower satisfaction than men when their partners are less expressive. This discrepancy likely increases stress for women through their partner interactions (Eid and Boucher, 2012).

In line with previous research that has revealed complex gender differences in physical and psychological stress responses, the current study suggests that there may be gendered associations between attachment, mentalizing, and somatic symptom severity in romantic relationships, warranting further study.

4.4.4 Cultural Factors

While cultural factors may influence mentalizing capacity, as suggested in the current literature (Aival-Naveh et al., 2022; Aival-Naveh et al., 2019), the current study's findings appear to be more universal than culture-specific. The associations

between attachment dimensions, mentalizing impairments, and somatic symptom severity within romantic relationships align with previous research conducted in various cultural contexts (Luyten et al., 2012b; Riem et al., 2018).

4.5 Limitations

One of the limitations of this study is its cross-sectional nature, which restricts our ability to draw conclusions about the causal relationships between attachment, mentalizing, and FSD severity. The relationship between these variables could be bidirectional or involve feedback loops that a cross-sectional study cannot detect. For instance, while mentalizing impairments may contribute to the development and maintenance of FSD symptoms, the presence of these symptoms could also lead to further disruptions in mentalizing abilities within the couple. Moreover, the cross-sectional nature of the data does not allow us to examine how these relationships may evolve over time or in response to different stressors or life events.

Sample characteristics also present some limitations. Most couples in the sample reported relatively low to medium levels of somatic symptom severity. Although this is consistent with the non-clinical nature of the sample, it may not fully capture the experiences of individuals with more severe FSD symptoms. Consequently, the generalizability of the findings to clinical populations with higher levels of symptom severity may be limited. Additionally, the sample was relatively homogeneous in terms of educational level and age and consisted entirely of Taiwanese couples. This homogeneity may limit the generalizability of the findings to more diverse populations

in different contexts. The use of convenience sampling and stringent exclusion criteria, which excluded individuals with comorbid medical conditions, may have introduced potential biases and further limited the representativeness of the sample.

The relatively small sample size may have limited the statistical power of our findings. To partially address this limitation, we used simpler models with fewer indicators and well-separated classes in the statistical models during data analysis, following recommendations for ensuring theoretical interpretability and rationale in the context of small samples (Mooijaart and van Montfort, 2004; Nylund-Gibson and Choi, 2018; Rosseel, 2020). However, it is important to note that the findings are based on a limited sample.

Regarding statistical approaches, the current study utilized only the index person's responses on somatic symptom severity, attachment, and mentalizing across different analytical methods. In the path analysis, although the Actor-Partner Interdependence Model (APIM) was used to examine the dyadic relationships between these variables, the focus on the index person's responses as the primary outcome variable may not fully capture the complex, reciprocal nature of these dynamics within romantic partnerships. Similarly, in the LCA and regression analysis, using only the index person's responses on attachment and mentalizing to classify respondents and predict symptom severity may not account for the potential influence of the other partner's characteristics on the couple's dynamics and outcomes. This decision was based on the study's primary research questions, the complexity of the

models, and the available sample size. While these approaches were deemed appropriate for providing initial insights into the dyadic relationships between attachment, mentalizing, and somatic symptom severity, it is important to recognize that using more advanced statistical methods and including both partners' responses could have provided a more nuanced understanding of the dyadic processes underlying FSDs.

Furthermore, the measurement of mentalizing impairments presents challenges. As a multi-dimensional construct, mentalizing comprises several dimensions (Fonagy and Bateman, 2008; Luyten et al., 2012a). This study used the TAS-20, originally developed to assess alexithymia, as an indicator of mentalizing impairments. While alexithymia conceptually overlaps with self and affective mentalizing, it also taps into cognitive mentalizing to a lesser degree (Luyten et al., 2012a; Luyten et al., 2012b), Therefore, it may not fully capture all aspects of mentalizing and may be influenced by perceived social expectations and an individual's capacity for self-assessment (Aival-Naveh et al., 2019; Gratz and Roemer, 2004).

Finally, the analyses were conducted to test the hypotheses outlined in the introduction. While these hypotheses were formed before data collection and informed by existing literature, they were not formally pre-registered prior to data analysis.

4.6 Implication and Directions for Future Research

The limitations of the current study highlight several important avenues for future research.

First, future studies could aim to validate and extend the findings with increased sample sizes and more diverse populations and contexts. Given the relatively small sample size and the homogeneous nature of the respondents in terms of age, educational level, and cultural background, future research might benefit from including a larger and more diverse sample to enhance the generalizability of the results. Including participants with a wider range of medical and psychological comorbidities could also provide a more valid understanding of the interplay between attachment, mentalizing, and FSD severity in real-world clinical settings. Additionally, recruiting participants with a broader range of FSD symptom severity, including those with more severe symptoms, could provide a more comprehensive understanding of the relationship between attachment, mentalizing, and FSD across the spectrum of symptom severity. Future research should also consider cultural factors to better understand how attachment and mentalizing interact in different cultural contexts.

Second, future research using longitudinal designs could help establish the directionality and temporal dynamics of these relationships. Such designs would allow for the examination of how these constructs interact and evolve over time or are influenced by life events, potentially uncovering bidirectional or feedback effects that cannot be detected in cross-sectional studies. More advanced statistical techniques, such as actor-partner interdependence models with longitudinal data, may also be helpful to investigate the dynamic and reciprocal effects of mentalizing within couples. Future studies could consider using both partners' responses as outcome variables and employing advanced dyadic data analysis techniques that account for the

interdependence of partners' experiences and characteristics. These alternative statistical approaches may provide a more comprehensive understanding of the interpersonal dynamics underlying FSDs and potentially uncover mediating effects not detectable in the current study, while being mindful of the sample size requirements and computational complexity of these advanced techniques.

Finally, the measurement of mentalizing impairments using the TAS-20 in this study suggests the need for a more comprehensive assessment of mentalizing in future research. Given that mentalizing is a multidimensional construct, future studies may consider using a combination of self-report, interview-based, observational, and experimental measures to assess its different dimensions more comprehensively. Incorporating measures that tap into both explicit and implicit mentalizing could provide a more nuanced understanding of mentalizing capabilities and their relationship to attachment and FSD severity.

4.7 Conclusion

In this chapter, we explored the quantitative associations between attachment dimensions, mentalizing capacity, and somatic symptom severity within romantic couples. The findings suggest significant relationships between insecure attachment, mentalizing impairments, and the severity of somatic symptoms, indicating a complex interplay of these factors.

In conclusion, while these quantitative findings provide important insights, they

also highlight the need for further exploration. The next chapter will present couple interviews to offer a deeper understanding of these dynamics. These qualitative insights aim to complement the quantitative results, providing a more comprehensive perspective on the relationships between attachment, mentalizing, and FSDs in romantic relationships.

Chapter 5 Qualitative Study: Exploring Couples' Experiences of FSDs

5.1 Introduction

This study aimed to delve into the intricate dynamics of attachment, mentalizing, and Functional Somatic Disorders (FSDs) within couples. Building on previous quantitative findings, this chapter sought to provide a more comprehensive understanding of how attachment styles and mentalizing capacity influenced the experiences of FSD from a couple-centric perspective. Most existing studies, including qualitative research (Burton et al., 2020; Cao et al., 2020; Häuser et al., 2020; Lara-Cinisomo et al., 2020; Lowe et al., 2024; Ma et al., 2023; Nielsen et al., 2020), had focused primarily on individuals, relatively overlooking the potential role of romantic partners in shaping the experience and course of FSDs. By adopting a qualitative approach, this study aimed to elucidate the nuanced interactions between mentalizing, attachment, and FSDs within couples, highlighting the complexity of these phenomena in romantic partnerships.

5.1.1 Functional Somatic Disorder (FSD)

Functional somatic disorder (FSD) is an umbrella term for various conditions characterized by persistent and distressing physical symptoms affecting both bodily and brain processes (Burton et al., 2020). This definition of FSD informs the approach used in this study, as it refers to a broad category of conditions marked by ongoing and distressing physical symptoms that lead to impairment or disability, rather than a

specific diagnosis.

Patients with impairing persistent physical complaints, also known as functional somatic symptoms, experience reduced quality of life, higher levels of sick leave, and increased use of healthcare resources compared to individuals without such symptoms (Budtz-Lilly et al., 2015b; Joustra et al., 2015; Lowe et al., 2024; Rask et al., 2015; Rasmussen et al., 2020). The prevalence in the general population is relatively high, ranging from 10 to 21% in adults under 60–65 years of age (Hilderink et al., 2013; Petersen et al., 2019; Rasmussen et al., 2020). These conditions are common, accounting for approximately one-third of healthcare appointments in both primary care (Haller et al., 2015) and specialist practice (Nimnuan et al., 2001), significantly impacting patients' quality of life and increased healthcare expenses.

Irritable bowel syndrome (IBS), fibromyalgia (FM), and chronic fatigue syndrome (CFS) were some of the first clinical syndromes now categorized as FSD (Schovsbo et al., 2021). However, the conceptualization and categorization of FSD are often inconsistent, especially from a primary-care perspective (olde Hartman et al.). Significant overlap between these syndromes raises questions about whether they are distinct diseases or represent the same underlying condition (Fink and Schröder, 2010; Petersen et al., 2020a; Petersen et al., 2020b). The heterogeneity and complexity of FSDs lead to limited knowledge about its etiology, which is believed to be influenced by biological, psychological, and social factors(Budtz-Lilly et al., 2015a; Burton et al., 2020; Schovsbo et al., 2021; Tak and Rosmalen, 2010), likely resulting from negative

cycles involving person-environment interactions (Luyten and Van Houdenhove, 2013; Luyten et al., 2012b; Van Houdenhove and Luyten, 2009).

5.1.2 Mentalizing

This study adopts a mentalizing-based approach to understanding FSD within the context of romantic relationships. Mentalizing is defined as an individual's capacity to understand and interpret human behaviours in terms of underlying mental states (Bateman and Fonagy, 2016). It plays a crucial role in expressing, communicating, and managing emotions and beliefs associated with an individual's wants and desires. The capacity to mentalize may fluctuate and is contextually associated with the relational situation and the individual's affective state (Bateman and Fonagy, 2016). Based on findings of the association between attachment styles and FSD, recent research has identified mentalizing problems as a potential mediator between insecure attachment and FSD in patients. Specifically, patients are assumed to have difficulties clarifying their emotions and less difficulty understanding others' mental states. This may, in turn, contribute to the somatic experience of emotional distress (Riem et al., 2018). The capacity to mentalize might act as a protective factor in the context of somatic complaints (Ballespi et al., 2019).

The recent mentalization-based approach to FSD emphasizes three areas of functioning which can be recognized as factors that either predispose, precipitate, or perpetuate conditions. These include attachment issues, embodied mentalizing (i.e., the capacity to reflect on one's own and other's embodied self), and epistemic trust

(i.e., the capacity to trust others, including clinicians, as a source of knowledge) (Luyten and Fonagy, 2020). Difficulties associated with each of these elements may contribute to the onset of the disorder, but they could also result from or worsen due to somatic complaints. Numerous studies showcase the detrimental effects of FSDs on attachment, mentalizing, and epistemic trust, especially in cases where symptoms have become persistent (Luyten et al., 2019b; Selders et al., 2015).

Mentalizing develops in the context of attachment relationships and is closely tied to these relationships (Luyten et al., 2012a). While the intrapersonal perspective is crucial, adopting a systemic view may provide a broader understanding of clinical features in FSD patients, considering the dynamics and interdependencies within romantic relationships. Interpersonal stress is suggested to be linked with somatic symptoms (Aanes et al., 2010). Previous studies suggest that expressing emotions within a couple contributes to better relationship adjustment and reduces stress (Eid and Boucher, 2012; Moore et al., 2001; Overall and Simpson, 2015). For example, a partner with difficulties in emotional expression may find it challenging to develop intimacy, which is crucial for relationship satisfaction (Moore et al., 2001), potentially hindering mentalizing within the relationship. Both quantitative and qualitative studies of FSDs within interpersonal relationships also demonstrate the positive effects of social support on patients' physical, mental, and social well-being, empowering them to better manage their condition (Franks et al., 2004; Hutten et al., 2021; Nabi et al., 2010; Reig-Garcia et al., 2021; Sallinen et al., 2011). However, FSD patients often do not experience high levels of social support (Schoofs et al., 2004). They frequently

exhibit troubled relationships with healthcare providers, psychotherapists, and significant others (Krivzov et al., 2021). Moreover, the uncertainty and complexity of these conditions significantly affect patients' relationships with their partners (Reich et al., 2006).

Findings of the survey study presented in the previous chapter align with current literature, suggesting mentalizing impairments as a potential mediator between insecure attachment and FSDs. Moreover, there appears to be a reciprocal effect between the attachment styles of the index person and their partner, mentalizing capacity, and symptom severity. The objective of the present study is to delve into the couple's mentalizing capacity at both individual and dyadic levels and explore whether and how the mentalizing processes of each of the partners influence the dynamics of their relationship.

This chapter employs online couple interviews to delve into the relationship between attachment styles and mentalizing ability demonstrated in day-to-day interactions. The interviews aim to explore mentalizing at the couple level, emphasizing the interdependency of mentalizing between the partners, while acknowledging the importance of individual mentalizing. This understanding is key to grasping how each individual's attachment styles, particularly insecure ones, contribute to distinct mentalizing of emotional expression behaviours, thus fostering a dynamic interplay between partners.

5.1.3 Attachment

The attachment relationship is closely linked to the three areas (attachment issues, embodied mentalizing, epistemic trust) discussed above in patients with FSD via the activation or reactivation of secondary attachment strategies to cope with persistent somatic problems, resulting in impairments in embodied mentalizing and problems with epistemic trust (Luyten and Fonagy, 2016; Luyten and Fonagy, 2020; Luyten et al., 2013). While patients may encounter these difficulties before the onset of FSDs, these issues may be further exacerbated by chronic symptoms (Luyten and Fonagy, 2020), and the person-environment interaction may also be a crucial factor. According to the sole study focusing on FSD patients and their spouses (Sayre, 2002), couples experiencing FSDs exhibit characteristics such as avoidance, rigidity, enmeshment, and interpersonal polarization around these factors. Given FSD's lack of clear classification and origin, patients may feel invalidated and untrusted. For better treatment and management, it may be important to explore these core issues in the context of the attachment relationship.

Previous studies indicate that romantic partners constitute the primary attachment figure for adults (Carli et al., 2019; Doherty and Feeney, 2004; Hazan and Zeifman, 1994). Additionally, studies focusing on individuals with FSD have identified the quality of the partners' relationship as a significant factor influencing how effectively individuals adapt to persistent symptoms (Cano et al., 2004; Jensen et al., 2011; Newton-John, 2013). Moreover, a supportive and well-adjusted relationship has

been shown to positively impact the emotional well-being of those affected by FSD (Johansen and Cano, 2007; Villeneuve et al., 2015). Participants in these studies reported experiencing well-adjusted relationships with their partners, and higher levels of dyadic adjustment and conjugal support were associated with reduced symptoms of depression and anxiety. Notably, factors such as dyadic consensus, marital status, and pain intensity were found to be predictive of depressive symptoms, while dyadic consensus and pain intensity were predictive of anxiety symptoms (Gatien et al., 2022).

The relationship between partners is not merely about the interpersonal functioning of the patients to enhance their psychological well-being; rather, partners play an integral role in the context of the patient's FSD symptoms. A longitudinal study examining the behaviour of significant others in response to pain, fatigue, and mental health outcomes found that more negative responses from significant others were associated with increased pain, poorer physical and mental health, and more symptoms over time (Schmaling et al., 2020). Similarly, a study focusing on husbands of fibromyalgia syndrome patients revealed that they experience significant impacts on their own physical and mental health due to their wives' condition (Steiner et al., 2010). Qualitative research has also shed light on how chronic fatigue affects both individuals diagnosed with the condition and their partners, highlighting the joint journey of reconciling with loss, grief, and implementing adaptations (Swinton, 2022).

These findings underscore the importance of adopting a systemic view that considers the couple, rather than just the individual, in the management of FSD. For

instance, an intervention targeting both partners to improve the well-being of couples dealing with chronic pain and relationship distress yielded promising results. Both quantitative and qualitative data indicated that chronic pain contributes to psychological and relationship distress in individuals as well as their partners. Participants reported reductions in depressive symptoms and improvements in relationship satisfaction and partner responsiveness, with individuals experiencing pain also reporting reductions in pain interference. More importantly, couples expressed a preference for couple therapy over individual therapy for addressing pain and relationship distress (Tankha et al., 2020).

One potential implication of these studies is that romantic relationships not only serve as a support system for patients but also underscore the significant role of partners and the interdependency within the couple in influencing symptoms. While understanding the relationship context is valuable for comprehending FSDs, there remains a gap in empirical research, both quantitative and qualitative, investigating FSD patients and their romantic partners collectively. Exploring conjoint attachment and mentalizing within couples, along with examining relationship dynamics, could provide a more comprehensive understanding of FSD.

5.1.4 Culture

The present study was conducted in Taiwan with Taiwanese couples, and consistent with the systemic approach central to this study, cultural factors may influence the couple's capacities to mentalize within their relationship. Mentalizing

tendencies vary across cultures, with individualistic cultures prioritizing self over others, while collectivistic cultures prioritize others over self (Aival-Naveh et al., 2019; Power et al., 2010). Linguistic factors, value preferences, and parenting characteristics may contribute to these differences (Aival-Naveh et al., 2019; Fukunishi et al., 1997; Le et al., 2002). In the context of romantic relationships, how individuals perceive, express, and respond to their own and their partner's mental states may also be influenced by the broader social context. A study on cross-cultural 'mentalizing values'—the degree to which considering internal mental states is valued—suggests that cultural variations in mentalizing values are closely linked to concepts emphasizing people's inclination or capacity to contemplate emotions, such as emotional awareness (Aival-Naveh et al., 2022). Mentalizing capacity also plays an important role in interpersonal emotion regulation, which utilizes social cues to facilitate the regulation of emotional states (Liddell and Williams, 2019). This connection between mentalizing and emotion regulation may be particularly relevant in cultures where interpersonal harmony and emotional control are highly valued, such as East Asian cultures. A previous study has highlighted that in these cultures, neutral expression and masking disappointment are seen as appropriate ways to minimize disturbances for others (Ip et al., 2021).

5.1.5 Research Design

The study employed Interpretative Phenomenological Analysis (IPA) as its research method due to its phenomenological focus that addresses a hermeneutic of empathy. IPA is a qualitative research approach that aims to explore individuals' lived

experiences and the meanings they attribute to them (Smith and Nizza, 2022). It is well-suited for investigating how people make sense of significant life events or challenges, such as coping with chronic illness. IPA seeks to explore the links between what people say and the way they think about their own experiences (Dickson et al., 2008). This method aligns with the mentalizing approach of the study, focusing on the couple's interpretations of their lived experiences and the meanings they attribute to these experiences, especially in the context of symptoms and relationship dynamics. Understanding personal meanings associated with lived experiences is crucial in IPA, as well as how these experiences relate to individuals' views of their world and relationships (Smith and Nizza, 2022).

Moreover, IPA's concern with the links between talk, thought, and/or behaviour means that there is a focus on the 'wholeness' of the individuals' experiences, as opposed to focusing on the separate parts of the phenomenon (Dickson et al., 2008). This aspect also aligns with the contextual, systemic perspective of the present study, as both health psychology and IPA research share the belief that individuals are both embodied and embedded within a broader social world (Dickson et al., 2008).

The couple interview was identified as the optimal choice for this study. In keeping with the systemic perspective of this thesis, this approach entails interviewing two participants simultaneously, termed a dyadic or joint interview, where both individuals respond to open-ended research inquiries. This method fosters dynamic interaction between participants and can be conducted with any pair of individuals

knowledgeable about the research topic, including couples (Morgan, 2012; Morgan et al., 2013). The couple interview stands out as a valuable qualitative data collection method in health psychology research, especially within frameworks such as IPA (Mavhandu-Mudzusi, 2018).The interviews were conducted online, allowing couples to be interviewed in the safety and comfort of their homes, which can be more relaxing for participants and better reflect their usual relationship context. This setting also enabled the researcher to closely observe facial expressions and body language, providing richer data.

This choice arises from the desire to explore both individual and conjoint experiences within the context of romantic relationships. The couple interview allows the researcher to explore each individual's interpretation of their experiences in the relationship, how each person interprets the other partner's interpretation, and how both partners interpret their relationship (Mavhandu-Mudzusi, 2018). Furthermore, a third layer of interpretation involves the researcher making sense of how each partner interprets the interpretation of the other partner, contributing to a comprehensive understanding of the couple's experience in the relationship (Mavhandu-Mudzusi, 2018).

5.2 Methods

5.2.1 Participants and Procedures

Nine Taiwanese couples were recruited for this study, with at least one partner in each couple exhibiting elevated FSD symptoms, indicated by a PHQ-15 score

higher than 4 (Huang et al., 2023). Of these, six couples were sourced from the previous survey study. The initial outreach involved an advertisement sent to an online recruiting service provider, directing potential participants to a survey where they self-identified by clicking the link. Following screening questions, participants received an information sheet and consent form. At the survey's conclusion, respondents were invited to a one-hour couple interview, and those interested provided their contact information for scheduling. In total, ten couples expressed interest and were contacted via email, where they were informed about the research, interview process, potential risks, and benefits. Couples who met the inclusion criteria and had already undergone screening for symptom severity in the previous survey study were selected, with at least one partner having a PHQ-15 score higher than 4 (Huang et al., 2023). Informed consent was obtained from both partners. Four couples decided not to participate, resulting in six couples participating in interviews. The remaining three couples were recruited through personal contacts, learning of the research from the researcher's friends and colleagues. The same inclusion criteria were applied to these three couples. They received the same information, and consent was obtained.

Thematic saturation was determined through ongoing analysis and discussion among the research team. Interviews were conducted until no new themes emerged, and the identified themes were judged to be sufficiently well-developed and nuanced.

Ethical approval was granted by University College London. Interviews occurred between April and May 2023. Participating couples were informed of their right to halt

the interview at any time or withdraw their data within two weeks. Compensation of forty pounds per couple was provided for participation.

5.2.2 Data Collection

Couple interviews were conducted online via MS Teams, with both the researcher and participants situated together in their respective homes, each in a private room. An interview guide with non-directive, open-ended questions was prepared prior to the interviews to explore attachment, mentalizing, interactions and symptoms within the couple. During the interviews, the couple sat side-by-side, facing the computer camera and screen. The sessions, lasting 50 to 70 minutes, focused on non-directive, open-ended questions such as 'Tell me about your experience of (specific symptom),' 'What aspects of your relationship has the symptom impacted on most?' 'In what ways?' and 'How does your partner react to your condition?' The interview guide, although not strictly followed, allowed for a reflective and probing approach (e.g., 'You said there that... What did you mean by that?', 'How did you feel about that?'). The researcher also briefly summarized after each statement to ensure understanding and provided the couple with the opportunity to clarify or add more information. Spontaneous interaction and reflection between the couple were encouraged, such as 'How are you feeling after hearing what your partner said?' As the interviews approached their conclusion, the couple was invited to express their feelings about the process and whether there was anything they needed to add or clarify at that moment, offering them an opportunity to share their story in their own

words, in alignment with the central tenets of IPA.

5.2.3 Data Analysis

The data were analysed following the standard process of conducting an IPA analysis (Smith and Nizza, 2022). Video recordings were transcribed using voice recognition software and manually corrected. Participant quotes were transcribed verbatim and checked for accuracy. Care was taken to maintain the context of the quotes when extracting them from the larger transcript. Transcripts were then analysed manually to identify recurrent themes using the IPA method (Smith and Nizza, 2022). Following the analysis and identification of themes in individual interviews, the recurrent themes tables for each couple were created. Numerous themes emerged within the transcripts of individual couples, and those appearing in at least half of the other couples' transcripts were categorized as recurrent. This approach aimed to highlight an individualized viewpoint while also incorporating broader descriptions found throughout the transcripts (Dickson et al., 2008). It is important to note that this selection process involved the researcher's interpretation. Capturing the meaning of the phenomenon for the couples was central, necessitating interpretative engagement with the text (Smith, 1996).

Experiential themes at the group level were reviewed by scrutinizing personal experiential theme tables for each couple. This process included identifying connections and intuitively assessing the tables holistically. The end result was the creation of a table delineating a series of group experiential themes, supported by

quotations from couples to substantiate the analysis. The selected quotations presented here were chosen based on their ability to capture the core of recurrent themes or provide the most significant expressions of those themes. The researcher conducted the analysis and discussed the process with the thesis committee members.

To ensure the trustworthiness and credibility of the qualitative data analysis, the researcher strictly adhered to the principles and steps of the IPA approach. This involved engaging in reflexivity throughout the research process, maintaining a clear audit trail of the analysis, and seeking guidance from experienced IPA researchers. By following a rigorous and systematic approach to data analysis, the researcher aimed to capture the essence of the participants' experiences while maintaining the integrity and authenticity of their narratives.

5.3 Results

As demonstrated in Table 14, four major, recurrent, and interrelated themes were identified: 'Mentalizing and its impact on the couple relationship,' 'Influence of attachment styles on mentalizing and emotional expression,' 'Symptom-focused mentalizing,' and 'Power struggles in the relationship.' Each theme is further elaborated upon with sub-themes. These themes are presented in a sequence that mirrors the inherent complexity and intertwining of the couple’s experiences.

Table 14: Group Experiential Themes and Sub-themes

Group experimental theme	Sub-theme
Mentalizing and its impacts on the couple relationship	• Positive Effects of Successful Mentalizing • Negative Effects of Successful Mentalizing • Prototypical mentalizing cycles within the couples
Influence of Attachment Styles on Mentalizing and Emotional Expression	• Attachment Styles' Influence on Emotional Expression • Attachment Styles' Influence on Mentalizing of Emotional Expression • Mentalizing and Communication
Symptom-focused mentalizing	• Divergent Perspectives on Symptomatic Interpretation • Partner's mentalizing about symptoms • Emotional dynamics surrounding symptoms • Mentazling of Symptom Influence on Couple Dynamics
Power Struggles in the Relationship	• Leadership dynamics • Dynamic Power Shifts • Attention Competition

Group Experiential Theme 1: Mentalizing and Its Impact on the Couple Relationship

This theme revolves around the couple's mentalizing capacity at both individual and dyadic levels and explores whether and how the mentalizing processes of each of the partners influence the dynamics of their relationship. A separate discussion will

address the couple's mentalizing of symptoms (i.e., symptom-focused mentalizing) in a later section, as it emerged as a distinct theme. Similar to the quantitative study in the last chapter, in each couple, the individual reporting elevated levels of FSD symptoms will be referred to as index person (IN), and their partner will be referred to as the partner (PA).

1a. Positive Effects of Successful Mentalizing

Mentalizing emerges as a pivotal element in interviews, involving the perception and interpretation of partner's behaviours as reflecting through intentional mental states such as beliefs, wishes, feelings, and thoughts (Bateman and Fonagy, 2016). Mentalizing plays a crucial role in how the couple comprehends both their partner and the situation, thus making successful or failed mentalizing a key factor that often influences the couple's relationship dynamic. Balanced mentalizing requires the capacity to hold one's own mind in mind as well as the minds of others (Bateman and Fonagy, 2016). This is evident in the couple's statement that being understood and having the ability to understand fosters intimacy, bringing their minds together. For instance, couples' express appreciation for their partners' sharing deep feelings, finding validation in their partners' trust and openness. The joy of engaging in conversations that strengthen their attachment stems from a deep understanding of each other. Furthermore, a shared perspective or feelings towards certain things immediately fosters a sense of closeness and togetherness.

The following excerpts demonstrate the couple's appreciation for their partner's

understanding. As expressed by 131 index person (IN), ‘I like him for his thoughtfulness and understanding me’ (131 IN). Feeling valued when a partner tries to understand, or at least tries to do so, is evident, as described by 184 IN: ‘He is compassionate about my needs’ (184 IN). Successful mentalizing also seems to have a reciprocal positive effect, creating virtuous circles between the partners. When the couple realizes they share thoughts or understanding, it enhances intimacy. According to 501 IN, ‘It feels like we 'hi-fived'—his perception was quite consistent with mine’ (501 IN). Understanding becomes instrumental in resolving differences, as emphasized by 502 PA: ‘We can reconcile from the argument because we now understand each other better’ (502 PA). Therefore, engaging in conversations that facilitate mentalizing serves to bring the couple closer, as articulated by 102 PA: ‘Talking brings us closer’ (102 PA).

Partner's self-disclosure appears to play a crucial role in making individuals feel self-worthy and validated, as highlighted by statements from 131 PA, 501 PA, and 100 IN. For instance, 131 PA noted, ‘Hearing her express her feelings made me more comfortable and improved my mood’ (131 PA). The significance of deep understanding is cherished, with couples often feeling content that they comprehend each other well. Instances of surprise arise when they discover otherwise. 133 PA attributes the cause of their arguments to misunderstanding, which seems improbable given their long history together. As expressed by 133 PA, ‘The very idea of misunderstanding is itself a misunderstanding’ (133 PA). Similar sentiments are echoed by 232 IN, who believes that, given their profound knowledge of each other,

disagreements should be rare: ‘We know each other so well, so the disagreement is surprising’ (232 IN).

1b. Negative Effects of Failures in Mentalizing

While successful mentalizing fosters mutual understanding, its failure can disrupt the dynamics between partners. There is limited or no evidence to suggest that individuals with FSDs experience difficulties mentalizing others (Riem et al., 2018). However, in our interviews, the index persons appear to talk more about frustration in understanding their partners, grappling with an inability to understand, and feeling upset about not being understood. The results may indicate that they encounter challenges in mentalizing others sometimes, at least in the incidents they mentioned. The difficulty emerges in context-specific mentalizing under those specific situations. This difficulty in mentalizing also aligns with research indicating that a supportive relationship facilitates mentalizing, while a troubled one inhibits it (Fonagy and Luyten, 2009). The index person finds that they can only properly mentalize about themselves and the situation when they feel safe and settled in the interaction. Another significant theme is that the limitation of mentalizing ability leads to arguments and challenges in the relationship, with both partners struggling to comprehend the other. This condition may lead to changes in the couple's power dynamics, which will be further elaborated on in the 'Power Struggling' theme later.

Despite decades together, some index persons, like 212 IN and 133 IN, express difficulty understanding their partners, leading to frustration. ‘I do not know him (the

partner) that well, only around 50%' (212 IN). Feelings of guilt and self-doubt also surface. For instance, 133 IN states, 'I sometimes feel frustrated and even guilty. I wonder why I cannot sense or understand him. Am I not sensitive enough? Have I not paid attention to his feelings? Sometimes, I wonder if there are aspects I've neglected' (133 IN). There's a sense that something is missing in understanding their partner of twenty or more years. Simultaneously, frustration arises as the index person feels misunderstood by the partner, causing sadness and anger for 131 IN and 184 IN. 'I was sad being misunderstood by him' (131 IN). 'I was upset he did not see my trying' (184 IN).

The index person's inability to understand or be understood may be attributed to the nature of the relationship or, at least, the interaction with their partner at that moment. A positive and encouraging relationship enhances an individual's ability to mentalize, whereas a problematic one obstructs this process (Ballespi et al., 2019). The index person notices that they sometimes become 'frozen' if the situation feels unsafe. For example, 102 IN, haunted by childhood memories of physical abuse, avoids arguments with her partner by keeping everything to herself. 'When he raised his voice, I got scared he would hurt me like my parents did' (102 IN). Her partner, perplexed, struggles to understand why she considers him violent. During the interview, they attempt to discuss this discrepancy. 'I just feel like I would not treat you this way, so why would you act like this? It sounds like I might get angry and lose control with you, and I feel that is not something I would do'(102 PA). 102 IN explained to him that it's not that simple: 'When you say to me, "We've been together for so long,

we're a family, don't think like this," it's still tricky because, after all, this has been an accumulated experience since childhood. It has become a thought habit, and I would start wondering, "Is anger coming again? Am I going to say something wrong again? Are you going to get angry with me again?" It's like when I was little, thinking, "Am I going to get beaten again?"'(102 IN). Only when they feel grounded and safe can the index person begin to understand what is happening internally and within the context, allowing them to react sensibly. As 184 IN explains, 'After feeling safer, I can look at it more rationally and see what I can do'(184 IN).

Failed mentalizing can spark arguments between couples. When questioned about recent quarrels, couples struggled to recall the actual cause but are upset because their significant other did not understand them. In contrast to the intimacy experienced during synchronized mentalizing, the index person and the partner are surprised when their attachment figure has different feelings and thoughts, feeling like they have suddenly turned into strangers. This disparity in mentalizing brings a sense of distance and frustration between the two.

133 IN expressed puzzlement about what was happening in her partner's head despite their long history together. 'I didn't do anything. Why was he mad?' (133 IN). Her partner, on the other hand, finds it challenging to explain, attributing her anger to a lack of comprehension. 'She wouldn't be mad if she understood' (133 PA). The trigger for their fights seems trivial, but the perceived limitation in each other's mentalizing is hard for them to accept. The frustration arises from the expectation that,

as a couple, they should be able to read each other's minds or have identical ideas all the time. This may be why the frustration is caused by the failed mentalizing in self and others, not the incident, as described by 184 PA: ‘I don't understand why she was so obsessed about that’ (184 PA).

The limitation of mentalizing is not exclusive to the index person but also applies to the partner. Both individuals occasionally struggle to comprehend each other and fail to understand their partner's lack of understanding. In relationships spanning many years, the longer they have been together, the more disappointing it is when their partner cannot be on the same page as them. ‘You're wondering why she still doesn't understand after all this time?’ (133 PA). This failure in mentalizing the other half creates a sense of disconnection, as expressed by 184 IN: ‘Sometimes he becomes absorbed in his own thoughts and is unable to listen, like there was a gap between us’ (184 IN). In line with the idea that successful mentalizing sparks connection, during these moments of offline mentalizing, the couple feels they don't really know or are close to their attachment figure, even though they have shared a life together for a long time.

1c. Prototypical mentalizing cycles within the couple

The interviews explore mentalizing at the couple level, emphasizing the interdependency between the couple's mentalizing processes within the relationship, rather than solely focusing on their individual mentalizing. Patients with various FSDs exhibit similar emotional regulation difficulties. Issues like reduced emotional

awareness, limited reflective capacity, rigid emotional attention, or abnormal autonomic activity have been found across different diagnoses and FSD types (Waller and Scheidt, 2006). Interestingly, all couples in the interviews demonstrated instances of effective emotional coregulation to an extent. With possible sampling bias in mind, this could be attributed to the stability of their long-term relationships, allowing them to develop their methods of emotional coregulation. When discussing reliance on their partner during challenging moments, couples highlighted how their attachment figure helped regulate emotional distress. 184 PA shared how his wife supported him in facing setbacks, stating, 'She can pull me out of those negative emotions and setbacks I faced in those challenging situations' (184 PA). Similarly, 133 IN found comfort in her husband's reaction to her complaints, expressing, 'He just goes along with me, listens, and offers occasional advice when needed. I do not particularly like people who join in and vent with me when I am upset. My husband's approach is just right. Gradually, my emotions start to recover because of these interactions' (133 IN). In these statements, the partner seems to effectively mentalize the needs of the index person to provide emotional regulation.

However, there were instances when couples were able to mentalize their partner but avoided openly discussing feelings. In a way, both individuals silently agreed to this arrangement. For 501 IN, this was a strategy to maintain peace in the relationship, stating, 'I think we can understand each other's feelings, but the question is whether we should openly address them or intervene in the situation. Sometimes, I feel that completely laying everything out on the table may not be the best approach'

(501 IN). Some couples found it easier to focus only on the 'facts' and leave aside the accompanying emotions. During arguments, 232 IN attempted to convince his partner that dealing with her feelings of hurt wasn't the immediate concern, mentioning, ‘I wanted to convince her that emotions were not necessary for this matter’ (232 IN).

In addition to the couple dynamic, cultural factors might also influence this. emotional self-control seems to be considered a thoughtful gesture (Ip et al., 2021; Liddell and Williams, 2019), as expressed by 502 IN: ‘In most cases, I can handle my own emotions’ (502 IN). Not being emotional, even to romantic partners, seems to be considered by the index person and the partner as an act of being responsible or even considerate. However, this could also result from individuals suppressing or 'silencing' their feelings when they find themselves in conflicted relationships aimed at maintaining relational harmony (Jack, 1991; Jack and Dill, 1992; Whiffen et al., 2016). In the context of FSD, self-silencing may be particularly significant since it is thought to lead to self-alienation; people who do not express their feelings in intimate relationships lose touch with what those feelings are (Whiffen et al., 2016). The possible association between FSDs and self-silencing in relationship conflict is further discussed in the conclusion section.

Another significant theme that surfaced in the interviews is the reciprocal impact of the couple's mentalizing. In the preceding section, the index person expressed frustration at their inability to comprehend their partner or not feeling understood by them. Upon closer examination, this challenge often stems from the interaction or

interdependency between the index person's and the partner's mentalizing abilities. For 131 IN, she provides insight into why she feels being misunderstood by her husband: ‘I think the part he does not understand may also be due to my lack of self-awareness. I cannot describe or express adequately yet’ (131 IN). This ‘lack of self-awareness’ may be linked to the extended time the index person requires for mentalizing, as discussed in the previous section. The prolonged processing time for the index person's internal reflections may lead to misinterpretation by the partner, incorrectly perceived as ignorance or annoyance. The partner's misunderstanding could also contribute to the index person's frustration, as described by 184 IN: ‘I was trying to process my emotions at that time. Some people can do it immediately, but I could not do it as quickly, so I might have been a bit stiff for a few minutes. But I do not think he realized I was just working through my feelings, and he thought I was upset’ (184 IN).

In this context, the mentalizing abilities of the couple appear interconnected. The proficiency of one person, whether the index person or the partner, in mentalizing significantly influences the other's mentalizing. The significant impact of a partner's mentalizing once again emphasizes the dyadic and reciprocal nature of mentalizing (Luyten et al., 2012a). Similar to the mutually influential nature of mentalizing abilities, the index person's challenges in mentalizing their partner could also be connected to the partner's attachment strategy and communication style. As highlighted by 212 IN, ‘Every time I ask him, "What is bothering you? Why do you seem upset?" he does not tell me.’ The perplexity felt by this index person is primarily due to a lack of information

or response from her partner. The relationship between attachment style, mentalizing, and communication will be further explored in the subsequent group theme 2.

Group Experiential Theme 2: Influence of Attachment Styles on Mentalizing and Emotional Expression

In this section, we delve into understanding how each individual's attachment styles, particularly insecure ones, contribute to distinct emotional expression behaviours, creating a dynamic interplay between the couple's mentalizing and emotional expression.

2a. Attachment Styles' Influence on Emotional Expression

Despite the longevity of their relationships, couples still struggle to comprehend their partner's behaviours, particularly in moments of affection or proximity seeking. Individual differences for attachment persist, and these disparities in emotional expression endure over time. The challenge for both the index person and their partner lies in decoding each other's feelings and responding appropriately to their behaviours while meeting the emotional needs of both.

For example, in the case of couple 212, the index person seeks comforting words or attachment behaviours during distress, expressing frustration: ‘Sometimes, I do wish to hear some comforting words, but he is just too rational, so he does not offer much consolation’ (212 IN). Conversely, the partner, adopting a more rational approach, views intimate behaviours differently: ‘I do not feel too much about intimacy behaviours. I felt like, "OK, she seems to want a hug or something. So maybe

a little hug, a pat, then she would be happy" (212 PA). He exhibits avoidance in expressing feelings through intimate behaviours or, alternatively, a lack of need for them.

For couple 212, in the partner's avoidant strategy in reflected in the way he pragmatically navigates emotional expressions. While the index person acknowledges his rational nature, she experiences disappointment when her emotional needs go unmet. These dynamic may underscore the nuanced interplay of attachment styles and emotional expression within the couple's relationship. Interestingly, the partner can cognitively mentalize what his wife wants but encounters difficulty in empathizing with her emotional needs, showcasing the influence of the couple's attachment style on understanding, empathizing and expressing emotions, ultimately shaping their interpersonal dynamics.

Variations in emotional expression, arising from distinct attachment styles, can lead individuals to perceive rejection when attempting thoughtful gestures for their loved ones. A significant factor contributing to this misinterpretation is that the partner may not view such actions as expressions of love, based on their unique attachment style. This phenomenon is not limited to either the index person or the partner. In essence, the adage 'one person's meat is another person's poison' encapsulates the impact of differing attachment styles in these situations.

During the interview, Couple 212 engaged in a minor argument concerning the appreciation of simply 'being there'. The partner, troubled by an old injury, occasionally

experiences foot pain and seeks solitary moments for relief. Conversely, the index person, feeling rejected, believes that being present during times of pain is a way of demonstrating affection. The partner explained, ‘She does not need to be with me because she cannot do much when I am in pain, so I hope she tries her best not to add any more burdens to me. It is better not to talk or ask me to do anything. I just want to take a break’ (212 PA). After hearing this, the index person expressed, ‘‘I feel down knowing when he is in pain, having me beside him does not make him more comfortable’ (212 IN).

In another scenario involving Couple 502, the partner sought to alleviate the index person's pain through massage, yet the effort was met with frustration. The partner, interpreting the index person's reaction as rejection of something beneficial, remarked, ‘I tried to alleviate his discomfort by massages. However, he feels this is unpleasant and screams. I find him quite impatient and annoying’ (502 PA). In response, the index person who prefers not to bother anyone when in pain, conveyed, ‘Actually, you do not need to take care of me’ (502 IN). The index person's impatience stemmed from physical discomfort and the pressure to respond as expected to the 'nice gesture,' rather than a lack of understanding, exacerbating the strain on him, especially when he was already drained and in pain.

In both scenarios, the challenge lies not in the ability to comprehend the partner's efforts but rather in the differing interpretations of what constitutes a caring gesture. While these individuals understand that their partners are attempting to do something

kind, they struggle to comprehend why these actions are considered thoughtful and helpful, reflecting their individual attachment styles.

Couples experiencing FSDs often exhibit characteristics such as avoidance, rigidity, enmeshment, and interpersonal polarization around these factors (Sayre, 2002). Among the interviewed couples, a prevailing theme emerged – many described themselves as opposites in 'personality'. A respondent reflected on this dichotomy, stating, 'He was very attentive; I wondered if I was being too careless' (184IN). These differences in relationship role also extended to their preferred modes of interaction with their partners.

Attachment styles wield significant influence over an individual's approach to conflict and conflict resolution. Couple 232 exemplifies this by acknowledging their divergent responses during arguments. The index person expressed a desire for immediate resolution, adopting a persistent and confrontational attitude, stating, 'When we argued, I wanted a resolution to this matter immediately, so I would keep asking questions persistently and expressed my thoughts with a very pointed and confrontational attitude' (232IN). Conversely, his partner found this anxious reaction overwhelming, opting for a more avoidant strategy. She shared, 'It is too stressful, so I tend to bottle things up and avoid confronting him directly because of his rapid-fire way of speaking. His non-stop talking makes it hard for me to express my emotions and reason now. So, I would put it aside for later and ignore him' (232PA). Her avoidance stemmed either from her own attachment strategies or as a response to

witnessing the partner's anxious attachment behaviours.

This section has probed into the impact of both partners' attachment styles on their emotional expressions and those of their counterparts. Subsequent sections will delve into the facets of attachment styles, exploring their ramifications on mentalizing and emotional expression within couples.

2b. Attachment Styles' Influence on Mentalizing of Emotional Expression

Attachment styles not only influence individuals' preferences in expressing emotions but also impact how they mentalize their partner's emotional expression. The disparity in mentalizing between couples is often recognized by them after years together.

For instance, consider 102 PA, who displays more attachment anxiety in his statements and during the interview. He has frequently found himself perplexed by his partner's avoidance. Unaware of 'attachment styles,' he attributes their interaction tendencies to personality traits. Reflecting on their relationship, 102 PA states, 'There are some differences in our personalities. So, our reactions to a situation were entirely different. It's because of these differences that sometimes she can't understand why I act the way I do, and I can't understand why she acts the way she does' (102 PA). After years together, the couple realized there were challenging differences in their ways of mentalizing to navigate. 'The way I perceive things might be one of the aspects she has difficulty empathizing with' (133 PA).

However, recognizing differences does not necessarily prevent conflicts between

couples. Attachment styles create distinct expectations for emotional expressions from partners. When these expectations are not met, couples may still feel disappointed or even angry despite being aware of the gap between them. After learning that his partner cherishes the hugs between them, 131 PA articulates, ‘A hug is nice, but most of the time, I want her to listen to me’ (131 PA). Similarly, upon discovering his wife's fear of emotion-charged conversation, 102 PA responds, ‘I can’t understand her fear of this type of communication’ (102 PA), interpreting her avoidance as a lack of trust in him or their relationship. However, his partner chose to do so because of being thoughtful: ‘I don't want the person I love to bear the burden of my unhealthy state of mind’ (102 IN).

Disappointments and anger resulting from a partner’s non-mentalizing often lead to conflicts between couples. When his wife seeks attention or reassurance, 502 IN becomes impatient because he does not interpret the behaviours as her way of attaching but rather as a burden. He states, ‘She complained about me being cold. In fact, I was already very tired but need to coax her and explain myself to her, making me anxious and upset’ (502 IN). Similarly, 232 PA expresses frustration and upset about her husband's approach to calming her down: ‘I was crying, but instead of comforting me, he kept trying to convince me not to cry’ (232 PA).

A significant theme observed in the interviews, consistent with previous studies, is the interdependency between couples' mentalizing. One person's mentalizing, influenced by attachment style, leads to emotional expression. Subsequently, the

other person observes these emotional expressions and mentalizes the internal state behind them. While this interdependency creates a virtuous circle, at other times, a vicious circle can also form. For instance, in interview, the participant 212 IN expresses frustration at being unable to understand her husband's thoughts and feelings due to his reserved nature: 'He is a very reserved person, so often, I already sense that something is going on, but when I ask the first and second time, he won't say anything' (212 IN). The lack of openness from her partner hinders her ability to mentalize effectively.

Another instance involves 232 PA, who expresses frustration about her husband fearing she might consider ending the relationship during arguments, prompting him to seek reassurance earnestly. Misinterpreting her avoidance as rejection, he triggers an anxiety-driven cycle that obstructs communication. She explains, ‘The more he leaned in that direction, the more agitated I became because that is completely not what I would think, and he just kept heading that way, you know? Growing more agitated, I became less willing to discuss it, creating a vicious cycle’ (232 PA).

In a couple's relationship, each person's mentalizing, influenced by their attachment styles, determines how they express emotions and interpret their partner's emotional behaviours. These differences, occasionally attributed to personality disparities by the couples, can lead to frustrations and disappointments, causing conflicts between the two. In this context, an individual's mentalizing, influenced by both the couple's attachment style and mentalizing ability, may manifest internally or

prompt a responsive reaction. The subsequent section will delve into how couples communicate about their mentalizing.

2c. Mentalizing and Communication

In the previous section, couples displayed variations in their mentalizing related to their attachment styles. Additionally, how couples communicate about what they have 'gathered' from their partner, beyond the content they mentalize, is crucial in understanding couple dynamics. In the interviews, couples demonstrate distinct patterns of response.

Both the index person and the partner sometimes know what is going on with their partner but choose not to respond to their emotional needs for various reasons. For 502 IN, frustration arose when the partner displayed hyperactive attachment at an inopportune time, prompting him to ignore the partner's need for reassurance: 'If you want my attention, you should wait until I am free, but I was busy with kids then' (502 IN). As for 100 IN, she avoids discussing her partner's financial worries, as she finds them too burdensome- 'I was afraid I couldn't handle it when he wanted to talk about our financial difficulties. He knew my fear and chose not to say anything till he couldn't take it anymore' (100 IN). Likewise, 501 IN refrains from discussing her partner's work troubles while knowing he is going through a tough time - 'I can probably imagine most of his anxiety. However, I feel that the final decision is still up to him. I'll be observing to see if there is anything I find concerning and whether I should remind him based on the situation' (501 IN), thus creating distance from potential burdens. In contrast, 232

PA shuts down communication due to dislike for her partner's anxious attachment behaviours in an argument: 'At that moment, I didn't want to talk. With that attitude, who wanted to talk to you!' (232 PA).

Both index persons and partners sometimes encounter difficulties responding appropriately, revealing a discrepancy between mentalizing and their actual responses. This is exemplified by 184 PA's statement- 'I feel like I understand her very well, but she doesn't feel that. Perhaps because of my way of expression' (184 PA). Complaints from 131 PA about his partner's attention being diverted during important conversations highlight the disconnect: 'When I was saying something important, she asked about a small detail. She was just being stuck on that detail, focusing on it. At that moment, I felt quite upset' (131 PA).

In the interviews, index persons showed more concern about saying the right things. For 133 IN, knowing her partner's dissatisfaction with her direct communication prompts conscious avoidance- 'I tend to be straightforward, and sometimes in social situations, I don't consider my husband's feelings as much as I should' (133 IN). Conversely, 102 IN, frustrated by expectations to be a mind reader, questions her partner, 'What is the answer you're really looking for?' (102 IN). The interdependency of the couple's communication strategy also plays a crucial role, as seen in 133 IN's frustration with her partner's lack of openness: 'I also felt a bit unjustified. I genuinely didn't understand why you don't tell me, and instead, you blamed me for not knowing' (133 IN), echoing 232 IN's sentiment: 'You need to tell me; you need to give me an

answer' (232 IN). Another noteworthy pattern observed among the index persons, exemplified by respondents like 133 IN and 184 IN, is the expressed need for more time before responding. This tendency may inadvertently cause their partners to feel ignored or upset, as articulated by 133 IN: 'I need to deal with my own feelings first, so sometimes I might fail to attend to others' emotions' (133 IN). Similarly, 184 IN clarifies that their reaction is not rooted in anger but rather in the necessity for internal processing before responding to their partners. 'My reaction was not because of being mad. It was because I need some time to process and regulate my bad mood' (184 IN).'

Couples' communication dynamics highlight the intricate interplay between individual's attachment style and mentalizing. Couples grapple with a delicate balance, aiming to express their understanding of their partner's emotional needs while navigating instances of withheld responses. Challenges arise as hyperactive or deactivated attachment strategies influence communication, resulting in disparities between perceived understanding and actual responsiveness. Both index persons and partners encounter difficulties in effective communication at times, contributing to tension and misunderstandings. Notably, index persons seem to express heightened concerns about their way of responding, potentially influenced by symptoms and the relationship dynamics. The subsequent sections will discuss couples' symptom-focused mentalizing and its impact.

Group Experiential Theme 3: Symptom-focused mentalizing

In addition to attachment and mentalizing, this study also explores Functional Somatic Disorders within the context of romantic relationships, investigating how couples navigate these symptoms. The couple's symptom-focused mentalizing, seeking to unravel their perceptions, feelings, and emotional dynamics surrounding symptoms, and the impact of FSDs on the relationship, emerged as separate themes.

3a. Divergent Perspectives on Symptomatic Interpretation

The central theme revolves around the divergent interpretations and attributions that index persons and their partners assign to the experienced symptoms. When asked about the cause of their symptoms, perspectives differ, ranging from physical attributions such as aging to linking symptoms to the pressures of work and parenting, or even perceiving them as a message from God. This diversity extends to their approaches in mitigating the symptoms. Index persons themselves undergo fluctuating sentiments about their symptoms, oscillating between adaptation and concerns about potential severe dysfunction in the future. The partner, upon observing the oscillation in the index person, points out the inconsistency and provides suggestions. However, these opinions are often ignored by the index person for various reasons, ranging from disagreement, deeper relationship issues, and disrupted to epistemic trust.

In the case of couple 502, both grappling with FSDs, the partner perceives an overwhelming burden exceeding their physical and mental capacities. 'We are

experiencing a level of stress that goes beyond what our bodies can bear. I genuinely feel that I've reached a point where it's beyond what I can handle, including work, household chores, and even intimate relationships (502 PA).' Conversely, the index person interprets these signs as manifestations of aging. 'I just feel like I'm getting older. My legs feel like they've deteriorated. My physical stamina isn't as good as it used to be (502 IN).' These distinct attributions lead to disparate approaches in addressing the issue. Participant 501IN finds spiritual meaning in her symptoms, considering them a divine reminder to prioritize self-care. 'I've quickly taken this as a warning from the higher powers, telling me to slow down and take better care of myself (501IN).' Meanwhile, her partner attributes the symptoms to a hectic work schedule, often suggesting schedule adjustments. 'She was busy all the time when she got projects. During those periods, her symptoms tended to be more severe and occur more frequently' (501PA). However, these suggestions were usually rejected by 501IN because she needs to keep the income from work, partly due to the unstable work situation of her partner.

Another divergence lies in how index persons perceive their reactions compared to their partners' observations. Index persons may downplay symptoms, asserting their lives have not changed much, while partners may contend that the symptoms still affect them. For instance, 184 IN expresses acceptance: 'My mood is okay. I don't really feel like it would bother me too much; I'm just coexisting with it. Perhaps I'm focusing on other things in my life, and I feel its impact on me is minimal (184 IN).' However, her partner notes the challenges during more severe episodes, stating, 'She

concerns a lot about some of her degenerative conditions... When it gets more severe, she becomes distraught and extremely frustrated, and I must pull her out of the negative emotions. So, it can be more troublesome during those times (184 PA)'.

The variance between the partner's observations and the index person's self-statements may come from the index person's shifting attitudes. Their perceptions of the symptom fluctuate over time. On ordinary days, they feel they have adapted to it, viewing the symptom as troublesome but bearable. This sentiment is echoed by participants such as 184 IN and 501 IN. 184 IN articulates, 'My personality is such that once I decide to live with something, I will truly commit to it. Once I have accepted my symptoms, they became a part of my life, a part of me, and I don't tend to change my daily routines or habits too much because of them' (184 IN). Similarly, 501 IN reflects on her acceptance of tinnitus, stating, 'I have had tinnitus for many years, and I accepted it quite quickly from the beginning' (501 IN). Conversely, on challenging days, the index person harbours concern about the potential deterioration of symptoms, foreseeing potential dysfunction in various aspects of their lives. 184 IN, committed to living with the symptom in previous statement, worries that its exacerbation might keep her from engaging in activities she enjoys, fundamentally altering her identity: 'There are many things I want to do. So, when my legs did not cooperate, I would have a sense of helplessness and a lack of hope in life' (184 IN). Similar apprehensions about the future progression of symptoms are expressed by 131 IN: 'If there is a possibility of having fertility problems because of my lower back pain, it could be quite serious for my or our future' (131 IN).

3b. Partner's Mentalizing About Symptoms

The narratives unfold around whether the partner effectively comprehends the experience of the symptoms. The index person wants to ensure that their partner has a nuanced understanding of what is occurring within their bodies. At times, couples share similar symptoms, fostering a sense of connection, as expressed by couple 131, ‘Only he knows what I was going through since he has back pain too’ (131 IN). Alternatively, the index person attempts to facilitate their partner's mentalizing by vividly describing their sensations, as exemplified by 100 IN: ‘My deep, bone-deep fatigue, or intense, achy soreness in my bones. I would describe it in detail to him.’ (100 IN). Despite these concerted efforts, there are instances when the index person perceives a lack of understanding from their partner. ‘But I know he still did not understand’ (100 IN). 501 IN articulated a sense of disparity in comprehension, stating, ‘I feel that he cannot understand. It is nothing like the dizziness you get when you get out of bed like he said. It is the kind of dizziness where the world spins around’ (501 IN). However, even with these challenges, witnessing the partner's sincere attempts to grasp the situation brings a sense of support to the index person. In essence, the positive impact of successful mentalizing, even if it's just an endeavour, provides comfort to the index person - ‘he tried so hard to understand, which makes me feel supported (100 IN).’

Given the unspecified nature of FSDs, communicating the chronic symptoms to someone unfamiliar with them, including health professionals who find them ‘hard to

cure' (Fonagy and Luyten, 2009), poses challenges for the index person. Therefore, the partner's understanding, even if a failed attempt, offers considerable comfort to the index person, ensuring that pain and suffering do not lead to complete isolation. The symptomatic experiences become an inseparable part of the index person's life; consequently, they seek connection with their attached figures through shared somatic experiences or the partner's mentalizing about symptoms, regardless of whether the index person believes it can be done.

3c. Emotional dynamics surrounding symptoms

The emotional dynamics within the couple can fluctuate during episodes of the symptom. The index person may lean towards relying on their partner's physical help or emotional support while hesitating to request it explicitly. They find comfort in the presence of their partner but also desire solitude to manage the symptoms independently. On the other hand, sometimes the partner also exhibits ambivalence toward the situation, willing to assist the index person in seeking a remedy but refraining from actively inquiring about or attending to their partner's emotional needs, even blaming the index person for not being responsible for their health issues.

Both 184 IN and 131 IN emphasized how their partner's mere presence brings comfort and care during times of illness. 'His being here stabilizes me' (184 IN). 'It's not necessarily about doing something specific, but when he has gestures or shows concern for me, I feel better already' (131 IN). During worsened symptoms, being with their partners makes the index persons feel secure, knowing they have someone to

reach out to when needed. ‘That is a sense of security. It's knowing that if I call for help, there is someone who will answer me. It makes me feel safe knowing he is there; I don't have to worry about anything when I'm uncomfortable’ (501 IN). However, this sense of security does not necessarily mean the index person wishes to physically be right next to their partner; instead, it implies keeping them within reachable distance. The index person believes it will be easier for them to be left alone, dealing with the distressful experience independently. This ambivalent attitude sometimes confuses the couple. In the case of couple 102, when the symptom worsens, the index person prefers solitude, finding it a little annoying if the partner keeps offering help. ‘I would hope that he would not bother me and let me be in pain on my own (102 IN).’ This preference starkly contrasts with the partner's desire for attention during painful episodes. ‘We are quite the opposite. When I'm in pain, I hope you will pay attention to me. It is best if you stay by my side and keep asking me what I need’ (102 PA).

The discrepancy in the couple's perception of ‘being there’ may come from the index person's epistemic mistrust-a reduced capacity to trust others as reliable knowledge about the world and the symptoms (Luyten and Fonagy, 2020). The index person may be sceptical that their partner, despite trying, can understand what they are going through or how to help. In some cases, the index person is torn between being dependent on their partner and self-reliant dealing with the symptom. As 501 IN expressed, ‘I need to adjust myself, trying to take actions to prevent it from happening and reduce the likelihood of it occurring, rather than expecting someone else to understand my feelings’ (501 IN).

As discussed earlier, the index person acknowledges the difficulty of someone else mentalizing their bodily experience, especially given the unpredictability of FSDs. Even with mutual efforts, the index person recognizes the challenge of comprehending their own conditions. This independence may stem from a resigned sense that nothing or no once may alleviate the symptoms, leading the index person to bear the suffering alone without addressing their partner's worries or questions. Eventually, the couple consents to the situation, and the partner leaves the index person alone. Even when the symptom worsens, the partner may still offer help, knowing the index person will decline. As described by 501 PA, ‘My wife has always been a very self-driven and self-managed person, so even after these symptoms appeared, I did not have to take on too much extra because she has always been good at self-management’ (501 PA).

An ambivalent attitude is also evident in the index person's reliance on practical help rather than emotional comfort from the partner. They express the need for the partner to assume more family responsibilities so they can rest yet avoid explicitly asking for assistance when needed. ‘When I was exhausted and needed his help, I would not ask for it (212 IN).’ ‘I do not actively seek his help. … He asked if he should help, but I said it's okay, it's okay. I've already took care of it; I'll just do it myself (102 IN).’ In this specific context of FSD onset, from the avoidance of asking for support possibly resulted from the challenges of balancing the twin demands of relatedness and agency/autonomy (Fonagy and Luyten, 2018). While needing their partner more, the index person hopes their partner can intuitively understand their needs to prevent the index person from feeling useless. However, they believe that mentalizing can only

go so far, ultimately requiring them to face the symptoms alone. Through long-term adaptation, the partner silently agrees, recognizing the limitations of their assistance, as described by 501 PA, ‘In situations where I can't be of assistance, my mood doesn't change much. I believe my wife understands that I've done everything I can to help. For instance, she understands when she needs me to give her my ears, literally (she suffers from tinnitus), but I'm unable to. I don't feel too much pressure because I know I've done what I could. If there is something I can't help with, it is beyond my control’ (501 PA). The partner accepts the silent arrangement, taking on more household chores and being prepared if the symptoms worsen, while trusting the index person's ability for ‘self-management’ to take care of herself.

The index person's ambivalence towards depending on the partner is mirrored by the partner's mixed feelings and responses to the index person's symptoms. The chronic nature of the symptom inevitably impacts their day-to-day life, testing patience and creating aversions. While the partner hopes to prevent the symptoms from worsening, there is a genuine concern that their loved one may continue to suffer. ‘I tend to urge her to take action to protect herself. I also constantly encourage her to participate in sports (131 PA).’ However, the complex nature of FSDs poses a challenge, leading to feelings of helplessness and, at times, frustration. This frustration, caused by the prolonged symptoms, occasionally transforms into understandable feelings of blame towards the index person, as expressed by 502 PA, ‘A part of me feels very sympathetic and thinks he is pretty pitiable. Another part of me gets annoyed. It can make me somewhat angry that he does not care better for his own body (502

PA).'

For partners, it may make things easier if the complex symptoms can only be blamed on the index person's careless behaviours or resolved by better self-management, even though it is typically impossible to determine the relative role of biological and psychological factors in an individual case (Luyten and Fonagy, 2020) . The possible sense of guilt caused by the subtle blaming from the partner, in addition to the index person's epidemic distrust, may be another reason why the index person wants to be left alone in pain while longing for emotional comfort.

3d. Mentazling of Symptom Influence on Couple Dynamics

The severity of symptoms appears to significantly influence the dynamics within the couple's relationship during episodes of symptom manifestation. Typically, couples collaborate effectively to address the situation, efficiently managing household chores and navigating the challenges presented by the symptoms. Nevertheless, the symptoms inevitably impose limitations on the index person's ability to engage romantically or fulfil family responsibilities, leading to tension within the relationship.

Given the chronic nature of FSDs, couples often establish a task force to respond as symptoms arise. As described by 100 IN, 'Both of us work well together, and it is like we have a sense of being a battle team when we divide our tasks' (100 IN). The partner readily assumes more responsibilities when the index person is unwell, as explained by 133 IN: 'When he knows I am not feeling well, he would try to help me by taking care of other things, such as preparing meals or picking up the kids' (133

IN). However, the couple is not oblivious to the strain that symptoms place on their relationship, particularly in areas where the symptoms render them less available to each other.

For 502 PA, the impact on their family life is evident: ‘It might have reduced our activities together. We used to go out a lot, like hiking or outdoor adventures. We still do these activities, but when we go out, he tends to get tired more easily’ (502 PA). The index person, such as 212 IN, acknowledges the restrictions imposed by the symptoms and expresses feelings of guilt: ‘I might start getting more impatient and reduce my attention towards the children and my husband’ (212 IN).

Consciously recognizing that the situation is not easily improved, both partners understand the challenges they face. Despite this awareness, the partner may still experience dissatisfaction due to the physical or psychological unavailability of the index person. 502 PA notes that her husband's tendency to tough it out and deal with the symptoms alone can contribute to increased stress and tension in their relationship: ‘When he is not feeling well, he tends to push through it, and I think that sometimes it leads to a lot of stress for him. Our relationship can become a bit tense as a result’ (502 PA). One potential reason for this tension is the partner feeling lonely when interpreting the index person's unavailability as ignorance, despite understanding the impact of the symptoms. Simultaneously, the index person expresses remorse and hopes for their partner's understanding, as indicated by 232 IN: ‘If my sleep disorder affects our quality time together, she tends to be less happy. There was a period when

she consistently complained about me falling asleep right after eating' (232 IN).

The tension within the couple ebbs and flows with the fluctuations in symptoms. While both partners experience moments of helplessness and disappointment, they find ways to incorporate the symptoms and their impact on their daily lives. This group theme explores how couples navigate through symptoms by forming conjoint mentalizing and behaviours in response to the complex and unpredictable nature of FSDs. The individuals in the couple exhibit a degree of internal conflict, torn between being considerate and helpful on one hand and feeling lonely and frustrated on the other.

Group Experiential Theme 4: Power Struggles in the Relationship

4a. Leadership Dynamics

One unexpected yet discernible theme that emerged during the interviews revolved around the issue of leadership in relationships. In the context of these couples, there appears to be an unspoken dynamics where partners often perceive themselves as having a better understanding and making more informed decisions for the duo. Conversely, the index person seems content and, at the very least, accepting of this subtly agreed-upon arrangement. Similar to the proposition of systems theory that somatic symptoms serve to maintain the dynamic balance of families, allowing individuals to express emotional needs that would normally disrupt the system in an acceptable manner (Minuchin et al., 1978a), it seems that the couple subtly develops and maintains this leader-follower dynamic.

One plausible explanation for this dynamic is the perception that the partner possesses greater thoughtfulness. Thoughtfulness, in this context, denotes the partner's ability to consider various aspects and devise more effective solutions. The index person often feels that their partner comprehends them better, even surpassing their own self-awareness. Consequently, the index person is willing to yield more decision-making power to their partner. The partner's higher level of mentalizing is viewed as a leverage point in the relationship.

Another contributing factor is the relationship roles of the couple. In most instances, the index person is identified as the 'emotional' one, while the partner is viewed as ‘rational.’ This alignment suggests a natural tendency for the rational partner to take the lead in decision-making due to their inclination towards 'rational moves.’ However, as discussed in the previous sections, if emotional expression is a significant aspect of being emotional, it becomes apparent that the partner is better equipped to mentalize the index person, since the index person may be more expressive. Conversely, the index person may struggle to understand their partner's thoughts due to differences in relationship role, mentalizing abilities, or attachment styles, ultimately leading to a power imbalance.

In specific instances, such as those involving participants 184 PA and 212 PA, partners express their belief in being more considerate than their wives, emphasizing their ability to adopt different perspectives and attend to details. Conversely, the index persons often overlook details or have trouble figuring out how things turn out. ‘My

way of thinking is detailed and focused. However, in terms of the details, it is as if she has serious myopia (184 PA). For 212 PA, this self-perceived superiority in understanding allows him to feel a sense of control over both the situation and his partner's needs. ‘I would consider various aspects and have a pretty good idea about what she might be thinking. And then, she might wonder why she is behaving this way and not quite understand it’ (212 PA). On the other hand, the index persons express satisfaction in relinquishing control to their partners, trusting their better judgment and sensitivity. ‘He is more sensitive and even knows my father's need better than I do’ (184 IN). However, the index person feels frustrated with the challenge of comprehending their partners. ‘He understands me better. His level of understanding of me is 8.5 out of 10. In terms of my understanding of him, I would say it is probably around 6 or 7. So, there is a gap between us’ (212 IN). As 184 IN described, the expressive disparity between partners becomes a source of confusion, hindering the index person's ability to mentalize effectively. ‘I find him more difficult to understand, while I am easy to understand. I am quite straightforward because what I think and do tend to align. However, he tends to have a disparity between what he thinks and does, making me feel like I cannot quite figure him out’ (184 IN).

A consistent pattern emerged where the index persons in all couples were perceived as emotional, while their partners were labelled as rational. ‘I am quick-tempered, and he is more rational’ (133 IN). ‘I am rational while she is emotional’ (133 PA). This dichotomy often leads to partners believing they need to communicate rationally with the emotional index person, as noted by 184 PA: ‘It seems like

sometimes my wife is being unreasonable. When I try to talk sense to her, she does not want to listen' (184 PA).

The index person's self-stated difficulties in mentalizing their partner in our results might be partially explained by relationship-specific mentalizing problems. Recent research has identified mentalizing issues as potential mediators between insecure attachment and FSDs in patients, suggesting difficulties in understanding one's own emotions and, to a lesser extent, comprehending others' mental states (Riem et al., 2018). Yet, the gap in mentalizing capacity could result from the specific context of the relationship. When considering mentalizing in dyadic regulation processes, the index person's struggle to mentalize their partner could partly stem from the partner's less expressive emotional style. Intentional or unintentional, the partner's attachment style may inadvertently create difficulties for the index person in mentalizing, thus establishing an imbalance in power dynamics within the relationship. This imbalance, in turn, creates less confidence and more insecurity in the index person, hindering their mentalizing further, and reinforcing the respective relationship roles of the couple.

4b. Dynamic Power Shifts

All the couples seemed to quickly form a 'working unit' as the symptoms of the index person arise, without too much discussion. Yet, the power dynamics between partners seem to change on such 'bad days' as index persons with symptoms that disable them to various degrees will need more help in different ways. However, this

dependency does not necessarily mean the index person has less power than their partner. On the contrary, chronic distress might have made them an ‘expert’ on the condition and better able judge the best way to react. Despite the attachment styles or power structure, when symptoms arise the interaction dynamics and power balance within the relationship may change. The partners typically avoid bothering or upsetting their loved one when they are in pain, leaving as much space for them to rest and following any instructions about how to respond. Since it looks like the index persons have more 'privilege’ or power in this respect, some partners tried to reset the balance by stressing the fact that they also have some long-term health issues.

184 IN, 232 IN, 100 IN and 212 IN described how they need their partners when their symptoms worsen. The index person may need their partner for different reasons. Sometimes, the partner was there to make the problematic moments better: ’I feel settled when he is here’ (184 IN). The proximity of the attachment figure makes the symptoms in the index person feel less severe. ‘If my sleeping problems get serious, I like to lie on her thighs, not necessarily to sleep, just to relax both mentally and physically. Typically, I end up falling asleep eventually’ (232 IN). The partner's presence lowered the pain, and this body-mind connection was noticed. ‘When I could depend on him psychologically, the physical discomfort would be alleviated’ (100 IN). Other times, the partner’s actual help was appreciated. ‘He helped me with the house chores so that I could rest’ (212 IN). For 232 IN, lying on his partner's thighs provides him a sanctuary that soothes the distress of being unable to sleep. When he feels safe and comforted, his problem becomes less severe. In this way, his partner helped him

to deal with the symptoms. The partner serves as a secure base and downregulates the bodily discomfort. As for 100 IN, the index person realized this function of attachment and needs her partner to be there to ease the pain. The partner was also needed to help when the index person was less functioning. For 212 IN, when she suffered and needed the rest most, her partner offered to take care of the children and do the housework so she could be undisturbed and relaxed.

Although the symptoms make the index person depend on their partner physically and mentally, the dependency does not necessarily mean having less power within the relationship. As discussed before, the index person was usually identified as the emotional one, while their partner tends to be regarded as the rational one who knows better. However, the situation may reverse when the symptoms worsen. Couples often dynamically adjust the balance between the self-definition and relatedness dialectic (Blatt and Blass, 1996; Blatt and Blass, 1990; Blatt and Luyten, 2009; Luyten et al., 2019a) to address power imbalances related to dependency and independence. As the symptom become the most pressing issue to deal with, the index person then appears to have the ‘absolute authority’ to decide what is best.

On the other hand, the partners, knowing that this is not the time to argue, would do what the index person wants. As 100 IN said, ‘my instructions were very clear’, she took charge in the ‘task force’ which quickly formed as she starts feeling unwell. Her partner was also pleased to know what instructions to follow. This unspoken agreement also seemed to occur in couple 102: ‘She would say what she wants, and

in this regard, I completely follow what she says' (102 PA). The partners were agreeable because when the index persons were in pain or distress, they naturally would not want to upset them further and are willing to yield more power within the relationship. This might involve the partner shouldering some of the family responsibilities that the index person typically handles: 'When he's tired, I won't add more tasks that require physical effort from him. At that time, the focus was on keeping him feeling good (232 PA)'. In other circumstances, this could mean the partner would walk on their toes, refraining from anything that triggers the index person. The partner's response was learned from previous repetitive experiences that this is the best way to cope with the tension that symptoms cause. 'When she is unwell, I will become more conscious of avoiding specific triggers. Usually, we already know about these sensitive areas and make sure not to ignite them. On regular days, it is acceptable to play around, but when she is not feeling well, I ensure she gets rest quickly. I understand that I could quickly deal with the situation, so nothing stops her from resting well (133 PA).'

Interestingly, while the worsening of symptoms changes the power balance within the couple, the index person has more rights to ask for help, do as they want, or waive some family duties. The partners, aware of the symptoms, may put themselves in a powerless position. Some would also mention their health issues to balance the perceived power imbalance. Some couples compete over who has better ideas about 'being ill' and who takes control of illness better. As 232 PA said, she also has a long-term condition- 'I have lots of pain, too' (232PA). This statement is a way

to keep some leverage to regain the power or agency, perhaps even in a passive-aggressive way. 232 PA stressed that she also has suffered from chronic pain while describing her husband's long-time sleep problems. Unlike her husband, she was able to take control of her symptoms, minimizing the impact on their lives. With their health issues, the partners can take control by normalizing the index person's 'sickness', ensuring they know what the index person is going through. ‘I can roughly relate to that, as one ages, and occasional dizziness may occur when getting up in the morning’ (501 PA).

The couples under study often seem to exhibit subtle power struggles stemming from the symptoms, marking a distinct characteristic. This adaptive attachment dynamic, specific to the context, seems to embody what is referred to as the 'interdependency dilemma’ (Overall and Simpson, 2015). In close relationships, interdependence is a crucial element where individuals' goals, desires, and well-being rely on the actions and ongoing commitment of their romantic partners (Kelley, 1978). As interdependence and closeness intensify, the psychological costs of rejection also increase (Leary and Baumeister, 2000).

The symptoms create specific situations that highlight compromise, providing support, or making sacrifices for the partner or the relationship, thus making interdependence more apparent (Kelley et al., 2009). The chronic and unpredictable nature of some symptoms accentuates the tension between the desire for autonomy and attachment, occasionally leading to dysfunction in the index person. Despite the

need for care and support from their partner, index persons strive to maintain agency and avoid appearing excessively needy or weak. In contrast, the partner typically takes on a caregiving role, aiming to assert control rather than merely acting as a servant. When partners' goals and desires diverge, they often need to adjust or set aside their own interests for the benefit of their partner or the relationship (Rusbult and Van Lange, 2003).

However, such adjustments can render individuals vulnerable to exploitation, rejection, or loss, particularly when their partner is not approachable enough (Murray et al., 2006; Rusbult and Van Lange, 2003), whether by choice or due to incapacity. The couple's responses to the threatening situation, such as worsening symptom, are partly influenced by their styles and degrees of attachment insecurity. Additionally, dyadic regulation processes, encompassing mentalized thoughts, feelings, and behaviours related to the relationship, are predominantly shaped by each partner's responses within the broader interdependence context of their relationship (Overall and Simpson, 2015).

This dyadic regulation aligns with the two-polarities model formulated by Blatt, illustrating a dialectic relationship between self-definition and relatedness. The position of each individual or couple on this dimension is dynamic, involving a creative struggle and potential integration (Blatt and Blass, 1996; Blatt and Blass, 1990; Blatt and Luyten, 2009; Luyten et al., 2019a). While the symptom creates a specific context, the couple manages to constantly balance and rebalance the power between them,

responding to the fluctuation of symptoms and fulfilling the needs for both independence and interdependence.

4c. Attention Competition

Another related salient theme emerging from the interviews concerns the power struggle relating to the allocation of affective attention within the relationship. Drawing on attachment theory, we can understand individuals facing stress or threats naturally gravitate towards the proximity of their attachment figures, seeking a sense of safety, security, and protection. These instinct triggers proximity-promoting attachment behaviours, including positive attention-seeking actions like calling or smiling, and aversive attachment behaviours that elicit soothing, such as crying. Despite the attachment system being more visibly operational in infants and young children, Bowlby asserted that attachment motives continue to shape individuals' thoughts, feelings, and behaviours in close relationships throughout their lifespan (Bowlby, 1973; Bowlby, 2008).

In the context of adult romantic relationships, unlike the one-way nature of parent-infant relationships, proximity-seeking is expected to be reciprocal. The significant other assumes the role of providing comfort during times of physical and mental distress. However, a subtle power struggle ensues when both parties in the relationship find themselves in need of comfort. This power struggle, driven by each partner’s attachment needs, becomes more complex when FSDs are introduced into the equation. The partner often takes on a caregiving role, especially when the index

person's symptoms worsen. As previously discussed, the partner is perceived as the 'rational one' and often takes the lead in the relationship. Under these circumstances, disagreements over who receives more attention or who receives it first can create an imbalance in power dynamics.

Illustratively, couple 131 engaged in arguments about who should be comforted first when both were stressed. The partner contends that he deserves more attention since he was the one upset by the index person: ‘I often find myself in situations where I believe she was the one who upset me first, but she feels like she also deserves to be comforted first. She gets angry when she does not receive that comfort (131 PA).’ He finds this particularly unfair given his consistent efforts to provide care and comfort: ‘I always want to do something to help her or find something or a way to make her feel more comfortable and relaxed (131 PA).’ Conversely, the index person perceives the situation differently: ‘I have spent some time soothing and being there for him, and now I want to be comforted, too, but he does not do the same for me. It feels a bit unfair to me’ (131 IN). Here, the difference stems from the index person's perspective on the ‘balance’ of attention in this incident, while the partner sees it as the index person's responsibility to provide attention. Additionally, the partner feels that he consistently attends to the index person's needs related to alleviating the discomfort caused by the symptoms, creating a sense of the index person being 'in debt of attention’. This sense of unfairness and imbalance results from the subtle competition for attention—who should be the focus of conjoint attention first, and to what extent? As described by 131 IN, ‘For example, when he wishes for comfort or support, he

would like me to hug him. He often says that hugging is a mutual action. I've told him that I hug him because he needs it, so I hold him tight. However, when I need support, I also need him. It's when he wants to offer support through a hug. Even though we both are hugging, the feeling seems different to me' (131 IN).

5.4 Discussion

This study aims to explore the relationship dynamics and the impact of somatic symptoms within couples where at least one partner is experiencing with Functional Somatic Disorders (FSDs), using a mentalizing-based approach. Numerous studies illustrate the harmful effects of FSDs on attachment, mentalizing, and epistemic trust, particularly among individuals whose symptoms have developed into a chronic condition (Luyten et al., 2019b). In this IPA study, we conducted online couple interviews to gather both collective and individual experiences. Our focus is on comprehending the interplay between the couple's attachment styles, mentalizing, and symptoms within this specific context. Mentalizing is considered a bidirectional social process (Fonagy and Target, 1997), developing through interactions with others and being influenced by the mentalizing abilities of those around us (Asen and Fonagy, 2017). This approach can provide insights into how couples experience and interpret their own and others' mental states, make sense of their partner's behaviours (Asen and Fonagy, 2017). This approach also helps us understand the influence of FSDs on couples, addressing the gap in current literature, which primarily focuses on

individuals (Fonagy and Target, 1997).

In this section, we discuss three main findings. Comparison with findings of the quantitative study is the focus of the following chapter.

Emerging themes from the couple interviews reveal the intertwined nature of mentalizing capabilities between the index person and their partner. Our investigation centres on exploring mentalizing cycles between them, understanding how they mentalize each other and the relationship. We also examine the unique impact of FSD symptoms on the couple's mentalizing. Furthermore, we address chronic symptom-induced power imbalances, which affect the physical, mental, and social functioning of the index person, subsequently altering the power dynamics within the relationship.

Finding 1: Co-regulation: distress, attachment and mentalizing cycles

The first main finding, consistent with the theoretical approach central to mentalizing theory, is that this study provides further evidence supporting the view that FSDs involve actively seeking co-regulation of distress, and that the course of FSDs is potentially influenced by the success or failure of these attempts.

In the interviewed couples, their prolonged and relatively stable relationship serves as a secure base for managing stress dysregulation. Based on their reported experiences, we also observed how couple-level mentalizing functioning within the attachment relationship, helps them navigate through long-term symptoms. As indicated in the literature, partners can activate neural regions associated with safety signals, thereby reducing the pain experience by the index person (Eisenberger et al.,

2011; Master et al., 2009; Porter et al., 2007). Moreover, pain appears to be attenuated when the participant is receptive to support (securely attached) and is aware that the partner is positively oriented towards them (Krahe et al., 2013). This awareness or mentalizing of each other within the couple may be helpful to better understand the management and treatment of FSDs.

In exploring FSDs within romantic relationships, the mentalizing cycles between interviewed couples emerged as a central focus. Successful mentalizing within the couple was expressed in the manifestation of affection and the couples appreciate the experience of understanding and being understood by their partners. Simultaneously, failures in mentalizing frustrate them and leads to arguments, as the couple views it as destructive to their relationship. A sense of strangeness or even betrayal emerged when they find their partner fails to understand them. These findings align with previous research, indicating that mentalizing and supportive relationships mutually reinforce each other (Ballespi et al., 2019; Fonagy and Luyten, 2009). Despite potential sampling bias favouring stable relationships, our participants, engaged in long-term relationships, demonstrate adaptive mentalizing even when one partner faces FSD-related challenges. The couple's relationship serves as a secure base, fostering adaptive mentalizing even under stress, similar to the 'broaden and build' cycles in attachment security. Interactions with sensitive and responsive partners enhance the sense of attachment security, promoting resilience and broadening perspectives and skills (Mikulincer and Shaver, 2020; Mikulincer and Shaver, 2010). Over the years spent together, they gradually learned to decipher each other's

thoughts, beliefs, wishes, and feelings, linking them to their partner's actions and behaviours. This process enhances understanding and emotional support between partners during challenging times.

Our findings suggest that even when one partner experiences FSDs associated with challenges in mentalizing, many couples consistently demonstrate proficient mentalizing skills. This may be influenced by potential sampling biases: the interviewed couples were recruited voluntarily from community samples exhibiting elevated symptoms, with recruitment criteria favouring stable relationships. FSDs have been theorized to arise from negative cycles involving person-environment interactions (Luyten et al., 2012b). In our study, couples displayed genuine interest and efforts to understand their partner, coupled with an acknowledgment of the opacity of internal states and occasional misunderstandings. These dynamic foster a virtuous cycle of mentalizing between partners. This mirrors observed virtuous cycles in the psychological development of children, where high levels of attachment security in parents provide a secure foundation for cognitive and socioemotional growth, enabling them to navigate their interpersonal world effectively (Luyten et al., 2020a). In adult couples, a parallel pattern is evident: the couple's relationship acts as a secure base, fostering adaptive mentalizing with occasional setbacks. The ability to sustain mentalizing under stress, whether symptom-related or not, correlates with the ‘broaden and build’ virtuous cycles of attachment security. Through this process, the couples gained a deeper understanding of each other and provided emotional support during challenging times.

The results also contribute to a more comprehensive understanding of the intricate relationship between attachment styles and mentalizing. Recent research has proposed mentalizing issues as a potential mediator linking insecure attachment to FSD in patients (Riem et al., 2018). Within the context of romantic relationships, when exploring the connection between mentalizing and stress, individual differences in attachment strategies emerge as pivotal influencers shaping mentalizing processes and the overall dynamic within couples. Aligning with existing literature, our observations reveal a correlation between the activation of the attachment system and the deactivation of mentalizing in participating couples(Nolte et al., 2013). Both anxious and avoidant attachment strategies not only impact each other's behaviours but also shape the interpretation of their partner's emotional expressions and mental states. Furthermore, these attachment strategies influence how couples understand and assess each other's emotional needs. For instance, individuals with an avoidant strategy may struggle to recognize when their partner requires their support during times of distress.

During stressful periods induced by symptoms or life events, these couples' attachment strategies affect the mentalizing support they receive from their partners. These strategies manifest in distinct behaviours: couples reported that the anxious-attached partner desires constant proximity and attention, particularly during times of illness, while the avoidant-attached partner tends to handle challenges independently. This dynamic can lead to emotional dysregulation, which has been shown to limit the ability to 'broaden and build' in the face of stress (Tugade and Fredrickson, 2004).

Such emotional dysregulation becomes evident in moments of disagreement or worsening symptoms among these couples, resulting in mentalizing failures. These failures, in turn, create barriers to effective communication and understanding, straining the couple's relationship during challenging times.

This finding highlights the crucial mediating role of mentalizing between attachment strategies and interactive behaviours within couples. FSDs are notably diverse disorders in terms of their cause, course, and response to treatment (Aslakson et al., 2009). From a neurobiological standpoint, FSDs may be best understood as a manifestation of allostatic load resulting from prolonged physical and/or psychological stress and conflict (McEwen, 2007). Recognizing that relationship conflict can be both a cause and consequence of FSDs, theoretical and treatment approaches should consider these intricate interactions. For instance, the dimensions of avoidance and anxiety predict conflict resolution strategies, with individuals possessing insecure attachment forms typically struggling to manage conflict and resorting to more negative conflict resolution tactics (Creasey, 2002; Shi, 2003). Specifically, anxious individuals exhibit less positivity during discussions of problems, often escalating conflicts, while avoidant individuals display less supportive and warm behaviour during problem-solving (Campbell et al., 2005). Acknowledging the mediating role of mentalizing between a couple's attachment and behaviours underscores the importance of the recovery of mentalizing capacity (Luyten et al., 2012b) and fostering adaptive mentalizing in therapeutic interventions for FSDs.

Finding 2: Co-mentalizing: mentalizing within couple

Regulating distress involves co-regulation, where the index person's capacity to mentalize is crucial. However, the couple's capacity for co-mentalizing is equally significant. This extends beyond individual mentalizing to include understanding and mentalizing others, as well as being mentalized by them, particularly one's significant other.

Influence of Relationship Dynamics

Interviewed couples exhibit both the ‘trait’ and ‘state’ natures of mentalizing, influenced by emotional arousal and interpersonal contexts (Asen and Fonagy, 2017). The secure attachment relationship serves as a stable base, enabling partners to explore each other's mental states. The individual's capacity to mentalize their own internal states determines their capacity to delve into their inner world and that of their partner, relying on secure internalized attachment representations or assistance from the romantic partner (Luyten et al., 2012a).

Despite the extended time spent together, both the index person and the partner still experienced moments of non-mentalizing or pseudomentalizing modes in this specific context. From a systemic perspective, offline mentalizing may result from both intrapersonal and interpersonal factors. Individuals experiencing FSDs are assumed to face challenges in clarifying their own emotions and, to a lesser extent, understanding others' mental states (Riem et al., 2018). Both the index person and the partner have mentioned persistent challenges in mentally grasping each other

cognitively or affectively and feel frustrated about not mentalizing the partner and not being mentalized. The complex interplay between each partner's attachment strategies, their ability to regulate emotions, and their capacity to mentalize during stressful situations often create obstacles in understanding and empathizing with each other. As a result, these couples may face relationship hurdles despite their long-standing commitment. These hurdles may surface through ambiguous verbal or nonverbal communication, which can emerge under stress, amplifying tension in the relationship or stemming from individual attachment styles. At times, couples may also purposely refrain from responding, even when capable of mentalizing their partner's mental state, as a form of passive-aggressive behaviour. Previous research suggests that expressing emotions leads to better adjustment in the relationship. A partner with limited emotional expression may find it more challenging to develop a sense of intimacy, crucial for relationship satisfaction (Moore et al., 2001). When the relationship is less satisfactory and stable, hindrances to the couple’s mentalizing may resurface.

Mentalizing Impairments

Mentalizing involves seeing ourselves from the outside and others from the inside (Bateman and Fonagy, 2016). Within romantic relationships, mentalizing influence communication and relationship dynamics. In our previous survey study, we identified mentalizing impairments in both partners as a potential key factor mediating the relationship between their insecure attachment styles and the severity of somatic

symptoms experienced by the index person. These interviews explored specific mentalizing impairments in couples, allowing us to observe the context-driven and relational nature of mentalizing in their interactions.

Aligning with current literature, we found that couples' heightened psychological arousal tends to diminish the capacity for explicit/reflective mentalizing, leading to a dominance of automatic and non-reflective mental processes (Bateman and Fonagy, 2016). Mentalizing comprises four dimensions (Fonagy and Luyten, 2009): automatic vs. controlled, self vs. other, internal vs. external, and cognitive vs. affective. Couples often unevenly focus on specific dimensions when discussing stressful experiences. For example, when discussing the cause of symptoms, attributions were either external (such as busy work) or internal (such as stress). When asked about feeling misunderstood by their partner, common complaints were that their partner was being too emotional or not affectionate enough (too cognitive). Also, when the couples got into an argument, they had difficulty understanding why their long-time life partner would think a certain way, as they were focused only on their own minds and were unable to take their partner’s perspective. At that moment, the impaired mentalizing capability prevented them from 'holding one’s mind in mind'.

We also observed that the activation of the attachment system is linked with the deactivation of mentalizing, as suggested by imaging studies (Nolte et al., 2013). Index persons often describe difficulty in thinking straight during arguments with partners. Their minds would go blank or fixate on a particular thought, indicating a general loss

of mentalizing capacity in stressful situations. Individuals without FSD might have similar experiences in daily life when they are too emotionally aroused, though this may be more noticeable in these index persons. These index persons also mentioned that they would be able to think or process their thoughts and feelings properly after calming down, or once the relational tension cooled off. This may result from the relatively stable relationship these couples have, which provides a secure base for regulating emotions, leading them to engage in more reflective, dimension-balancing mentalizing. This might be seen as further evidence that mentalizing capability fluctuates not only across relationships, but also within the dynamics of a single relationship as they change over time (Luyten et al., 2012a).

A notable discovery is the connection between attachment trauma in childhood and the deactivation of mentalizing. While the primary focus of our study was not early adversity, and the interviews did not delve into those specific questions, one participant shared a significant insight. This individual mentioned that whenever she sensed her partner was about to become upset, she would instinctively apologize or avoid potential conflict. Despite recognizing her partner as a loving spouse, she could not shake the belief that he might resort to violence, triggered by the familiarity of past physical abuse endured during childhood. Consequently, her non-reflective reaction was to shut down emotionally and distance herself from the situation entirely, despite partner's non-violent nature. Although she intellectually understood that her partner will not harm her, the emotional residue of past trauma leads her to anticipate violence during tense moments. Meanwhile, her partner experienced confusion and hurt due to

perception as abusive and being avoided.

Polarization

Another significant finding is the polarization in attachment strategies and mentalizing dimensions within couples, particularly during stressful situations, highlighting the dyadic and reciprocal nature of mentalizing.

Most couples (except couple 501) described themselves as a combination of emotional and rational individuals, exhibiting opposite 'personality' traits. This polarization may involve variations in attachment strategy and mentalizing dimensions, with the index person often identified as the emotional one. Mentalizing fluctuates over time and across relationship contexts, influenced by varying stress levels and activation gradients of attachment systems (Luyten et al., 2020a; Luyten et al., 2012b) and effective mentalizing requires balancing these dimensions according to context (Bateman and Fonagy, 2016). Participating couples tend to lean toward opposite ends of the mentalizing dimension, possibly influenced by the stress or emotional arousal (Nolte et al., 2013). Intense emotion leads to a temporary loss of capacity to think about the thoughts and feelings of others and self in a balanced way (Fonagy and Luyten, 2009). Emotional arousals is a key factor in predicting mentalizing at any point in time (Luyten et al., 2012a). This was evident in the interviews when during arguments, where each partner was stuck in their respective form of mentalizing (e.g. internal vs. external) and repeatedly say what is on their mind but stop trying to listen or to understand the other.

Given the observed polarization in couples, an intriguing question arises: why do couples often seem to consist of one emotionally inclined individual paired with a more rational counterpart? While the notion of 'opposites attracts' may offer one explanation, another compelling factor could be the polarization of attachment styles and mentalizing dimensions within the couple. According to the study on FSD patients and their spouses (Sayre, 2002), these couples are characterized by avoidance, rigidity, enmeshment, and interpersonal polarization around these factors. It is possible that with increasing time spent together, the reciprocal effect between the two becomes stronger, developing the couple's joint mentalizing. When one person, who is more avoidant and cognitively mentalizing, assumes the 'rational' role, the other inevitably becomes the less rational or more emotional counterpart. Attachment styles and mentalizing capability shape their respective roles within the relationship, and the couple's interactions serve to reinforce polarized attachment styles and mentalizing dimensions.

Partner's Role

A prominent theme emerging from the interviews is the dynamic and reciprocal nature of the couple's mentalizing capabilities.

In the context of FSD couples' romantic relationships, the mentalizing capacity of the relationship partner may be crucial for the index person's mentalizing capacity in several ways. Firstly, when the index person encounters difficulties in mentalizing, partners may provide corrective experiences, leading to variations in the index

person's ability to utilize such corrective experiences (Luyten et al., 2012a). As discussed earlier, with the lengthening of the relationship, adaptive mentalizing between the couple becomes more significant. However, the partner may inadvertently exacerbate mentalizing lapses, resulting in a downward spiral. For instance, couples mentioned a cognitive focus in the partner and an affective focus in the index person. The 'emotional index person' is oversensitive to emotional cues, while the 'rational partner' views 'mind reading' as an intellectual game, exhibiting less emotional empathy (Bateman and Fonagy, 2016). These dynamics may lead the index person to underestimate their emotional needs and adopt a teleological mode, concentrating solely on observable causes of the symptoms.

Epistemic Trust

Although the interviewed index persons did not explicitly express their epistemic trust toward their partner, this may be evident in their rejection of their partner's perspective on the symptom origin and remedy, as well as the skepticism they have toward their partner's ability to mentalize the symptoms.

In this context, epistemic trust is the capacity to trust the partner as reliable sources of knowledge about index person's symptoms of FSDs (Luyten and Fonagy, 2020). Epistemic mistrust or epistemic hypervigilance describes a difficulty in relying on others as credible sources of knowledge about the world, including information related to FSDs (Fonagy et al., 2017). Among individuals experiencing FSDs, the lack of trust in others, including healthcare professionals who assert that the patients'

concerns are entirely psychosomatic without any biological basis, often contributes to a closing down of the patients' epistemic trust as a result of experiencing a sense of being misunderstood and invalidated (Luyten and Fonagy, 2020). One of the important function of attachment relationship is to provide a relational basis for the development of epistemic trust (Luyten et al., 2019a). In our study, the index persons have a relatively secure attachment relationships and place trust in their partner in many aspects of their life. However, in terms of their symptoms, even though the index person hopes the partner shares their physical and mental burden, they often have reduced trust in their partner's suggestions about the symptom cause and ways to relieve symptoms. They would rather 'deal with the symptom' alone, perhaps due to this symptom-specific epistemic trust issue.

Finding 3: Symptom-specific Mentalizing and Power Imbalance

The third finding, perhaps the most important aspect of the study, relates to the intricate associations between symptom-specific mentalizing and the associated power imbalances, as well as attempts to redress these imbalances.

Stress response

FSDs exhibit notable heterogeneity and are best comprehended as indicative of an allostatic load resulting from prolonged physical and/or psychological stress and conflict (Luyten and Fonagy, 2020; McEwen, 2007). The development of FSDs is suggested to stem from negative cycles involving person-environment interactions (Luyten et al., 2012b). Within the psychodynamic approach, three crucial areas—

attachment concerns, the ability for embodied mentalizing, and the capacity for epistemic trust—are highlighted as predisposing, precipitating, or perpetuating factors in these disorders. Issues within these factors may contribute to disorder development and could be influenced or worsened by somatic complaints (Luyten and Fonagy, 2020).

Couples grappling with FSD symptoms often face an intricate interplay between these symptoms and their stress response. The impact of symptoms on daily life, such as limited bandwidth for work, family, and intimacy, can be significant. In an attempt to regulate stress, patients often rely on secondary strategies such as attachment deactivation or hyperactivation, leading to mentalizing impairments (Luyten et al., 2012b). This study's specific context suggests that FSD symptoms may be both the cause and consequence of the stress response. Heightened psychological arousal impedes access to controlled mentalizing, favouring automatic and nonreflective mentalizing (Bateman and Fonagy, 2016). In interpersonal situations, heightened emotional arousal makes it challenging to focus on someone else's point of view. Couples in our study frequently find themselves fixated on their own interpretations and thoughts about stressful situations, resulting in a struggle for mutual understanding. The index persons often struggle to think clearly when feeling unsafe or unsettled, leading to increased frustration as they perceive themselves as 'slow'. The partner may become frustrated with the index person's lack of responsiveness or may believe that they should be the one making decisions, whether it pertains to symptom alleviation or lifestyle choices. This lack of reflection on both their own and

the index person's internal states can result in mutual frustration and tension in the relationship. This observation aligns with the assumption that factors intensifying the attachment system beyond stress-induced arousal contribute to a general decline in mentalizing capacity (Bateman and Fonagy, 2016).

In the relatively stable relationships among those interviewed, despite the potential for a longer recovery time, the couple tends to return to more reflective, adaptive mentalizing after a cooling-off period, effectively co-regulating stress. The results emphasize the importance of understanding FSDs within the context of relationships, enhancing the potential for improved management of precipitating factors. Such factors often involve chronic psychological stress (e.g., work, relationships) (Aslakson et al., 2009) and/or physiological stress (e.g., chronic infections or whiplash), disrupting allostasis and contributing to a state of allostatic load (McEwen, 2007).

Conflicting Mentalizing

Attachment problems and mentalizing impairments may precede FSD onset or arise from an inability to regulate increasing stress and allostatic load, potentially exacerbated by the symptom (Luyten et al., 2012b). Notably, individuals experiencing FSDs and their partners may have different perceptions of these symptoms. The index person often attributes symptoms to physical causes, downplaying their impact and externalizing them as a regular part of life with a standard coping procedure in place—maybe an understandable adaptation strategy to manage their sense of vulnerability

and helplessness. In contrast, the partner tends to perceive negative emotions and influences associated with the symptoms more keenly. Despite these differing perspectives, the partner generally follows the index person's symptom-related narrative, possibly as a strategy to simplify matters and avoid delving into deep-seated relationship issues further intensified by FSDs. These divergent interpretations of the experienced symptoms and their potential evolution within the index person or between the couple may arise from the fluctuating nature of FSDs and/or the inherent challenges of comprehending someone else's somatic experiences, even with mutual effort. Additionally, mood swings within the couple, oscillating between hopefulness and frustration, could contribute to these variations.

Another recurring theme from our interviews revolves around the index person's conflicting feelings regarding their partner's ability to comprehend the symptoms. As the symptoms constitute a significant part of the index person's life experience, there exists a desire to ensure their partner fully understands the conditions and challenges they are facing. While the practical assistance offered by the partner during times of illness is valued, the index person also yearns for their loved ones to grasp the distress on a deeper level. However, deep down, the index person may also believe that the complexity of the symptoms makes it challenging for others, including their partner, to fully mentalize their pain and suffering. This internal conflict often leads to the rejection of the partner's offers to alleviate pain, with the index person opting to grapple with the symptoms alone—a profound experience of isolation that transcends understanding and touch. Over time, the partner adapts by shouldering additional family

responsibilities when the index person is unwell, although direct emotional support may be absent. This adaptation highlights the interdependence in the couple's mentalizing. While the partner acknowledges uncertainty or even reluctance in providing emotional comfort, they find household chores more manageable to undertake.

Throughout the interviews, all index persons convey that their partner's presence makes them feel secure during illness. Interestingly, none of the couples explicitly mention seeking or providing emotional comfort-one index person even expresses a preference to be left alone in pain. This observation, influenced by cultural factors, can offer valuable insights into the index person's mentalizing concerning the pursuit of proximity to their attachment figure amidst the challenging backdrop of FSDs.

Mentalizing Frustration

FSDs are associated with impaired mentalizing (Luyten and Fonagy, 2020), and the interviewed index persons express awareness and frustration about difficulties in mentalizing both themselves and their partner. Despite research indicating fewer issues in mentalizing others than themselves among FSD patients (Luyten et al., 2012b), index persons struggle to comprehend their partner's thoughts and feelings, experiencing simultaneous feelings of sorrow and anger. This frustration may arise from the partner's mentalizing capability and the partner's attachment or communication style.

Mentalizing enables us to comprehend the thoughts, feelings, and intentions of

those around us, aiding in interpreting their actions much like we do with our own experiences; we use the same psychology (and neural mechanism) to understand ourselves that we apply to understanding others (Heyes and Frith, 2014). During our interviews, index persons shared their occasional struggles with mentalizing themselves, facing similar challenges in understanding their partners. The results suggest that the issue may lie in this relationship-specific mentalizing. Additionally, index persons mentioned requiring more time to feel safe and grounded before regaining their mentalizing capacity during heated moments. This need for recovery time may be perceived as incompetence or misunderstanding.

Concurrently, the partner's attachment and communication style also impact how easily the index person can discern their thoughts. The index person faces more difficulties reading their partner's mind when the partner is more avoidant and less expressive, often described as 'rational'. The frustration of index persons regarding the inability to mentalize successfully reinforces the belief that the partner 'knows better,' whether about the best course for the couple or the index person's internal state. This imbalance appears to solidify the index person's dependency and their fixed roles in the relationship. The power dynamics between the couple influenced by symptoms will be further discussed in the later section.

Embodied Mentalizing

The interviews also revealed specific ways in which mentalizing impairments can manifest within romantic relationships, shaping the dynamics between partners.

Embodied mentalizing refers to the capacity to recognize and contemplate bodily signals (interoception), interpreting them as indicative of inner mental states and one's sense of self (Luyten and Fonagy, 2020). From a mentalizing perspective, impairments in FSD patients are see 1) often specific to an experience or symptom, 2) often the consequence rather than the cause of FSD, and 3) relates to interpersonal experiences that involves high arousal or stress (Luyten et al., 2012b). These aspects are evident in the details shared by the couples in their statements.

Recent research indicates that individuals with FSDs may face challenges in understanding and expressing their own emotions. This struggle extends to embodied mentalizing, evident in high levels of alexithymia, for instance. However, in terms of mentalizing others, particularly concerning the self and embodied self, there is limited or no evidence to suggest that individuals with FSDs experience difficulties (Riem et al., 2018).

While exploring the embodied mentalizing of these couples, we noticed that they were less elaborated when describing their experiences compared to when being interviewed about other topics. Possible explanations for this could include the impact of having a prolonged experience of dealing with their conditions, leading them to react to symptoms rather than engage in reflective discussion of them. However, FSD symptoms can also be perceived as an ‘attack’ on the capacity to reflect, especially on the ability to view the body as a 'live body' one owns, which is fundamental in our connections with others (Luyten et al., 2012b). The persistence of feelings such as

pain and fatigue may gradually undermine and distorts this capacity, as the body becomes increasingly perceived as a hostile entity threatening the coherence of one's self from within (Luyten and Fonagy, 2020; Schattner et al., 2008). During interviews about their symptoms, individuals discussed daily activities such as exercise to prevent symptom onset or aggravation. This ‘internal object’ within their bodies needs constant soothing to remain dormant (Schattner et al., 2008). If the symptom wakes up and 'attacks', the couples automatically form a 'task force' to counteract it—a strategy they have employed for an extended period and intend to continue. The constant defence and the fluctuating nature of the illness wear individuals down. Imagining further escalation of their symptoms in the future also generates fear and anxiety. The high levels of arousal and stress resulting from FSDs may further exacerbate existing impairments in embodied mentalizing capacity.

Non-mentalizing Mode

Given the index persons' prolonged experience with complex symptoms, it is noticeable that their mentalizing concerning these symptoms appears somewhat different from their general mentalizing impairments regarding other issues in the relationship. When discussing the cause of their symptoms or their potential consequences, we observed that the index persons often resort to non-mentalizing ways of thinking that parallel the behaviour of young children before they have developed full mentalizing capacity (Bateman and Fonagy, 2016). Abundant research demonstrates the impact of FSDs on mentalizing, especially among those whose

symptoms become chronic (Luyten and Fonagy, 2020). Compared to other issues mentioned in the interviews, long-standing symptoms seem to elicit more emotional arousal and result in mentalizing failures.

Aligning with the literature, the individuals' non-mentalizing modes could be categorized as psychic equivalence, teleological, and pretend modes (Bateman and Fonagy, 2016; Fonagy and Bateman, 2008). For instance, 501 IN interpreted her tinnitus as a message from above to remind her to slow down, engaging in a psychic equivalence mode that equalizes inner and outer reality without overlooking biological, psychological, and environmental factors. Similarly, 502 IN attributed his severe fatigue solely to observable causes, such as the loss of vitality due to aging. In pretend mode, 184 IN appeared to be adapting positively to chronic pain, despite its debilitating effects. However, her partner observed episodes of depression and harbours concerns that these symptoms may affect her more deeply than she admits. These symptom-specific impairments in mentalizing are associated with the re-emergence of non-mentalizing modes (Bateman and Fonagy, 2016; Fonagy and Bateman, 2008), playing a pivotal role in perpetuating the symptoms (Luyten and Fonagy, 2020; Luyten et al., 2012b), and could lead to complications and disturbances in relationships (Bateman and Fonagy, 2016), whether with health professionals or romantic partners.

Self-silencing and Alien Self

During the interviews, we observed that certain individuals tended to halt further communication when conversations with their partners became more intense. This

phenomenon was also evident in the experiences they recounted. Such behaviour may be associated with the Silencing the Self Model (Jack, 1991), which posits that women are susceptible to depression when they suppress their genuine thoughts and emotions to avoid conflict. Subsequent studies indicated that both men and women who perceived their marriages as conflict-ridden tended to conceal their anger while outwardly agreeing with their partner's opinions or desires. This tendency, coupled with a propensity to evaluate oneself based on external standards, also served as a mediator in the relationship between marital conflict and depressive symptoms (Whiffen et al., 2016). This tendency, coupled with a propensity to evaluate oneself based on external standards, also served as a mediator in the relationship between marital conflict and depressive symptoms (Whiffen et al., 2016).

In general practice, the comorbidity of somatic symptom disorders and anxiety/depressive disorders was found to be 3.3 times higher than expected by chance (Arnold et al., 2004). While none of the couples in our study were diagnosed with clinical depression, individuals with somatic disorders are at an elevated risk of experiencing depression (Egede, 2007; Moussavi et al., 2007). According to Grassi (2019), there is a mental aspect to every physical disease (Grassi et al., 2019), and empirical studies have found that depressive symptoms predict and amplify somatic symptoms (Kapfhammer, 2006). Depressive symptoms could be both the cause and/or the consequence of chronic somatic distress. Regardless, people with FSDs generally have a lower quality of life compared to healthy individuals, and depression is associated with functioning and quality of life in these patients (Liao et al., 2019).

Further examination of self-silencing behaviours among the individuals under study reveals a parallel tendency towards ‘self-alienation’ within the relationship, reflecting their embodied-mentalizing. In attachment relationships, some individuals resort to interpersonal behaviours such as suppressing or 'silencing' their feelings to maintain relational harmony in conflicted relationships. Over time, self-silencing is believed to contribute to self-alienation, wherein individuals who fail to express their emotions in intimate relationships become disconnected from those feelings (Whiffen et al., 2016). Additionally, self-silencing may be perceived as a coping mechanism for managing relationship stress. Experiencing multiple physical symptoms is associated with specific coping strategies, such as resignation and diversion (Raasthoj et al., 2023).

The concept of the ‘alien self’ refers to the disconnection from one's authentic self that can occur when individuals suppress their emotions in intimate relationships (Luyten et al., 2012b). In the context of this study, some participants exhibited self-silencing behaviors, potentially as a coping mechanism for managing relationship stress or maintaining harmony. This self-silencing may contribute to a sense of self-alienation, where the individual becomes disconnected from their own feelings (Jack, 1991). In the context of FSDs, the ‘alien self’ concept may also manifest as a feeling that one's body in distress is separate from or outside of one's control (Luyten et al., 2012b). The physical symptoms of FSD can be experienced as an external threat to the coherence of the self, leading to a desire to externalize the distress to restore a sense of equilibrium (Fonagy and Target, 2007).

In the mentalizing perspective, the process of mentalizing generates self-coherence, and the failure of mentalizing can indicate a sense of fragmentation, a painful state that often drives individuals to seek refuge in extreme or even violent acts (Bateman and Fonagy, 2016). In emotionally charged situations, such as conflicts or distress, intense emotions can disrupt mentalizing processes, making it challenging to maintain coherence within oneself and in relationships. This disruption often leads individuals to seek ways to restore this coherence, sometimes resorting to dramatic actions to navigate the emotional turmoil. To alleviate the distress and restore equilibrium, individuals may externalize their feelings, reducing the sense of incoherence within themselves. This disconnection from one's authentic self is commonly referred to as the ‘alien self’ (Bateman and Fonagy, 2016). Similarly, in modes of non-mentalizing, one's body in distress may begin to feel like an 'alien self-part' (Luyten et al., 2012b). The experience of this distress is too intense and needs to be externalized.

This sense of detachment from oneself may also manifest in interpersonal relationships as a means of dealing with unwanted feelings. The nature and quality of relationships influence how people interpret and communicate their physical sensations and feelings. In clinical settings, clinicians working with these patients often perceive their fatigue, pain, and feelings of helplessness, hopelessness, anger, and fear. In some cases, the inclination to externalize the alien self is semi-consciously expressed through a desire to have others experience what they are going through (Luyten et al., 2012b). In romantic relationships, individuals who suppress their

feelings may also resort to externalizing the alien self when facing pressure within the context of the relationship. There is a possibility that individuals who demonstrate self-silencing in their interactions with their partners, also often externalize the suppressed feelings through somatic experiences or exacerbate their severity without engaging in mentalizing. While acknowledging the role of biological factors, identifying the potential FSD perpetuating behaviours may be helpful to validate these patients.

The study findings suggest that self-silencing and the experience of an 'alien self' may play a role in perpetuating FSD symptoms within romantic relationships. When individuals with FSD suppress their authentic emotions and externalize their distress through somatic experiences, they may struggle to effectively mentalize and communicate their needs to their partners. This difficulty in mentalizing and communication can potentially exacerbate the impact of FSDs on the relationships (Luyten and Fonagy, 2018).

Power Imbalance and Rebalance

The enduring relationships of the interviewed couples, which provide a secure base for navigating physical and psychological distress, however, an underlying power struggle often also observed between partners. Power, as a pervasive social construct in everyday interactions and relationships (Gergen and Davis, 2012), has long been scrutinized in social and personality science. Studies have explored variations in power levels among romantic partners and the consequential impact on variables like relationship satisfaction (Körner and Schütz, 2021; Rodman, 1967; Safilios-Rothschild,

1976; Wolf, 1961). From a mentalizing perspective, a stable relationship is essential for fostering mentalizing and mitigating the adverse effects of FSDs on the couple. The couples' reported experiences reveal a mutual reinforcement between mentalizing and supportive relationships (Bateman and Fonagy, 2016). However, these couples are also contending with chronic symptoms that can impair the index person physically, mentally, and socially. In the specific context of FSD, the delicate balance between autonomy and attachment becomes more intricate.

The observed power balance between the index person and the partner is dynamic rather than static. Blatt's Two-Polarities Model underscores the dialectic relationship between self-definition (the introjective pole) and relatedness (the anaclitic pole) in personality development and psychopathology. Personality states are calibrated based on an individual's position along this dimension, defined by the two polarities (Blatt and Blass, 1996; Blatt and Blass, 1990; Blatt and Luyten, 2009). The index person inevitably relies on the partner emotionally and for tangible help on challenging days. When unwell, the index person leans on the partner to care for the children, assist around the house, and offer immediate help. The partner aids in addressing symptoms, either directly or indirectly. The partner's proximity, whether providing direct assistance like social modulation of pain or indirectly by offering a sense of safety and comfort, alleviates the severity of the problem. In such circumstances, the index person may experience higher dependency, potentially resulting in reduced power within the relationship.

However, according to the Two-Polarities Model, an individual's position on the dimensions between self-definition and relatedness is complex, interactive, and synergistic. This dimension's dialectic nature involves dynamic changes and the potential for resolution (Luyten et al., 2019a). The constant dependency on the partner may decrease the index person’s sense of autonomy or even self- esteem. Therefore, when the context changes, the power dynamic shifts due to the rebalance between the needs for independence and interdependence.

When examining couples' interactions during symptom attacks, the power is not held solely by the partner, who also serves as the caretaker. Despite the index person typically being identified as emotional and less rational than the partner, with the partner usually making decisions for both, during a symptom attack, the index person takes the lead. They are in charge of responding to this changed, stressful situation, with the partner following their instructions to avoid further upsetting the index person. The pain and suffering caused by symptoms, while distressing, seem to confer a certain 'authority' to the index person. This feeling of having sole authority aligns with our assumption that the index person may think their symptoms are too complex for others to fully grasp.

Interestingly, as symptoms worsen, the power dynamic within the couple shifts. The index person gains increased entitlement to impatience, seeking help, asserting their preferences, foregoing family duties, or withdrawing from intimacy. The partner appears to accept this shift without disagreement, acknowledging that the onset of

symptoms takes precedence in the moment. The index person is recognized as the sole expert, granting them enhanced authority in the relationship.

The partners may find themselves in a powerless position due to the impact of the index persons' symptoms. During interviews, partners mentioned their health issues to balance the perceived power imbalance, creating a sort of competition about who is sicker. Nevertheless, in alignment with their 'cognitive' and 'caregiver' role within the relationship, partners willingly redirect the focus onto the index person, conveying an unspoken sentiment akin to, 'While I also contend with conditions, I manage mine more effectively.' This inference reflects their underlying thoughts. The changing power dynamic may be seen as a way for the couple to balance their interrelatedness and self-definition in the context of FSDs. From a mentalizing perspective, effective mentalizing requires balancing different dimensions according to context (Bateman and Fonagy, 2016), and the couple may cultivate this context-specific, symptom-focused mentalizing to adapt to FSD's complex and fluctuating nature.

Systemic Perspective

Another way to understand the power struggling within the couple is through a systemic view or family theory. System theorists have suggested that somatic symptoms maintain the balance of family dynamics, allowing the identified patient (IP) to express their emotional needs without disrupting acceptable family functioning. The perpetuation of symptoms is a way to cope with a family relationship and is silently

agreed upon by everyone (Bowen, 1978; Minuchin, 1974; Minuchin et al., 1978b).

From systems perspective, similar to the Self-silencing Model discussed previously, the somatizer's (individuals with FSDs) poor interpersonal communication facilitates indirect symbolic communication of emotional aspects of the relationship, which both partners find safer or less threatening than direct verbal communication. The adherence to black-and-white logic maintains resistance to change within the system, leading to a continuous shift towards more rigid role adoption in the quest for stability. Conversely, a tightly enmeshed system prevents the dyad from directly addressing underlying relational conflicts (Retzer, 1991; Waring, 1983).

System theorists suggest that the manifestation of somatization serves to uphold pseudo-powerful, rigidly defined roles within the dyadic relationship. The nurturing role taken on by the non-somatizer provides them with an unrealistic sense of power as the caregiver in the relationship. However, this comes at the expense of the index person's health. Engaging in a relational dance cantered around symptoms equally fosters an unrealistic sense of power for the patient. Meanwhile, the dyad's focus on physical symptoms detracts from addressing underlying relational conflicts and dysfunctional attachment styles (Taylor et al., 2000a).

According to family theory, issues can arise within both patients and their relationships, and symptom presentation serves as a method to maintain harmony within the relationship and balance power between both parties. This dynamic power balancing is evident in interviews as well. The index person usually listens to and relies

on their partner during regular days. When symptoms arise, the index person inevitably depends on their partner even more but may feel entitled to seek their help or delegate family responsibilities. Outside of symptom episodes, the partner often holds more decision-making power and also assumes a caregiving role when symptoms arise. While the partner may agree to relinquish more power during the index person's distress, they may sometimes position themselves as more knowledgeable or in control over the physical symptoms, both their own and those of the index person. Conversely, the index person may hesitate to trust their partner's assessment of symptoms, including their cause or remedy, as they perceive themselves to be the authority in this domain.

While recognizing the psychodynamics within couples is important, it is not the whole story in understanding FSD. However, the systemic perspective offers a broader view, highlighting the significant role that close relationships may play in the development and perpetuation of FSDs. This assumption aligns in part with the attachment and mentalizing approach adopted by this study. The capacity to mentalize encompasses both ‘trait’ and ‘state’ aspects, which may vary in quality depending on emotional arousal and the interpersonal context (Ballespi et al., 2019). The underlying power dynamics may play a crucial role in this regard.

Cultural Context

While the themes that emerged from this study appear to reflect more universal experiences of couples dealing with FSDs, it is important to acknowledge that the

findings are situated within the cultural context of Taiwanese couples. The way these couples experience and make sense of their relationship dynamics, emotional expression, and power struggles may be subtly influenced by cultural norms and values specific to Taiwanese society. For instance, emotional self-control seems to be considered a thoughtful gesture by both the index person and their partner, as expressed by one participant: 'In most cases, I can handle my own emotions' (502 IN). This suggests that not being emotional, even with long-term romantic partners, may be seen as an act of being responsible or considerate in Taiwanese culture (Ip et al., 2021; Liddell and Williams, 2019). Similarly, emotion control may explain why none of these couples explicitly displayed attachment behaviours, such as hugging each other, when discussing emotion-charged incidents, even though some couples mentioned enjoying their physical intimacy.

However, this emotional self-control could also result from individuals silencing their feelings when they find themselves in conflicts and try to maintain relational harmony (Jack, 1991; Jack and Dill, 1992). Despite these potential cultural influences, the lack of explicit cultural differences in the findings suggests that the experiences of Taiwanese couples in this study may share significant similarities with couples from other cultural backgrounds dealing with FSDs. Future research could further explore the potential role of culture in shaping couples' experiences of FSDs across different cultural contexts, as well as investigate the balance between cultural norms and individual experiences within long-term romantic relationships.

5.5 Limitations and Reflexivity

In this interview study, we aimed to explore the experiences of Taiwanese couples where at least one partner has elevated FSD symptoms. While the depth of the phenomenological analysis appeared to capture the complexities of participants' experiences, several limitations should be considered.

In qualitative research, it is recognized that the researcher plays an integral role in the process and may reflect on their own influence and experiences within the research (Biggerstaff, 2012). As a Taiwanese woman with personal relationship experiences, overseas education, and a clinical background, I acknowledge that my beliefs and values related to romantic relationships and mental health may have influenced my interactions and analysis, despite ongoing journaling and discussions with supervisors and peers. Some subtle cultural factors that might be more prominent in other contexts may not have been identified. Moreover, in IPA, the interpretative nature and double hermeneutic entail the researchers reporting their understanding of participants' descriptions and reasoning about their experiences, rather than presenting the experiences as pure phenomena themselves (Smith and Nizza, 2022). This is particularly pertinent when exploring the opaque nature of mentalizing, as the results are inevitably limited to reflecting our understanding of the participants' experiences, rather than presenting one, objective 'fact'.

The use of purposive sampling ensured that all couples in the study were selected for their relevance to the research question, which might limit the

representativeness of the findings to the broader population of Taiwanese couples dealing with FSDs. Three of these couples were recruited from my personal connections and the familiarity with these particular couples could have influenced their responses or my interpretation of their experiences.

Conducting interviews online about sensitive relationship topics might have impacted participants' comfort levels and willingness to share openly, affecting the richness and depth of the data obtained. While the online format allowed for easy capture of facial expressions and body language, it might have made participants more self-aware as they constantly saw themselves on the screen, potentially influencing their responses. Additionally, the online setting may have reduced the chances for couples to look at each other during the interview, which could have provided valuable insights into their interactions. Although I adhered to ethical guidelines, informing participants at the beginning that they could prioritize their comfort and suspend the interview if they became emotionally overwhelmed, this approach may have limited the full exploration of their emotions and experiences.

The study involved only one interview at a single point in time. A longitudinal approach with multiple interviews could have provided insights into how the symptom-related experience, mentalizing capacity, and couple dynamics changed over time. However, data saturation was reached, and we tried our best to ensure a comprehensive range of issues was explored.

The study aimed to provide more lived experiences of couples experiencing

FSDs, and the findings are specific to this particular group of Taiwanese couples. Thus, they cannot be generalized to the wider population of couples dealing with FSDs. The transferability of the findings to other contexts or populations may be limited due to the idiographic nature of IPA and the specific cultural and methodological factors involved in this study.

5.6 Conclusion

In this qualitative study, we employed Interpretative Phenomenological Analysis (IPA) to explore the lived experiences of Taiwanese couples where at least one partner has elevated symptoms of FSDs. Through in-depth online interviews, we gained valuable insights into the complex interplay between attachment styles, mentalizing, and FSD symptoms within romantic relationships. The emergent themes shed light on mentalizing cycles, the influence of attachment styles on emotional expression and mentalizing, symptom-focused mentalizing, and power struggles within the relationship. These findings underscore the potential importance of understanding FSDs within the context of romantic couples, as the dyadic nature of mentalizing and the reciprocal influence of each partner's attachment style and mentalizing capacity play crucial roles in shaping their symptom-related experiences. By acknowledging the limitations and engaging in reflexivity, we aimed to present findings that transparently represent the experiences of the Taiwanese couples who participated in this study while recognizing the inherent subjectivity of the interpretative process. This

study contributes to the growing body of literature on the relational aspects of FSDs and highlights the need for further research to inform the development of tailored support interventions aimed at improving the quality of life for individuals dealing with FSDs.

Chapter 6: Discussion and Conclusion

6.1 Introduction

This study aimed to investigate Functional Somatic Disorder (FSD) within the context of romantic relationships using a mentalizing-based approach. To examine the interplay between couples' attachment, mentalizing, and functional somatic symptoms, a systemic perspective was adopted in combination with a mixed-method research approach.

Study 1 surveyed 74 couples to explore the reciprocal effects between romantic partners' attachment dimensions, mentalizing capacity, and the severity of FSD symptoms. The quantitative findings showed significant associations between attachment anxiety, mentalizing impairments, and somatic symptom severity. Path analysis revealed that a partner's attachment anxiety directly influenced the index person's symptom severity, partially supporting the view that a systemic perspective may be needed for understanding and treating FSDs.

Study 2 provided a more in-depth exploration of these dynamics by examining the lived experiences of nine couples through in-depth interviews. The qualitative insights gained from this study provided a much more nuanced understanding of how attachment styles and mentalizing capabilities interact within couples, highlighting the reciprocal nature of these relationships and their impact on FSD symptoms.

These two studies provide a foundation for examining the integrated findings from both quantitative and qualitative perspectives, which will be the main focus of this chapter, together with a discussion of clinical implications and directions for future research. Investigating the dyadic and reciprocal effects between couples' attachment dimensions and mentalizing capacities offers valuable insights that may contribute to the development of improved treatments and management strategies for FSDs. The mixed-method approach of this study reveals the interplay of attachment styles, mentalizing capacities, and relational dynamics in shaping the experience and expression of FSDs within romantic relationships.

6.2 Integrated Insights on Couple Dynamics and FSDs

Building on the findings from both studies reported in the previous chapters of this thesis, the mixed-method approach adopted in this study provides complementary insights into how attachment styles, mentalizing capacities, and relational dynamics shape the experience and expression of FSDs within romantic relationships. The following sections discuss five key findings that emerged from this integrative approach, focusing on 1) the potential role of attachment anxiety, 2) attachment avoidance, 3) mentalizing interdependency, 4) contextual impairments in mentalizing, and 5) power imbalances within the couple relationship. I will try to show how these findings align with existing research on the importance of couple dynamics in understanding FSDs, but also suggest potential avenues for further investigation into

the nuanced and reciprocal processes at play.

6.2.1 Attachment Anxiety and Mentalizing

Both the quantitative and qualitative findings provide evidence suggesting that attachment anxiety may play an important role in influencing the expression and course of FSDs within romantic relationships. The quantitative study, using variable-centered and complementary person-centered approaches, found that attachment anxiety in both partners was associated with higher FSD severity in the index person, and this association was potentially mediated by mentalizing impairments. Index person with preoccupied attachment reported significantly higher symptom severity compared to other attachment style groups, which is potentially explained by difficulties in (embodied) mentalizing.

The qualitative findings offered a more nuanced understanding of these quantitative results. They suggested that anxiously attached individuals' desires for proximity and attention, particularly during periods of illness, may be associated with increased levels of tension and conflict within the couple. During such periods, often induced by an exacerbation of symptoms, life events, or a combination of both, individuals with anxious attachment seemed to increasingly seek proximity and attention from their partner. This dynamic appeared to result in more frequent failures to mentalize each other's attachment needs effectively, leading to feelings of rejection and frustration from both partners. These experiences seemed to further fuel insecurity within the couple, potentially activating secondary attachment strategies

such as hyperactivation (i.e., intensified efforts to seek proximity and support) or deactivation (i.e., emotional withdrawal and suppression).

The qualitative observations also suggest that when an individual with anxious attachment has a partner with avoidant attachment, the dynamic between the couple may worsen. In such cases, the anxiously attached individual's heightened desire for proximity and reassurance during symptom flare-ups may be met with emotional distancing and withdrawal from the avoidantly attached partner. This observed mismatch in attachment needs and responses can amplify feelings of rejection and frustration, as suggested by the heightened conflict and distress observed in our qualitative data.

The complex interplay between insecure attachment and mentalizing impairments may exacerbate relationship tension. When individuals with anxious attachment experience heightened emotional distress and engage in behaviours that create relational stress, their partner's mentalizing abilities may be challenged, leading to difficulties in understanding and responding to each other's emotional needs. This, in turn, can further fuel insecurity and contribute to a cycle of increased tension within the couple. This increased tension could potentially lead to aggregated stress responses in the index person, which, in turn, may contribute to elevated FSD symptoms. One potential explanation for these findings, which would need to be examined in further research, is that the anxiously attached individual's heightened desire for proximity and reassurance during symptom flare-ups may lead to behaviours

that create relational stress. This stress could potentially contribute to aggregated stress responses in the index person, which, in turn, may exacerbate their FSD symptoms. However, the specific mechanisms underlying this proposed pathway would need to be investigated in future studies. This proposed pathway is consistent with the biopsychosocial model of FSDs, which posits that interpersonal stress and difficulties in emotion regulation can contribute to the onset and maintenance of somatic symptoms (Jansman et al., 2019). However, further research is needed to confirm this potential causal chain and explore the specific mechanisms involved.

The findings summarized above are also consistent with previous research highlighting the role of insecure attachment in FSDs. Several studies have shown that insecure attachment styles are common among individuals with FSDs (Luyten and Fonagy, 2020; Luyten et al., 2012b; Riem et al., 2018). The current quantitative study extends this understanding by identifying specific pathways through which attachment anxiety may influence FSD severity within romantic relationships, emphasizing the potential mediating role of mentalizing impairments impairments and both attachment anxiety and avoidance (discussed in the next section). The qualitative observations further enrich this understanding by illustrating how the interplay between different insecure attachment styles within a couple may amplify the challenges in mentalizing and emotion regulation, potentially contributing to the maintenance or exacerbation of FSD symptoms.

Moving from attachment anxiety, the next section explores the role of attachment

avoidance in couple dynamics.

6.2.2 Attachment Avoidance and Mentalizing

The quantitative and qualitative findings suggest some potential inconsistencies regarding the role of attachment avoidance in mentalizing and FSD severity. The quantitative results indicate that a couple's attachment avoidance was only correlated with their own impaired mentalizing, without significant 'crossover' effects on their partner's mentalizing impairments or the FSD symptoms in the index person. The results also suggested a correlation between the index person's and their partner's avoidant attachment styles, but no significant correlation was found between between the index person's and their partner's anxiety attachment styles.

These findings align with observations from couple interviews, where partners tend to seek attachment differently during moments of tension, with one partner seeking proximity while the other seeks distance, or both partners avoiding underlying issues. However, during interviews, couples were more likely to explore the reasons behind their avoidant behaviour when their partner seemed distant.

The qualitative findings suggest that attachment avoidance may hinder the index person's ability to co-regulate stress and emotions, which could potentially affect their mentalizing and well-being. Avoidant individuals often minimize or suppress their emotional needs and may have difficulty seeking or accepting support from their partners (Fraley and Shaver, 1997). This avoidant strategy, while intended to maintain a sense of self-reliance and autonomy, may be particularly maladaptive in the context

of chronic illness, where effective co-regulation and support-seeking are crucial for managing symptoms and reducing stress (Luyten et al., 2013).

The inconsistency between the quantitative and qualitative results could be due to methodological factors. Attachment avoidance may be more readily expressed and observed during interviews than reported in self-report measures, possibly due to factors such as defensive processes, lack of insight, social desirability bias, or context-specific attachment patterns (Fraley and Shaver, 1997; Locke, 2008; Mikulincer and Shaver, 2010; Ross and Spinner, 2001). Self-report measures of attachment avoidance may be subject to defensive reporting or lack of insight, as avoidant individuals may have difficulty acknowledging their emotional needs or the impact of their avoidant strategies on their relationships. They may also be more likely to present themselves in a socially desirable manner, minimizing their avoidant tendencies. In contrast, the attachment dynamics related to avoidance may be more easily identified and explored during in-depth interviews, where the researcher can probe for specific examples and observe the couple's interactions. The qualitative approach allows for a more nuanced understanding of how attachment avoidance manifests in the couple's experiences and relationships, capturing the subtle ways in which avoidant individuals may distance themselves emotionally or minimize their attachment needs. While path analysis helps understand the strength of relationships, it may not fully capture the complexities and context-dependent nature of attachment avoidance, which can be better elucidated through qualitative methods (Mikulincer and Shaver, 2010). The inconsistencies between the quantitative and qualitative findings regarding attachment

avoidance suggest that the role of avoidance in mentalizing and FSD severity may be more complex than initially assumed.

Another possible explanation for the difference between survey and interview results in relation to avoidance may be the couple's self-silencing. Couples may choose avoidance or silence to maintain peace, reducing the likelihood of arguments but potentially exacerbating depressive feelings and aggregate symptoms. This tendency is exemplified in the interviews, where index persons appear to be reluctant to express themselves or resort to indirect confrontation when their partner is upset. Self-silencing, or the suppression of one's genuine thoughts, feelings, and needs to avoid conflict and maintain relationship harmony, has been linked to increased psychological distress and somatic symptoms (Jack, 1991). In the context of FSDs, self-silencing may be particularly problematic, as it can lead to a disconnect between the individual's emotional experience and their bodily sensations, contributing to the development or maintenance of somatic symptoms (Luyten et al., 2013). Moreover, self-silencing can perpetuate a cycle of emotional invalidation and isolation, as the individual's needs and concerns remain unaddressed within the relationship. The current study may extend these findings to the context of FSDs, suggesting that self-silencing and avoidance may contribute to the exacerbation of symptoms and relationship distress in FSD couples.

Withdrawal and suppression may lead to feelings of invalidation and isolation, heightening stress in the relationship and potentially aggravating symptoms in the

index person. This is consistent with the findings of a related study conducted by Jansman et al. (Jansman et al., 2019), which found that crying frequency was related to attachment avoidance in patients with medically unexplained somatic symptoms, and FSD severity was associated with more negative attitudes toward crying. These findings suggest that attachment avoidance and negative attitudes towards emotional expression may play a role in the experience and severity of FSDs, aligning with the idea of self-silencing and suppression of emotions observed in the qualitative interviews.

Following the discussion on attachment avoidance, the next section highlights the interdependency of mentalizing within the couple.

6.2.3 Interdependency of Mentalizing within the Couple

Both the quantitative and qualitative findings provide evidence highlighting the potential reciprocal nature and interdependency of mentalizing within FSD couples. The quantitative study suggests an actor-partner effect in the couple's mentalizing impairments, which may mediate the relationship between their attachment styles and the index person's symptom severity. This finding indicates that each partner's mentalizing difficulties may not only affect their own well-being but also have an impact on their partner's mentalizing and, in turn, the index person's FSD symptoms. The data suggest that mentalizing at the couple level may be as significant as at the individual level for effective communication and emotional co-regulation within relationships. However, there has been little research on this topic.

The qualitative findings further illustrate how bi-directional processes may unfold within specific relationships, with successful mentalizing reinforcing feelings of understanding and reciprocity, while failures in co-mentalizing may lead to increased feelings of alienation and conflict. These findings are consistent with the conceptualization of mentalizing as a fundamentally interpersonal process, which is shaped by the quality of early attachment relationships and continues to develop within the context of close relationships throughout life (Luyten et al., 2012a).

The studies provide further evidence to suggest that attachment styles may potentially influence emotional expression and mentalizing within FSD couples. Specifically, the quantitative results indicate that attachment anxiety in both partners is associated with higher FSD severity in the index person, potentially mediated by mentalizing impairments. The qualitative findings complement this by illustrating how the interplay between different insecure attachment styles within a couple may amplify challenges in mentalizing and emotion regulation, thereby contributing to the maintenance or exacerbation of FSD symptoms.

The couple interviews provided an opportunity to observe that mentalizing capability fluctuates not only across relationships, but also within the dynamics of a single relationship as they change over time (Luyten et al., 2012a). Even in relatively long and stable relationships, couples appear to demonstrate both the ‘trait’ and ‘state’ natures of mentalizing, influenced by emotional arousal and interpersonal context (Asen and Fonagy, 2017). The couple's mentalizing often varies along with the topics

discussed. They may make deep and reflective comments about each other in general but appear to show breakdowns in mentalizing when talking about emotionally charged subjects, such as previous arguments or symptom-related distress. As seen in the quantitative results, attachment anxiety appeared to be more influential than avoidance; index persons may find it more challenging to mentalize when their partner is anxious. In the interviews, index persons also described how, during the episodes of relationship conflict, they often feel overwhelmed and unable to process their thoughts and feelings. When the relationship is unsatisfactory and unstable, hindrances to the couple's mentalizing may potentially resurface.

The findings from these studies align with and extend the current literature on FSDs and the role of attachment and mentalizing in romantic relationships. Existing literature indicates that a supportive relationship facilitates mentalizing, while a troubled one inhibits it (Ballespi et al., 2019). Relationship satisfaction has been found to moderate the association between partner's solicitous responses and fatigue- (Schmaling et al., 2000) and pain-related disability (Campbell et al., 2012) and severity (Turk et al., 1992), insofar as these associations are stronger among those with more satisfied relationships. A longitudinal study has shown that the negative responses of the significant other were associated with more pain, poorer physical and mental health, and more fatigue-related symptoms over time (Schmaling et al., 2020).

Previous research has identified mentalizing impairments as a potential mediator between insecure attachment and FSDs in patients (Luyten et al., 2012b; Riem et al.,

2018). The current quantitative study provides further evidence for this relationship and highlights the importance of considering both partners' attachment styles and mentalizing abilities in understanding FSD experiences. The interdependency of mentalizing within couples, as indicated in both studies, is consistent with the concept of mentalizing as a dyadic and reciprocal process (Fonagy and Target, 1997; Luyten et al., 2012a). The discussion now shifts to contextual impairments in mentalizing and their implications.

6.2.4 Contextual Impaired Mentalizing and Its Influence on Relationship Dynamics

Both the quantitative and qualitative studies underscore the potential importance of context-specific mentalizing impairments, particularly during emotionally charged interactions or symptom discussions. The quantitative study identifies mentalizing impairments in both partners as a possible mediator between insecure attachment styles and FSD symptom severity. This finding suggests that difficulties in understanding and regulating one's own emotions, as well as understanding the emotions of others, may play a role in the relationship between attachment insecurity and FSD symptoms.

The qualitative study reveals specific ways these impairments may manifest in couples' interactions, such as polarized mentalizing dimensions and difficulties in perspective-taking, providing a more in-depth understanding of moment-to-moment fluctuations in mentalizing. These findings highlight the dynamic and context-

dependent nature of mentalizing, which can be influenced by a range of factors, such as emotional arousal, relationship quality, and situational demands (Luyten et al., 2012a).

The survey results suggest that the index person's capacity to articulate emotions may be influenced more by their partner than by themselves. This finding is consistent with the idea that individuals with FSDs may have a heightened sensitivity to interpersonal stress and a greater need for validation and support from their partners (Luyten and Meulemeester, 2017). When the partner fails to provide this validation or responds in an invalidating manner, it may exacerbate the index person's mentalizing difficulties and contribute to a cycle of relationship distress and symptom aggravation.

The qualitative study found that couples often move to more polarized positions on mentalizing dimensions when emotionally aroused and take divergent perspectives on symptom interpretation and attribution. Mentalizing is a multidimensional capacity that can be organized around four dimensions, each of which has two poles, with both poles of each dimension being subserved by relatively discrete neural circuits (Frith and Frith, 2021; Luyten et al., 2020a). Effective mentalizing is considered to involve a balance and flexible movement between the different poles of the mentalizing dimensions and the systems underlying them (Luyten et al., 2024). One notable impairment may involve an overemphasis on one dimension of mentalizing. This tendency is particularly pronounced during symptom-specific mentalizing or in stressful situations, underscoring the importance of context. Consistent with existing

literature, we observe that heightened psychological arousal in couples tends to diminish explicit/reflective mentalizing, resulting in a dominance of automatic and non-reflective mental processes (Bateman and Fonagy, 2016). During stressful interactions, couples often unevenly prioritize specific dimensions (such as automatic vs. controlled, self vs. other, internal vs. external, and cognitive vs. affective). Moreover, there is often a polarization between the partners, leading to difficulties in understanding each other's perspectives. In such instances, impaired mentalizing capabilities may hinder the ability to 'hold one's mind in mind'.

These findings contribute to the growing understanding of context-specific mentalizing and its potential implications for FSD couples. By identifying specific ways in which mentalizing impairments manifest during emotionally charged interactions or symptom discussions, such as polarized mentalizing dimensions and difficulties in perspective-taking, the current study highlights the potential dynamic and context-dependent nature of mentalizing in FSD couples. This underscores the importance of assessing and addressing mentalizing impairments not only at a general level but also within specific relational contexts that may be particularly challenging for couples navigating FSDs.

During those moments, index persons often express challenges in understanding their partners. While these difficulties may stem from the index person's own impaired mentalizing or their partner's attachment styles, some index persons note that their partners are reserved in expressing their feelings, leading to confusion

and frustration. Conversely, partners often believe they understand the index person better, feeling more adept at discerning their partner's thoughts. However, the partner may also have contextual mentalizing impairments, such as overly focusing on cognitive features associated with mental states and ignoring the affective ones. This perceived disparity in mentalizing between partners may solidify fixed roles within the relationship, observed as a cognitive-emotional dynamic where the index person relies on their partner's perceived superior understanding. This perception of inadequacy in understanding and thoughtfulness may introduce stress into the relationship. Whether impaired mentalizing in the index person is a contributing factor to or a consequence of their FSD remains unclear; however, it appears that the established relationship roles may potentially reinforce these impairments.

Symptom-specific mentalizing also emerged during the interviews. The index person's attitudes towards symptoms and the partner's attempts to understand their experiences seem to contribute to the emotional dynamics surrounding FSDs. Index persons seem to relate to their symptoms differently as the condition worsens -- they usually report having adapted to living with the symptoms; however, when the symptoms get worse, their mood deteriorates, often feeling frustrated and fearing the worst. As the symptoms increase, the index persons often feel as though they are under attack and need to form a task force with the partner. The physical distress further creates stress and may further impede the mentalizing capacity. As observed in couples' statements, they tend to stick to certain routines when dealing with symptom flare-ups, or the index person might be irritated or impatient, and the partner

would often be walking on eggshells to avoid further upsetting the index person.

Hence, these findings provide preliminary evidence suggesting that, rather than a general impairment in mentalizing, couples may experience offline mentalizing in specific contexts of emotional arousal, such as during arguments or heightened symptomatic distress. Polarization in the mentalizing dimensions within the couple may become more apparent with aroused emotions. According to mentalizing theory, different types of psychological problems are thought to reflect specific types of imbalances on these dimensions, which can be expressed in different mentalizing profiles (Fonagy and Bateman, 2008; Luyten et al., 2012a). The interview results suggest that these couples' mentalizing profiles may fluctuate with the context and become imbalanced, often in a reciprocal cycle between them. Moreover, the index person's ability to articulate emotions may be more influenced by their partner than by their own efforts, based on our survey results.

Although studies on symptom-specific mentalizing are promising, their numbers are few (Katznelson, 2013; Rudden et al., 2006; Solomonov et al., 2019). Our findings on the influence of the partner's mentalizing on the index person's symptom severity are consistent with the literature on the interpersonal aspects of FSDs (Bateman and Fonagy, 2019; Borelli et al., 2020; De Meulemeester et al., 2017; Goldstein et al., 2022; Luyten et al., 2020a; Nolte et al., 2013). It highlights the potential importance of considering the relational context in understanding and treating FSDs, emphasizing the role of attachment styles and mentalizing capacities in shaping the experience and

expression of functional somatic symptoms.

As for the potential cultural factors in mentalizing, while the quantitative results suggested that the findings may be more universal than culture-specific, the qualitative study provided some insights into potential cultural influences on couples' mentalizing and emotional expression. the lack of explicit attachment behaviours observed during the interviews when discussing emotion-charged situations, such as hugging or other forms of physical comfort, could be attributed to cultural norms emphasizing emotional self-control in Taiwanese society. Furthermore, the qualitative findings highlighted the potential role of self-silencing in the context of relationship conflicts and FSD symptoms. Couples may often choose to avoid expressing their emotions or resort to indirect communication to maintain peace and avoid arguments, which could inadvertently exacerbate depressive feelings and aggregate symptoms. This tendency may be particularly relevant in collectivistic cultures like Taiwan, where individuals may prioritize relational harmony over individual emotional expression.

These cultural factors may contribute to the development of contextual impairments in mentalizing by shaping how couples perceive, express, and respond to their own and their partner's mental states during emotionally charged situations or symptom-related discussions. While the current study provides initial insights into these cultural influences, future research could further investigate how specific cultural norms and values may impact the mentalizing processes and relational dynamics in couples experiencing FSDs across different cultural contexts.

Lastly, the role of power imbalances within the couple relationship is examined.

6.2.5 Power Imbalance and Struggle within the Couple Relationship

The qualitative study unexpectedly revealed the presence of fluctuating power imbalances and struggles within FSD couples, potentially influenced by symptom severity and attachment styles. This finding was not directly examined in the quantitative study, highlighting the limitations of variable-centered approaches in capturing the complex relational dynamics that may contribute to FSD experiences.

One unexpected yet significant finding concerns the power dynamics within couples grappling with FSD, which suggest a fluctuating and intricate nature. The dynamics between partners appear to be associated with the severity of symptoms experienced by the index person, suggesting a potential bidirectional relationship between couple dynamics and FSD symptoms. The mixed-method approach enables us to observe how these relationship dynamics may evolve over different time points.

In the typical relationship dynamic, the partner without FSD symptoms often seems to assume a dominant role, making decisions and guiding the relationship. The index person, who experiences FSD symptoms, tends to follow their partner's lead. This power imbalance may be influenced by the couple's attachment styles and the index person's chronic condition.

The index person often reported experiences feelings of guilt or inadequacy about not being able to contribute equally to the relationship or fulfil their roles as a partner or parent, which may or may not be due to their FSD symptoms. However,

when the index person's FSD symptoms intensify, a notable shift in the power dynamic is often reported. Despite the index person's increased feelings of dependency on their partner, they may assert more control over the situation. Instead of apologizing for their limitations, the index person may start giving instructions or orders to their partner, directing them to take on additional responsibilities such as household chores or childcare duties, to allow the index person to rest and manage their symptoms. At those times, the index person often prefers to keep their partner at a reachable distance but deal with their symptoms alone.

As the severity of their symptoms increases, the index person may feel more justified in demanding additional support and accommodations from their partner. Their feelings of guilt or inadequacy may be temporarily overshadowed by their need for assistance. The partner, who is accustomed to being in a dominant role, may initially comply with the index person's instructions or orders to maintain peace and provide support during symptom flare-ups. However, this compliance may not always be willingly given and can lead to feelings of resentment or frustration, potentially resulting in the partner reasserting themselves. The observed shifts in relationship dynamics in response to changes in symptom severity are noteworthy, but the underlying psychological processes remain speculative at this stage.

Blatt's Two-Polarities Model, also known as the Two Configurations Model, offers a potentially useful framework for understanding the dynamic power struggle observed in couples where at least one partner has FSDs. This model posits that personality

development and psychopathology can be understood in terms of two fundamental dimensions: interpersonal relatedness and self-definition (Blatt, 2008a; Blatt and Blass, 1996). Interpersonal relatedness refers to the capacity for establishing and maintaining mutually satisfying relationships. It involves the ability to form close, empathic, and reciprocal connections with others. In FSD couples, the index person's need for support and understanding during symptom flare-ups can be seen as an expression of their desire for interpersonal relatedness. They may seek emotional closeness and reassurance from their partner to cope with the distress associated with their condition (Blatt and Zuroff, 1992; Luyten and Blatt, 2011).

On the other hand, self-definition refers to the development of a coherent, differentiated, and positive sense of self. It involves the ability to establish autonomy, set goals, and assert one's needs and desires. In FSD couples, the index person's assertion of control during symptom flare-ups can be understood as an attempt to maintain a sense of self-definition in the face of their chronic condition. By having a sense of entitlement or giving orders to their partner, they may be trying to regain a sense of agency and control over their body and environment (Blatt and Blass, 1996; Luyten and Blatt, 2013).

Blatt's model emphasizes the dialectical relationship between interpersonal relatedness and self-definition. Healthy personality development involves a balance and integration of these two dimensions. However, an overemphasis on one dimension to the neglect of the other can lead to psychopathology (Blatt and Shichman,

1983). In FSD couples, the power struggle may reflect an imbalance between the index person's needs for interpersonal relatedness and self-definition. During symptom flare-ups, their heightened need for support and understanding (interpersonal relatedness) may coexist with an exaggerated assertion of control and autonomy (self-definition), leading to a disruption in the relational equilibrium (Blatt, 2008b; Luyten and Blatt, 2011). This dynamic balance may be illustrated by the assertion that the index person prefers to engage in self-care while keeping their partner nearby when symptoms arise. The findings from the current study are consistent with the systemic perspective on FSDs, which proposes that somatic symptoms may serve to maintain the balance of relationship dynamics and power structures (Minuchin et al., 1978b; Sayre, 2002). For instance, the qualitative observations of fluctuating power dynamics in FSD couples, where the index person's symptom severity appears to be associated with changes in their assertiveness and control within the relationship, are consistent with the notion that FSDs can be conceptualized as a means of regulating interpersonal processes and maintaining relational equilibrium (Hyphantis et al., 2009; Krivzov et al., 2021; Liu et al., 2011; Thoburn et al., 2009). By emphasizing these potential systemic functions of FSD symptoms, the current study highlights the significance of considering the broader relational context in understanding and treating these conditions. More research is needed to investigate whether, and if so, how these power dynamics are related to individuals' attachment and broader developmental history.

In conclusion, the integrated findings of this PhD study highlight the complex

interplay of attachment styles, mentalizing capacities, and relational dynamics in shaping the experience and expression of FSDs within romantic relationships. The findings in relation to power struggles within FSD couples, which emerged from the qualitative study, underscore the need for multiple methodologies and perspectives to fully understand the potential role of relational dynamics in the development and maintenance of FSDs.

6.3 Clinical Implications

Our study provides preliminary insights into the contextual impairments in mentalizing within couples where at least one partner has FSD symptoms. The findings suggest the potential importance of assessing and addressing mentalizing impairments in both partners, particularly in the context of heightened emotional arousal and symptom-specific situations. However, further research is needed to establish the clinical significance of these findings and to develop evidence-based interventions that effectively target these impairments.

The results of this study suggest in the first place that a more systemic view of the predisposing, precipitating, and perpetuating factors in FSDs may be warranted, consistent with existing literature on the role of emotion regulation in the pathways between social interaction and physical and mental health (Grigaitytė and Söderberg,

2021). Research on the mentalizing approach to somatoform disorders increasingly suggests a causal sequence from disruptions in attachment to impairments in mentalizing and stress dysregulation, leading to a pattern of hyperreactivity to stress (Luyten et al., 2019b).

The findings of this thesis underscore the importance of considering the interpersonal context when understanding and treating FSDs. By suggesting the potential reciprocal influences of attachment styles, mentalizing capacities, and symptom severity within romantic relationships, this research suggests that addressing relational processes may be valuable in supporting individuals with FSDs. Interventions that consider the couple's dynamics, such as fostering secure attachment, enhancing mentalizing skills, and promoting adaptive emotion regulation strategies, may help to alleviate FSD symptoms and improve overall psychological well-being for both partners. Future research could explore how these interpersonal factors can be integrated into existing treatment approaches for FSDs and evaluate the potential benefits of incorporating a relational perspective in clinical practice. The potential effectiveness and feasibility of such interventions need to be established through rigorous research, considering potential challenges such as recruitment difficulties, attrition rates, and the need for specialized training for therapists.

To address the systemic perspective on FSDs, one implication is to include an interpersonal perspective in case formulation for clinical treatment. Empirical studies reveal that perceived social support reduces the severity of somatic symptoms

(Nagpure et al., 2020; Reddy et al., 2018; Reich et al., 2006; Reig-Garcia et al., 2021; Wesley et al., 2013). Although relationship issues may predate the symptom, exploring the patient's unique experiences and challenges in their interpersonal or romantic relationships may be significant in identifying perpetuating factors and increasing perceived support for the patients.

Another possible approach is involving the romantic partner in the treatment and management of FSDs, which is more common in multidisciplinary treatments. Research suggests that FSD symptoms are associated with marital relationship difficulties, which, in turn, are linked to various negative outcomes, such as psychological distress and intra-family conflict (Cano et al., 2004; Romano et al., 1997). Therefore, focusing on improving relationship skills and interpersonal dynamics could be a promising target for intervention in couples affected by FSDs. In a study on behavioural theory concerning relationships between patient pain behaviours and partner responses. , partner solicitous and negative behaviours were associated significantly with the rate of patient pain behaviours, after controlling for patient age, gender, and pain intensity (Romano et al., 2000). In a study by Edlund et al., brief validation training for partners or closest family members led to increased validating and decreased invalidating responses toward individuals with chronic pain. This training resulted in an immediate positive impact on the emotions of the person with pain (Edlund et al., 2015).

The recent shift in the mentalizing approach towards a broader social-

communicative perspective (Luyten et al., 2020a) suggests that psychological treatments may work by improving epistemic trust and enabling social learning. In the context of couple-based interventions for FSD, this could involve creating a safe, trusting environment where partners can openly express and reflect on their thoughts, feelings, and experiences related to the disorder. By promoting a mentalizing stance and emphasizing the couple's joint intentionality in understanding and managing FSD, such interventions may help restore epistemic trust and facilitate the co-construction of new, more adaptive narratives about the illness experience. This, in turn, may lead to increased resilience and improved outcomes for both partners. Meanwhile, the effectiveness of this approach needs to be tested empirically, and potential barriers to implementation, such as resistance from partners or difficulties in establishing a trusting therapeutic alliance, need to be considered.

However, involving partners, such as in couple therapy or psychoeducation for the couple, should be cautiously considered as part of the complete treatment plan, after case conceptualization work that includes an assessment of the couple's relationship. Fixed relationship roles within the couple may jeopardize the treatment and reinforce dysfunctional patterns if the timing or approach is not appropriate. For instance, partner solicitousness is a factor that affects chronic pain and marital functioning. Edlund et al. (Edlund et al., 2015) described examples of solicitous responses, such as taking over household chores, offering help, or adapting daily activities to the person in pain when it reinforces dysfunction. While pain patients with a solicitous partner reported more relationship satisfaction (Cano et al., 2004), several

studies have found that solicitous responses are associated with greater pain intensity (DC, 1992; Flor et al., 1987; Kerns et al., 1990), increased frequency of pain behaviours (DC, 1992; Romano et al., 1997; Romano et al., 1995) less activity (Flor et al., 1987) and increased disability (DC, 1992) in patients. This stresses the importance of identifying and developing a supportive way for the couple to interact without reinforcing dysfunction.

Another possible implication of a more interpersonal approach to FSDs is a greater focus on the interpersonal component, particularly in patients with an insecure attachment history and/or a history of complex trauma, which have been found to be significantly prevalent in some samples (Greenman et al., 2024; Lin et al., 2020; Loeb et al., 2018; Luoni et al., 2018; McCall-Hosenfeld et al., 2014; Nacak et al., 2017; Petkus et al., 2009; Sadeghi et al., 2017; Uji, 2022; Waldinger et al., 2006). Dynamic Interpersonal Therapy for FSD (DIT-FSD) is an integrative psychodynamic psychotherapy that has been shown to be effective in the treatment of FSDs (Luyten and Fonagy, 2020). A pilot study comparing DIT with cognitive-behavioural therapy (CBT) for patients with medically unexplained somatic symptoms found that both interventions led to significant improvements, suggesting DIT may be a viable alternative to CBT (Selders et al., 2015). DIT-FSD focuses on the three core features of patients with FSD: the activation or reactivation of secondary attachment strategies to deal with persistent somatic problems, the resulting impairments in embodied mentalizing, and problems with epistemic trust (Abbass et al., 2021; Luyten and Fonagy, 2016; Luyten et al., 2013). When patients have significant deficits in

embodied mentalizing, therapy typically focuses on restoring this ability before exploring the patient's interpersonal dynamics in depth. As therapy progresses, the emphasis shifts to collaboratively establishing an Interpersonal Affective Focus (IPAF) between the therapist and patient. This IPAF delineates a recurring, often subconscious pattern of self and relational interaction that is intricately tied to the development and persistence of functional somatic issues (Abbass et al., 2021; Luyten et al., 2019b; Luyten and Fonagy, 2020; Luyten et al., 2013; Luyten et al., 2012b).

Similarly, Psychodynamic Interpersonal Therapy (PIT) is a approach, stemming from the fact that people with psychological problems such as depression often report problems with managing their feelings, as well as difficulties in their relationships with other people (Humer et al., 2021). A randomized controlled trial found that 12 sessions of brief PIT led to greater improvements in physical quality of life compared to enhanced medical care for patients with multiple chronic medically unexplained symptoms, with benefits emerging after treatment and being associated with the intensity of interpersonal elements in the therapy (Sattel et al., 2012). These findings, along with previous research showing interpersonal functioning is linked to reduced distress in irritable bowel syndrome (Hyphantis et al., 2009),suggest that addressing interpersonal issues through psychotherapy may enhance overall well-being for individuals with FSDs. These findings, along with the evidence supporting the efficacy of interpersonal approaches like DIT for FSDs (Selders et al., 2015), highlight the potential value of addressing interpersonal dynamics in the treatment of these conditions.

When integrating a partner-focus in DIT-FSD and PIT, the findings suggest that clinicians may want to consider the following approaches in different stages of treatment. In the initial stage, therapists could begin with a systemic case formulation, considering the role of the partner and the couple's relationship dynamics in the development and maintenance of the patient's FSD during the initial assessment and case formulation. Additionally, depending on the specific needs and dynamics of each couple, partners could be involved in the therapy process to varying degrees, ranging from occasional joint sessions to more extensive couple-based interventions.

As therapy progresses into the middle stage, both DIT-FSD and PIT may benefit from incorporating techniques to enhance mentalizing capacities within the couple, such as encouraging perspective-taking and promoting curiosity about each other's mental states. Therapists may be able to help couples identify and work through attachment-related challenges that may impact their ability to provide and receive support in the context of FSDs. Furthermore, therapists may consider guiding couples in identifying and addressing interpersonal patterns and dynamics that contribute to emotional distress and somatic symptoms, utilizing an interpersonal affect focus. Couples could also be helped to develop an awareness of how their mentalizing capacities may be impacted by specific contexts, such as during emotionally charged interactions or when discussing FSD symptoms, through the use of contextual mentalizing techniques.

In the final stage of treatment, couples could be assigned exercises and practices

to reinforce the skills and insights gained during therapy, promoting a shared sense of responsibility and collaboration in managing FSDs. These homework assignments and practices can be completed between sessions to support the couple's ongoing growth and development.

While both DIT-FSD and PIT may benefit from integrating a partner-focus, there are some differences in their specific focus and theoretical underpinnings that could influence the way this is implemented. Therefore, when integrating a partner-focus, DIT-FSD may place a greater emphasis on addressing attachment-related dynamics and enhancing mentalization specifically related to bodily experiences and somatic symptoms. PIT, on the other hand, may focus more on exploring unconscious relational patterns and promoting more adaptive ways of relating to others in general. However, the relative effectiveness of these different approaches in the context of FSDs remains to be established through empirical research.

In summary, the study results suggest that the reciprocal influence of partners' mentalizing capacities on each other and on the index person's symptom severity underscores the potential importance of individual or couple-based interventions that target these relational dynamics. Our study, along with the existing literature, suggests the potential importance of adopting a systemic perspective in the assessment and treatment of FSDs, considering the complex interplay between attachment, mentalizing, and emotion regulation within the context of romantic relationships. Clinical interventions that target these relational dynamics, such as DIT-FSD and PIT,

may prove beneficial in promoting adaptive mentalizing, attachment strategies, and symptom management in FSD patients and their partners. Further research is needed to establish best practices in relation to involving partners in the treatment of FSDs and to identify potential pitfalls and strategies for mitigating them.

6.4 Limitations

Several limitations need to be considered regarding this study. This study investigated FSD-related symptoms in a sample of individuals without diagnosed medical conditions. Most of the couples reported low to medium levels of FSD symptoms. While this corresponds to the characteristics of the community sample, it may not sufficiently represent patients with high-level symptoms. Additionally, due to the sampling strategy and data collection methods, the respondents were skewed and homogeneous in terms of education level and age.

Another limitation worth mentioning is the relatively small sample size in the quantitative study. Consequently, during data analysis, simpler models (with fewer indicators and classes) were adopted, ensuring well-separated classes. This approach was taken to create distinct, easily interpretable groups that are robust and theoretically consistent (Mooijaart and van Montfort, 2004; Nylund-Gibson and Choi, 2018; Rosseel, 2020). However, it is important to note that these findings are based on a limited sample and may reflect issues related to statistical power.

Mentalizing, as a multidimensional construct, encompasses various dimensions (Fonagy and Luyten, 2009). In this study, the 20-item Toronto Alexithymia Scale was

utilized to measure impaired mentalization. It is worth noting that the concept of alexithymia overlaps with self and affective mentalizing, albeit to a lesser extent with cognitive mentalizing (Luyten et al., 2012b). However, it has been observed that self-reported TAS scores also intersect with explicit mentalizing (Aival-Naveh et al., 2019). Furthermore, scores may be influenced by perceived social expectations and an individual's capacity to evaluate their own mental processes (Gratz and Roemer, 2004). Therefore, it is imperative to explore additional dimensions of couples' mentalizing profiles using alternative data collection methods, such as transcript-based measures or accessing interviews.

Additionally, the studies have been conducted in a limited cultural context with Taiwanese couples. Although most emotional experiences and symptom-related mentalizing appear to be universal, cultural factors may significantly influence (embodied) mentalizing within romantic relationships in certain aspects such as emotion expression (Aival-Naveh et al., 2022; Aival-Naveh et al., 2019; Thomas et al., 2020)

In qualitative research, it is acknowledged that the researcher plays an integral role in the process and may reflect on their own influence and experiences within the research (Biggerstaff, 2012). Moreover, in Interpretative Phenomenological Analysis (IPA), the interpretative nature and double hermeneutic entail the researchers reporting their understanding of participants' descriptions and reasoning about their experiences, rather than presenting the experiences as pure phenomena themselves

(Smith and Nizza, 2022). This is particularly pertinent when exploring the opaque nature of mentalizing, as the results are inevitably limited to reflecting our understanding of the participants' experiences, rather than presenting one, objective 'fact'. Despite ongoing reflection and discussions with supervisors and those knowledgeable in IPA, the researcher's background and life experiences could have introduced bias in understanding and interpreting participants' experiences. This bias might have affected the interview process, data analysis, and conclusions drawn. Consequently, the transferability of the findings to other contexts or populations may be limited, due to the idiographic nature of IPA and the specific cultural and methodological factors involved in the study.

6.5 Future Research Directions

The current study provides initial insights into the intricate interplay between attachment, mentalizing, and symptom severity in couples affected by Functional Somatic Disorders (FSDs). However, further research is needed to deepen our understanding of these relationships and explore the potential of integrating a partner-focus in the treatment of FSDs. Several areas warrant further investigation to inform clinical practice and guide the development of effective interventions.

To begin with, prospective research is crucial to elucidate the role of partner relationships in the genesis and persistence of FSDs. It is imperative to discern whether observed interpersonal challenges and mentalizing impairments result from FSDs (scar effects) or pre-existing vulnerabilities that shape partner relationships and,

subsequently, contribute to the onset or exacerbation of symptoms (vulnerability effects). Longitudinal studies are essential for investigating the development of mentalizing in relation to various psychosocial and biological factors (Luyten et al., 2020a), especially the relationship dynamics and symptom fluctuations in the context of couples experiencing FSDs. Riedl et al. (Riedl et al., 2023) also emphasize the need for longitudinal research to establish causal relationships between mentalizing, attachment, and somatic symptom severity, as well as cross-cultural studies to examine the generalizability of these findings. In the context of FSDs, such studies could elucidate the directional relationships between attachment insecurity, mentalizing impairments, and symptom severity. Ideally, these studies would assess couples before FSD onset and track the evolution of their mentalizing capacities, relationship dynamics, and illness trajectories over time, offering valuable insights into bidirectional influences between interpersonal factors and FSDs, thereby informing theory and clinical practice. Moreover, exploring the role of other pertinent variables (e.g., family history, life stressors, cultural factors) in these developmental pathways could enrich our understanding of the intricate etiology and maintenance of FSDs within romantic relationships.

Second, to capture the nuances of the reciprocal relationships between attachment, mentalizing, emotion regulation, and FSD symptoms, future studies should employ mixed-method approaches. Integrating in-depth interviews with experience sampling methods (ESM) could yield a more comprehensive understanding of these dynamics. ESM, involving repeated assessments of

participants' experiences, behaviours, and psychological states in their natural environments, enables examination of within-person variability and contextual influences (Csikszentmihalyi and Larson, 1987). By collecting real-time data on couple's interactions, emotional experiences, and symptom fluctuations, researchers can gain a more ecologically valid understanding of moment-to-moment processes contributing to FSD maintenance or exacerbation. Furthermore, sophisticated data analytic techniques, such as dyadic multilevel modelling (Bolger and Laurenceau, 2013) and actor-partner interdependence models (Cook and Kenny, 2005), can elucidate reciprocal influences between partners' mentalizing capacities, attachment strategies, and FSD symptoms over time.

Thirdly, treatment research should explore the potential benefits of integrating an interpersonal focus and involving partners in both the process and outcome of FSD interventions. While the current study highlights the potential advantages of interpersonal approaches like DIT-FSD and PIT. Rigorous evaluations of these approaches in couple-based interventions such as couple therapy or integrating a partner-focus may be needed. Randomized controlled trials comparing individual and couple-based treatments for FSDs could help elucidate the potential benefits and limitations of addressing relational dynamics in therapy, while considering factors such as feasibility, acceptability, and cost-effectiveness. Additionally, process-outcome research investigating potential mechanisms of change in couple-based interventions, such as changes in co-mentalizing capacity or co-emotion regulation skills, could provide insights into the active components of these treatments. If these mechanisms

are found to be important, this knowledge could inform the refinement and optimization of couple-based interventions, with the aim of improving patient outcomes. However, it is essential to consider the multifaceted nature of FSD treatment response and the possibility of other contributing factors.

Lastly, cross-cultural studies are imperative to ascertain the generalizability of current findings and the potential influence of cultural factors on relationships between attachment, mentalizing, and FSDs. Since our studies have been conducted in a limited cultural context with Taiwanese couples. Although most emotional experiences and symptom-related mentalizing appear to be universal, cultural factors may significantly influence (embodied) mentalizing within romantic relationships in certain aspects such as emotion expression (Aival-Naveh et al., 2022; Aival-Naveh et al., 2019; Thomas et al., 2020). Culture significantly shapes individuals' mentalizing, emotional behaviour and experience (Aival-Naveh et al., 2019; Kirmayer, 1989; Lee et al., 2023; Lim, 2016; Mesquita and Walker, 2003), as well as their attitudes toward bodily distress (Fukunishi et al., 1997; Grover and Ghosh, 2014; Gureje, 2004; Ots, 1990). Hence, future research may explore whether observed patterns of impaired mentalizing and insecure attachment in FSD couples are consistent across different cultural contexts. Additionally, investigating the role of culture-specific attachment styles, relationship dynamics, and embodied mentalizing in FSD development and maintenance could provide valuable insights for tailoring interventions to diverse populations.

In summary, future research on FSDs and romantic relationships may benefit from adopting a prospective, mixed-method approach to clarify the directionality of relationships between interpersonal factors and symptom severity. Treatment studies exploring the potential effectiveness of couple-based interventions and investigating possible mechanisms of change could provide valuable insights for enhancing patient outcomes. However, rigorous research designs and careful consideration of potential moderating factors are necessary to establish the efficacy and generalizability of these approaches. Furthermore, cross-cultural research is necessary to understand the generalizability of current findings and to inform culturally sensitive interventions for FSDs.

Appendix: Couple Interview Guide

I. Attachment

		1st probe	2nd probe	both answer
1	How did you meet?			V
2	Can you tell me one of your happy memories together?			V
3	There might be some difficult moments in every relationship. Can you tell me an example of how you handle conflicts or disagreements?	V		V
4	Can you remember how you relied on your partner when something bad happened?	V		V
5	How do you feel when your partner wants to be close to you?	V	V	V
6	How strong of your partner's feelings for you? Are you happy with the attention and affection you have in the relationship?	V	V	V

II. Mentalizing

		1st probe	2nd probe	both answer
7	Like everyone else, you have thoughts and feelings in your mind. How well do you think your partner understands you? How well do you know what your partner thinks/feels? example	V		
8	Can you think about a time your partner was upset? How could you tell?	V		V
9	You've been listening to your partner say (in Q8, 9), how does that make you feel/think?	V	V	
10	Can you describe a recent situation in which you felt misunderstood or misperceived by your partner?	V	V	V

III. FSD symptom-related

		1st probe	2nd probe	both answer
11	Check-in: I noticed you mentioned you have [symptoms] in the survey. Is it correct? how often do you have them?			
12	How do you feel about your [symptoms]	V		
13	What do you feel about your partner's [symptoms]?	V		
14	Has your relationship become different with your and/or your partner's [symptoms]? how?	V		V
15	When you are feeling unwell, can your partner soothe you? (If not, what would you like your partner to do? Any reasons they didn't?)	V		
16	When your partner was having [symptoms], what did you do?	V		
17	How were your symptoms different (better/worse) when you were with your partner?	V		V
18	How well did your partner know how you felt when you had [symptoms]?	V	V	V

References

AANES, M. M., MITTELMARK, M. B. & HETLAND, J. 2010. Interpersonal stress and poor health:Interpersonal stress and poor health: The mediating role of loneliness. *Eur. Psychol,* 15**,** 3-11.

AARON, L. A. & BUCHWALD, D. 2001. A review of the evidence for overlap among unexplained clinical conditions. *Ann Intern Med,* 134**,** 868-81.

AARON, L. A. & BUCHWALD, D. 2003. Chronic diffuse musculoskeletal pain, fibromyalgia and co-morbid unexplained clinical conditions. *Best Pract Res Clin Rheumatol,* 17**,** 563-74.

ABBASS, A., LUMLEY, M. A., TOWN, J., HOLMES, H., LUYTEN, P., COOPER, A., RUSSELL, L., SCHUBINER, H., DE MEULEMEESTER, C. & KISELY, S. 2021. Short-term psychodynamic psychotherapy for functional somatic disorders: A systematic review and meta-analysis of within-treatment effects. *J Psychosom Res,* 145**,** 110473.

ABLIN, J. N., COHEN, H., CLAUW, D. J., SHALEV, R., ABLIN, E., NEUMANN, L., SARZI-PUTTINI, P. & BUSKILA, D. 2010. A tale of two cities - the effect of low intensity conflict on prevalence and characteristics of musculoskeletal pain and somatic symptoms associated with chronic stress. *Clin Exp Rheumatol,* 28**,** S15-21.

ABU-KAF, S. & SHAHAR, G. 2017. Depression and Somatic Symptoms Among Two Ethnic Groups in Israel: Testing Three Theoretical Models. *Isr. J. Psychiatry Relat. Sci,* 54**,** 32-40.

ADSHEAD, G. & GUTHRIE, E. 2018. The role of attachment in medically unexplained symptoms and long-term illness. *BJPsych Advances,* 21**,** 167-174.

AFARI, N., AHUMADA, S. M., WRIGHT, L. J., MOSTOUFI, S., GOLNARI, G., REIS, V. & CUNEO, J. G. 2014. Psychological trauma and functional somatic syndromes: a systematic review and meta-analysis. *Psychosomatic medicine,* 76**,** 2-11.

AGGARWAL, V. R., MCBETH, J., ZAKRZEWSKA, J. M., LUNT, M. & MACFARLANE, G. J. 2006. The epidemiology of chronic syndromes that are frequently unexplained: do they have common associated factors? *Int J Epidemiol,* 35**,** 468-76.

AINSWORTH, M. D. S., BLEHAR, M. C., WATERS, E. & WALL, S. N. 1978. *Patterns of attachment,* NJ: Erlbaum, Hillsdale.

AISENSTEIN, M. 2006. The indissociable unity of psyche and soma: a view from the Paris Psychosomatic School. *Int J Psychoanal,* 87**,** 667-80.

AISENSTEIN, M. & SMADJA, C. 2010. Conceptual framework from the Paris

Psychosomatic School: A clinical psychoanalytic approach to oncology1. *Int. J. Psychoanal.,* 91**,** 621-40.

AIVAL-NAVEH, E., ROTHSCHILD-YAKAR, L., PARK, J. & KURMAN, J. 2022. The Value of Thinking About Feelings Across Cultures: A Preliminary Investigation of the Mentalizing Values Scale. *J. Cross-Cult. Psychol.,* 53**,** 362-379.

AIVAL-NAVEH, E., ROTHSCHILD-YAKAR, L. & KURMAN, J. 2019. Keeping culture in mind: A systematic review and initial conceptualization of mentalizing from a cross-cultural perspective. *Clinical Psychology: Science and Practice,* 26.

AIVAL-NAVEH, E., ROTHSCHILD-YAKAR, L. & KURMAN, J. 2021. The moderating effects of self and other mentalizing on the relationship between distress and disordered eating: A cross-cultural examination. *J. Clin. Psychol.,* 77**,** 1937-1953.

ALEXANDER, F. 1950. *Psychosomatic medicine, its principles and applications*, Norton.

ALI, A., DEURI, S. P., DEURI, S. K., JAHAN, M., SINGH, A. R. & VERMA, A. N. 2010. Perceived social support and life satisfaction in persons with somatization disorder. *Ind Psychiatry J,* 19**,** 115-8.

ALLEN, J., BLEIBERG, E., HASLAM-HOPWOOD, G. & PSYD 2003. Mentalizing as a Compass for Treatment. *Bull Menninger Clin,* 67.

ANDREWS, B. 1998. Shame and childhood abuse. *In:* GILBERT, P. & ANDREWS, B. (eds.) *Shame: Interpersonal behavior, psychopathology, and culture.* Oxford University Press.

ARAGONA, M., ROVETTA, E., PUCCI, D., SPOTO, J. & VILLA, A. M. 2012. Somatization in a primary care service for immigrants. *Ethn Health,* 17**,** 477-91.

ARMEY, M. F., SCHATTEN, H. T., HARADHVALA, N. & MILLER, I. W. 2015. Ecological momentary assessment (EMA) of depression-related phenomena. *Curr Opin Psychol,* 4**,** 21-25.

ARNOLD, I. A., DE WAAL, M. W. M., EEKHOF, J. A. H. & VAN HEMERT, A. M. 2004. Somatoform disorders in general practice: Prevalence, functional impairment and comorbidity with anxiety and depressive disorders. *Br J Psychiatry,* 184**,** 470-476.

ASEN, E. & FONAGY, P. 2017. Mentalizing Family Violence Part 1: Conceptual Framework. *Fam Process,* 56**,** 6-20.

ASLAKSON, E., VOLLMER-CONNA, U., REEVES, W. C. & WHITE, P. D. 2009. Replication of an empirical approach to delineate the heterogeneity of chronic unexplained fatigue. *Popul Health Metr,* 7**,** 17.

BĄCZKOWSKI, B. M. & CIERPIAŁKOWSKA, L. 2015. Mentalization within close relationships: The role of specific attachment style. *Pol. Psychol. Bull. ,* 46**,** 285-299.

BAGBY, R. M., PARKER, J. D. A. & TAYLOR, G. J. 1994. The twenty-item Toronto Alexithymia scale—I. Item selection and cross-validation of the factor structure. *J Psychosom Res,* 38**,** 23-32.

BAKERMANS-KRANENBURG, M. J., VAN IJZENDOORN, M. H., MESMAN, J., ALINK, L. R. & JUFFER, F. 2008. Effects of an attachment-based intervention on daily cortisol moderated by dopamine receptor D4: a randomized control trial on 1- to 3-year-olds screened for externalizing behavior. *Dev Psychopathol,* 20**,** 805-20.

BAKERMANS-KRANENBURG, M. J. & VAN, I. M. H. 2009. The first 10,000 Adult Attachment Interviews: distributions of adult attachment representations in clinical and non-clinical groups. *Attach Hum Dev,* 11**,** 223-63.

BALLESPI, S., VIVES, J., ALONSO, N., SHARP, C., RAMIREZ, M. S., FONAGY, P. & BARRANTES-VIDAL, N. 2019. To know or not to know? Mentalization as protection from somatic complaints. *PLoS One,* 14**,** e0215308.

BAND, R., BARROWCLOUGH, C., EMSLEY, R., MACHIN, M. & WEARDEN, A. J. 2016. Significant other behavioural responses and patient chronic fatigue syndrome symptom fluctuations in the context of daily life: An experience sampling study. *Br J Health Psychol,* 21**,** 499-514.

BAND, R., BARROWCLOUGH, C. & WEARDEN, A. 2014. The impact of significant other expressed emotion on patient outcomes in chronic fatigue syndrome. *Health Psychol,* 33**,** 1092-101.

BARSKY, A. J., ORAV, E. J. & BATES, D. W. 2005. Somatization increases medical utilization and costs independent of psychiatric and medical comorbidity. *Arch Gen Psychiatry,* 62**,** 903-10.

BARSKY, A. J., PEEKNA, H. M. & BORUS, J. F. 2001. Somatic symptom reporting in women and men. *J Gen Intern Med,* 16**,** 266-275.

BARTHOLOMEW, K. & HOROWITZ, L. M. 1991. Attachment styles among young adults: a test of a four-category model. *J Pers Soc Psychol,* 61**,** 226-44.

BATEMAN, A., CAMPBELL, C., LUYTEN, P. & FONAGY, P. 2018. A mentalization-based approach to common factors in the treatment of borderline personality disorder. *Curr Opin Psychol,* 21**,** 44-49.

BATEMAN, A. & FONAGY, P. 2016. *Mentalization-Based Treatment for Personality Disorders: A Practical Guide*, Oxford University Press.

BATEMAN, A. & FONAGY, P. 2019. A randomized controlled trial of a mentalization-based intervention (MBT-FACTS) for families of people with borderline personality disorder. *Personal Disord,* 10**,** 70-79.

BENAU, K. 2018. Shame, Attachment, and Psychotherapy: Phenomenology, Neurophysiology, Relational Trauma, and Harbingers of Healing. *Attachment:*

New Directions in Psychotherapy and Relational Psychoanalysis, 11**,** 1-27.

BERK, M. S. & ANDERSEN, S. M. 2000. The impact of past relationships on interpersonal behavior: Behavioral confirmation in the social–cognitive process of transference. *J PERS SOC PSYCHOL,* 79**,** 546.

BIGGERSTAFF, D. 2012. Qualitative Research Methods in Psychology.

BION, W. R. 1962. *Learning from Experience,* London, Heinemann Medical Books.

BLATT, S. J. 2008a. *Relatedness and self-definition in personality development*, American Psychological Association.

BLATT, S. J. 2008b. Two primary configurations of psychopathology.

BLATT, S. J. & BLASS, R. 1996. Relatedness and self definition: A dialectic model of personality development. *In:* NOAM, G. G. & FISCHER, K. W. (eds.) *Development and vulnerabilities in close relationships.* New York, NY: Lawrence Erlbaum Associates.

BLATT, S. J. & BLASS, R. B. 1990. Attachment and separateness. A dialectic model of the products and processes of development throughout the life cycle. *PSYCHOANAL STUD CHIL,* 45**,** 107-127.

BLATT, S. J. & LUYTEN, P. 2009. A structural-developmental psychodynamic approach to psychopathology: two polarities of experience across the life span. *Dev Psychopathol,* 21**,** 793-814.

BLATT, S. J. & SHICHMAN, S. 1983. Two primary configurations of psychopathology. *Psychoanalysis and contemporary thought*.

BLATT, S. J. & ZUROFF, D. C. 1992. Interpersonal relatedness and self-definition: Two prototypes for depression. *Clin. Psychol. Rev,* 12**,** 527-562.

BLOM, D., THOMAES, S., KOOL, M. B., VAN MIDDENDORP, H., LUMLEY, M. A., BIJLSMA, J. W. & GEENEN, R. 2012a. A combination of illness invalidation from the work environment and helplessness is associated with embitterment in patients with FM. *Rheumatology (Oxford),* 51**,** 347-53.

BLOM, R. M., HENNEKAM, R. C. & DENYS, D. 2012b. Body integrity identity disorder. *PLoS One,* 7**,** e34702.

BOGAERTS, K., VAN EYLEN, L., LI, W., BRESSELEERS, J., VAN DIEST, I., DE PEUTER, S., STANS, L., DECRAMER, M. & VAN DEN BERGH, O. 2010. Distorted symptom perception in patients with medically unexplained symptoms. *J Abnorm Psychol,* 119**,** 226-34.

BOLGER, N. & LAURENCEAU, J.-P. 2013. *Intensive longitudinal methods: An introduction to diary and experience sampling research*, Guilford press.

BORELLI, J. L., SLADE, A., PETTIT, C. & SHAI, D. 2020. I "get" you, babe: Reflective functioning in partners transitioning to parenthood. *J SOC PERS RELAT,* 37**,**

1785-1805.

BOS, F. M., SCHOEVERS, R. A. & AAN HET ROT, M. 2015. Experience sampling and ecological momentary assessment studies in psychopharmacology: A systematic review. *Eur Neuropsychopharmacol,* 25**,** 1853-64.

BOSCOLO, L., CECCHIN, G., HOFFMAN, L. & PENN, P. 1987. *Milan systemic family therapy: Conversations in theory and practice*, Basic Books.

BOWEN, M. 1978. *Family therapy in clinical practice.,* Northvale, NJ, Jason Aronson, Inc.

BOWLBY, J. 1973. Attachment and loss. Volume II. Separation, anxiety and anger. *Attachment and loss. volume II. Separation, anxiety and anger.*

BOWLBY, J. 2008. *Attachment,* New York, Basic books.

BRENNAN, K. A., CLARK, C. L. & SHAVER, P. R. 1998. *Self-Report Measurement of Adult Attachment: An Integrative Overview,* New York, Guilford.

BRENNAN, K. A. & SHAVER, P. R. 1995. Dimensions of Adult Attachment, Affect Regulation, and Romantic Relationship Functioning. *Pers Soc Psychol Bull,* 21**,** 267-283.

BREUER, J. & FREUD, S. 2009. *Studies on hysteria*, Hachette UK.

BRODY, P. R. 1988. Couples psychotherapy: A psychodynamic model. *Psychoanalytic psychology,* 5**,** 47.

BROWN, R. J., BOUSKA JF FAU - FROW, A., FROW A FAU - KIRKBY, A., KIRKBY A FAU - BAKER, G. A., BAKER GA FAU - KEMP, S., KEMP S FAU - BURNESS, C., BURNESS C FAU - REUBER, M. & REUBER, M. 2013. Emotional dysregulation, alexithymia, and attachment in psychogenic nonepileptic seizures. *Epilepsy Behav,* 29**,** 178–183.

BRYMAN, A. 2016. *Social research methods* Oxford University Press.

BUDTZ-LILLY, A., SCHRODER, A., RASK, M. T., FINK, P., VESTERGAARD, M. & ROSENDAL, M. 2015a. Bodily distress syndrome: A new diagnosis for functional disorders in primary care? *BMC Fam Pract,* 16**,** 180.

BUDTZ-LILLY, A., VESTERGAARD, M., FINK, P., CARLSEN, A. H. & ROSENDAL, M. 2015b. The prognosis of bodily distress syndrome: a cohort study in primary care. *Gen Hosp Psychiatry,* 37**,** 560-6.

BURNS, J. W., POST, K. M., SMITH, D. A., PORTER, L. S., BUVANENDRAN, A., FRAS, A. M. & KEEFE, F. J. 2018. Spouse criticism and hostility during marital interaction: effects on pain intensity and behaviors among individuals with chronic low back pain. *Pain,* 159**,** 25-32.

BURNS, J. W., POST, K. M., SMITH, D. A., PORTER, L. S., BUVANENDRAN, A., FRAS, A. M. & KEEFE, F. J. 2019. Spouse and Patient Beliefs and Perceptions

About Chronic Pain: Effects on Couple Interactions and Patient Pain Behavior. *J Pain,* 20**,** 1176-1186.

BURTON, C., FINK, P., HENNINGSEN, P., LÖWE, B. & RIEF, W. 2020. Functional somatic disorders: discussion paper for a new common classification for research and clinical use. *BMC Med,* 18**,** 34.

BUTLER, E. A. & RANDALL, A. K. 2012. Emotional Coregulation in Close Relationships. *Emotion Review,* 5**,** 202-210.

CABELLO, R., SORREL, M. A., FERNÁNDEZ-PINTO, I., EXTREMERA, N. & FERNÁNDEZ-BERROCAL, P. 2016. Age and gender differences in ability emotional intelligence in adults: A cross-sectional study. *Dev Psychol,* 52**,** 1486–1492.

CAMPBELL, C. & ALLISON, E. 2022. Mentalizing the modern world. *Psychoanal Psychother,* 36**,** 206-217.

CAMPBELL, L., SIMPSON, J. A., BOLDRY, J. & KASHY, D. A. 2005. Perceptions of conflict and support in romantic relationships: the role of attachment anxiety. *J Pers Soc Psychol,* 88**,** 510-31.

CAMPBELL, P., JORDAN, K. P. & DUNN, K. M. 2012. The role of relationship quality and perceived partner responses with pain and disability in those with back pain. *Pain Med,* 13**,** 204-14.

CANO, A., BARTERIAN, J. A. & HELLER, J. B. 2008. Empathic and nonempathic interaction in chronic pain couples. *Clin J Pain,* 24**,** 678-84.

CANO, A., GILLIS, M., HEINZ, W., GEISSER, M. & FORAN, H. 2004. Marital functioning, chronic pain, and psychological distress. *Pain,* 107**,** 99-106.

CANO, A., LEONG, L. E. M., WILLIAMS, A. M., MAY, D. K. K. & LUTZ, J. R. 2012. Correlates and consequences of the disclosure of pain-related distress to one's spouse. *Pain,* 153**,** 2441-2447.

CANO, A., WEISBERG, J. N. & GALLAGHER, R. M. 2000. Marital satisfaction and pain severity mediate the association between negative spouse responses to pain and depressive symptoms in a chronic pain patient sample. *Pain Med,* 1**,** 35-43.

CAO, J., WEI, J., FRITZSCHE, K., TOUSSAINT, A. C., LI, T., JIANG, Y., ZHANG, L., ZHANG, Y., CHEN, H. & WU, H. 2020. Prevalence of DSM-5 somatic symptom disorder in Chinese outpatients from general hospital care. *Gen Hosp Psychiatry,* 62**,** 63-71.

CARLI, L. L., ANZELMO, E., POZZI, S., FEENEY, J. A., GALLUCCI, M., SANTONA, A. & TAGINI, A. 2019. Attachment Networks in Committed Couples. *Front Psychol,* 10**,** 1105.

CATRONE, C. 2021. An Integrated Treatment of Psychosomatic Symptoms and

Disorders of the Self: The Role of Alexithymia. *Psychoanalytic Social Work,* 28**,** 25-42.

ÇETIN, Ş. & SÖZERI VARMA, G. 2021. Somatic Symptom Disorder: Historical Process and Biopsychosocial Approach. *Current Approaches in Psychiatry,* 13**,** 790-804.

CHIOQUETA, A. P. & STILES, T. C. 2007. The relationship between psychological buffers, hopelessness, and suicidal ideation: identification of protective factors. *Crisis,* 28**,** 67-73.

CHUN, C., ENOMOTO, K. & S., S. 1996. Health care issues among Asian Americans: implications of somatization. *In:* KATO, P. & MANN, T. (eds.) *Handbook of Diversity Issues in Health Psychology.* New York, NY: Plenum.

CIECHANOWSKI, P. S., KATON, W. J., RUSSO, J. E. & DWIGHT-JOHNSON, M. M. 2002. Association of attachment style to lifetime medically unexplained symptoms in patients with hepatitis C. *Psychosomatics,* 43**,** 206-12.

CLULOW, C. 2017. Before, between, and beyond interpretation: Attachment perspectives on couple psychoanalytic psychotherapy. *Psychoanalytic Inquiry,* 37**,** 343-354.

COHEN, S., DOYLE, W. J., SKONER, D. P., RABIN, B. S. & GWALTNEY, J. M., JR. 1997. Social Ties and Susceptibility to the Common Cold. *JAMA,* 277**,** 1940-1944.

COHEN, S., GOTTLIEB, B. H. & UNDERWOOD, L. G. 2000. Social relationships and Health. *In:* S.COHEN, L.G.UNDERWOOD & GOTTLIEB, B. H. (eds.) *Social support measurement and intervention: A guide for health and social scientists.* Oxford University Press.

CONNELLY, P. J., AZIZI, Z., ALIPOUR, P., DELLES, C., PILOTE, L. & RAPARELLI, V. 2021. The Importance of Gender to Understand Sex Differences in Cardiovascular Disease. *Can J Cardiol,* 37**,** 699-710.

COOK, W. L. & KENNY, D. A. 2005. The Actor–Partner Interdependence Model: A model of bidirectional effects in developmental studies. *Int J Behav Dev,* 29**,** 101-109.

CORDOVA, J. V., GEE, C. B. & WARREN, L. Z. 2005. Emotional Skillfulness in Marriage: Intimacy As a Mediator of the Relationship Between Emotional Skillfulness and Marital Satisfaction. *J Soc Clin Psychol,* 24**,** 218-235.

COZZARELLI, C., HOEKSTRA, S. J. & BYLSMA, W. H. 2000. General versus specific mental models of attachment: Are they associated with different outcomes? *Pers Soc Psychol Bull,* 26**,** 605-618.

CRAIG, T. K., COX, A. D. & KLEIN, K. 2002. Intergenerational transmission of somatization behaviour: a study of chronic somatizers and their children. *Psychol*

Med, 32**,** 805-16.

CREASEY, G. 2002. Associations Between Working Models of Attachment and Conflict Management Behavior in Romantic Couples. *J Couns Psychol,* 49**,** 365-375.

CREED, F., DAVIES, I., JACKSON, J., LITTLEWOOD, A., CHEW-GRAHAM, C., TOMENSON, B., MACFARLANE, G., BARSKY, A., KATON, W. & MCBETH, J. 2012. The epidemiology of multiple somatic symptoms. *J Psychosom Res,* 72**,** 311-7.

CREED, F., TOMENSON, B., CHEW-GRAHAM, C., MACFARLANE, G. & MCBETH, J. 2018. The associated features of multiple somatic symptom complexes. *J Psychosom Res,* 112**,** 1-8.

CREED, F. H., TOMENSON, B., CHEW-GRAHAM, C., MACFARLANE, G. J., DAVIES, I., JACKSON, J., LITTLEWOOD, A. & MCBETH, J. 2013. Multiple somatic symptoms predict impaired health status in functional somatic syndromes. *Int J Behav Med,* 20**,** 194-205.

CRESWELL, J. W. & CRESWELL, J. D. 2017. *Research design: Qualitative, quantitative, and mixed methods approaches*, Sage publications.

CRESWELL, J. W. & PLANO CLARK, V. L. 2018. *Designing and conducting mixed methods research / John W. Creswell, Vicki L. Plano Clark,* Thousand Oaks, California, SAGE Publications. Inc.

CSIKSZENTMIHALYI, M. & LARSON, R. 1987. Validity and reliability of the experience-sampling method. *J Nerv Ment Dis,* 175**,** 526-536.

DALGLEISH, T. 2004. The emotional brain. *Nat Rev Neurosci,* 5**,** 583-9.

DAMASIO, A. R., EVERITT, B. J. & BISHOP, D. 1996. The somatic marker hypothesis and the possible functions of the prefrontal cortex. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences,* 351**,** 1413-20.

DANTZER, R., O'CONNOR, J. C., FREUND, G. G., JOHNSON, R. W. & KELLEY, K. W. 2008. From inflammation to sickness and depression: when the immune system subjugates the brain. *Nat Rev Neurosci,* 9**,** 46-56.

DC, T. 1992. Effects of marital interaction on chronic pain and disability: examining the downside of social support. *Rehab Psychol,* 37**,** 257-272.

DE GUCHT, V. & HEISER, W. 2003. Alexithymia and somatisation: quantitative review of the literature. *J Psychosom Res,* 54**,** 425-34.

DE MEULEMEESTER, C., LOWYCK, B., VERMOTE, R., VERHAEST, Y. & LUYTEN, P. 2017. Mentalizing and interpersonal problems in borderline personality disorder: The mediating role of identity diffusion. *Psychiatry Res,* 258**,** 141-144.

DE VROEGE, L., HOEDEMAN, R., NUYEN, J., SIJTSMA, K. & VAN DER FELTZ-

CORNELIS, C. M. 2012. Validation of the PHQ-15 for Somatoform Disorder in the Occupational Health Care Setting. *J Occup Rehabil,* 22**,** 51-58.

DE VROEGE, L., WOUDSTRA-DE JONG, J. E., VIDELER, A. C. & KOP, W. J. 2022. Personality factors and cognitive functioning in patients with somatic symptom and related disorders. *J Psychosom Res,* 163**,** 111067.

DEARY, V., CHADLER, T. & M, S. 2007. The cognitive behavioral model of medically unexplained symptoms: a theoretical and expirical review. *Clin Pschol Rev,* 27**,** 781-97.

DEMANGE, V., GUILLEMIN, F., BAUMANN, M., SUURMEIJER, T., MOUM, T., DOEGLAS, D., BRIANÇON, S. & VAN DEN HEUVEL, W. 2004. Are there more than cross-sectional relationships of social support and support networks with functional limitations and psychological distress in early rheumatoid arthritis? The European Research on Incapacitating Diseases and Social Support Longitudinal Study. *ACR Open Rheumatol,* 51**,** 782-791.

DEWSARAN-VAN DER VEN, C., VAN BROECKHUYSEN-KLOTH, S., THORSELL, S., SCHOLTEN, R., DE GUCHT, V. & GEENEN, R. 2018. Self-compassion in somatoform disorder. *Psychiatry Res,* 262**,** 34-39.

DI TELLA, M. & CASTELLI, L. Alexithymia in Chronic Pain Disorders.

DI TELLA, M. & CASTELLI, L. 2016. Alexithymia in Chronic Pain Disorders. *Curr Rheumatol Rep,* 18**,** 41.

DIAMOND, D., STOVALL-MCCLOUGH, C., CLARKIN, J. F. & LEVY, K. N. 2003. Patient-therapist attachment in the treatment of borderline personality disorder. *Bull Menninger Clin,* 67**,** 227-59.

DICKSON, A., KNUSSEN, C. & FLOWERS, P. 2008. 'That was my old life; it's almost like a past-life now': identity crisis, loss and adjustment amongst people living with Chronic Fatigue Syndrome. *Psychol Health,* 23**,** 459-76.

DOERR, J. M., NATER, U. M., FENEBERG, A. C. & MEWES, R. 2021. Differential associations between fatigue and psychobiological stress measures in women with depression and women with somatic symptom disorder. *Psychoneuroendocrinology,* 132**,** 105343.

DOHERTY, N. & FEENEY, J. 2004. The composition of attachment networks throughout the adult years. *Pers Relatsh,* 11.

DUNBAR, R. I. 2010. The social role of touch in humans and primates: behavioural function and neurobiological mechanisms. *Neurosci Biobehav Rev,* 34**,** 260-8.

DUQUETTE, P. 2020. More Than Words Can Say: A Multi-Disciplinary Consideration of the Psychotherapeutic Evaluation and Treatment of Alexithymia. *Front Psychiatry,* 11**,** 433.

EDLUND, S. M., CARLSSON, M. L., LINTON, S. J., FRUZZETTI, A. E. & TILLFORS,

M. 2015. I see you're in pain - The effects of partner validation on emotions in people with chronic pain. *Scand J Pain,* 6**,** 16-21.

EDWARDS, M. J., ADAMS, R. A., BROWN, H., PAREÉS, I. & FRISTON, K. J. 2012. A Bayesian account of 'hysteria'. *Brain,* 135**,** 3495-3512.

EGEDE, L. E. 2007. Major depression in individuals with chronic medical disorders: prevalence, correlates and association with health resource utilization, lost productivity and functional disability. *Gen Hosp Psychiatry,* 29**,** 409-416.

EID, P. & BOUCHER, S. 2012. Alexithymia and Dyadic adjustment in intimate relationships- analyses using the actor partner interdependence model. *J Soc Clin Psychol,* 31**,** 1095-1111.

EISENBERGER, N. I., JARCHO, J. M., LIEBERMAN, M. D. & NALIBOFF, B. D. 2006. An experimental study of shared sensitivity to physical pain and social rejection. *Pain,* 126**,** 132-8.

EISENBERGER, N. I., MASTER, S. L., INAGAKI, T. K., TAYLOR, S. E., SHIRINYAN, D., LIEBERMAN, M. D. & NALIBOFF, B. D. 2011. Attachment figures activate a safety signal-related neural region and reduce pain experience. *Proc Natl Acad Sci U S A,* 108**,** 11721-11726.

ENGEL, G. L. 1977. The need for a new medical model: a challenge for biomedicine. *Science,* 196**,** 129-36.

ERNST, M., BRAHLER, E., WILD, P. S., FABER, J., MERZENICH, H. & BEUTEL, M. E. 2021. Loneliness predicts suicidal ideation and anxiety symptoms in long-term childhood cancer survivors. *Int J Clin Health Psychol,* 21**,** 100201.

FALAHATDOOST, M., DOLATSHAHI, B., POURSHAHBAZ, A., DEHGHANI, M., YALGUZAGHAJI, M. N. & MOHAMMADI, Z. 2020. Modeling the relationship between attachment styles and somatic symptoms with the mediating role of emotional processing. *J Educ Health Promot,* 9**,** 157.

FINK, P. & SCHRÖDER, A. 2010. One single diagnosis, bodily distress syndrome, succeeded to capture 10 diagnostic categories of functional somatic syndromes and somatoform disorders. *J Psychosom Res,* 68**,** 415-26.

FINK, P., SØRENSEN, L., ENGBERG, M., HOLM, M. & MUNK-JØRGENSEN, P. 1999. Somatization in primary care. Prevalence, health care utilization, and general practitioner recognition. *Psychosomatics,* 40**,** 330-8.

FINK, P., TOFT, T., HANSEN, M. S., ØRNBØL, E. & OLESEN, F. 2007. Symptoms and syndromes of bodily distress: an exploratory study of 978 internal medical, neurological, and primary care patients. *Psychosom Med,* 69**,** 30-9.

FITZCHARLES, M. A. & YUNUS, M. B. 2012. The clinical concept of fibromyalgia as a changing paradigm in the past 20 years. *Pain Res Treat,* 2012**,** 184835.

FLOR, H., KERNS, R. D. & TURK, D. C. 1987. The role of spouse reinforcement,

perceived pain, and activity levels of chronic pain patients. *J Psychosom Res,* 31**,** 251-259.

FONAGY, P. & ALLISON, E. 2012. What is mentalization? The concept and its foundations in developmental research. *Minding the child: Mentalization-based interventions with children, young people and their families***,** 11-34.

FONAGY, P. & BATEMAN, A. 2008. The Development of Borderline Personality Disorder— A Mentalizing Model. *J Pers Disord,* 22**,** 4-21.

FONAGY, P., GERGELY, G., JURIST, E. & TARGET, M. 2002. *Affect Regulation, Mentalization and the Development of the Self.,* London, Karnac.

FONAGY, P. & LUYTEN, P. 2009. A developmental, mentalization-based approach to the understanding and treatment of borderline personality disorder. *Dev Psychopathol,* 21**,** 1355-81.

FONAGY, P. & LUYTEN, P. 2018. Conduct problems in youth and the RDoC approach: A developmental, evolutionary-based view. *Clin Psychol Rev,* 64**,** 57-76.

FONAGY, P., LUYTEN, P., ALLISON, E. & CAMPBELL, C. 2017. What we have changed our minds about: Part 2. Borderline personality disorder, epistemic trust and the developmental significance of social communication. *Borderline Personal Disord Emot Dysregul,* 4**,** 9.

FONAGY, P., LUYTEN, P., MOULTON-PERKINS, A., LEE, Y. W., WARREN, F., HOWARD, S., GHINAI, R., FEARON, P. & LOWYCK, B. 2016. Development and Validation of a Self-Report Measure of Mentalizing: The Reflective Functioning Questionnaire. *PLoS One,* 11**,** e0158678.

FONAGY, P. & TARGET, M. 1997. Attachment and reflective function: their role in self-organization. *Dev Psychopathol,* 9**,** 679-700.

FONAGY, P. & TARGET, M. 2007. The rooting of the mind in the body: new links between attachment theory and psychoanalytic thought. *J Am Psychoanal Assoc,* 55**,** 411-56.

FRALEY, R. C. & SHAVER, P. R. 1997. Adult attachment and the suppression of unwanted thoughts. *J Pers Soc Psychol,* 73**,** 1080.

FRANKS, H. M., CRONAN, T. A. & OLIVER, K. 2004. Social support in women with fibromyalgia: Is quality more important than quantity? *J Community Psychol,* 32**,** 425-438.

FREUD, S. 1895. Studies on hysteria. *SE,* 2.

FREUD, S. 2016. Introductory lectures on psycho-analysis. *Myths and Mythologies.* Routledge.

FREUD, S., STRACHEY, J. & RICHARDS, A. 1991. *Introductory lectures on psychoanalysis,* London, Penguin.

FRITH, C. & FRITH, U. 2021. Mapping Mentalising in the Brain.

FUKUNISHI, I., NAKAGAWA, T., NAKAMURA, H., KIKUCHI, M. & TAKUBO, M. 1997. Is alexithymia a culture-bound construct? Validity and reliability of the Japanese versions of the 20-item Toronto Alexithymia Scale and modified Beth Israel Hospital Psychosomatic Questionnaire. *Psychol Rep,* 80**,** 787-99.

GATCHEL, R. J., PENG, Y. B., PETERS, M. L., FUCHS, P. N. & TURK, D. C. 2007. The biopsychosocial approach to chronic pain: scientific advances and future directions. *Psychol Bull,* 133**,** 581-624.

GATIEN, C., TOO, A. & CORMIER, S. 2022. Dimensions of relationship adjustment as correlates of depressive and anxiety symptoms among individuals with chronic pain. *Med Clin North Am,* 27**,** 1748-1759.

GAW, A. 1993. Psychiatric care of Chinese Americans. *In:* GAW, A. (ed.) *Culture, Ethnicity and Mental Illness.* Washington, DC: American Psychiatric Press.

GERBER, A. H., GIRARD, J. M., SCOTT, S. B. & LERNER, M. D. 2019. Alexithymia - Not autism - is associated with frequency of social interactions in adults. *Behav Res Ther,* 123**,** 103477.

GERGEN, K. J. & DAVIS, K. E. 2012. *The social construction of the person*, Springer Science & Business Media.

GOLDENBERG, I. & GOLDENBERG, H. 2000. *Family therapy: An overview.,* Belmont, CA, Wadsworth/Thompson Learning.

GOLDSTEIN, A., BORELLI, J. L. & SHAI, D. 2022. In her shoes: Partner reflective functioning promotes family-level resilience to maternal depression. *Dev Psychopathol***,** 1-14.

GOLDSTEIN, P., SHAMAY-TSOORY, S. G., YELLINEK, S. & WEISSMAN-FOGEL, I. 2016. Empathy Predicts an Experimental Pain Reduction During Touch. *J Pain,* 17**,** 1049-1057.

GONZÁLEZ-RAMÍREZ, M. T., GARCÍA-CAMPAYO, J. & LANDERO-HERNÁNDEZ, R. 2011. The role of stress transactional theory on the development of fibromyalgia: a structural equation model. *Actas Esp Psiquiatr,* 39**,** 81-7.

GRASSI, L., RIBA, M. & WISE, T. 2019. *Person centered approach to recovery in medicine*, Springer.

GRATZ, K. L. & ROEMER, L. 2004. Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale. *J Psychopathol Behav Assess,* 26**,** 41-54.

GREENMAN, P. S., RENZI, A., MONACO, S., LUCIANI, F. & DI TRANI, M. How does trauma make you sick? The role of attachment in explaining somatic symptoms of survivors of childhood trauma. Healthcare, 2024. MDPI, 203.

GRIGAITYTĖ, I. & SÖDERBERG, P. 2021. Why does perceived social support protect against somatic symptoms: Investigating the roles of emotional self-efficacy and depressive symptoms? *Nord Psychol,* 73**,** 226-241.

GROVER, S. & GHOSH, A. 2014. Somatic symptom and related disorders in Asians and Asian Americans. *Asian J Psychiatr,* 7**,** 77-9.

GROVER, S., KUMAR, V., CHAKRABARTI, S., HOLLIKATTI, P., SINGH, P., TYAGI, S., KULHARA, P. & AVASTHI, A. 2012. Prevalence and type of functional somatic complaints in patients with first-episode depression. *East Asian Arch Psychiatry,* 22**,** 146-153.

GROVES, J. E. 1978. Taking Care of the Hateful Patient. *N Engl J Med,* 298**,** 883-887.

GUETTERMAN, T. C., FETTERS, M. D. & CRESWELL, J. W. 2015. Integrating Quantitative and Qualitative Results in Health Science Mixed Methods Research Through Joint Displays. *Ann Fam Med,* 13**,** 554-61.

GUNNAR, M. & QUEVEDO, K. 2007. The neurobiology of stress and development. *Annu Rev Psychol,* 58**,** 145-73.

GUREJE, O. 2004. What can we learn from a cross-national study of somatic distress? *J Psychosom Res,* 56**,** 409-12.

HACKENBERG, B., DOGE, J., O'BRIEN, K., BOHNERT, A., LACKNER, K. J., BEUTEL, M. E., MICHAL, M., MUNZEL, T., WILD, P. S., PFEIFFER, N., SCHULZ, A., SCHMIDTMANN, I., MATTHIAS, C. & BAHR, K. 2023. Tinnitus and Its Relation to Depression, Anxiety, and Stress-A Population-Based Cohort Study. *J Clin Med,* 12.

HALLER, H., CRAMER, H., LAUCHE, R. & DOBOS, G. 2015. Somatoform disorders and medically unexplained symptoms in primary care. *Dtsch Arztebl Int,* 112**,** 279-87.

HAMBROOK, D., OLDERSHAW, A., RIMES, K., SCHMIDT, U., TCHANTURIA, K., TREASURE, J., RICHARDS, S. & CHALDER, T. 2011. Emotional expression, self-silencing, and distress tolerance in anorexia nervosa and chronic fatigue syndrome. *Br J Clin Psychol,* 50**,** 310-25.

HARTOCOLLIS, P. 2002. 'Actual neurosis' and psychosomatic medicine: The vicissitudes of an enigmatic concept. *Int. J. Psychoanal.,* 83**,** 1361-1373.

HÄUSER, W., BRÄHLER, E., WOLFE, F. & HENNINGSEN, P. 2014. Patient Health Questionnaire 15 as a generic measure of severity in fibromyalgia syndrome: surveys with patients of three different settings. *J Psychosom Res,* 76**,** 307-11.

HAUSER, W., HAUSTEINER-WIEHLE, C., HENNINGSEN, P., BRAHLER, E., SCHMALBACH, B. & WOLFE, F. 2020. Prevalence and overlap of somatic symptom disorder, bodily distress syndrome and fibromyalgia syndrome in the German general population: A cross sectional study. *J Psychosom Res,* 133**,**

110111.

HÄUSER, W., HAUSTEINER-WIEHLE, C., HENNINGSEN, P., BRÄHLER, E., SCHMALBACH, B. & WOLFE, F. 2020. Prevalence and overlap of somatic symptom disorder, bodily distress syndrome and fibromyalgia syndrome in the German general population: A cross sectional study. *J Psychosom Res,* 133**,** 110111.

HÄUSER, W., SCHMUTZER, G., BRÄHLER, E. & GLAESMER, H. 2009. A cluster within the continuum of biopsychosocial distress can be labeled "fibromyalgia syndrome"--evidence from a representative German population survey. *J Rheumatol,* 36**,** 2806-12.

HAWKLEY, L. & CACIOPPO, J. 2010. Loneliness matters: a theoretical and empirical review of consequences and mechanisms. *Ann Behav Med,* 40**,** 218-27.

HAWKLEY, L., HUGHES, M. E., WAITE, L. J., MASII, C. M., THISTED, R. A. & CACIOPPO, J. T. 2008. From social structural factors to perceptions of relationship quality and loneliness: the Chicago health, aging, and social relations study. *J Gerontol B Psychol Sci Soc Sci,* 63**,** S375-S384.

HAZAN, C. & ZEIFMAN, D. 1994. Sex and the psychological tether. *In:* BARTHOLOMEW, K. & PERLMAN, D. (eds.) *Attachment processes in adulthood.* Jessica Kingsley Publishers.

HEATLEY TEJADA, A., DUNBAR, R. I. M. & MONTERO, M. 2020. Physical Contact and Loneliness: Being Touched Reduces Perceptions of Loneliness. *Adapt Human Behav Physiol***,** 1-15.

HEIM, C., YOUNG, L. J., NEWPORT, D. J., MLETZKO, T., MILLER, A. H. & NEMEROFF, C. B. 2009. Lower CSF oxytocin concentrations in women with a history of childhood abuse. *Mol Psychiatry,* 14**,** 954-8.

HENNINGSEN, P., ZIMMERMANN, T. & & SATTEL, H. 2003. Medically unexplained physical symptoms, anxiety, and depression: a meta-analytic review. *Psychosom Med,* 65**,** 528–533.

HENNINGSEN, P., ZIPFEL, S. & HERZOG, W. 2007. Management of functional somatic syndromes. *Lancet,* 369**,** 946-955.

HENNINGSEN, P., ZIPFEL, S., SATTEL, H. & CREED, F. 2018. Management of Functional Somatic Syndromes and Bodily Distress. *Psychother Psychosom,* 87**,** 12-31.

HEYES, C. M. & FRITH, C. D. 2014. The cultural evolution of mind reading. *Science,* 344**,** 1243091.

HILDERINK, P. H., COLLARD, R., ROSMALEN, J. G. M. & OUDE VOSHAAR, R. C. 2013. Prevalence of somatoform disorders and medically unexplained symptoms in old age populations in comparison with younger age groups: A systematic

review. *Ageing Res Rev,* 12**,** 151-156.

HINZ, A., ERNST, J., GLAESMER, H., BRAHLER, E., RAUSCHER, F. G., PETROWSKI, K. & KOCALEVENT, R. D. 2017. Frequency of somatic symptoms in the general population: Normative values for the Patient Health Questionnaire-15 (PHQ-15). *J Psychosom Res,* 96**,** 27-31.

HINZ, A., KOCALEVENT, R. D., GLAESMER, H., RAUSCHER, F. G., WIRKNER, K., TREUDLER, R. & MEHNERT-THEUERKAUF, A. 2022. Changes in bodily complaints (PHQ-15) over six years in a large general population sample. *J Psychosom Res,* 161**,** 111014.

HOOPER, D., COUGHLAN, J. & MULLEN, M. R. 2008. Structural equation modelling: Guidelines for determining model fit. *EJBRM,* 6**,** pp53-60-pp53-60.

HU, L. T. & BENTLER, P. M. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct Equ Modeling,* 6**,** 1-55.

HUANG, W. L. 2021. *The psychological and heart rate variability features of the somatic symptom diagnoses in psychiatry.* PhD, National Taiwan University.

HUANG, W. L., CHANG, S. S., WU, S. C. & LIAO, S. C. 2023. Population-based prevalence of somatic symptom disorder and comorbid depression and anxiety in Taiwan. *Asian J Psychiatr,* 79**,** 103382.

HUANG, W. L., CHEN, I. M., CHANG, F. C. & LIAO, S. C. 2016. Somatic symptom disorder and undifferentiated somatoform disorder, which is broader? Response to "Clinical value of DSM IV and DSM 5 criteria for diagnosing the most prevalent somatoform disorders in patients with medically unexplained physical symptoms (MUPS)". *J Psychosom Res,* 89**,** 114-5.

HUDSON, J. I., MANGWETH, B., POPE, H. G., JR., DE COL, C., HAUSMANN, A., GUTWENIGER, S., LAIRD, N. M., BIEBL, W. & TSUANG, M. T. 2003. Family Study of Affective Spectrum Disorder. *Arch Gen Psychiatry,* 60**,** 170-177.

HUMER, E., SATTEL, H., GÜNDEL, H., HENNINGSEN, P., KRUSE, J., SCHNEIDER, G., LAHMANN, C., PIEH, C. & PROBST, T. 2021. Stress, depression, and the therapeutic alliance as mediators on the outcome of brief psychodynamic-interpersonal psychotherapy for multisomatoform disorder. *Psychother Res,* 31**,** 1012-1021.

HUNTER, J. J. & MAUNDER, R. G. 2001. Using attachment theory to understand illness behavior. *Gen Hosp Psychiatry,* 23**,** 177-82.

HUTTEN, E., JONGEN, E. M., VOS, A. E., VAN DEN HOUT, A. J. & VAN LANKVELD, J. J. 2021. Loneliness and mental health: The mediating effect of perceived social support. *Int J Environ Res Public Health,* 18**,** 11963.

HYLAND, M. E., BACON, A. M., LANARIO, J. W. & DAVIES, A. F. 2019. Symptom

frequency and development of a generic functional disorder symptom scale suitable for use in studies of patients with irritable bowel syndrome, fibromyalgia syndrome or chronic fatigue syndrome. *Chronic Dis Transl Med,* 5**,** 129-138.

HYPHANTIS, T., GUTHRIE, E., TOMENSON, B. & CREED, F. 2009. Psychodynamic interpersonal therapy and improvement in interpersonal difficulties in people with severe irritable bowel syndrome. *Pain,* 145**,** 196-203.

IP, K. I., MILLER, A. L., KARASAWA, M., HIRABAYASHI, H., KAZAMA, M., WANG, L., OLSON, S. L., KESSLER, D. & TARDIF, T. 2021. Emotion expression and regulation in three cultures: Chinese, Japanese, and American preschoolers' reactions to disappointment. *J Exp Child Psychol,* 201**,** 104972.

ISAAC, M. L. & PAAUW, D. S. 2014. Medically unexplained symptoms. *Med Clin North Am,* 98**,** 663-72.

JACK, D. C. 1991. *Silencing the self: Women and depression*, Harvard University Press.

JACK, D. C. & DILL, D. 1992. The Silencing the Self Scale: Schemas of intimacy associated with depression in women. *Psychol Women Q,* 16**,** 97-106.

JANSMAN, R., RIEM, M. M. E., BROEKHUIZEN-DIJKSMAN, S., VETH, C., BEIJER, E. & VINGERHOETS, A. J. J. M. 2019. Attachment and Crying in Patients with Medically Unexplained Somatic Symptoms. *SN Compr Clin Med,* 1**,** 1065-1072.

JANSSENS, K. A., ZIJLEMA, W. L., JOUSTRA, M. L. & ROSMALEN, J. G. 2015. Mood and Anxiety Disorders in Chronic Fatigue Syndrome, Fibromyalgia, and Irritable Bowel Syndrome: Results From the LifeLines Cohort Study. *Psychosom Med,* 77**,** 449-57.

JENSEN, M. P., MOORE, M. R., BOCKOW, T. B., EHDE, D. M. & ENGEL, J. M. 2011. Psychosocial factors and adjustment to chronic pain in persons with physical disabilities: a systematic review. *Arch Phys Med Rehabil,* 92**,** 146-160.

JEONG, H. G., HAN, C., PARK, M. H., RYU, S. H., PAE, C. U., LEE, J. Y., KIM, S. H. & STEFFENS, D. C. 2014. Influence of the number and severity of somatic symptoms on the severity of depression and suicidality in community-dwelling elders. *Asia Pac Psychiatry,* 6**,** 274-83.

JOHANSEN, A. B. & CANO, A. 2007. A preliminary investigation of affective interaction in chronic pain couples. *Pain,* 132**,** S86-S95.

JOHNSON, R. B., ONWUEGBUZIE, A. J. & TURNER, L. A. 2007. Toward a Definition of Mixed Methods Research. *J Mix Methods Res,* 1**,** 112-133.

JØRGENSEN, T., DANTOFT, T. M., WEINREICH PETERSEN, M., ERIKSEN BENROS, M., POULSEN, C. H., FALGAARD EPLOV, L., GORMSEN, L., FROSTHOLM, L., CARSTENSEN, T. B. W., HOLM ELIASEN, M., KÅRHUS, L. L., SKOVBJERG, S., BJERREGAARD, A. A., BRIX, S., LINNEBERG, A. & FINK,

P. 2022. Examine the public health impacts of functional somatic disorders using the DanFunD study. *Scand J Public Health,* 50**,** 988-994.

JOUSTRA, M. L., JANSSENS, K. A. M., BÜLTMANN, U. & ROSMALEN, J. G. M. 2015. Functional limitations in functional somatic syndromes and well-defined medical diseases. Results from the general population cohort LifeLines. *J Psychosom Res,* 79**,** 94-99.

KALANTAR, J. S., LOCKE, G. R., ZINSMEISTER, A. R., BEIGHLEY, C. M. & TALLEY, N. J. 2003. Familial aggregation of irritable bowel syndrome: a prospective study. *Gut,* 52**,** 1703.

KANI, H. T., DURAL, U., SAKALLI KANI, A., YANARTAS, O., KIZILTAS, S., YILMAZ ENC, F., ATUG, O., DEYNELI, O., KUSCU, K. & IMERYUZ, N. 2018. Evaluation of depression, anxiety, alexithymia, attachment, social support and somatization in functional dyspepsia. *Psychiatry Clin Psychopharmacol,* 29**,** 45-51.

KANO, M., ENDO, Y. & FUKUDO, S. 2018. Association Between Alexithymia and Functional Gastrointestinal Disorders. *Front Psychol,* 9**,** 599.

KANO, M., OUDENHOVE, L. V., DUPONT, P., WAGER, T. D. & FUKUDO, S. 2020. Imaging Brain Mechanisms of Functional Somatic Syndromes: Potential as a Biomarker? *Tohoku J Exp Med,* 250**,** 137-152.

KAPFHAMMER, H.-P. 2006. Somatic symptoms in depression. *Dialogues in clinical neuroscience,* 8**,** 227-239.

KATO, K., SULLIVAN, P. F., EVENGÅRD, B. & PEDERSEN, N. L. 2009. A population-based twin study of functional somatic syndromes. *Psychol. Med.,* 39**,** 497-505.

KATO, K., SULLIVAN, P. F. & PEDERSEN, N. L. 2010. Latent class analysis of functional somatic symptoms in a population-based sample of twins. *J. Psychosom. Res.,* 68**,** 447-453.

KATZNELSON, H. 2013. Reflective functioning: A review. *Clin. Psychol. Rev,* 34**,** 107-117.

KEALY, D., RICE, S. M., OGRODNICZUK, J. S. & SPIDEL, A. 2018. Childhood trauma and somatic symptoms among psychiatric outpatients: Investigating the role of shame and guilt. *Psychiatry Res,* 268**,** 169-174.

KELLEY, H. H. 1978. *Interpersonal relations: A theory of interdependence,* New York, Wiley.

KELLEY, H. H., HOLMES, J. G., KERR, N. L., REIS, H. T., RUSBULT, C. E. & VAN LANGE, P. A. M. 2009. *An Atlas of Interpersonal Situations*.

KENNY, D. A. & LEDERMANN, T. 2010. Detecting, measuring, and testing dyadic patterns in the actor–partner interdependence model. *J Fam Psychol,* 24**,** 359-366.

KERNBERG, O. F. 2011. The sexual couple: A psychoanalytic exploration. *The Psychoanalytic Review,* 98**,** 217-245.

KERNS, R. D., HAYTHORNTHWAITE, J., SOUTHWICK, S. & GILLER JR, E. 1990. The role of marital interaction in chronic pain and depressive symptom severity. *J Psychosom Res,* 34**,** 401-408.

KINDT, S., VANSTEENKISTE, M., BRENNING, K. & GOUBERT, L. 2019. The Effects of Partners' Helping Motivation on Chronic Pain Patients' Functioning Over Time. *J Pain,* 20**,** 348-357.

KINGMA, E. M., DE JONGE, P., ORMEL, J. & ROSMALEN, J. G. 2013. Predictors of a functional somatic syndrome diagnosis in patients with persistent functional somatic symptoms. *Int J Behav Med,* 20**,** 206-12.

KIRKPATRICK, L. A. & DAVIS, K. E. 1994. Attachment style, gender, and relationship stability: a longitudinal analysis. *J Pers Soc Psychol,* 66**,** 502.

KIRMAYER, L. J. 1989. Cultural variations in the response to psychiatric disorders and emotional distress. *Soc Sci Med,* 29**,** 327-39.

KITSELAAR, W. M., VAN DER VAART, R., PERSCHL, J., NUMANS, M. E. & EVERS, A. W. M. 2023. Predictors of Persistent Somatic Symptoms in the General Population: A Systematic Review of Cohort Studies. *Psychosom Med,* 85**,** 71-78.

KLEIN, M. 1946. Notes on some schizoid mechanisms. *Int J Psychoanal,* 27**,** 99-110.

KLEINMAN, A. 1982. Neurasthenia and depression: A study of somatization and culture in China - Report Number One of the University of Washington - Hunan Medical College Collaborative Research Project111222. *Cult Med Psychiatry,* 6**,** 117-190.

KLOHNEN, E. C., WELLER, J. A., LUO, S. & CHOE, M. 2005. Organization and Predictive Power of General and Relationship-Specific Attachment Models: One for All, and All for One? *Pers Soc Psychol Bull,* 31**,** 1665-1682.

KNIGHT, J. R., LOCKE, G. R., 3RD, ZINSMEISTER, A. R., SCHLECK, C. D. & TALLEY, N. J. 2015. Family history of mental illness or alcohol abuse and the irritable bowel syndrome. *J Psychosom Res,* 78**,** 237-41.

KOCALEVENT, R. D., HINZ, A. & BRÄHLER, E. 2013. Standardization of a screening instrument (PHQ-15) for somatization syndromes in the general population. *BMC Psychiatry,* 13**,** 91.

KOECHLIN, H., COAKLEY, R., SCHECHTER, N., WERNER, C. & KOSSOWSKY, J. The role of emotion regulation in chronic pain: A systematic literature review.

KOELEN, J. A., HOUTVEEN, J. H., ABBASS, A., LUYTEN, P., EURELINGS-BONTEKOE, E. H., VAN BROECKHUYSEN-KLOTH, S. A., BUHRING, M. E. & GEENEN, R. 2014. Effectiveness of psychotherapy for severe somatoform disorder: meta-analysis. *Br J Psychiatry,* 204**,** 12-9.

KOH, J. S., KO, H. J., WANG, S. M., CHO, K. J., KIM, J. C., LEE, S. J. & PAE, C. U. 2014. Depression and somatic symptoms may influence on chronic prostatitis/chronic pelvic pain syndrome: a preliminary study. *Psychiatry Investig,* 11**,** 495-8.

KOHLMANN, S., GIERK, B., HILBERT, A., BRÄHLER, E. & LÖWE, B. 2016. The overlap of somatic, anxious and depressive syndromes: A population-based analysis. *J Psychosom Res,* 90**,** 51-56.

KONNOPKA, A., KAUFMANN, C., KONIG, H. H., HEIDER, D., WILD, B., SZECSENYI, J., HERZOG, W., HEINRICH, S. & SCHAEFERT, R. 2013. Association of costs with somatic symptom severity in patients with medically unexplained symptoms. *J Psychosom Res,* 75**,** 370-5.

KÖRBER, S., FRIESER, D., STEINBRECHER, N. & HILLER, W. 2011. Classification characteristics of the Patient Health Questionnaire-15 for screening somatoform disorders in a primary care setting. *J Psychosom Res,* 71**,** 142-7.

KÖRNER, R. & SCHÜTZ, A. 2021. Power in romantic relationships: How positional and experienced power are associated with relationship quality. *J SOC PERS RELAT,* 38**,** 2653-2677.

KRAHE, C., SPRINGER, A., WEINMAN, J. A. & FOTOPOULOU, A. 2013. The social modulation of pain: others as predictive signals of salience - a systematic review. *Front Hum Neurosci,* 7**,** 386.

KRAMER, E. J., KWONG, K., LEE, E. & CHUNG, H. 2002. Cultural factors influencing the mental health of Asian Americans. *West J Med,* 176**,** 227-231.

KRIVZOV, J., BAERT, F., MEGANCK, R. & CORNELIS, S. 2021. Interpersonal dynamics and therapeutic relationship in patients with functional somatic syndromes: A metasynthesis of case studies. *J Couns Psychol,* 68**,** 593-607.

KROENKE, K. & MANGELSDORFF, A. D. 1989. Common symptoms in ambulatory care: incidence, evaluation, therapy, and outcome. *Am J Med,* 86**,** 262-6.

KROENKE, K., SPITZER, R. L. & WILLIAMS, J. B. 2002. The PHQ-15: validity of a new measure for evaluating the severity of somatic symptoms. *Psychosom Med,* 64**,** 258-66.

LANE, R. D. & SCHWARTZ, G. E. 1987a. Induction of lateralized sympathetic input to the heart by the CNS during emotional arousal: a possible neurophysiologic trigger of sudden cardiac death. *Psychol. Med.,* 49**,** 274-284.

LANE, R. D. & SCHWARTZ, G. E. 1987b. Levels of emotional awareness: a cognitive-developmental theory and its application to psychopathology. *Am J Psychiatry,* 144**,** 133-43.

LANE, R. D. & SMITH, R. 2021. Levels of emotional awareness: theory and measurement of a socio-emotional skill. *J. Intell.,* 9**,** 42.

LANMAN, M. & GRIER, F. 2003. Evaluating change in couple functioning: A psychoanalytic perspective. *Sexual and Relationship Therapy,* 18**,** 13-24.

LARA-CINISOMO, S., AKINBODE, T. D. & WOOD, J. 2020. A systematic review of somatic symptoms in women with depression or depressive symptoms: do race or ethnicity matter? *J Womens Health,* 29**,** 1273-1282.

LE, H.-N., BERENBAUM, H. & RAGHAVAN, C. 2002. Culture and alexithymia: Mean levels, correlates and the role of parental socialization of emotions. *Emotion,* 2**,** 341-360.

LEARY, M. & BAUMEISTER, R. 2000. The nature and function of self-esteem: Sociometer theory. 32.

LEE, Y. 2021. *A cross-cultural comparison of parental mentalisation in the UK and South Korea.* University of York.

LEE, Y., MEINS, E. & LARKIN, F. 2023. Parental Mentalization Across Cultures: Mind-Mindedness and Parental Reflective Functioning in British and South Korean Mothers.

LEE, Y. H., RIM, H. D. & LEE, J. Y. 1996. Development and validation of a Korean version of the 20-item Toronto Alexithymia Scale (TAS-20K). *Psychiatry Investig,* 35**,** 888–899.

LEIKNES, K. A., FINSET, A., MOUM, T. & SANDANGER, I. 2007. Course and predictors of medically unexplained pain symptoms in the general population. *J Psychosom Res,* 62**,** 119-128.

LEONARD, M. T., CANO, A. & JOHANSEN, A. B. 2006. Chronic pain in a couples context: a review and integration of theoretical models and empirical evidence. *J Pain,* 7**,** 377-90.

LIAO, S. C., HUANG, W. L., MA, H. M., LEE, M. T., CHEN, T. T., CHEN, I. M. & GAU, S. S. 2016. The relation between the patient health questionnaire-15 and DSM somatic diagnoses. *BMC Psychiatry,* 16**,** 351.

LIAO, S. C., MA, H. M., LIN, Y. L. & HUANG, W. L. 2019. Functioning and quality of life in patients with somatic symptom disorder: The association with comorbid depression. *Compr Psychiatry,* 90**,** 88-94.

LIDDELL, B. J. & WILLIAMS, E. N. 2019. Cultural Differences in Interpersonal Emotion Regulation. *Front Psychol,* 10**,** 999.

LIEB, R., MEINLSCHMIDT, G. & ARAYA, R. 2007. Epidemiology of the association between somatoform disorders and anxiety and depressive disorders: an update. *Psychosom Med,* 69**,** 860-3.

LIM, N. 2016. Cultural differences in emotion: differences in emotional arousal level between the East and the West. *Integr Med Res,* 5**,** 105-109.

LIN, H.-C., YANG, Y., ELLIOTT, L. & GREEN, E. 2020. Individual differences in attachment anxiety shape the association between adverse childhood experiences and adult somatic symptoms. *Child Abuse Rev,* 101**,** 104325.

LIN, Y. C. & CHAN, C. H. 2006. Alexithymia in Non-psychiatric Outpatients of a General Hospital. *Taiwan J Psychiatry,* 20**,** 272-278.

LIN, Y. C. & CHEN, H. C. 2003. Taiwan Version of the Toronto Alexithymia Scale-20. *Taiwan J Psychiatry,* 17**,** 276-281.

LITTLE, P., SOMERVILLE, J., WILLIAMSON, I., WARNER, G., MOORE, M., WILES, R., GEORGE, S., SMITH, A. & PEVELER, R. 2001. Family influences in a cross-sectional survey of higher child attendance. *Br J Gen Pract,* 51**,** 977-81, 984.

LIU, L., COHEN, S., SCHULZ, M. S. & WALDINGER, R. J. 2011. Sources of somatization: exploring the roles of insecurity in relationships and styles of anger experience and expression. *Soc Sci Med,* 73**,** 1436-43.

LOCKE, K. D. 2008. Attachment styles and interpersonal approach and avoidance goals in everyday couple interactions. *Pers Relatsh,* 15**,** 359-374.

LOEB, T. B., JOSEPH, N. T., WYATT, G. E., ZHANG, M., CHIN, D., THAMES, A. & ASWAD, Y. 2018. Predictors of somatic symptom severity: The role of cumulative history of trauma and adversity in a diverse community sample. *Psychol Trauma,* 10**,** 491.

LOPEZ-POUSA, S., GARRE-OLMO, J., DE GRACIA, M., RIBOT, J., CALVO-PERXAS, L. & VILALTA-FRANCH, J. 2013. Development of a multidimensional measure of fibromyalgia symptomatology: the comprehensive rating scale for fibromyalgia symptomatology. *J Psychosom Res,* 74**,** 384-92.

LÖWE, B., SPITZER, R. L., WILLIAMS, J. B., MUSSELL, M., SCHELLBERG, D. & KROENKE, K. 2008. Depression, anxiety and somatization in primary care: syndrome overlap and functional impairment. *Gen Hosp Psychiatry,* 30**,** 191-9.

LOWE, B., TOUSSAINT, A., ROSMALEN, J. G. M., HUANG, W. L., BURTON, C., WEIGEL, A., LEVENSON, J. L. & HENNINGSEN, P. 2024. Persistent physical symptoms: definition, genesis, and management. *Lancet,* 403**,** 2649-2662.

LÖWE, B., TOUSSAINT, A., ROSMALEN, J. G. M., HUANG, W. L., BURTON, C., WEIGEL, A., LEVENSON, J. L. & HENNINGSEN, P. 2024. Persistent physical symptoms: definition, genesis, and management. *Lancet,* 403**,** 2649-2662.

LUONI, C., AGOSTI, M., CRUGNOLA, S., ROSSI, G. & TERMINE, C. 2018. Psychopathology, dissociation and somatic symptoms in adolescents who were exposed to traumatic experiences. *Front Psychol,* 9**,** 391984.

LUYTEN, P. & BLATT, S. J. 2011. Integrating theory-driven and empirically-derived models of personality development and psychopathology: A proposal for DSM V. *Clin. Psychol. Rev,* 31**,** 52-68.

LUYTEN, P. & BLATT, S. J. 2013. Interpersonal relatedness and self-definition in normal and disrupted personality development: retrospect and prospect. *Am Psychol,* 68**,** 172.

LUYTEN, P., CAMPBELL, C., ALLISON, E. & FONAGY, P. 2020a. The Mentalizing Approach to Psychopathology: State of the Art and Future Directions. *Annu Rev Clin Psychol,* 16**,** 297-325.

LUYTEN, P., CAMPBELL, C. & FONAGY, P. 2019a. Reflections on the Contributions of Sidney J. Blatt: The Dialectical Needs for Autonomy, Relatedness, and the Emergence of Epistemic Trust. *Psychoanalytic Psychology,* 36**,** 328-334.

LUYTEN, P., CAMPBELL, C. & FONAGY, P. 2020b. Borderline personality disorder, complex trauma, and problems with self and identity: A social-communicative approach. *J Pers,* 88**,** 88-105.

LUYTEN, P., CAMPBELL, C., MOSER, M. & FONAGY, P. 2024. The role of mentalizing in psychological interventions in adults: Systematic review and recommendations for future research. *Clin. Psychol. Rev,* 108**,** 102380.

LUYTEN, P., COSYNS, N. & VAN DEN BROECK, A. 2006. Are patients with Chronic Fatigue Syndrome perfectionistic— or were they? A case-control study. *Pers Individ Dif,* 40**,** 1473-1483.

LUYTEN, P., DE MEULEMEESTER, C. & FONAGY, P. 2019b. Psychodynamic therapy in patients with somatic symptom disorder. *Contemporary Psychodynamic Psychotherapy.*

LUYTEN, P. & FONAGY, P. 2016. An Integrative, Attachment-Based Approach to the Management and Treatment of Patients with Persistent Somatic Complaints. *In:* HUNTER, J. & MAUNDER, R. (eds.) *Improving Patient Treatment with Attachment Theory: A Guide for Primary Care Practitioners and Specialists.* Cham: Springer International Publishing.

LUYTEN, P. & FONAGY, P. 2018. The stress–reward–mentalizing model of depression: An integrative developmental cascade approach to child and adolescent depressive disorder based on the Research Domain Criteria (RDoC) approach. *Clin. Psychol. Rev,* 64**,** 87-98.

LUYTEN, P. & FONAGY, P. 2020. Psychodynamic Psychotherapy for Patients With Functional Somatic Disorders and the Road to Recovery. *Am J Psychother,* 73**,** 125-130.

LUYTEN, P., FONAGY, P., LOWYCK, B. & VERMOTE, R. 2012a. Assessment of mentalization. *In:* BATEMAN, A. W. & FONAGY, P. (eds.) *Handbook of Mentalizing in Mental Health Practice.* London; New York, NY: American Psychiatric Publishing.

LUYTEN, P., LEMMA, A., TARGET, M. & FONAGY, P. 2013. Vulnerability for Functional Somatic Disorders: A Contemporary Psychodynamic Approach. *J*

Psychother Integr, 23**,** 250.

LUYTEN, P. & MEULEMEESTER, C. D. 2017. Understanding and Treatment of Patients with Persistent Somatic Complaints Through the Lens of Contemporary Attachment Theory. *ATTACHMENT: New Directions in Psychotherapy and Relational Psychoanalysis,* 11**,** 205-222.

LUYTEN, P. & VAN HOUDENHOVE, B. 2013. Common and specific factors in the psychotherapeutic treatment of patients suffering from chronic fatigue and pain. *J Psychother Integr,* 23**,** 14-27.

LUYTEN, P., VAN HOUDENHOVE, B., LEMMA, A., TARGET, M. & FONAGY, P. 2012b. A mentalization-based approach to the understanding and treatment of functional somatic disorders. *Psychoanal Psychother,* 26**,** 121-140.

MA, D., LU, W., FRITZSCHE, K., TOUSSAINT, A. C., LI, T., CHEN, H., WU, H., MA, X., REN, J. & LEONHART, R. 2023. Differences in psychometric characteristics of outpatients with somatic symptom disorder from general hospital biomedical (neurology/gastroenterology), traditional Chinese medicine, and psychosomatic settings. *Front Psychiatry,* 14**,** 1205824.

MALLINCKRODT, B. & WANG, C.-C. 2004. Quantitative Methods for Verifying Semantic Equivalence of Translated Research Instruments: A Chinese Version of the Experiences in Close Relationships Scale. *J Couns Psychol,* 51**,** 368-379.

MARSHALL, T., JONES, D. P., RAMCHANDANI, P. G., STEIN, A. & BASS, C. 2007. Intergenerational transmission of health beliefs in somatoform disorders: exploratory study. *Br J Psychiatry,* 191**,** 449-50.

MARSZAL, M. & JANCZAK, A. 2018. Emotion Dysregulation, Mentalization and Romantic Attachment in the Nonclinical Adolescent Female Sample. *Curr Psychol,* 37**,** 894-904.

MASTER, S. L., EISENBERGER, N. I., TAYLOR, S. E., NALIBOFF, B. D., SHIRINYAN, D. & LIEBERMAN, M. D. 2009. A picture's worth: partner photographs reduce experimentally induced pain. *Psychol Sci,* 20**,** 1316-8.

MAUNDER, R. G. & HUNTER, J. J. 2008. Attachment relationships as determinants of physical health. *J Am Acad Psychoanal Dyn Psychiatry,* 36**,** 11-32.

MAUNDER, R. G., LANCEE, W. J., BALDERSON, K. E., BENNETT, J. P., BORGUNDVAAG, B., EVANS, S., FERNANDES, C. M., GOLDBLOOM, D. S., GUPTA, M., HUNTER, J. J., MCGILLIS HALL, L., NAGLE, L. M., PAIN, C., PECZENIUK, S. S., RAYMOND, G., READ, N., ROURKE, S. B., STEINBERG, R. J., STEWART, T. E., VANDEVELDE-COKE, S., VELDHORST, G. G. & WASYLENKI, D. A. 2006. Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. *Emerg Infect Dis,* 12**,** 1924-32.

MAVHANDU-MUDZUSI, A. H. 2018. The Couple Interview as a Method of Collecting

Data in Interpretative Phenomenological Analysis Studies. *Int J Qual Methods,* 17.

MAYER, E., NALIBOFF, B., CHANG, L. & SV., C. 2001. Stress and irritable bowel syndrome. *AM J Physiol Gastrointest Liver Physiol,* 280**,** G519-G524.

MCANDREW, L. M., FRIEDLANDER, M. L., ALISON PHILLIPS, L., S, L. S. & HELMER, D. A. 2018. Concordance of illness perceptions: The key to improving care of medically unexplained symptoms. *J Psychosom Res,* 111**,** 140-142.

MCCALL-HOSENFELD, J. S., WINTER, M., HEEREN, T. & LIEBSCHUTZ, J. M. 2014. The association of interpersonal trauma with somatic symptom severity in a primary care population with chronic pain: exploring the role of gender and the mental health sequelae of trauma. *J Psychosom Res,* 77**,** 196-204.

MCEWEN, B. S. 2007. Physiology and neurobiology of stress and adaptation: central role of the brain. *Physiol Rev,* 87**,** 873-904.

MCWILLIAMS, L. A. 2017. Adult attachment insecurity is positively associated with medically unexplained chronic pain. *Eur J Pain,* 21**,** 1378-1383.

MEEHAN, K. & LEVY, K. 2009. Psychodynamic theories of relationships. *Encyclopedia of Human Relationships***,** 1299-1302.

MESQUITA, B. & WALKER, R. 2003. Cultural differences in emotions: A context for interpreting emotional experiences. *Behav Res Ther,* 41**,** 777-793.

MEWES, R. 2022. Recent developments on psychological factors in medically unexplained symptoms and somatoform disorders. *Front Public Health,* 10**,** 1033203.

MIKULINCER, M. & SHAVER, P. 2020. Enhancing the "Broaden and Build" Cycle of Attachment Security in Adulthood: From the Laboratory to Relational Contexts and Societal Systems. *Int J Environ Res Public Health,* 17.

MIKULINCER, M. & SHAVER, P. R. 2010. *Attachment in adulthood: Structure, dynamics, and change*, Guilford Publications.

MIKULINCER, M. & SHAVER, P. R. 2019. Attachment orientations and emotion regulation. *Current Opinion in Psychology,* 25**,** 6-10.

MINUCHIN, S. 1974. *Family and family therapy,* Cambridge, MA, Harvard University Press.

MINUCHIN, S., ROSMAN, B. L. & BAKER, L. 1978a. *Psychosomatic families: Anorexia nervosa in context*, Harvard University Press.

MINUCHIN, S., ROSSMAN, B. & BAKER, L. 1978b. *Psychosomatic families: Anorexia nervosa in context,* Cambridge, MA, Harvard University Press.

MITCHELL, S. A. 1988. *Relational Concepts in Psychoanalysis: An Integration,* Cambridge, MA, Harvard University Press.

MOOIJAART, A. & VAN MONTFORT, K. 2004. Statistical Power in PATH Models for Small Sample Sizes. *In:* VAN MONTFORT, K., OUD, J. & SATORRA, A. (eds.) *Recent Developments on Structural Equation Models: Theory and Applications.* Dordrecht: Springer Netherlands.

MOORE, K. A., MCCABE, M. P. & BRINK, R. B. 2001. Are married couples happier in their relationships than cohabiting couples? Intimacy and relationship factors. *Sex Relation Ther,* 16**,** 35-46.

MORGAN, D. L. 2012. Focus groups and social interaction. *The Sage handbook of interview research: The complexity of the craft,* 2**,** 161-176.

MORGAN, D. L., ATAIE, J., CARDER, P. & HOFFMAN, K. 2013. Introducing dyadic interviews as a method for collecting qualitative data. *Qual Health Res,* 23**,** 1276-1284.

MORGAN, M. 2018. *A Couple State of Mind: Psychoanalysis of Couples and the Tavistock Relationships Model*.

MOSTAFAEI, S., KABIR, K., KAZEMNEJAD, A., FEIZI, A., MANSOURIAN, M., HASSANZADEH KESHTELI, A., AFSHAR, H., ARZAGHI, S. M., RASEKHI DEHKORDI, S., ADIBI, P. & GHADIRIAN, F. 2019. Explanation of somatic symptoms by mental health and personality traits: application of Bayesian regularized quantile regression in a large population study. *BMC Psychiatry,* 19**,** 207.

MOUSSAVI, S., CHATTERJI, S., VERDES, E., TANDON, A., PATEL, V. & USTUN, B. 2007. Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *Lancet,* 370**,** 851-858.

MURATA, A., MOSER, J. S. & KITAYAMA, S. 2013. Culture shapes electrocortical responses during emotion suppression. *Soc Cogn Affect Neurosci,* 8**,** 595-601.

MURRAY, S. L., HOLMES, J. G. & COLLINS, N. L. 2006. Optimizing assurance: the risk regulation system in relationships. *Psychol Bull,* 132**,** 641-66.

MUSSELL, M., KROENKE, K., SPITZER, R. L., WILLIAMS, J. B., HERZOG, W. & LÖWE, B. 2008. Gastrointestinal symptoms in primary care: prevalence and association with depression and anxiety. *J Psychosom Res,* 64**,** 605-12.

MUTHÉN, B. & MUTHÉN, L. K. 2000. Integrating person-centered and variable-centered analyses: growth mixture modeling with latent trajectory classes. *Alcohol Clin Exp Res,* 24**,** 882-91.

NABI, H., HALL, M., KOSKENVUO, M., SINGH-MANOUX, A., OKSANEN, T., SUOMINEN, S., KIVIMÄKI, M. & VAHTERA, J. 2010. Psychological and Somatic Symptoms of Anxiety and Risk of Coronary Heart Disease: The Health and Social Support Prospective Cohort Study. *Biol Psychiatry,* 67**,** 378-385.

NACAK, Y., MORAWA, E., TUFFNER, D. & ERIM, Y. 2017. Insecure attachment style

and cumulative traumatic life events in patients with somatoform pain disorder: A cross-sectional study. *J Psychosom Res,* 103**,** 77-82.

NAGPURE, P., MODAK, A., SINGAM, A., SHREY, S., LATWAL, B. & JEJANI, A. 2020. Relationship between Perceived Social Support and Severity of Symptoms in Persons with Somatoform Disorder. *J Evol Med Dent Sci,* 9**,** 324-28.

NEFF, K. 2003. Self-Compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself. *Self Identity,* 2**,** 85-101.

NEMIAH, J. C., FREYBERGER, H. & SIFNEOS, P. E. 1976. Alexithymia: A view of the psychosomatic process. *In:* HILL, O. W. (ed.) *Modern trends in psychosomatic medicine.* London: Butterworths.

NEWTON-JOHN, T. R. 2013. How significant is the Significant Other in patient coping in chronic pain? *Pain Manag,* 3**,** 485-493.

NIELSEN, G., BUSZEWICZ, M., EDWARDS, M. J. & STEVENSON, F. 2020. A qualitative study of the experiences and perceptions of patients with functional motor disorder. *Disabil Rehabil,* 42**,** 2043-2048.

NIMNUAN, C., HOTOPF, M. & WESSELY, S. 2001. Medically unexplained symptoms: an epidemiological study in seven specialities. *J Psychosom Res,* 51**,** 361-7.

NOLTE, T., BOLLING, D. Z., HUDAC, C. M., FONAGY, P., MAYES, L. & PELPHREY, K. A. 2013. Brain mechanisms underlying the impact of attachment-related stress on social cognition. *Front Hum Neurosci,* 7**,** 816.

NYLUND, K. L., ASPAROUHOV, T. & MUTHÉN, B. O. 2007. Deciding on the Number of Classes in Latent Class Analysis and Growth Mixture Modeling: A Monte Carlo Simulation Study. *Struct Equ Modeling,* 14**,** 535-569.

NYLUND-GIBSON, K. & CHOI, A. 2018. Ten frequently asked questions about latent class analysis. 4**,** 440-461.

O'DOWD, T. C. 1988. Five years of heartsink patients in general practice. *Bmj,* 297**,** 528-30.

OFFENBAECHER, M., BONDY, B., JONGE, S. D., GLATZEDER, K., KRÜGER, M., SCHOEPS, P. & ACKENHEIL, M. 1999. Possible association of fibromyalgia with a polymorphism in the serotonin transporter gene regulatory region. *Arthritis Rheumatol,* 42**,** 2482-2488.

OKUR GÜNEY, Z. E., CARDONE, D., SATTEL, H., ARIENS, S., WITTHÖFT, M., MERLA, A., KUPPENS, P. & HENNINGSEN, P. 2022. Interpersonal Emotion Dynamics in Couples With Somatic Symptom Disorder: Dyadic Coherence in Facial Temperature During Emotional Interactions. *Psychosom Med,* 84**,** 188-198.

OKUR GUNEY, Z. E., SATTEL, H., WITTHOFT, M. & HENNINGSEN, P. 2019. Emotion regulation in patients with somatic symptom and related disorders: A

systematic review. *PLoS One,* 14**,** e0217277.

OLDE HARTMAN, T., HASSINK-FRANKE, L., DOWRICK, C., FORTES, S., LAM, C., VAN DER HORST, H., LUCASSEN, P. & VAN WEEL-BAUMGARTEN, E. 2008. Medically unexplained symptoms in family medicine: defining a research agenda. Proceedings from WONCA 2007. *Fam Pract,* 25**,** 266-71.

OLDE HARTMAN, T. C., HASSINK-FRANKE, L., DOWRICK, C., FORTES, S., LAM, C., HORST, H., LUCASSEN, P. & WEEL-BAUMGARTEN, E.

OTS, T. 1990. The angry liver, the anxious heart and the melancholy spleen. The phenomenology of perceptions in Chinese culture. *Cult Med Psychiatry,* 14**,** 21-58.

OVERALL, N. C. & SIMPSON, J. A. 2015. Attachment and Dyadic Regulation Processes. *Curr Opin Psychol,* 1**,** 61-666.

PANDEY, R., MANDAL, M. K., TAYLOR, G. J. & PARKER, J. D. 1996. Cross-cultural alexithymia: development and validation of a Hindi translation of the 20-Item Toronto Alexithymia Scale. *J Clin Psychol,* 52**,** 173-6.

PEDROSA GIL, F., RIDOUT, N., KESSLER, H., NEUFFER, M., SCHOECHLIN, C., TRAUE, H. C. & NICKEL, M. 2008a. Facial emotion recognition and alexithymia in adults with somatoform disorders. *Depress Anxiety,* 25**,** E133-41.

PEDROSA GIL, F., SCHEIDT, C. E., HOEGER, D. & NICKEL, M. 2008b. Relationship between attachment style, parental bonding and alexithymia in adults with somatoform disorders. *Int J Psychiatry Med,* 38**,** 437-51.

PETERSEN, M. W., CARSTENSEN, T. B. W., FROSTHOLM, L., WELLNITZ, K. B., ØRNBØL, E., JØRGENSEN, T., EPLOV, L. F., DANTOFT, T. M. & FINK, P. 2023. High Perceived Stress and Low Self-Efficacy are Associated with Functional Somatic Disorders: The DanFunD Study. *Clin Epidemiol,* 15**,** 407-419.

PETERSEN, M. W., ORNBOL, E., DANTOFT, T. M. & FINK, P. 2021. Assessment of functional somatic disorders in epidemiological research: Self-report questionnaires versus diagnostic interviews. *J Psychosom Res,* 146**,** 110491.

PETERSEN, M. W., SCHRÖDER, A., JØRGENSEN, T., ØRNBØL, E., DANTOFT, T. M., ELIASEN, M., CARSTENSEN, T. W., FALGAARD EPLOV, L. & FINK, P. 2019. Prevalence of functional somatic syndromes and bodily distress syndrome in the Danish population: the DanFunD study. *Scand J Public Health,* 48**,** 567-576.

PETERSEN, M. W., SCHRÖDER, A., JØRGENSEN, T., ØRNBØL, E., DANTOFT, T. M., ELIASEN, M., THUESEN, B. H. & FINK, P. 2020a. The unifying diagnostic construct of bodily distress syndrome (BDS) was confirmed in the general population. *J Psychosom Res,* 128**,** 109868.

PETERSEN, M. W., SCHRÖDER, A., JØRGENSEN, T., ØRNBØL, E., MEINERTZ

DANTOFT, T., ELIASEN, M., BENROS, M. E. & FINK, P. 2020b. Irritable bowel, chronic widespread pain, chronic fatigue and related syndromes are prevalent and highly overlapping in the general population: DanFunD. *Sci Rep,* 10**,** 3273.

PETKUS, A. J., GUM, A. M., KING-KALLIMANIS, B. & WETHERELL, J. L. 2009. Trauma history is associated with psychological distress and somatic symptoms in homebound older adults. *Am J Geriatr Psychiatry,* 17**,** 810-818.

PICARDI, A., PASQUINI, P., CATTARUZZA, M., GAETANO, P., MELCHI, C., BALIVA, G., CAMAIONI, D., TIAGO, A., ABENI, D. & BIONDI, M. 2003. Stressful life events, social support, attachment security and alexithymia in vitiligo: A case-control study. *Psychother Psychosom,* 72**,** 150-158.

PIETROMONACO, P. R. & POWERS, S. I. 2015. Attachment and Health-Related Physiological Stress Processes. *Curr Opin Psychol,* 1**,** 34-39.

POPE, C., MAYS, N. & POPAY, J. 2007. *Pope C, Mays N, Popay J. (2007) Synthesizing qualitative and quantitative health evidence: a guide to methods. Buckingham: Open University Press*.

PORTER, L. S., DAVIS, D. & KEEFE, F. J. 2007. Attachment and pain: recent findings and future directions. *Pain,* 128**,** 195-198.

POWER, D., SCHOENHERR, T. & SAMSON, D. 2010. The cultural characteristic of individualism/collectivism: A comparative study of implications for investment in operations between emerging Asian and industrialized Western countries. *J. Oper. Manag,* 28**,** 206-222.

POWERS, S. I., PIETROMONACO, P. R., GUNLICKS, M. & SAYER, A. 2006. Dating couples' attachment styles and patterns of cortisol reactivity and recovery in response to a relationship conflict. *J Pers Soc Psychol,* 90**,** 613-28.

RAASTHOJ, I., RASMUSSEN, S., CARSTENSEN, T. B. W., WEHBERG, S., ROSENDAL, M. & JARBOL, D. E. 2023. Coping strategies among individuals with multiple physical symptoms: A general population-based cross-sectional study. *J Psychosom Res,* 165**,** 111140.

RAPHAEL, K. G., JANAL, M. N., NAYAK, S., SCHWARTZ, J. E. & GALLAGHER, R. M. 2004. Familial aggregation of depression in fibromyalgia: a community-based test of alternate hypotheses. *Pain,* 110**,** 449-460.

RAPOZA, K. A., VASSELL, K., WILSON, D. T., ROBERTSON, T. W., MANZELLA, D. J., ORTIZ-GARCIA, A. L. & JIMENEZ-LAZAR, L. A. 2016. Attachment as a moderating factor between social support, physical health, and psychological symptoms. *Sage Open,* 6**,** 2158244016682818.

RASK, M. T., ROSENDAL, M., FENGER-GRØN, M., BRO, F., ØRNBØL, E. & FINK, P. 2015. Sick leave and work disability in primary care patients with recent-onset multiple medically unexplained symptoms and persistent somatoform disorders: a 10-year follow-up of the FIP study. *Gen Hosp Psychiatry,* 37**,** 53-59.

RASMUSSEN, S., JENSEN, C. T., ROSENDAL, M., VÆGTER, H. B., SØNDERGAARD, J. & JARBØL, D. E. 2020. Multiple physical symptoms and individual characteristics – A cross-sectional study of the general population. *J Psychosom Res,* 131**,** 109941.

REDDY, B., DAS, S. & GURUPRASAD, S. 2018. Research challenges in somatoform disorders: A narrative review. *Asian J Psychiatr,* 34**,** 65-66.

REICH, J. W., OLMSTED, M. E. & VAN PUYMBROECK, C. M. 2006. Illness uncertainty, partner caregiver burden and support, and relationship satisfaction in fibromyalgia and osteoarthritis patients. *Arthritis Rheum,* 55**,** 86-93.

REIG-GARCIA, G., BOSCH-FARRE, C., SUNER-SOLER, R., JUVINYA-CANAL, D., PLA-VILA, N., NOELL-BOIX, R., BOIX-ROQUETA, E. & MANTAS-JIMENEZ, S. 2021. The Impact of a Peer Social Support Network from the Perspective of Women with Fibromyalgia: A Qualitative Study. *Int J Environ Res Public Health,* 18.

RETZER, A. 1991. Love's Labor's Lost: Systemic therapy for a couple with somatic symtpoms. *J Fam Psychol,* 1**,** 1-27.

RIEDL, D., ROTHMUND, M. S., GROTE, V., FISCHER, M. J., KAMPLING, H., KRUSE, J., NOLTE, T., LABEK, K. & LAMPE, A. 2023. Mentalizing and epistemic trust as critical success factors in psychosomatic rehabilitation: results of a single center longitudinal observational study. *Front Psychiatry,* 14.

RIEF, W. & BROADBENT, E. 2007. Explaining medically unexplained symptoms-models and mechanisms. *Clinical psychology review,* 27**,** 821-841.

RIEF, W. & MARTIN, A. 2014. How to use the new DSM-5 somatic symptom disorder diagnosis in research and practice: a critical evaluation and a proposal for modifications. *Annu Rev Clin Psychol,* 10**,** 339-67.

RIEM, M. M. E., DOEDEE, E., BROEKHUIZEN-DIJKSMAN, S. C. & BEIJER, E. 2018. Attachment and medically unexplained somatic symptoms: The role of mentalization. *Psychiatry Res,* 268**,** 108-113.

ROBLES, T. F., SLATCHER, R. B., TROMBELLO, J. M. & MCGINN, M. M. 2014. Marital quality and health: a meta-analytic review. *Psychol Bull,* 140**,** 140.

ROBSON, C. & CHICHESTER, J. 2011. *Real world research: A resource for uers of social research methods in applied setting (3rd ed.)*, Wiley &Sons Ltd.

RODMAN, H. 1967. Marital Power in France, Greece, Yugoslavia, and the United States: A Cross-National Discussion. *J Marriage Fam,* 29**,** 320-324.

RODRIGUEZ, L. M., COY, A. & HADDEN, B. W. 2021. The Attachment Dynamic: Dyadic Patterns of Anxiety and Avoidance in Relationship Functioning. *J Soc Pers Relat,* 38**,** 971-994.

ROENNEBERG, C., SATTEL, H., SCHAEFERT, R., HENNINGSEN, P. &

HAUSTEINER-WIEHLE, C. 2019. Functional Somatic Symptoms. *Dtsch Arztebl Int,* 116**,** 553-560.

ROMANO, J., JENSEN, M., TURNER, J., GOOD, A. & HOPS, H. 2000. Chronic pain patient-partner interactions: Further support for a behavioral model of chronic pain. *Behavior Therapy,* 31**,** 415-440.

ROMANO, J. M., TURNER, J. A. & JENSEN, M. P. 1997. The family environment in chronic pain patients: Comparison to controls and relationship to patient functioning. *J Clin Psychol Med Settings,* 4**,** 383-395.

ROMANO, J. M., TURNER, J. A., JENSEN, M. P., FRIEDMAN, L. S., BULCROFT, R. A., HOPS, H. & WRIGHT, S. F. 1995. Chronic pain patient-spouse behavioral interactions predict patient disability. *Pain,* 63**,** 353-360.

ROSMALEN, J. G. 2010. The way forward: a case for longitudinal population-based studies in the field of functional somatic syndromes. *J Psychosom Res,* 68**,** 399-401.

ROSS, L. R. & SPINNER, B. 2001. General and specific attachment representations in adulthood: Is there a relationship? *J SOC PERS RELAT,* 18**,** 747-766.

ROSSEEL, Y. 2020. Small Sample Solutions for Structural Equation Modeling.

RUDDEN, M., MILROD, B., TARGET, M., ACKERMAN, S. & GRAF, E. 2006. Reflective functioning in panic disorder patients: a pilot study. *J Am Psychoanal Assoc,* 54**,** 1339-43.

RUSBULT, C. E. & VAN LANGE, P. A. 2003. Interdependence, interaction, and relationships. *Annu Rev Psychol,* 54**,** 351-75.

RUSZCZYNSKI, S. 1993. *Psychotherapy with Couples: Theory and Practice at the Tavistock Institute of Marital Studies,* London, Karnac Books.

RUSZCZYNSKI, S. 2018. *Psychotherapy with Couples: Theory and Practice at the Tavistock Institute of Marital Studies*.

SADEGHI, S., DOLATSHAHI, B., POURSHAHBAZ, A., ZAREI, M. & KAMI, M. 2017. Relationship between traumatic experiences and somatic symptoms severity in students. *PCP* 5**,** 211-216.

SAFILIOS-ROTHSCHILD, C. 1976. A Macro- and Micro-Examination of Family Power and Love: An Exchange Model. *J Marriage Fam,* 38**,** 355-362.

SALLINEN, M., KUKKURAINEN, M. L. & PELTOKALLIO, L. 2011. Finally heard, believed and accepted – Peer support in the narratives of women with fibromyalgia. *Patient Educ Couns,* 85**,** e126-e130.

SANDLER, R. S., EVERHART, J. E., DONOWITZ, M., ADAMS, E., CRONIN, K., GOODMAN, C., GEMMEN, E., SHAH, S., AVDIC, A. & RUBIN, R. 2002. The burden of selected digestive diseases in the United States. *Gastroenterology,*

122**,** 1500-11.

SATTEL, H., LAHMANN, C., GUNDEL, H., GUTHRIE, E., KRUSE, J., NOLL-HUSSONG, M., OHMANN, C., RONEL, J., SACK, M., SAUER, N., SCHNEIDER, G. & HENNINGSEN, P. 2012. Brief psychodynamic interpersonal psychotherapy for patients with multisomatoform disorder: randomised controlled trial. *Br J Psychiatry,* 200**,** 60-7.

SAYRE, G. 2002. *The psychosomatic marriage: An empirical study.* Unpublished doctoral dissertation, Seattle Pacific University.

SBARRA, D. A. & HAZAN, C. 2008. Coregulation, dysregulation, self-regulation: an integrative analysis and empirical agenda for understanding adult attachment, separation, loss, and recovery. *Pers Soc Psychol Rev,* 12**,** 141-67.

SCHARFF, D. E. & SCHARFF, J. S. 2018. An overview of psychodynamic couple therapy. *Psychoanalytic Couple Therapy***,** 3-24.

SCHATTNER, E., SHAHAR, G. & ABU-SHAKRA, M. 2008. 'I used to dream of lupus as some sort of creature': Chronic illness as an internal object. *Am J Orthopsychiatry,* 78**,** 466-72.

SCHMALING, K. B., FALES, J. L. & MCPHERSON, S. 2020. Longitudinal outcomes associated with significant other responses to chronic fatigue and pain. *J Health Psychol,* 25**,** 692-702.

SCHMALING, K. B., SMITH, W. R. & BUCHWALD, D. S. 2000. Significant other responses are associated with fatigue and functional status among patients with chronic fatigue syndrome. *Psychosom Med,* 62**,** 444-50.

SCHNABEL, K., PETZKE, T. M. & WITTHOFT, M. 2022. The emotion regulation process in somatic symptom disorders and related conditions - A systematic narrative review. *Clin Psychol Rev,* 97**,** 102196.

SCHOOFS, N., BAMBINI, D., RONNING, P., BIELAK, E. & WOEHL, J. 2004. Death of a Lifestyle: The Effects of Social Support and Healthcare Support on the Quality of Life of Persons With Fibromyalgia and/or Chronic Fatigue Syndrome. *Orthop Nurs,* 23.

SCHORE, A. 2001. The Effects of Early Relational Trauma on Right Brain Development, Affect Regulation, and Infant Mental Health. *TRADITION A JOURNAL OF ORTHODOX JEWISH THOUGHT,* 22**,** 201-269.

SCHOVSBO, S. U., DANTOFT, T. M., THUESEN, B. H., LETH-MØLLER, K. B., EPLOV, L. F., PETERSEN, M. W., JØRGENSEN, T. & OSLER, M. 2021. Social position and functional somatic disorders: The DanFunD study. *Scand J Public Health,* 51**,** 225-232.

SELDERS, M., VISSER, R., VAN ROOIJ, W., DELFSTRA, G. & KOELEN, J. A. 2015. The development of a brief group intervention (Dynamic Interpersonal Therapy)

for patients with medically unexplained somatic symptoms: a pilot study. *Psychoanal Psychother,* 29**,** 182-198.

SHAH, G., LINGAM, L., MURALEEDHARAN, V., PRAKASH, P. & NARAYAN, T. 2000. Ethics in social sciences and health research - Draft code of conduct. *Econ Polit Wkly,* 35**,** 987-991.

SHAVER, P. R. & MIKULINCER, M. 2007. *Adult Attachment Strategies and the Regulation of Emotion*, The Guilford Press.

SHERRY, D. L., SHERRY, S. B., VINCENT, N. A., STEWART, S. H., HADJISTAVROPOULOS, H. D., DOUCETTE, S. & HARTLING, N. 2014. Anxious attachment and emotional instability interact to predict health anxiety: An extension of the interpersonal model of health anxiety. *Pers Individ Dif,* 56**,** 89-94.

SHI, L. 2003. The Association Between Adult Attachment Styles and Conflict Resolution in Romantic Relationships. *Am J Fam Ther,* 31**,** 143-157.

SHI, L., WAMPLER, R. & WAMPLER, K. 2013. A Comparison of Self-Report Adult Attachment Measures: How Do They Converge and Diverge? *Univers. J. Psychol,* 1**,** 10-19.

SIFNEOS, P. E. 1973. The prevalence of 'alexithymic' characteristics in psychosomatic patients. *Psychother Psychosom,* 22**,** 255-62.

SIFNEOS, P. E. 2010. Is Dynamic Psychotherapy Contraindicated for a Large Number of Patients with Psychosomatic Diseases? *Psychotherapy and Psychosomatics,* 21**,** 133-136.

SKAPINAKIS, P., LEWIS, G. & MAVREAS, V. 2003. Cross-cultural differences in the epidemiology of unexplained fatigue syndromes in primary care. *Br J Psychiatry,* 182**,** 205-9.

SKERRETT, K. 2015. Resilience in Couples: A View of the Landscape. *In:* SKERRETT, K. & FERGUS, K. (eds.) *Couple Resilience: Emerging Perspectives.* Springer Science + Business Media.

ŚMIEJA, M., ORZECHOWSKI, J. & STOLARSKI, M. S. 2014. TIE: An Ability Test of Emotional Intelligence. *PLOS ONE,* 9**,** e103484.

SMITH, J. & NIZZA, I. 2022. *Essentials of interpretative phenomenological analysis*.

SMITH, J. A. 1996. Beyond the divide between cognition and discourse: Using interpretative phenomenological analysis in health psychology. *Psychol Health,* 11**,** 261-271.

SMITH, L. & GASSER, M. 2005. The development of embodied cognition: six lessons from babies. *Artif Life,* 11**,** 13-29.

SOLOMONOV, N., VAN-DOORN, K. A., LIPNER, L. M., GORMAN, B. S., MILROD,

B., RUDDEN, M. G., CHAMBLESS, D. L. & BARBER, J. P. 2019. Panic-Focused Reflective Functioning and Comorbid Borderline Traits as Predictors of Change in Quality of Object Relations in Panic Disorder Treatments. *J Contemp Psychother,* 49**,** 255-264.

SPILLER, R. C., HUMES, D. J., CAMPBELL, E., HASTINGS, M., NEAL, K. R., DUKES, G. E. & WHORWELL, P. J. 2010. The Patient Health Questionnaire 12 Somatic Symptom scale as a predictor of symptom severity and consulting behaviour in patients with irritable bowel syndrome and symptomatic diverticular disease. *Aliment Pharmacol Ther,* 32**,** 811-20.

SRIRAM, T. G., CHATURVEDI, S. K., GOPINATH, P. S. & SHANMUGAM, V. 1987. Controlled study of alexithymic characteristics in patients with psychogenic pain disorder. *Psychother Psychosom,* 47**,** 11-7.

STEINER, J. L., BIGATTI, S. M., HERNANDEZ, A. M., LYDON-LAM, J. R. & JOHNSTON, E. L. 2010. Social support mediates the relations between role strains and marital satisfaction in husbands of patients with fibromyalgia syndrome. *Fam Syst Health,* 28**,** 209.

STEVENS, F. L. 2014. Affect Regulation Styles in Avoidant and Anxious Attachment.pdf. *Individual Differences Research,* 12**,** 123-130.

STUART, S. & NOYES, R. 1999. Attachment and Interpersonal Communication in Somatization. *Psychosomatics,* 40**,** 34-43.

SUBIC-WRANA, C., BEUTEL, M. E., KNEBEL, A. & LANE, R. D. 2010. Theory of mind and emotional awareness deficits in patients with somatoform disorders. *Psychosom Med,* 72**,** 404-11.

SWINTON, J. 2022. *Factors that influence how relationships adjust to a diagnosis of chronic fatigue syndrome: A grounded theory.* Doctorate, University of Wolverhampton.

TAK, L. M., CLEARE, A. J., ORMEL, J., MANOHARAN, A., KOK, I. C., WESSELY, S. & ROSMALEN, J. G. 2011. Meta-analysis and meta-regression of hypothalamic-pituitary-adrenal axis activity in functional somatic disorders. *Biol Psychol,* 87**,** 183-94.

TAK, L. M., JANSSENS, K. A. M., DIETRICH, A., SLAETS, J. P. J. & ROSMALEN, J. G. M. 2010. Age-Specific Associations between Cardiac Vagal Activity and Functional Somatic Symptoms: A Population-Based Study. *Psychother Psychosom,* 79**,** 179-187.

TAK, L. M. & ROSMALEN, J. G. 2010. Dysfunction of stress responsive systems as a risk factor for functional somatic syndromes. *J Psychosom Res,* 68**,** 461-8.

TALLEY, N. J., GABRIEL, S. E., HARMSEN, W. S., ZINSMEISTER, A. R. & EVANS, R. W. 1995. Medical costs in community subjects with irritable bowel syndrome. *Gastroenterology,* 109**,** 1736-41.

TANKHA, H., CAÑO, A., CORLEY, A., DILLAWAY, H., LUMLEY, M. A. & CLARK, S. 2020. A Novel Couple-Based Intervention for Chronic Pain and Relationship Distress: A Pilot Study. *Couple Family Psychol,* 9**,** 13-32.

TAYLOR, G. J. 1992. Psychoanalysis and psychosomatics: a new synthesis. *J Am Acad Psychoanal,* 20**,** 251-75.

TAYLOR, G. J. 2022. Psychoanalysis and Psychosomatics: A New Synthesis (Taylor, 1992). *Psychodyn Psychiatry,* 50**,** 304-305.

TAYLOR, G. J. & BAGBY, R. M. 2013. Psychoanalysis and empirical research: the example of alexithymia. *J Am Psychoanal Assoc,* 61**,** 99-133.

TAYLOR, G. J., BAGBY, R. M. & PARKER, J. D. 2003. The 20-Item Toronto Alexithymia Scale. IV. Reliability and factorial validity in different languages and cultures. *J Psychosom Res,* 55**,** 277-83.

TAYLOR, G. J., BAGBY, R. M. & PARKER, J. D. A. 1997. *Disorders of Affect Regulation: Alexithymia in Medical and Psychiatric Illness.,* Cambridge, Cambridge University Press.

TAYLOR, G. J., MICHAEL BAGBY, R. & PARKER, J. D. A. 1991. The Alexithymia Construct: A Potential Paradigm for Psychosomatic Medicine. *Psychosomatics,* 32**,** 153-164.

TAYLOR, R., MANN, A., WHITE, N. & GOLDBERG, D. 2000a. Attachment style in patients with unexplained physical complaints. *Psychol Med,* 30**,** 931-941.

TAYLOR, R. E., MANN, A. H., WHITE, N. J. & GOLDBERG, D. P. 2000b. Attachment style in patients with unexplained physical complaints. *Psychol Med,* 30**,** 931-41.

TAYLOR, R. E., MARSHALL, T., MANN, A. & GOLDBERG, D. P. 2012. Insecure attachment and frequent attendance in primary care: a longitudinal cohort study of medically unexplained symptom presentations in ten UK general practices. *Psychol Med,* 42**,** 855-64.

THOBURN, J., HOFFMAN-ROBINSON, G., SHELLY, L. J. & SAYRE, G. 2009. Collaborative Treatment for the Psychosomatic Couple. *Fam J Alex Va,* 17**,** 6-13.

THOMAS, J., AL-SHEHHI, A., GREY, I. & BROACH, T. 2020. Exploring cultural variation in the emotional expressivity of online drawings. *Comput Hum Behav Rep,* 2.

THOMPSON, W. G., LONGSTRETH, G. F., DROSSMAN, D. A., HEATON, K. W., IRVINE, E. J. & MÜLLER-LISSNER, S. A. 1999. Functional bowel disorders and functional abdominal pain. *Gut,* 45 Suppl 2**,** Ii43-7.

TORRES, M. E., LOWE, B., SCHMITZ, S., PIENTA, J. N., VAN DER FELTZ-CORNELIS, C. & FIEDOROWICZ, J. G. 2021. Suicide and suicidality in somatic symptom and related disorders: A systematic review. *J Psychosom Res,* 140**,**

110290.

TOSYALI, A. F. & HARMA, M. 2021. The role of co-regulation of stress in the relationship between perceived partner responsiveness and binge eating: A dyadic analysis. *Int J Psychol,* 56**,** 435-443.

TOUSSAINT, A., MURRAY, A. M., VOIGT, K., HERZOG, A., GIERK, B., KROENKE, K., RIEF, W., HENNINGSEN, P. & LÖWE, B. 2016. Development and validation of the somatic symptom disorder–b criteria scale (SSD-12). *Psychosomatic medicine,* 78**,** 5-12.

TSENG, W. 1975. The nature of somatic complaints among psychiatric patients: the Chinese case. *Compr Psychiatry,* 16**,** 237-45.

TUGADE, M. M. & FREDRICKSON, B. L. 2004. Resilient individuals use positive emotions to bounce back from negative emotional experiences. *J Pers Soc Psychol,* 86**,** 320-33.

TURK, D. C., KERNS, R. D. & ROSENBERG, R. 1992. Effects of marital interaction on chronic pain and disability: Examining the down side of social support. *Rehabil Psychol,* 37**,** 259–274.

UJI, M. 2022. Understanding Somatoform Disorder through Insecure Attachment Developed by Childhood Trauma. *Psychology,* 13**,** 1659-1669.

UM, Y. H., KOH, J. S., KO, H. J., CHO, K. J., KIM, J. C., LEE, S. J. & PAE, C. U. 2014. The predictor analysis of response to routine treatment in patients with lower urinary tract symptoms suggestive of benign prostatic hyperplasia. *Neuro Endocrinol Lett,* 35**,** 116-22.

VAN HOUDENHOVE, B. & LUYTEN, P. 2009. Central sensitivity syndorms: Stress system failure may explain the whole picture. *Seminars in Arthritis and Rheumatism.*

VERDURMEN, M. J., VIDELER, A. C., KAMPERMAN, A. M., KHASHO, D. & VAN DER FELTZ-CORNELIS, C. M. 2017. Cognitive behavioral therapy for somatic symptom disorders in later life: a prospective comparative explorative pilot study in two clinical populations. *Neuropsychiatr Dis Treat,* 13**,** 2331-2339.

VERMA, R., BALHARA, Y. P. & GUPTA, C. S. 2011. Gender differences in stress response: Role of developmental and biological determinants. *Ind Psychiatry J,* 20**,** 4-10.

VERMUNT, J. & MAGIDSON, J. 2002. Latent Class Cluster Analyses.

VILLENEUVE, L., TRUDEL, G., DARGIS, L., PRÉVILLE, M., BOYER, R. & BÉGIN, J. 2015. The influence of health over time on psychological distress among older couples: The moderating role of marital functioning. *Sex Relation Ther,* 30**,** 60-77.

WALDINGER, R. J., SCHULZ, M. S., BARSKY, A. J. & AHERN, D. K. 2006. Mapping

the road from childhood trauma to adult somatization: the role of attachment. *Psychosom Med,* 68**,** 129-135.

WALLER, E. & SCHEIDT, C. E. 2006. Somatoform disorders as disorders of affect regulation: a development perspective. *Int Rev Psychiatry,* 18**,** 13-24.

WARING, E. M. 1983. Marriages of patients with psychosomatic illness. *Gen Hosp Psychiatry,* 5**,** 49-53.

WATKINS, L. R. & MAIER, S. F. 2005. Immune regulation of central nervous system functions: from sickness responses to pathological pain. *J Intern Med,* 257**,** 139-55.

WELLER, B. E., BOWEN, N. K. & FAUBERT, S. J. 2020. Latent Class Analysis: A Guide to Best Practice. *J Black Psychol,* 46**,** 287-311.

WESLEY, K. M., ZELIKOVSKY, N. & SCHWARTZ, L. A. 2013. Physical Symptoms, Perceived Social Support, and Affect in Adolescents with Cancer. *J Psychosoc Oncol,* 31**,** 451-467.

WESSELY, S., NIMNUAN, C. & SHARPE, M. 1999. Functional somatic syndromes: one or many? *Lancet,* 354**,** 936-9.

WESSELY, S. & WHITE, P. D. 2004. There is only one functional somatic syndrome. *Br J Psychiatry,* 185**,** 95-6.

WHIFFEN, V. E., FOOT, M. L. & THOMPSON, J. M. 2016. Self-silencing mediates the link between marital conflict and depression. *J SOC PERS RELAT,* 24**,** 993-1006.

WOLF, E. P. 1961. The Dynamics of Married Living. *Merrill-Palmer Quarterly of Behavior and Development,* 7**,** 304-308.

WOLKE, D., COPELAND, W. E., ANGOLD, A. & COSTELLO, E. J. 2013. Impact of bullying in childhood on adult health, wealth, crime, and social outcomes. *Psychol Sci,* 24**,** 1958-70.

WONGPAKARAN, T. & WONGPAKARAN, N. 2014. Personality traits influencing somatization symptoms and social inhibition in the elderly. *Clin Interv Aging,* 9**,** 157-64.

WOOLDRIDGE, J. M. 2019. *Introductory Econometrics: A Modern Approach*, South-Western Cengage Learning.

YANG, H. C., SUH, S., KIM, H., CHO, E. R., LEE, S. K. & SHIN, C. 2013. Testing bidirectional relationships between marital quality and sleep disturbances: a 4-year follow-up study in a Korean cohort. *J Psychosom Res,* 74**,** 401-6.

YANG, Y. J., KOH, J. S., KO, H. J., CHO, K. J., KIM, J. C., LEE, S. J. & PAE, C. U. 2014. The influence of depression, anxiety and somatization on the clinical symptoms and treatment response in patients with symptoms of lower urinary tract symptoms suggestive of benign prostatic hyperplasia. *J Korean Med Sci,*

29**,** 1145-51.

ZHU, Y., LI, Z., FAN, J. & HAN, S. 2007. Neural Basis of Cultural Influence on Self-Representation. *NeuroImage,* 34**,** 1310-6.

ZIJLEMA, W. L., STOLK, R. P., LÖWE, B., RIEF, W., WHITE, P. D. & ROSMALEN, J. G. 2013. How to assess common somatic symptoms in large-scale studies: a systematic review of questionnaires. *J Psychosom Res,* 74**,** 459-68.