

**The Impact of Culture on Anxiety Related Cognitions: An exploration with  
Saudi-Arabian Individuals**

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DClinPsy Thesis (Volume 1)

2017

University College London

**UCL Doctorate in Clinical Psychology**

**Thesis declaration form**

I 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.

Signature:

Name:

Date:

## **Overview**

This three part thesis focuses on the applicability of CBT with Middle Eastern clients. Part 1 is a systematic literature review that examines the use of CBT with Middle-Eastern clients. Only a small number of studies met the broad inclusion criteria, indicating that the outcome of CBT with this population is relatively under-researched. The studies demonstrated that CBT as a Western therapeutic intervention was acceptable and beneficial to Arab participants. In studies that compared Western and Arab samples, the results were better for Western samples, indicating that CBT is less efficacious with Arab clients.

Part 2 is a qualitative empirical study that examines the experiences of panic and anxiety symptoms of participants from Saudi-Arabia. Rooted in Clark's cognitive model of panic, this cross-cultural study uses existing literature on panic cognitions based on a Western sample to compare Saudi-Arabian participants symptoms of panic and their interpretation of said symptoms. The results reveal a large overlap between the two ethnic groups in both symptom expression and interpretation. In keeping with Clark's model, Saudi-Arabian participants misinterpreted bodily symptoms to mean imminent danger or bodily harm. The study also provided evidence of differences in symptoms expression and the content of catastrophic cognitions. In doing so, the study enhanced the clinical knowledge of culturally dependent symptoms and cognitions.

Part 3 is critical appraisal dedicated to addressing in more detail some of the limitations in the empirical paper, emphasising quality and validity. A discussion of the appropriateness of the methods is followed by a discussion on factors that informed the analysis process. Part 3 concludes with a personal reflection on the wider motivating factors that guided the selection of this research topic.

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## **Acknowledgements**

As a child refugee, I was 6 years old and hiding from the police in Lebanon with my family in a room above a shop. This small room, in an obscure part of the city outskirts, was furnished with 3 mattresses shared among eight of my family members. A glimmer of light fought its way through the thick dusty velvet curtain of the windows that overlooked the sun-soaked street ahead. Heavy and outstretched from ceiling to floor, the curtain was not for decorative purposes. It was a barrier between the dangerous world outside and us. Its tattered edges were always pulled together to shield those within. Risking my father's rage, I would sneak under the curtains every afternoon to look out the window. Waiting in anticipation, for what arrived like clockwork; a group of young children, all dressed in school uniform, would cross the road to the other side. Their shoulders heavy under the weight of school bags that threatened to seep into the ground, as if melting under the heady sun. I stood there looking silently, desperately wishing I was one of them.

This thesis is dedicated to that little girl, who wanted more than anything to freely attend school and learn the contents of those heavy books.

I wish to thank Dr Katrina Scior, for helping to make this wish possible, for her unyielding support and belief in my abilities even when I felt I had none. I am also indebted to Dr Caroline Selai for her kindness, encouragement, and guidance but above all, her enthusiasm which helped energise and sustain what was a very onerous process.

I am immensely grateful to my colleagues in Saudi-Arabia for their interest in this research and helping to secure participants, without whom this would not be possible.

**Part 1: Literature review**

**The Application of Cognitive Behavioural Therapy with Arab Middle Eastern  
Clients: A Systematic Literature Review**



## **Abstract**

**Aims:** The popularity of CBT as a first-line treatment for many psychological disorders has resulted in its application to ethnically diverse populations, despite its evidence base being rooted in Western populations. Equivalence in results between clients from Middle-Eastern and Western ethnicity has not been established. The aims of this review were to summarise the literature on CBT for mental health difficulties among Arab individuals in Middle Eastern countries and Arab minority individuals in Western countries.

**Method:** Studies were identified through a systematic literature search using the databases PsycINFO, Web of Science, and PUBMED.

**Results:** Eight studies were included in this review, encompassing quantitative, qualitative, and case-report articles. All studies reported on the outcome of CBT interventions with Arab participant(s).

**Conclusion:** Despite the scarcity of studies, small sample sizes, and a majority of non-clinical samples, the outcomes demonstrated that Arab individuals benefited from CBT. In studies that compared Western and Arab samples, the results were better for Western samples, indicating that CBT is less efficacious with Arab clients. A discussion on the strengths and limitations of the studies is presented.

## **Introduction**

In the United Kingdom (UK), Cognitive Behavioural Therapy (CBT) is the recommended treatment for numerous mental health difficulties, including anxiety and depression, with a large evidence base for its effectiveness (Cuijpers et al., 2008; Hollon & Ponniah, 2010; Hofmann et al., 2012).

The popularity of CBT as the first line treatment for many psychological disorders has resulted in its application to non-Western and other ethnically diverse populations (Chowdhary et al., 2014). However, the literature on mental health has extensively documented that clients' cultural background may influence the perception and expression of symptoms of mental illness (Hayes, 2009, Rathod et al., 1997, Sayed 2003). For example, patients from Middle Eastern countries such as Saudi Arabia have a greater tendency to express their symptoms with an emphasis on physicality (i.e. somatic symptoms) as compared to patients from Western countries (Al-Krenawi, 2005). Yet, there is a scarcity of psychotherapeutic outcome research that includes non-Western ethnic groups (Bernal et al., 2009; Miranda, 1996).

The differences in symptom expression between patients from Western and non-Western cultures can affect the type of treatment received. For instance, it could be due to such differences that Arab patients are sometimes misdiagnosed (Budman, Lipson, & Meleis, 1992; Eloul, Ambusaidi & Al-Adawi, 2009) or have difficulty establishing a positive working alliance with their therapists (Nassar-McMillan & Hakim-Larson, 2003).

Alegria and McGuire (2003) noted that social, cultural, and contextual factors mediate the relationship between disorders and symptoms. For example, other research has shown that both language and ethnicity impacts treatment outcome (Flaskerud & Akutsu, 1993, Griner & Smith, 2006). Based on such findings, Alegria and McGuire

(2003) have advocated for a systematic modification of psychotherapeutic interventions to better meet the needs of clients from diverse cultural and ethnic backgrounds. As currently conceptualised, systematic cultural modifications are tied to treatment (e.g., Bernal, Bellido, & Bonilla, 1995) and include a review of conceptual congruency (e.g. distinction between thoughts and emotions), values (e.g. autonomy), and language (e.g. use of metaphors), whereas cultural competence is tied to clinicians' practice (Beck, 2016) and thus varies from clinician to clinician.

### **The application of CBT to non-Western patient populations**

Most of the literature on CBT outcomes with non-Western and minority ethnic groups has focused on case examples of individuals from South Asian backgrounds such as Pakistan (Mahr et al, 2015) or Saudi-Arabia (Alatiq, 2014). Single case study research is helpful in highlighting potentially important themes in therapy such as the role of religion in explaining symptoms, family cohesion versus autonomy, and the meaning of emotional expression within the respective cultural context. Such studies provide suggestions in addressing these themes whilst maintaining fidelity to the treatment paradigm (e.g. CBT). Nevertheless, the findings from single case studies are limited in terms their generalisability and thus offer little in the way of systemically addressing such themes.

Previous systematic reviews of the effectiveness of CBT for a range of mental health difficulties have been limited to Western populations (Griner & Smith, 2006; Huey & Polo, 2008). There have been some exceptions, including three meta-analyses that specifically focused on the outcome of psychological treatments (CBT, interpersonal therapy, and psychodynamic psychotherapy) with ethnic minorities (Benish, Quintana, & Wampold, 2011; Chowdhary et al., 2014; Hall et al., 2016). The majority of the participants in these studies were individuals of Black or Hispanic

ethnicity residing in the US. Chowdhary et al. (2014) included studies with participants from Asian countries such as Pakistan and India that were residing in their country of origin. All of the meta-analyses concluded that CBT and other psychotherapeutic interventions (e.g. psychodynamic psychotherapy) were effective in reducing symptoms for individuals who were predominantly diagnosed with psychosis and major depressive disorder (average  $d = .72$ , Chowdhary et al., 2014). In particular, the authors of the meta-analyses note that culturally modified interventions were superior in outcome compared to non-modified interventions (e.g. a moderate effect size of  $d = 0.32$  was identified by Benish, Quintana & Wampold, 2011).

Despite the popularity in cross-cultural practice, the application of psychotherapeutic interventions to minority ethnic groups has been consistently plagued by high drop-out rates and poorer treatment outcomes (Miranda et al., 2003; Rathod et al., 2010; Schraufnagel et al., 2006). Findings from the meta-analyses described above also note a lack of systematic cultural adaptation of psychotherapeutic treatments. The adaptations were restricted to the implementation of the treatments rather than their content, examples include culturally appropriate synonym, matching of therapist-client ethnicity, and adjusting the level of therapist directedness to match culturally specific expectations. Thus it appears that the treatments were administered in a culturally sensitive manner, rather than a culturally adaptive manner. This distinction is noted by Beck (2016) in which the former is a systematic evidence building approach in identifying differences in the manifestation of mental health problems, whilst the latter is a case-by-case approach in which relevant adaptations are made during therapy, which can be limited to the clinicians' experience and thus variable.

Discussing the suitability of CBT for the general population, Safran et al. (1993) suggested a few selection criteria which included the ability to differentiate between thoughts and emotions, and understand how thoughts relate to emotions. This distinction is a Western concept and one that is paramount in CBT-based interventions. Outcome research exploring the application of CBT and other interventions cross-culturally do not address whether the aforementioned distinction between thoughts, feelings, and behaviour, is relevant to the culture in question. Thus, our understanding of the process by which mental illness is expressed culturally is limited to anecdotal and overgeneralised advice provided by single case studies (Rathod et al., 2008). An exclusive focus on Western populations, with whom the treatment modality was developed, may overlook pertinent factors that may influence the outcome of treatment for non-Western populations, necessitating a review of the appropriateness of CBT for the treatment of non-Western client groups.

Most notably, there was a lack of research identified in the aforementioned literature reviews that included an Arab population, who make up over 5% of the World population (Abdoun & Chammah, 2011). Despite this, CBT as an imported treatment modality has been growing in popularity in Middle Eastern health services (Khan, 2012).

Against this background, it seems important to examine to what extent CBT is being delivered to Arab patients and what is known about the outcomes of CBT in treating common mental health difficulties in this population. In addition, given the recognition of the cross-cultural variability in symptom expression, it is clinically useful to examine the extent to which CBT has been modified and delivered to Arab clients.

## **Aims**

The aims of this review were to summarise the literature on CBT for mental health difficulties among Arab individuals in Middle Eastern countries and Arab minority individuals in Western countries. The review specifically aimed to answer the following questions:

1. What studies have been conducted using CBT to treat common mental health difficulties in Arab individuals?
2. What is known about the outcomes of CBT when delivered to Arab individuals?
3. How has CBT been modified for Arab individuals?

## **Methods**

### **Search strategy**

Studies were identified through a systematic literature search using the following strategies:

(1) A database search of PsycINFO, Web of Science, PUBMED, with no specific start date, until October 2016 was conducted. The search terms that were used included 'Arab', 'Middle Eastern' (in addition to individual target countries; 'Jordan', 'Iraq', 'Lebanon', 'Egypt', 'Kuwait', 'Saudi Arabia', 'United Arab Emirates'), 'CBT', 'Cognitive Behavioural Therapy', 'mental illness', 'mental disorder', 'mental problems'. These were combined in various ways using "modification of", "adaption of", "adapting" and the Boolean terms 'OR' and 'AND'. See Appendix 1 for full search terms.

(2) Checking of reference lists of articles identified for inclusion in the review to identify additional studies that met the inclusion criteria.

## **Data collation and extraction**

The titles and abstracts of 132 articles identified through the search were inspected with reference to the inclusion and exclusion criteria, and duplicates were deleted. Potentially relevant full-text papers were then accessed and reviewed against the inclusion and exclusion criteria described below, see Figure 1 for an overview of collated articles.

### ***Inclusion criteria***

- (1) Articles were included if they: presented clinical studies, both using RCT designs and studies without control groups that described the use of CBT among Arab populations in Middle Eastern or Western countries for common mental health difficulties which are defined cross nationality by NICE (2011b) and WHO (2004) as the following six disorders: depression, generalised anxiety disorder, panic disorder, obsessive compulsive disorder, post-traumatic stress disorder (PTSD), and social anxiety including anxiety and depression. However, studies that included other disorders (e.g. psychosis) were not excluded. Any evaluation of CBT in an Arab country were included. Non-RCTs, such as qualitative and/or case studies was included as they would help in addressing the above aims.
- (2) No restrictions were placed on year, sample size, delivery of intervention, or types of comparison groups or outcome measures.
- (3) The studies included were conducted with adults (aged >18 years).

### ***Exclusion criteria***

- (1) Studies that did not report the use of CBT among an Arab population were excluded (e.g. Bolton et al., 2014).
- (2) Studies published in languages other than English or Arabic were excluded.

An overview of the search strategy results as well as explanations for exclusion of articles at each stage is provided in Figure 1.

Table 2 outlines the total ratings obtained for each study.

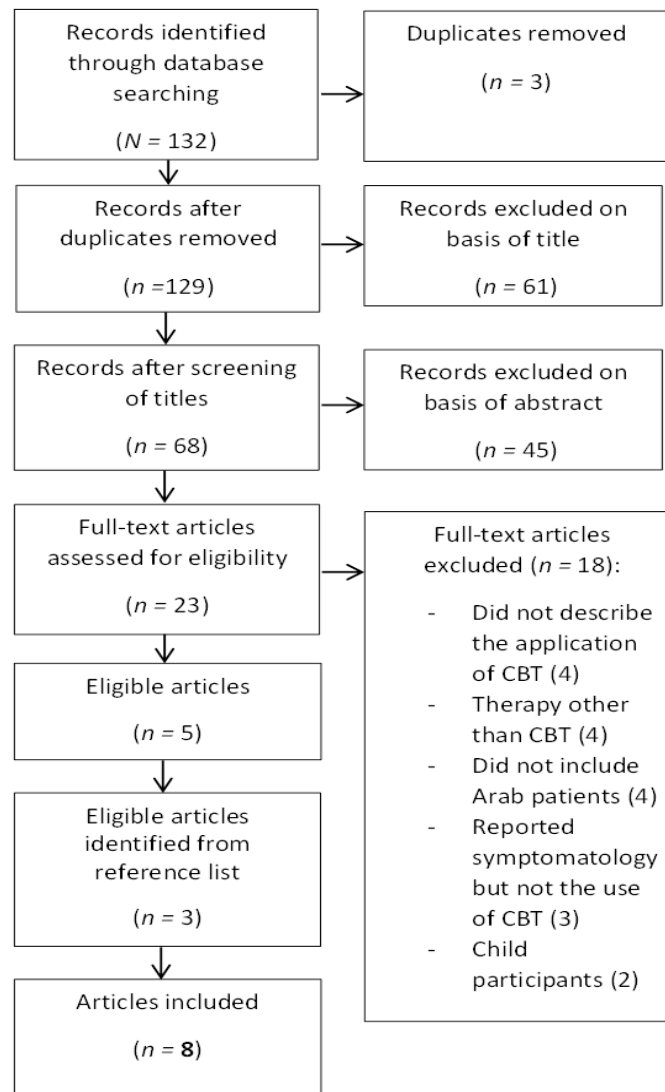


Figure 1: Overview of search procedure



### *Quality of studies*

The quality of included quantitative and qualitative studies was assessed using QualSyst (Kmet, Lee & Cook, 2004), a standardised quality appraisal tool that is suitable for a range of research designs, and therefore fits with the type of articles included in this review. QualSyst provides quality criteria for quantitative (14 items) and qualitative (10 items) research articles, with scores ranging from 0 to 2 (0 = No; 1 = Partial; 2 = Yes; and N/A = item not relevant to the article being rated). This tool provided a metric for the quality of each study based on various aspects of methodological rigour (e.g. participant's selection procedures, blinding). Table 1 below provides an overview of all the items in the QualSyst corresponding numerically to the items in Table 3. QualSyst has been used in previous studies (Wilson & Scior, 2014; Keall, Clayton, & Butow, 2015), and has been shown to have good inter-rater reliability (Kmet et al., 2004).

**Table 1:** Overview of the items on QualSyst.

**Quantitative Items**

---

1. Question / objective sufficiently described?
2. Study design evident and appropriate?
3. Method of subject/comparison group selection or source of information/input variables described and appropriate?
4. Subject (and comparison group, if applicable) characteristics sufficiently described?
5. If interventional and random allocation was possible, was it described?
6. If interventional and blinding of investigators was possible, was it reported?
7. If interventional and blinding of subjects was possible, was it reported?
8. Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? means of assessment reported?
9. Sample size appropriate?
10. Analytic methods described/justified and appropriate?
11. Some estimate of variance is reported for the main results?
12. Controlled for confounding?
13. Results reported in sufficient detail?
14. Conclusions supported by the results?

---

**Qualitative items**

---

1. Question / objective sufficiently described?
2. Study design evident and appropriate?
3. Context for the study clear?
4. Connection to a theoretical framework / wider body of knowledge?
5. Sampling strategy described, relevant and justified?
6. Data collection methods clearly described and systematic?
7. Data analysis clearly described and systematic?
8. Use of verification procedure(s) to establish credibility?
9. Conclusions supported by the results?
10. Reflexivity of the account?

---

## **Results**

### **Overview of studies included in the review**

A total eight studies were included in this review which encompassed qualitative and case-report articles. All articles reported on the outcome of CBT interventions with Arab participant(s). Table 2 provides an overview of the eight studies included in this review.

### **Study and sample characteristics**

Half of the studies were conducted in the Middle East ( $n = 4$ ), this included countries undergoing active conflict such as Iraq and Lebanon. Most notably, the search did not identify studies conducted in the United Arab Emirates or Saudi Arabia, despite recent development in their healthcare provision (Al-Krenawi, 2005; Khan, 2012). Other studies included Arab minority participants in host countries such as Australia ( $n = 3$ ) and the UK ( $n = 1$ ).

Participants in the studies included in this review were aged between 18 and 80. A gender bias was observed in the majority of studies reported ( $n = 7$ ), in that women made up between 55% to 87% of the samples, except for one study (Ayman et al., 2009) where there were more men (55%) than women (45%). Gender differences in affective disorders (e.g. depression, anxiety) have also been noted among Western samples (Altemus, 2006; Faravelli, 2013). The observed gender bias reported in this review may therefore reflect a broader trend of women reporting affective disorders more than men.

Furthermore, the majority of studies reported recruited participants based on cut-off scores on measures of symptomology (e.g. Beck Depression Inventory, Ways of Coping Scale). Most studies did not recruit participants with a formal psychiatric diagnosis to support the presence of mental health difficulties (e.g. 'mental disorder').

A lack of formal diagnosis may allow for variability in the types of difficulties participants experienced, which can include multiple diagnoses such as depression and anxiety. Without diagnosis we cannot determine whether participants shared a similar set of difficulties as required for any CBT intervention, nor can we determine which difficulty is being treated. Therefore, the absence of formal diagnosis renders the outcome of the research unreliable. Participants with no formal psychiatric diagnosis are henceforth referred to in this review as non-clinical participants.

Most studies reported in this review employed a quasi-experimental design (n = 5). These included primary outcome measures at pre and post intervention, and some included outcome measures at post intervention, and 2-3 months follow-up (Kayrouz et al., 2015, 2016, Wagner et al, 2008). However, all of the five quasi-experimental studies included only one intervention group, no control group and no random allocation of participants. Of the remaining three studies, one employed a randomised design, and one used a case-study, and one used a qualitative design study. Most of the quasi-experimental studies reported poor response rates and consequently obtained small sample sizes, ranging from 10 to 15. For the quasi-experimental studies, participants were recruited through opportunistic sampling, relying on multi-media platforms (e.g. radio, social networks) that come with inherent sampling biases.

Table 2: Overview of studies included in this review.

<b>Author (Year) Location</b>	<b>Mental health difficulty in focus</b>	<b>Design, Primary Outcome Measures</b>	<b>Sample characteristics</b>	<b>Key Findings</b>	<b>Effect size where available</b>
Ayman et al. (2009) Jordan	Depression and Stress	Experimental (RCT) design. Beck Depression Inventory* (BDI; Hamdi, Nizam, & Saber, 1988), Perceived Stress Scale (PSS; Cohen, 1983), and Ways of Coping Scale (WCO; Folkman & Lazarus, 1988)	<i>N</i> = 84, non-clinical sample: age range of university students with moderate to severe depression 17-24 (mean age not reported), 45% female, 55% male.	Participants completed 10 sessions of group CBT, with outcomes assessed at post intervention and 3-months follow-up. Significant improvement on all outcome measures at post intervention and 3-months follow-up	<i>d</i> = 0.5-0.7
El Kady, Ibrahim, & Mohamed (2012) Egypt	Insomnia	Quasi-experimental design. Pittsburgh Sleep Quality Index* (PSQI; Buysse et al. 1989)	<i>N</i> = 133, non-clinical institutionalised older adults with insomnia, age range 60-80 (mean age not reported), 55% female, 45% male.	Participants completed 4 weekly sessions of CBT, lasting 30minutes each. Outcomes were assessed at post intervention and were reported to show a reduction in poor sleep after completion of CBT.	mean and sd not reported
Farhood et al. (2014) Lebanon	PTSD and Depression	Qualitative design. Focus group format. Harvard Trauma Questionnaire (HTQ; Mollica 1992) and BDI** (Beck, Steer & Carbin, 1988)	<i>N</i> = 10, non-clinical sample of trauma sufferers: Mean age = 40.6 (no SD reported), 80% female, 20% male.	Participants completed 8 weekly sessions of an adapted group-CBT intervention. Qualitative feedback was obtained after each session and analysed post intervention. Analysis produced 3 themes; group interaction (e.g. cohesiveness), benefits of intervention (e.g. destigmatisation), and barriers to attendance (e.g. stigma).	n/a

Table 2: Overview of studies included in this review.

<b>Author (Year) Location</b>	<b>Mental health difficulty in focus</b>	<b>Design, Primary Outcome Measures</b>	<b>Sample characteristics</b>	<b>Key Findings</b>	<b>Effect size where available</b>
Kayrouz et al. (2015) Australia	Anxiety and Depression	Quasi-experimental design. Patient Health Questionnaire – 9-item (PHQ-9; Kroenke et al., 2001) and Generalised Anxiety Disorder – 7-item scale (GAD-7; Spitzer et al., 2006).	<i>N</i> = 11, non-clinical sample of individuals with mild to moderate anxiety and depression: mean age = 33.6 (SD = 8.99), 73% female, 27% male.	Participants completed 5 sessions of modified internet delivered CBT treatment in English. Outcomes were assessed at post intervention and 3-months follow-up. There were significant improvements across all outcome measures at post intervention, which was maintained at 3 month's follow-up.	<i>d</i> = 0.94-1.86 at 3-months follow-up
Kayrouz et al. (2016) Australia	Anxiety and Depression	Quasi-experimental design. PHQ-9 and GAD-7.	<i>N</i> = 13, non-clinical sample of individuals with mild to moderate anxiety and depression: mean age = 37.1 (SD = 12.4), 38% female, 62% male.	Participants completed 5 sessions of modified internet CBT treatment delivered with a choice of Arabic or English language. Outcomes were assessed at post intervention and 3-months follow-up. There were significant improvements across all outcome measures at post intervention, which was maintained at 3 month's follow-up.	<i>d</i> = 1.10-1.60 at 3-months follow-up

Table 2: Overview of studies included in this review.

<b>Author (Year) Location</b>	<b>Mental health difficulty in focus</b>	<b>Design, Primary Outcome Measures</b>	<b>Sample characteristics</b>	<b>Key Findings</b>	<b>Effect size where available</b>
Mofrad & Webster (2013) UK	Phobia and Depression	Single case study design. PHQ-9 and GAD-7.	<i>N</i> = 1, clinical setting, age in 30's, female with phobia and depression.	15 weekly CBT sessions were completed. Outcome measures were completed after every session, and the scores fluctuated during intervention. Scores remained at baseline levels at post intervention.	n/a
Wagner et al. (2008) Australia	Panic disorder	Quasi-experimental design. Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) and Work and Social Adjustment Scales (WSAS; Marks, 1986)	<i>N</i> = 50, clinical sample of individuals with Arabic vs. Australian ethnicity: mean age = 31.2 (SD = 7.2), 76% female, 24% male.	Participants completed 8 sessions of group-CBT with outcomes assessed at post intervention and 2-months follow-up. Treatment outcomes were similar and showed favourable results for both groups at post treatment. However, the Australian group showed more reduced scores than the Arab group at post intervention. Arab participants were found to express more fear of dying and experience less sweating during panic attacks compared to Australian patients.	<i>d</i> = 1.2

Table 2: Overview of studies included in this review.

<b>Author (Year) Location</b>	<b>Mental health difficulty in focus</b>	<b>Design, Primary Outcome Measures</b>	<b>Sample characteristics</b>	<b>Key Findings</b>	<b>Effect size where available</b>
Wagner et al. (2012) Iraq	PTSD	Quasi-experimental design. Post-traumatic Diagnostic Scale (PDS; Foa, 1995), and Hopkins Symptom Checklist-25 (HSCL-25; Mollica et al., 1987)	<i>N</i> = 15, non-clinical sample meeting PTSD criteria: mean age = 29.3 (SD= 7.1), 86.7% female, 12.3% male.	Participants completed an average of 12 weekly CBT sessions delivered online. Outcomes were assessed at post intervention and demonstrated reduced symptoms on both measures.	<i>d</i> = 1.43

\*Measure validated with Arab Middle Eastern population. \*\*Validated version of measure is available, however authors did not report using validated measure.



### **Quality of studies reviewed**

Table 3 below shows that the scores obtained from each study ranged between 0.3 to 0.6, with an average of 0.3. The scores indicate that the quality of the studies reviewed in this report are generally poor. Studies that received higher than average scores were ones with a control group (e.g. Ayman et al., 2009, Kayrouz et al., 2015, 2016). Conversely, El Kady, Ibrahim, & Mohamed 's (2012) study received the lowest score of 0.3, reflecting poor study design. The limitations of the studies included in this review are discussed in the sections below.

**Table 3:** Overview of the quality of studies included in this review.

<b>Quantitative studies (14 Items Total)</b>															
<b>QualSyst criteria item scores (0, 1, 2, n/a)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>Score (0-1)</b>
<b>Ayman et al., 2009</b>	2	2	2	2	1	0	0	1	1	2	1	1	2	2	<b>0.6</b>
<b>El Kady, Ibrahim, &amp; Mohamed, 2012</b>	1	1	1	0	0	0	0	1	0	1	0	0	1	1	<b>0.3</b>
<b>Kayrouz et al., 2015</b>	2	2	n/a	2	1	n/a	n/a	1	2	1	1	0	2	1	<b>0.6</b>
<b>Kayrouz et al., 2016</b>	2	2	n/a	2	1	n/a	n/a	1	2	1	1	0	2	1	<b>0.6</b>
<b>Wagner et al., 2008</b>	1	2	2	2	1	n/a	n/a	0	1	1	0	0	2	1	<b>0.5</b>
<b>Wagner et al., 2012</b>	2	1	1	1	0	n/a	n/a	1	1	1	0	0	1	1	<b>0.4</b>
<b>Qualitative studies (10 Items Total)</b>															
<b>QualSyst criteria item scores (0, 1, 2)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>					<b>Score (0-1)</b>
<b>Farhood et al., 2014</b>	1	2	1	1	1	1	1	1	1	0					<b>0.5</b>
<b>Case studies</b>															
<b>Mofrad &amp; Webster, 2012</b>	n/a														<b>n/a</b>

## **What studies have been conducted using CBT to treat common mental health difficulties in Arab individuals?**

This section will outline the type of mental health difficulties for which CBT interventions with Arab population samples have been reported. The outcome of said treatment will be discussed in the next section.

The prevalence of common mental health difficulties in national populations has been reported at the lowest rate as 4.3% (Shanghai) and at its highest as 26.4% (USA; WHO, 2004). To the author's knowledge, there is no prevalence data for mental health difficulties in Arab countries. However, individual surveys across different Middle Eastern regions have generated rates for depression between 13% to 18% (Eloul et al., 2009), and 5% to 8% for anxiety disorders (Baxter et al., 2012).

A total of eight studies were included in this review that specifically examined the application of CBT with Arab participants. This number is relatively small compared to the number of studies examining CBT for a range of disorders across Western countries. For example, Hofmann et al. (2012) found a total of 106 meta-analyses examining CBT for various disorders including common mental health difficulties.

Four types of common mental health difficulties were identified among the empirical studies reviewed, these were: PTSD, depression, anxiety, and panic disorder, each of which discussed in turn.

**PTSD.** Among the empirical studies reviewed, two studies applied CBT to treat PTSD, one of these an online version of CBT (Wagner et al., 2012), the other group-CBT (Farhood et al., 2014). The number of sessions in these two studies ranged between 6-12 weeks, and 8 weeks respectively. Neither study sample was obtained from a clinical population, and both studies used different outcome measures thus

precluding a comparison between them. In both studies, PTSD was assessed using different criteria (e.g. Harvard Trauma Questionnaire, HDQ, Posttraumatic Diagnostic scale, PDS).

**Depression, anxiety, and panic disorder.** Five studies examined CBT for these difficulties in Arab individuals. They include two quasi-experimental studies and one case study that investigated CBT for depression and anxiety. Additionally, one study employed CBT to treat depression and stress, whilst another focused on panic disorder. All of the aforementioned studies differed in various ways, most pertinently they differed in the way they delivered CBT, the number of sessions, and sample characteristics.

Kayrouz et al. (2015, 2016), conducted a one group pre-test/post-test design study with outcome measures completed at pre, post, and 3 months follow-up. They investigated the efficacy of CBT for depression and anxiety delivered predominantly in English (2015), and in both English and Arabic (2016). The authors offered five individual-CBT sessions online to a non-clinical sample. El Kady et al. (2009) conducted a study with a one group post-test only design, the primary outcome measures assessed only at post intervention. They offered university students ten sessions of group-CBT for depression and stress. In contrast to the aforementioned studies, Wagner et al. (2008) conducted a non-equivalent group pre-test/post-test design study. They offered a clinical sample of Arabic and Australian patients with panic disorder eight weekly group-CBT sessions.

Whilst Kayrouz et al. (2015, 2016) used the same outcome measures in both of their studies (e.g. PHQ-9, GAD-7) and obtained similar results, the other two studies used different outcome measures, making comparison across the studies difficult.

Lastly, Mofrad and Webster's (2012) single case study described using CBT to treat one patient with depression and phobia with the help of an Arabic interpreter. In their case study, Mofrad and Webster outlined the patient's depression (PHQ-9), anxiety (GAD-7), and phobia (phobia Q3) outcome scores after each session for 15 sessions treatment.

**Insomnia.** This review identified one paper that employed a one group post-test only design. They described using CBT to treat insomnia among older adults in residential care homes (e.g. supported living; El Kady, Ibrahim, & Mohamed, 2012). Insomnia is recognised by DSM-5 as a primary disorder (DSM-5, American Psychiatric Association, 2013), however it also features as a symptom of common mental health difficulties such as depression and anxiety (Johnson, Roth, & Breslau, 2006; Ohayon & Roth, 2003). Patients with poor sleep and a range of medical diagnoses (e.g. arthritis) but no history of mental health difficulties were offered four sessions of group-CBT aimed at enhancing the quality of their sleep.

**Conclusion.** This section reveals that a limited number of studies to date examined the efficacy of CBT to treat common mental health difficulties with Arab participants mental health difficulties. Samples were mainly non-clinical, which limits the generalisability of the results to clinical samples. However, where available, clinical cut-off scores on measures were used as participant inclusion criteria, and these scores may be used as a tool for comparison with clinical populations. Where anxiety is described, the studies reported in this review do not delineate the type of anxiety disorder. Given this, other common disorders such a social anxiety and OCD may not be represented in this review.

## **What is known about the outcome of CBT when delivered to Arab individuals?**

This section focuses on the outcome of the eight CBT studies outlined in the section above. The validity of measures used in the studies described below, as well as their adaptation of CBT will be addressed in the subsequent section.

**PTSD.** Two studies (Farhood et al., 2014; Wagner et al., 2012) examined the efficacy of CBT to treat PTSD among a sample of non-clinical Arab participants. The study by Wagner et al. (2012) was a one group pre-test/post-test design and evaluated an internet based CBT programme (adapted from a Dutch study by Lang et al., 2003) for 15 Iraqi participants, of whom 87% met diagnostic criteria for PTSD<sup>1</sup>. Participants' scores on all measures were reduced post treatment, and clinically significant change was achieved by 67% of the sample. A large effect size <sup>2</sup> ( $d = 1.43$ ) for pre-and-post treatment was obtained on the main outcome measure (PDS), indicating that participants benefitted from treatment.

Despite a reduction in depression and anxiety from pre-to-post treatment, nevertheless 46% of the sample still met criteria for depression and 60% of the sample still met criteria for anxiety (as measured by the HSCL-25) post treatment. This indicates that the benefits of the treatment were limited to scores on the PDS. These results are in contrast those results obtained by the original Dutch study which showed substantial improvement in depression and anxiety (Lange et al., 2003). Some of the limitations of this study may have affected the efficacy of the treatment and results obtained. They include a small sample size ( $N = 15$ ), 86.7% of which were female. The small sample size in Wagner et al.'s (2012) study meant that the study had low statistical power with which to detect a difference. These factors make the research

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<sup>1</sup> Using the Posttraumatic Diagnostic Scale (PDS).

<sup>2</sup> Effect sizes reported in this review are assessed based on Cohen's standard interpretation where  $d = .02$  is small,  $d = .05$  is medium,  $d = .08$  is large (Ferguson, 2009)

findings unreliable (Faber & Fonseca, 2014). Furthermore, the study had a high drop-out rate of 62.5% (from 40 starters to 15 treatment completors), however the authors reported that there were no statistical differences in the demographics of completors and drop-outs. Nevertheless, they may have differed in levels of depression and anxiety, which the authors did not explore.

The second study on PTSD was conducted in the Lebanon by Farhood et al. (2014), using a group based format to deliver CBT to 14 participants. This was a qualitative study that used the same intervention sessions to receive feedback, in the form of 'field notes', on participant progress. Inclusion criteria consisted of scores above cut-off on the Harvard Trauma Questionnaire (HTQ) and Beck Depression Inventory (BDI). The analysis consisted of a synthesis of the field notes and feedback from participants on their experience of the group and achievement of therapeutic goals. The authors reported that the benefits of the intervention were mainly from a psycho-educational and social support perspective, on the basis of which they described it as successful.

However, they did not outline of the framework or rationale for their analysis, nor did they provide illustrative quotes from participants. The results are further confounded by two participants' simultaneous use of pharmacological treatment, which may have influenced their perception of the utility of the group. Furthermore, participants were not assessed with the HTQ and BDI beyond baseline, therefore the validity of the authors' claim that the intervention was successful is not supported by the available data.

**Depression and anxiety.** As noted, this review identified one study that aimed to treat depression and stress, two studies that aimed to treat depression and anxiety,

and a single case study that described the treatment of one client with depression and phobia. These studies will be discussed in turn.

Ayman et al. (2009) using an experimental repeated measures design, randomised a university student sample (N = 80) to either the control group or group-based CBT for depression and anxiety. They modified the manualised CBT based 'Teaching Kids to Cope' (MTKC). Participant inclusion criteria were scores above 15 on the BDI (e.g. mild to severe depression), however the authors did not report cut-off criteria for the Perceived Stress Scale (PSS). After ten sessions, they compared baseline and post-intervention scores on the BDI and PSS, and showed that the intervention group, compared to the control group, had lower depression and stress scores post intervention and at three months follow-up, with medium effect sizes ( $d = 0.5-0.7$ ).

Despite demonstrating benefit, Ayman et al.'s study is limited in a number of ways that effect on the generalisability of the results. The authors did not report whether the control group and the experimental group were similar on demographics and levels of depression and anxiety. Therefore the study findings are unreliable as nothing is known about potential confounding variables. Of note, the experimental group on average scored 26.8 (SD = 8.3) on the BDI at baseline, dropping to M= 12.7 (SD = 9.7) at follow-up. In contrast, the control group had lower BDI scores of an average 21.1 (SD = 9.9) at baseline, dropping to M= 17.8 (SD = 9.9) The range of the BDI scores as illustrated by the respective SDs is large, and can fall between minimal (0-13) to severe depression (29-63) at post intervention. The authors did not take account of this range in scores, an omission which may have impacted on the results through an inflation of the significance levels.



Additionally, two quasi-experimental non-equivalent group studies using outcome measures at pre and post intervention, aimed to deliver CBT over the internet (iCBT) to treat depression and anxiety in Australians of Arab ethnicity. Both of these studies were conducted by Kayrouz et al. (2015, 2016), where one served as an extension of the other (with different samples). The basis and format for the intervention was established by two previous studies (Kirckpatrick et al., 2013 & Tiov et al., 2015). All previous studies with clinical participants in Australia have shown the effect of iCBT compared to waitlist controls (Titov et al., 2015). However none of the previous studies supported the use of this intervention with Arab-Australian minorities, which Kayrouz et al. (2015, 2016) began to trial using non-clinical samples.

In the first trial, they translated ‘key words’ in iCBT from English to Arabic and piloted this version with Arab-Australian participants (N = 11). The results showed clinically significant improvements on the primary outcome measures (PHQ-9 and GAD-7) with large effect sizes ranging from  $d = 0.94-1.86$ . The authors ran this trial again in 2016 with 13 Arab Australian participants, using the original English version as well as providing an option for full Arabic translation. Whilst only ten of 13 (77%) participants provided responses for language preferences, seven of ten reported using both English and Arabic translation, two used only English, and one of ten used only Arabic translation. Results from the second trial showed that participants improved on all measures including the primary outcome measures (PHQ-9 and GAD-7). These results were clinically and statistically significant post-treatment and remained statistically significant at 3-months follow-up. Similarly to the first trial, the second trial obtained large effect sizes, ranging from  $d = 1.10$  to  $1.60$ , which were comparable to Titov et al.'s (2015) original study's effect sizes of  $d = 0.67$  to  $1.66$ .

The significant results in Kayrouz et al's studies, with large effect sizes, indicate that participants benefitted from modified treatment delivered in both English with minor changes and an option of English or Arabic translation. With these small scale studies, the authors demonstrated the feasibility of delivering online to Australians with Arabic ethnicity and note the acceptability of this delivery of treatment (e.g. 89% of participants said they would 'recommend this treatment to a friend or family member with anxiety or depression'). Contrary to the authors' rationale that stigma is a large motivator for seeking treatment over the internet, only one participant endorsed this (Kayrouz et al., 2016). Furthermore, both studies were limited in their use of non-clinical samples and small sample sizes (N = 11, 13 respectively), which restricts their generalisability to the clinical samples.

Moving on from quasi-experimental studies, Mofrad and Webster's (2013) single case study described 15 session CBT treatment with a 35 year old Middle Eastern woman diagnosed with depression and phobia. The focus of this case study was on the use of an interpreter and the impact this has on the client-therapist relationship (e.g. the potential for bias or lost information, and increased duration of treatment). The authors highlighted the added complexity of defining Westernised treatment concepts (e.g. exposure curve) into linguistically and culturally acceptable terms for Middle Eastern clients. Despite this difficulty, the authors reported that treatment commenced by direct translation of concepts into Arabic, and once this was established, both client and therapist continued to use the English description. Although a translation of concepts does not address the cultural meaning and acceptability of the treatment, nevertheless the clients' scores reduced from moderate to mild anxiety (12 to 8 on the GAD-7). However, despite fluctuations during treatment, scores for depression (8.5 on the PHQ-9, indicating mild depression) and

phobia (8 on the Phobia-3, indicating 'always avoid') remained the same. There could be many reasons for the limited success of CBT for this client, not least the possibility that CBT is generally not of benefit when delivered to an Arab population. Other considerations pertain to the limited exploration of the clients own language and words used to describe concepts for phobia and depression, instead of relying on the English words.

**Panic disorder.** The review identified one study that aimed to treat panic disorder. The effectiveness of group based-CBT for panic disorder was investigated by Wagner et al. (2008). This non-equivalent group pre-test/post-test design study offered a clinical sample of Arabic and Australian patients with panic disorder eight weekly group-CBT sessions. The study had two aims, firstly to evaluate the effectiveness of group CBT for panic disorder within an Arab-Australian population compared with a Caucasian-Australian population. Secondly, to explore differences in symptom expression between participants of Arab ethnicity and Caucasian participants. These aims will be discussed in turn.

Participants with a primary diagnosis of panic disorder were included in this study. Arab and Caucasian Australian participants were matched on age, gender and diagnosis, and there were no group differences in severity of panic. Treatment outcomes were assessed immediately after the last session and at two months follow up. The results showed that the treatment was effective in reducing symptoms (as assessed by the Depression Anxiety Stress Scale, DASS) and Work and Social Adjustment Scale, WSAS) in both groups (unable to obtain effect size as means and SD were not reported).

Despite the encouraging results, post-intervention the Arab group's means of 17.4 for anxiety and 14.5 for depression symptoms remained consistently higher than

the Australian group means of 8.2 for anxiety and 8.2 depression. The differences in means post-intervention between the groups were statistically significant, however the authors did not comment on this difference between the groups. However, consulting the DASS manual (Lovibond & Lovibond, 1995) the Arab score means described above remained within the moderate to severe range in both depression (14-20) and anxiety (15-19), compared to the Australian group means which fell to within the normal range (0-9). Therefore it appears that the Arab group did not improve as much as the Australian group, and whilst there may be a number of reasons for this, from a design perspective this difference may be due to the delivery method of CBT. According to the NICE guidelines for panic disorder (NICE, 2011a), individual CBT should be offered for the duration of 12 sessions. This is in contrast to the group CBT implemented in Wagner et al.'s study where participants attended on average 7.5 sessions. With a comparatively lower number of sessions, participants may not have received the optimal 'dose' in the form of sessions attended, and the group format itself may have diluted the results of the treatment. Thus, the 'active ingredients' of CBT received through individual sessions may have been inaccessible to Arab participants.

The second aim of Wagner et al.'s (2008) study was to examine group differences in symptom descriptions endorsed by each group using items on the Structured Clinical Interview for DSM-5 tool (SCID). The results showed that for two of the 13 items there were statistically significant differences between the two groups; fear of dying and less sweating. Sweating was reported by 51% of Arab patients compared to 76% of Australian patients. Conversely, fear of dying during a panic attack was reported by 72% of Arab participants vs. 35% of Australian participants. These differences in symptoms may allude to differences in the experience of anxiety/panic between Australian and Arab patients. However, given that the majority

of Arab participants were Australian migrants with English as their second language (English ability was not formally assessed) the results are difficult to discern and may be an artifact of an untranslated measure.

**Insomnia.** The review identified one study that aimed to treat insomnia. CBT for insomnia was investigated by El Kady et al. (2012) with a one group post-test only design. The authors reported administering a CBT programme, with an emphasis on behaviour modification, to a large sample (N=133) of older adults residing in a care home. The sample were divided into poor (63%) and good sleepers (37%), with poor sleepers receiving CBT. The authors described the programme as consisting of 120 minutes of weekly group “instructions” about “behavioral sleep therapy” on a series of health-related themes over four weeks. The authors reported that post-intervention the percentage of poor sleepers was reduced from 63% to 46%. However the authors did not report whether this difference was statistically significant.

A range of factors were significantly and negatively associated with poor sleep, including chronic disease such as hypertension (50%), locomotor problems (34.8%), and heart disease (32.9%), as well as demographic factors such as being female, and higher educational attainment. Beyond identifying the aforementioned factors associated with poor sleep pre-intervention, the authors did not report factors associated specifically with remaining a poor sleeper post-intervention. Among the limitations of this study, one concern is the lack of a control group that would help determine the effects of CBT on poor sleepers who received the intervention and those who did not. The results of this study therefore remain unclear.

**Conclusion.** The studies described in this section reveal positive outcomes of CBT for common mental health difficulties with Arab samples. The studies described above also demonstrate the various forms of delivering CBT (e.g. internet, group, individual) that have been tested with Arab participants. However, most of the studies reviewed are plagued by substantial limitations, such as small sample sizes and lack of control groups, rendering their results unreliable. Furthermore, where CBT was successful in reducing symptomatology, scores remained within the clinical range post-intervention, particularly for Arab participants. These results indicate that CBT may be helpful in treating common mental health difficulties, but that the effects may be quite limited.

#### **How has CBT been modified for Arab individuals?**

As noted in the introduction section the evidence for CBT was developed mainly with white middle class Caucasian populations (Cuijpers et al., 2008; Hollon & Ponniah, 2010). There is considerable evidence that culture and context influence almost every aspect of the diagnostic and treatment process (Alegría & McGuire, 2003; Canino & Alegría, 2008; Comas-Díaz, 2006). Given its roots, CBT may have limitations when delivered to recipients who ascribe to a different culture (Miranda et al., 2005).

Hays (2014) highlighted that CBT's cultural heritage, such as its emphasis on social independence over group conformity, talking over the use of non-verbal cues/more subtle forms of communication, may become barriers for successful treatment when delivered in other cultural contexts. Given the variability of the outcomes and the small sample sizes that characterise the majority of the studies in this review, a modification of CBT may be warranted to encourage better response rates and outcomes.

**Translation vs. modification.** Bernal et al. (2009) noted that a systematic modification of a treatment protocol includes several areas to be reviewed, such as language, culture, meanings, and values. When conducted in a systematic replicable fashion, such modification can provide ecological validity to the evidence based treatment. Modifying treatments in a systematic manner emphasises the culture and context of diverse patient populations. Beyond translation of English to Arabic words, the studies included in this review either did not report or made no systematic effort to modify the treatment protocol to the intended population.

The majority of studies used a modified version of CBT, the modifications were developed for various reasons including to achieve effective administration of CBT over the internet (itself often developed through many trials with a Western population). Studies in this review modified their version of CBT further in order to meet the demands of access (e.g. less sessions) or stigma (e.g. group CBT vs. individual sessions) as well as language (e.g. translation of parts or all components of the intervention; Ayman et al., 2009; El Kady et al., 2012; Farhood et al., 2014; Kayrouz et al., 2015, 2016; Wagner et al., 2012). For example, Kayrouz et al. (2015) reported using internet-delivered CBT for PTSD (iCBT). This intervention was in itself a modification of face-to-face CBT for PTSD (Emmelkamp et al., 2011), and iCBT was developed in three previous studies (Kirckpatrick et al., 2013; Titov et al., 2013; Titov et al., 2015). Kayrouz et al. (2015) reported that they adapted the English version of iCBT (Titov et al., 2013) to an Arab-Australian population through translating 'key' words. However, the authors did not elaborate what these adaptations consisted of beyond an overview of the content of iCBT and the direct translation of key words (e.g. 'shameful' and 'symptoms') which included one image of ethnic Arab persons.

Nevertheless, Kayrouz et al. (2016) conducted a second trial that underwent a more cohesive translation process spanning four stages with various versions of the translation undertaken by both professional translators and bi-lingual mental health clinicians. Although a great deal of effort has gone into trialing this Arabic-English version of iCBT, there has been no reported effort to undertake a systemic investigation into the acceptability of the concepts and components of CBT (e.g. thoughts, feelings, and body sensations that influence behavior) to the recipients' culture, values, or worldview.

The lack of systematic effort in moving beyond a simple translation of words and into questioning the cultural premise in CBT, that thoughts and feelings are separate, may have had an effect on the results observed in the studies described above. It also raises several limitations, most notably that the adaptations do not take into consideration the possibility that the 'potent ingredients' in the original CBT may have been diluted through using an already modified version of CBT (e.g. MTKC) to adapt further. Given the lack of control groups, these studies have not demonstrated that specific CBT concepts are inter-culturally acceptable and thus viable for further efficacy testing.

Whereas six of the studies described above have attempted to adapt CBT through translation, two others did not report any modifications for Arab participants. Wagner et al. (2008) compared group CBT for panic disorder between Arab-Australians and Caucasian Australians. Despite the lack of formal assessment of the Arab group's English language competency, the authors concluded that translation was not warranted. Even if this was the case, a lack of testing of the viability of CBT, may have contributed to the Arab group's scores remaining within the clinical range for panic, compared to their Caucasian-Australian counterparts.



Similarly, Mofrad and Webster's (2013) case study describing a Middle Eastern client with depression and phobia, did not address the possibility of conceptual differences and acceptability of the treatment. In fact, the authors reported the client initially used her own language to complete therapeutic tasks (e.g. thought diary). However, once an accumulation of 'English words' was established, these were used. This assimilation of the English concepts through the use of a selection of English words could leave pertinent and culturally bound information inaccessible and thereby limit the success of the treatment. It is therefore possible that the poor outcomes for this client may reflect a poor CBT modification process.

**Measure validity.** It has been illustrated that symptom expression is culturally bound (Hofmann et al., 2010; Ryder et al., 2008), and this is reflected in prevalence rates of mental health difficulties as well as culturally specific symptoms (Alegría & McGuire, 2003). In order to obtain accurate results, studies are therefore obliged to use reliable and culturally validated measures. However, a common practice of the studies reviewed included the use of measures not validated with Arab populations (henceforth referred to as non-validated measures).

Each of the eight studies in this review included several measures, most of which were not validated in an Arab population. Only half of the studies included one validated measure amongst other non-validated measures (Ayman et al., 2009; El Kady & Mohamed, 2012; Farhood et al., 2014; Wagner et al., 2012). Despite the inclusion of a validated measure, the results obtained from non-validated measures render the outcome of the studies unreliable. Unreliable results may lead to ill-advised therapeutic treatments, which at best may be ineffective and a waste of resources, at worst, cause to harm (Lambert, 2007; Lilienfeld, 2007).

Furthermore, only one study in this review addressed the possibility of culturally bound differences in symptom expression and by doing so illustrated the importance of suitably validated measures (Wagner et al., 2008). Using a list of common panic symptoms on the SCID, Wagner et al. (2008) compared the endorsement of panic symptoms between Arab and Western samples. Out of a total of 12 items, the results showed similarities on ten items but also two significant differences in which the Arab group reported less symptoms of sweating and more fear of dying. This result supports the notion that differences in symptoms between cultures are present even when assessed using a measure developed with a Western population.

**Conclusion.** This section outlined the lack of systematic modification of CBT and use of validated measures as one of the main limitations shared by all studies reviewed. Studies aimed to facilitate the delivery of English-based CBT protocols to Arab participants often without a systematic translation process. Furthermore, studies appeared to view a simple translation of words as equivalent to a modification of CBT. Both translation and modification are different processes in cross-cultural research that require an in-depth systematic approach, without which the results obtained are unreliable (Hays, 2014).

### **Discussion**

Despite the generally poor quality of the studies reviewed, the encouraging outcomes reported by the limited number of studies included in this review provide insight into the acceptability of CBT among Arab participants. They demonstrate that the various forms of delivering CBT (e.g. internet, group, individual) to Arab participants have shown therapeutic benefits, albeit limited ones. Furthermore, CBT was delivered in a range of contexts and various Arab and (Arab individuals residing in) Western countries, indicating that CBT as a therapeutic approach is flexible and acceptable to

a range of sub-cultures within the Middle East. This flexibility was particularly evident by the delivery of CBT over the internet to conflict areas such as Iraq (Wagner et al., 2012).

The poor quality ratings are reflective of the limitations of the studies described throughout this review. They include small sample sizes, the use of CBT to non-clinical samples. The majority of participants included in this review were either students or lay people recruited through multi-media platforms (e.g. radio, social media sites), and may in turn limit the results.

The lack of health infrastructure in Middle Eastern countries that are subject to major political conflict may have limited access to clinical population samples, and this may explain why clinical samples were scarce across studies. However, by no means are all Arab countries subject to significant political conflict; the United Arab Emirates are an example of this. Nor have there been many attempts at examining the delivery and outcome of CBT for Arabs residing in Western countries. For example, 0.8% of the Australian population are individuals with Arab ethnicity (Australian Human Rights Commission, 2003), similarly 0.5% of the UK population are British individuals with Arabic ethnicity (The National Association of British Arabs, 2011).

Higher quality studies attempted to compare Arab participants with Western participants (Kayrouz et al., 2015, 2016; Wagner et al., 2008) or randomised participants to an intervention vs. non-intervention group (Ayman et al., 2009).

Other shared study design limitations among experimental studies was a lack of waitlist controls and/or no other control group that compares CBT groups with another psychotherapeutic group treatment. We therefore do not know whether CBT with an Arab population is more efficacious for treating common mental health problems, as outcome studies suggests, than a different type of psychotherapy. Nor do we know if the results obtained are a reflection of the treatment components within CBT, or whether they pertain to other confounding variables such as social support or placebo effect.

Moreover, where a modification of CBT for Arab participants was an aim, this did not extend beyond a simple translation of English words. Only one study included in this review used a systematic approach to translation (e.g. Kayrouz et al., 2016). In addition, the majority of measures were not validated with an Arab sample, this further complicates the aim of evaluating the efficacy of CBT with Arab populations as it may not accurately reflect changes in the symptomology results. Together, these limitations restrict comparison between studies, and render the results unreliable.

Lastly, the inclusion criteria for this review did place restrictions on the type of mental health problem (e.g. the word ‘common’ was not included in the search terms). It is therefore of interest to note that no article was identified describing more severe and enduring mental health difficulties, such as bipolar disorder, personality disorder, or schizophrenia. These disorders are considered less common (WHO, 2004), however CBT has a growing evidence base for said disorders, albeit developed primarily in Western countries (Hofmann et al., 2012). The absence of more severe and chronic disorders in this review may reflect a less established evidence base reaching Arab countries.

### **Limitations of this review**

This review has several strengths and limitations that will be noted in this section. The strengths include broad research questions, the use of several databases searches encompassing qualitative, quantitative, and single case-study research. Due to limited resources in doctoral research, this review was conducted by the present author alone, and as such there may be a potential for bias in the systematic efforts of this review.

Despite an effort to hand-search the references of included articles, a more systematic hand search of all articles was not feasible. As such, relevant articles may have been missed from being included in this review. The studies included were assessed against inclusion/exclusion criteria as well as for quality using QualSyst without a second researcher to establish inter-rater reliability. Thus, a single perspective may be presented, unintentionally shaping the outcome of this review.

Furthermore, QualSyst itself is not without limitations. As a measurement tool it is subject to similar psychometric criteria as other instruments (e.g. mood scales) such as validity and reliability. Given the absence of a 'gold standard' appraisal tool, it cannot be certain that QualSyst accurately measures what it is supposed to measure. Moreover, the use of summary scores can itself be misleading as two uniquely different studies may have similar aggregate scores but quite different limitations. Further still, this tool is particularly vulnerable to subjective perceptions of quality and thus prone to the convictions of a single author, as is the case for this review.

### **Summary and recommendations**

There is a large evidence base for the applicability of CBT with Western population samples to treat a range of mental health difficulties (Epp & Dobson, 2010;

Hofmann et al., 2012). However, there is a paucity of research that aims to examine the efficacy of CBT with non-Western population samples (e.g. Chowdhary et al., 2014). Less still is known about the applicability of CBT to Arab population samples. This review was conducted to address this gap and examine the application of CBT with Arab populations. Using a range of databases and hand-searching of references, this review identified eight studies that reported on the application of CBT with Arab participants. This is a relatively small number of studies compared to the 106 meta-analyses of CBT conducted with Western population samples (Hofmann et al., 2012), and reflects the scarcity of research with Arab Middle Eastern populations.

An examination of the studies included in this review revealed that CBT has been used with Arab participants, both in the Middle East and Western countries, to treat common mental health difficulties. Although the samples included in this review were small and mainly non-clinical, the outcomes of the studies reviewed demonstrate the potential benefits of CBT for treating common mental health difficulties in Arab individuals. These encouraging results were demonstrated across different CBT delivery methods (e.g. via internet, group-CBT, and individual CBT), and in a range of different Middle Eastern and Western countries.

This review identified trials that compared the outcome of CBT between Arab and Western participants (Kayrouz et al., 2015, 2016; Wagner et al., 2008). The outcomes were two fold: both groups benefitted from the intervention, but scores on primary measures suggested that the Arab group(s) did not improve as much as the Western group(s). On the one hand, these result indicate that CBT appears to be acceptable to Arab individuals; on the other hand they suggest that CBT may be less efficacious compared to Western samples. Whilst there may be a multitude of factors

that contribute to the less efficacious results among Arab samples, one factor may relate to the modification of CBT. A modification of therapy protocol calls for a systematic review of culture, meanings, values, and language (Bernal et al., 2009). In contrast, in the studies included in this review modification of CBT consisted only of translation of parts or complete treatment manual.

Given the aforementioned limitations in the studies reviewed, future research may benefit from systematic modification of CBT, exploration of possible differences in symptom expression, and any differences between Arab and Western samples in the cognitive biases that CBT aims to modify.

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## **Part 2: Empirical Paper**

### **The Impact of Culture on Anxiety Related Cognitions: An exploration with Saudi Arabian Individuals**

## **Abstract**

**Introduction:** The majority of the psychological understanding of anxiety and CBT treatment for anxiety disorders has been derived from research that has been undertaken with European and North American populations.

**Aim:** This study aimed to improve our understanding of the experiences of anxiety and panic related cognitions among Saudi-Arabian individuals and to examine the potential role that culture might have in influencing their symptom expression.

**Methods:** Given the lack of previous research, this study adopted an exploratory, qualitative approach using Thematic Analysis. Semi-structured interviews were undertaken with 14 participants with an ICD diagnosis of panic and anxiety from Saudi Arabia.

**Results:** The results demonstrated that Saudi-Arabian participants misinterpret their symptoms in the way predicted by CBT. Differences in panic cognitions were related to the Saudi-Arabian sample's emphasis on negative social evaluation, and two previously unidentified cognitions: separation and loss from loved ones, and Jinn possession.

**Conclusion:** The results suggests that CBT for anxiety can be applied to Saudi-Arabian clients without systematic modification.

## **Introduction**

The dynamic influences of culture are not bound by the parameters of reality television, culinary delights or fashion. Culture permeates all aspects of life, shaping the very tapestry of society. In doing so, culture influences technological advancement (Baptista, & Oliveira, 2015, Herbig & Miller, 1993, Pedro & Cabral Vieira, 2004), social policy (Guimond, et al.,2013, Shove, 2010), and human behaviour (Harrison & Huntington, 2000, Machery, 2010). Thus, it is not surprising that current research on mental health suggests that a person's expression of their symptoms is likely to be influenced by cultural beliefs and practices (Beck, 2016; Boehnlein, 2001, Viswanath & Chaturvedi, 2012). In a clinical setting the cultural context can account for whether people seek help (Hamid & Furnham, 2013), which symptoms are reported (Sheikh & Furnham, 2012), and differences in how people communicate their symptoms (Hamdi, Amin, & Abou-Saleh, 1997). For example, patients from Middle Eastern countries such as Saudi Arabia express their symptoms in a more physical way compared to patients from Western countries, such as the United Kingdom (Al-Krenawi, 2005).

### **Transcultural CBT**

In the UK, Cognitive Behavioural Therapy (CBT) has gained status as the first-line treatment for a wide range of mental health problems, and has gained credence as an effective intervention internationally (Al Gelban, 2009; Beck, 2016; Chowdhary et al., 2014). CBT is deemed applicable across cultures partly due to its inherent flexibility in working at a cognitive as well as a behavioural level (Beck, 2016). The behavioural level in CBT helps to mitigate the effects of language barriers whilst recognising the unique nature of clients' problems (Guo & Hanley, 2015).

Despite its flexibility, Beck (2016) makes a distinction between culturally adapted and culturally sensitive CBT. Both approaches maintain the premise of the universality of mental health problems, manifested differently across cultures in terms of distinct thoughts and behaviours. However, while the former takes a systematic evidence building approach in identifying differences in the manifestation of mental health problems, the latter is a case-by-case approach in which relevant adaptations are made during therapy. Both of these approaches have merit and may facilitate the acceptability of CBT across cultures. However, culturally sensitive CBT may be influenced by the cultural competency of the clinician, and may thus vary from clinician to clinician. Such variability may interfere with successful treatment, necessitating a more standardised approach to optimise treatment outcome.

### **CBT with non-Western Populations**

Whilst there is good evidence for CBT for anxiety with Western patient populations, despite CBT's cross-national popularity less is known about using this model with non-Western populations. CBT was developed in North America and Europe where researchers, clinicians, and clients identified with a Western cultural heritage (Beck, 2016). Its lineage is influenced by Western concepts of mental health and illness and thus the results of outcome research conducted with predominately Western samples may overlook pertinent factors that influence the outcome of treatment for non-Western populations. There are a few studies that illustrate this. For example, culturally-bound health beliefs were among a range of adaptations made to CBT for psychosis which resulted in enhanced retention and better outcomes for individuals from minority ethnic groups in the UK (Rathod et al, 2013). Moreover, adapting CBT to address collectivist maladaptive core-beliefs among Chinese

individuals affected by anxiety resulted in better outcomes (Wong & Poon, 2010). Furthermore, in examining CBT for depression, Arab individuals showed significantly more negative thoughts towards themselves and the world compared to a matched Caucasian sample (Beshai, Dobson & Adel, 2012).

The aforementioned studies reflect the importance of considering cultural differences in the manifestation and expression of symptoms within a CBT context which may have an impact on treatment success. Most of the cross-cultural research on CBT has been conducted with Southeast Asian samples (Chowdhary et al., 2014; Williams & Mohammed, 2009). Less is known about the application of CBT for anxiety with Arab Middle Eastern individuals who make up more than 5% of the world population (Abdoun & Chammah, 2011), and for whom access to CBT has been gradually increasing (Khan, 2012).

### **Panic Disorder**

Panic disorder is one of the most common anxiety disorders (Katon, 1996; Leon, Portera, & Weissman, 1995). It is characterised by recurrent, unpredictable attacks of anxiety involving intense apprehension, fear or terror. It is frequently complicated by major depression and agoraphobia (Roy-Byrne et al., 2000). Estimate prevalence rates of panic disorder<sup>3</sup> vary from 1.7% in the UK (Skapinakis et al., 2011) to 5.1% in the United States of America (Lewis-Fernández, et al., 2010). Rates are comparatively higher in Saudi Arabia and in the United Arab Emirates, at 13.8% (Quraishi, 2001) and 25.8% (McIlvenny, 2000) respectively. These rates attest to the

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<sup>3</sup> Using the same DSM-IV diagnostic instrument.

ubiquitous nature of anxiety, affecting individuals across nations and cultures, though apparently at different rates.

CBT is the recommended treatment for anxiety and panic disorder in the UK, with emphasis on using Clark's (1986) model of anxiety for treatment and formulation of clients' difficulties (NICE, 2011). Moving beyond symptom expression, the model posits that the misinterpretation of benign bodily symptoms leads to the erroneous perception of an impending catastrophe of either physical or mental nature (e.g. heart attack or 'going crazy'). This type of erroneous thinking is termed 'catastrophic cognition(s)' and results in the use of avoidance strategies that maintain the disorder in a cyclical pattern of misinterpretation, hyper arousal, and avoidance. This model underpins CBT treatment which has shown positive outcomes (Hans & Hiller, 2013; Olatunji, Cisler, & Deacon, 2010; Stewart & Chambless, 2009).

To the author's knowledge, there has been no research published on the relevance of catastrophic cognitions in the development and maintenance of anxiety and panic disorder within an Arab Middle Eastern population. Research examining catastrophic cognitions within an American-Latino sample found distinctive culturally dependent catastrophic cognitions (e.g. "nervios" and "ataque de nervios", translated 'nerves' and 'attack of the nerves') that maintained anxiety (Hinton, 2011). Similar findings were obtained with Vietnamese and Cambodian patient samples, whereby culturally dependent catastrophic cognitions (e.g. neck and orthostatic focused misinterpretations) were found to maintain anxiety (Hinton et al., 2005). In all three ethnic groups, modifying CBT to incorporate these cognitions showed a favorable effect on treatment outcome (Hinton et al., 2005, 2011). This research highlights that



there may be important differences in catastrophic cognitions among different ethnicities which have implications for treatment.

### **Aim**

To date, the majority of the psychological understanding of anxiety and CBT treatment for anxiety disorders has been derived from research that has been undertaken with European and North American populations. However, given the cross-national prevalence of anxiety (Boehnlein, 2001), and the apparent cultural variability in symptom expression related to catastrophic cognitions (Hinton et al., 2004, 2005), it is pertinent to explore catastrophic cognitions within other cultural contexts in which CBT for anxiety and panic is being delivered.

The current study aimed to improve our understanding of the experiences of anxiety and related cognitions among Arab Middle Eastern individuals and to examine the potential role that culture might have in influencing their symptom expression. It was anticipated that the results would indicate the degree to which CBT for anxiety can be applied to Arab Middle Eastern clients with or without systematic modification. Given the lack of previous research, this study adopted an exploratory, qualitative approach, which is reflected in the research questions:

1. How do Arab individuals describe symptoms related to panic?
2. How do they interpret symptoms related to panic, and to what extent is this in keeping with Clark's (1986) model?

## **Methodology**

### **Design and analysis**

This study employed a qualitative research paradigm with Thematic Analysis (TA) framework to facilitate an in-depth examination of participants' experiences. TA does not sit within any specific epistemological framework and as such is a flexible methodology for guiding the discovery of data related to the current research questions (Braun & Clark, 2006; Gale et al., 2013). Semi-structured interviews (Appendix 2) aimed to elicit descriptions of panic and related cognitions as experienced by a sample of Middle Eastern participants from Saudi Arabia. The analysis was informed by literature on panic and catastrophic cognitions as detailed by Clark's (1986) model of anxiety. The types of catastrophic cognitions that Clark's model posits are of either physical (e.g. fainting, heart attack, choking) or mental (e.g. 'going crazy', or loss of control of behaviour) descriptions that signal death or severe harm. The analysis entailed a focus on participants' descriptions of (potentially catastrophic) panic cognitions. As such, the analysis was 'theory-driven' (Braun & Clark, 2006).

TA was employed to explore the data in relation to the first research question, which required an in-depth examination of participants' experiences of anxiety and related cognitions. However, the second research question required a clinically informed analysis of whether the description of panic related cognitions constitute misinterpretations of benign bodily sensations as per Clark's model, which will be outlined in the discussion section.

### **Setting**

Participants were recruited through convenience sampling from two collaborating outpatient clinics in Saudi Arabia's capital Riyadh. Saudi Arabia was

been chosen due to the similarities in infrastructure of the health system to that of Western cultures (e.g. division of treatment by diagnosis) as this would facilitate collaboration with mental health practitioners for recruitment.

### **Inclusion and exclusion criteria**

Adult participants (aged between 18 and 65 years) with an ICD-10 diagnosis of anxiety with panic attending one of the participating clinics on an outpatient basis were invited to participate in the study. Failure to meet any of the above criteria and/or diagnosis of any other co-morbid Axis I disorders (e.g. agoraphobia, depression, PTSD, organic mental disorder, schizophrenia, bipolar disorder, psychotic disorder) resulted in exclusion from participation in the study.

### **Recruitment procedure**

Eligible participants were identified and recruited as part of routine clinic appointments by collaborators across the two clinics. Collaborators included two clinicians; a qualified psychiatrist and a psychologist. They screened participants in each participating clinic in terms of the inclusion criteria and if they were met, individuals who were interested in taking part in the study were presented with an information sheet (Appendix 2). At this point the process of informed consent began as participants were informed of the aims and methods (e.g. interview) of the study. If participants agreed to participate the clinicians obtained their written consent (Appendix 3). The researcher then contacted potential participants through telephone in order to discuss the study, answer any questions, and, where appropriate, arrange a date and time for interview.

### **Measures**

Three measures-anxiety, depression scales and a demographic information form, were used in order to situate the sample (Elliott, Fischer, & Rennie, 1999). The level of anxiety may differ between participants and this may in turn influence the presence of anxiety related cognitions with which this study is concerned. Therefore, in order to ascertain the level of anxiety independent of the diagnosis, participants were asked to complete a standardised anxiety scale. Furthermore, anxiety and panic are often co-morbid with depression (Kessler et al., 2005). Thus, depression related cognitions may interact with anxiety cognitions in a way that may overshadow the person's anxiety cognitions. Participants were therefore asked to complete a depression scale in order to assess the level of depression in the sample independent of the diagnosis. In addition to the anxiety and the depression scales, demographic information was collected.

Consenting participants were requested to complete the questionnaires described below by accessing the online version of the forms hosted by Qualtrics and their names and contact information were passed on to the researcher using a password encrypted document.

#### ***Demographic information***

Participants provided brief sociodemographic data, including gender, age, and educational attainment (Appendix 4). This form was initially developed in English before undergoing a translation process into Arabic, as per the Delphi method described below.

#### ***Kuwait University Anxiety scale (KUAS; Abdel-Khalek, 2003, Appendix 5):***

The Kuwait University Anxiety scale is a measure of anxiety developed in Arabic,

which was the version used in this study. It was previously translated from Arabic into English and had undergone psychometric testing with English (Abdel-Khalek, 2003), German (Abdel-Khalek et al., 2006), and Spanish (Abdel-Khalek, Tomás-Sabádo, & Gómez-Benito, 2004) populations. This study employed the Arabic scale (Ahmed & Alansari, 2004) developed with a non-clinical sample of Saudi Arabian University students. The scale comprised of 20 brief statements rated on a 4-point intensity scale, anchored by 1: Rarely, 2: Sometimes, 3: Often, and 4: Always. The maximum total score is 80, with high scores indicating higher levels of anxiety. Ahmed and Alansari (2004) tested the measure by splitting the sample into male and female groups. Both gender groups obtained internal reliability scores of .86 (alpha). Test-retest reliability for males were .94 and .95 for females. Criterion-related validity of the scale were .73 for males and .88 for females (scores were computed against the Trait sub-scale on the State Anxiety Inventory, Spielberger et al, 1983). In Ahmed and Alansari's (2004) sample, the mean scores on the KUAS were Mean = 35.11 (SD= 8.94) males (N=150) and Mean = 41.83 (SD= 9.77) for females (N=150). There are no published means comparing a non-clinical to a clinical sample, thus there are no available clinical cut-off scores for the KUAS.

***Beck Depression Inventory (BDI; West, 1985):*** The BDI is a measure of depression, originally developed in English by Beck (1988), and has undergone translation into Arabic and psychometric testing with an ethnically Arab clinical sample (participants from Saudi Arabia, West, 1985). The scale is comprised of 21 brief symptom statements in Arabic answered on a 4-point intensity scale ranging from 0 to 3 based on severity of each item. The maximum total score is 63, with high scores indicating higher depression levels. The BDI offers clinical cut off of minimal (range

0-13), mild (range 14-19), moderate (range 20-28) and severe (range 29-63) depression levels. West (1985) obtained a reliability score of .86 (alpha), matching Beck's original reliability criterion of .86. The criterion-related validity of the scale was .77, denoting good internal and external validity.

### **Participants**

Fourteen participants receiving treatment from two outpatient clinics in the city of Riyadh, Saudi Arabia, participated in telephone interviews. They were aged between 23 and 56 years ( $M = 38$ ,  $SD = 11$ ). There were nine women and five men, and all except for one participant were university graduates. All participants identified ethnically as Arab, and were fluent in Arabic. All had a confirmed panic diagnosis and had experienced at least one panic attack in the last year. In addition, all participants were on medication for anxiety. Treatment consisted of six monthly reviews of medication for mood and anxiety as well as a review of progress for psychotherapeutic interventions. A total of six participants had received psychological treatment; three participants completed CBT for anxiety and another three participants were receiving monthly psychotherapy (other than CBT) at the time of the interviews.

*Table 1. Participants' demographic information.*

<b>Participant number</b>	<b>Gender</b>	<b>Age</b>	<b>Marital status</b>	<b>Educational attainment</b>	<b>Psychological Intervention</b>
1	Male	30's	Married	University graduate	-
2	Female	40's	Married	University graduate	Completed CBT
3	Male	40's	Married	University graduate	Completed CBT
4	Female	20's	Married	University graduate	-
5	Female	20's	Single	University graduate	Completed CBT
6	Female	50's	Widowed	University graduate	-
7	Male	30's	Married	University graduate	-
8	Male	30's	Married	University graduate	-
9	Male	40's	Married	University graduate	-
10	Female	30's	Married	University graduate	-
11	Female	20's	Single	University graduate	-
12	Female	30's	Married	University graduate	In treatment
13	Female	50's	Married	Primary school	In treatment
14	Female	40's	Married	University graduate	In treatment

*Participants' age are submitted in decades to guard confidentiality.*

### ***Anxiety and Depression***

Participants' anxiety scores ranged from 26 to 66, with a mean of 49. The published non-clinical means of the KUAS are separated by gender (Ahmed & Alansari, 2004). Comparing the present clinical sample with the non-clinical Saudi Arabian sample (Ahmed & Alansari, 2004) showed that current female mean anxiety scores were higher ( $M = 51, SD = 12$ ).

Given that there are no published cut-off scores for the KUAS, z-scores were computed to obtain a measure of distance between the current sample scores and the non-clinical means. Thus, a z-score for each participant in the current sample was computed using the mean and SD from the original non-clinical sample. Z-scores above 0 indicated individual scores above the original sample mean (i.e. higher anxiety score) whereas z-scores below 0 indicated individual scores below the original sample mean (i.e. lower anxiety score). Z-scores for the current female sample ranged from  $z = -1.6$ - $2.4$ , with 44% of the scores between  $z = 1.1$ - $2.4$ . This showed that 33% of the sample were above the non-clinical original mean, indicating that a large proportion of the sample (67%) scored similarly to the non-clinical group on anxiety.

Likewise, comparing the present clinical sample with the non-clinical Saudi Arabian sample (Ahmed & Alansari, 2004) showed that current male mean anxiety scores were higher ( $M = 46, SD = 8$ ). Z-scores for the male sample ranged from  $z = 0.3$ - $2.5$ , with 80% of the scores between  $z = 0.3$ - $0.7$ . This shows that 20% of the current sample was above the published non-clinical group mean. Similarly to the female sample, this again indicated that a large proportion of the current male sample (80%) scored similarly to the non-clinical group on anxiety.



Overall, the scores from both genders suggested that 43% of the total sample differed in anxiety scores from non-clinical controls, suggesting that just over half of the sample had low anxiety scores.

Scores on Beck's depression measure ranged from minimal (range 4-13) to severe (29-63), with average scores indicating moderate depression (Mean = 23, SD = 11). This reflected the co-morbidity between anxiety and depression that has been documented in the literature (Kessler et al., 2005).

### **Interviews**

All interviews were conducted by telephone in Arabic and digitally recorded, lasting on average 45 minutes. The interviews started by summarising the study's objectives and participants were reminded of their right to withdraw from the study at any time. They gave their verbal consent again to the researcher (author) for participation and to audio recording. Each participant was debriefed at the end of the interview.

The interview schedule (Appendix 6) was guided by the literature on anxiety cognitions as conceptualised by CBT, which suggests that anxiety and panic are maintained by catastrophic misinterpretations of benign bodily sensations (e.g. fast heart rate). This concept has been supported by decades of experimental research using a variety of questionnaires assessing said misinterpretations (e.g. Catastrophic Cognitions Questionnaire –Modified, CCQ-M; Khawaja, Oei, & Baglioni, 1994, Brief Body Sensations Interpretation Questionnaire, BBSIQ; Clark et al., 1997) in predominantly Western populations (Clark et al, 1986, 1988, 1997, Woud et al, 2014, Haug et al, 2015). The interview schedule included questions about participants' first

experience of a panic attack and their thoughts in relation to bodily sensations such as shortness of breath.

It was piloted with the first two participants. As a result, a question was added to the interview schedule to explicitly elicit imagery during a panic attack as the participants spontaneously offered this information in their accounts of panic attacks. Given that the modification of the interview schedule was minor and information about imagery was elicited through spontaneous questions in the pilot interviews, these two interviews were included in the analysis. The revised interview schedule was used throughout all subsequent interviews.

### **Translation and transcription process**

The translation of the interview questions, along with translation of the interview transcripts, was conducted following the Delphi method. This method is used widely in both qualitative and quantitative research (Birbili, 2000; Iqbal & Pison-Young, 2009) and details a systematic translation process ensuring accuracy and a culturally appropriate translation. In addition to myself, two further bilingual (Arabic and English) researchers were involved in the translation and transcription process.

Following the Delphi method, the first three transcripts were transcribed verbatim and translated in five steps: (1) a co-researcher produced an Arabic transcription of the interviews, (2) a further independent co-researcher translated the Arabic transcripts into English, (3) back translation of English transcripts into Arabic was conducted by myself, (4) the two versions of Arabic transcriptions for each transcript (i.e. the transcriptions resulting from steps 1 and 3) were compared and discrepancies were resolved by mutual agreement among a panel of three independent

bi-lingual Arab psychologists who reached consensus on the most culturally appropriate English words or phrases, (5) the English version of the transcript was amended where appropriate in line with the panel's consensus.

Review of the first three parallel Arabic versions of transcripts revealed only one potentially contentious issue: two Arabic words ('نوبة', 'هلع') were used by participants to describe the concept of 'panic attack'. The panel's view was that one of these words, 'نوبة', translates literally into 'fit' (as in 'seizure') in the English language but is used in the Arabic language as a shorthand for 'panic attack'. Therefore the English term 'panic attack' was deemed an appropriate translation for both Arabic words. Given that the complex process of arriving at English transcriptions outlined above only identified two translation issues that were satisfactorily resolved, the remaining interviews were transcribed from Arabic audio directly into English by myself.

### **Analysis process**

Anonymised interview transcripts were analysed using a TA approach as outlined by Braun and Clark (2006). Steps in the analysis, as detailed by Braun and Clark (2006), were followed with each transcript which included re-reading each transcript for familiarity with the data before a line-by-line analysis of the transcript. In the first instance, preliminary codes were attributed to utterances, ideas or descriptions in the data that were associated with the first research question. Similar or related codes were grouped into potential categories from which themes were identified. For example descriptions of shortness of breath, heart palpitations, and dizziness were grouped together to make the category 'Bodily Sensations' experienced during panic attack. Following this, the potential relationship between themes was

explored, for example the theme ‘Body Sensations’ was linked with ‘Emotions’ associated with panic attacks.

### **Quality and validity**

To help ensure validity of the findings three transcripts were selected at random and underwent independent analysis by the two research supervisors of this study. Differences in coding, themes or relationship between themes were resolved through discussion with the supervisors of this study and amended accordingly.

### **Disclosure of perspective**

As the author, I am aware that my own ethnic background as a woman of Middle Eastern Arab ethnicity, and professional credentials as a trainee clinical psychologist may both enhance and limit the lens with which I approach this research. This background helped shape my interest in Arab individuals and their experiences, which led me towards this research paradigm as a form of exploring potentially unique anxiety presentations. My background affords me insight into salient and often implicit cultural influences that may shape a participant’s outlook or description. For example, during the interviews participants would often start a sentence with ‘*wallahi*’ which loosely translates to ‘by God’. My cultural background helped me decipher that the implicit meaning of this expression is one beyond a call to a deity, and more towards a symbolic expression of genuineness. This same cultural understanding may also hinder a more detailed analysis of similar utterances when these may have meaning beyond the symbolic.

### **Ethical considerations**

Following UCL doctoral research procedure, ethical approval was received by both UCL Research Ethics Committee and by the R&D departments of the

collaborating clinics. Furthermore, this study followed ethical considerations outlined by the British Psychological Society (British Psychological Society, 2014). This included additions to the information sheet that helped participants anticipate the nature of the questions during the interview in order to make an informed decision about their commitment.

## **Results**

### **Themes of Anxiety Symptoms and Cognitions**

The results of the analysis are presented in two parts addressing the two research questions which are as follows; (1) how do Saudi Arabian individuals describe symptoms related to panic? and (2) how do they interpret symptoms related to panic, and to what extent is this in keeping with Clark's (1986) model? Part one of the results section addresses the first research question by outlining three main themes which pertained to participants' experiences of symptoms: Bodily Sensation, Emotions, and Behavioural consequences. Part two of the results section addresses the second research question and outlines three main themes associated with symptoms. These were: Uncertainty, Feared Consequences and Disjointed sense of identity. The results in this second part will be expanded on by comparing the findings with available literature in the discussion section.

The data in this study provided rich material for exploration of the aforementioned research questions, however participants' responses also extended beyond the remits of the research questions. They included experiences of events leading up to the onset of panic, and strategies in managing the effects of panic. Due to the specific focus of the research questions and the limitations in scope of this

doctoral thesis, the results presented are those that maintained direct associations with the research questions.

### **Part One: How do Saudi Arabian Individuals Describe Symptoms Related to Panic?**

In describing their experiences of panic and anxiety symptoms, participants spoke about specific bodily sensations that they associated with a panic attack and an array of emotions that were linked with these sensations. These symptoms affected participants functioning in multiple areas, specifically in terms of Work, Travel and Relationships. The symptoms therefore represented observable Behavioural Consequences and were closely integrated with participants' accounts of Bodily sensations and Emotions. Therefore, although Behavioural consequences do not directly constitute symptoms of panic, they are nevertheless represented in this section due to the importance that participants attaches to them and their associations with symptoms. Figure 1 below illustrates the themes in part one and the relationship between them.

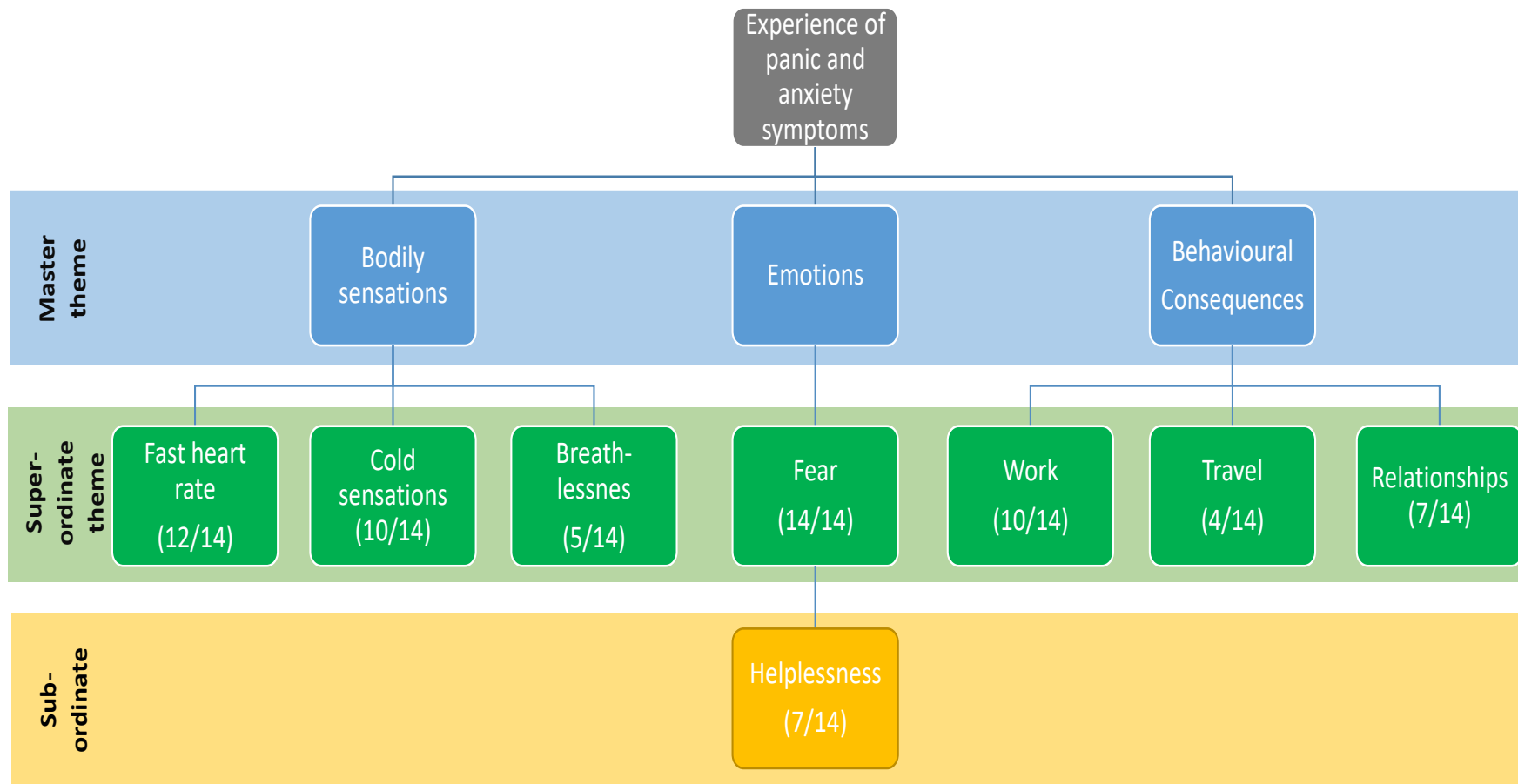


Figure 1: A hierarchical representation of the themes and connections between them. Numbers in brackets display the number of participants that endorsed a super-ordinate or sub-ordinate theme.

**1.1. Bodily sensations.** Participants tended to highlight a set of physical sensations in describing the sequence of events as experienced during a panic attack. These bodily sensations were reported as symptoms of a panic attack and immediately interpreted as signs of imminent danger. For example, participant 4 associated an increase in heart rate as signaling imminent death;

*“...I used to get it as extreme fear (...) I suddenly get the feelings of the panic attack; the heart beats suddenly increase... I’ll have very fast heart beats and I’ll feel like ‘OK, I’m going to die now’...” (P4)*

Participants typically reported multiple bodily sensations during a panic attack and these ranged from breathlessness to cold sensations at the extremities. Each participant tended to experience the same bodily sensations during a panic attack; however, these differed according to each individual participant. Across the sample, participants identified a total of 19 different sub-ordinate themes of bodily sensations<sup>4</sup>. Appendix 7 outlines a list of the total 19 sub-ordinate themes of bodily sensations, this section will focus on three sub-ordinate themes that most participants recognised.

Most participants reported experiencing a sensation of Fast Heart Rate, and Cold Sensations, usually in their extremities. Breathlessness was the third most frequently cited bodily sensations.

*“...my heart was beating fast...” (P11)*

*“...coldness in the hands and feet, they freeze...” (P6)*

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<sup>4</sup> A body sensation was considered a sub-ordinate theme if two or more participants identified the same body sensation.



*“...I felt like I couldn't breathe...” (P11)*

**1.2. Emotions.** Participants expressed an array of emotions associated with the panic symptoms described above. Emotions included anger (1/14), discomfort (1/14), and guilt (2/14). Not all of these emotions were represented across the sample and were therefore considered unique to each individual. However, the emotion of fear was recognised across the sample and is therefore the main emotion described as associated with the symptoms of panic.

**1.2.1. Fear:** The majority of participants described a panic attack through expressing the fear associated with it. For some participants, this was an unescapable level of fear and intrinsically associated with the interpretation of bodily sensations as symptoms of panic and their possible meaning (e.g. imminent danger). This section will focus on outlining the bodily sensations and the immediate fear- in the order participants seem to highlight, whilst the second part of the Results section outlines the interpretations that are associated with symptoms which gives rise to the fear. Participants described that panic was interwoven with the emotion of fear, as illustrated by the quotes below:

*“...the panic that comes, there's no other word for it than fear...” (P10)*

*“...panic is when a human reaches a level of fear and he's unable to do anything about it...” (P14)*

*“...I feel my heart pounding, I feel like I can't breathe, I'm scared and then I break down...” (P5)*

Participants described feeling fearful within an overall emotional state of uncertainty and as a permeating emotion that invaded many aspects of their lives, as the extracts below illustrate:

*“... and fear- you’re afraid, observing something although you don’t know what that thing is...” (P9)*

*“...and after that I had a sort of reaction, a fear of aeroplanes, fear of cars, fear of anything, fear of making decisions. I started always thinking about everything a thousand times...” (P1)*

Within the context of fear, participants described a latent sense of helplessness that appears to override their ability to overcome their fear, giving rise to the theme of Helplessness (7/14). This was illustrated by participant 14 as he emphasised that neither he nor others were able to help him with the panic and anxiety:

*“...that’s it, your life will stop, you can’t do anything after [panic attack]- no one can help you, you can’t deal with your illness, your problem, you know?...”*

**1.3. Behavioural Consequences.** Participants reported that panic symptoms affected many areas of their lives, both practically and relationally. In doing so, participants expanded on their acute panic attack symptoms to include symptoms that drove their behavior and impacted their ability to function in daily life. Below is a description outlining the three main areas affected.

**1.3.1. Work.** Some participants reported that panic and anxiety had affected their ability to obtain or maintain employment, for example as it impacted their ability to concentrate. Others expressed fear of a panic attack occurring at work and therefore had resigned:

*“...I didn’t have a job (...) I wasn’t able to, for example, if I’d go study or go to Quran lessons, I couldn’t, I couldn’t concentrate...” (P 6)*

*“...so I got [panic attacks] at work twice, so I became very scared of going to work and getting this feeling, so I left my job, I quit...” (P 4)*

**1.3.2. Travel.** A minority of participants developed specific anxiety and panic in relation to types of transport that later generalised to include other means of transport, restricting their ability to travel:

*“...I started to fear travelling...”* (P 9)

*“...I’m afraid that something would happen to me when flying...”* (P 3)

**1.3.3. Relationships.** Participants also reported on the far-reaching symptoms of panic and anxiety, emphasising a disruption to their relationships. Although participants were vague about the specific ways in which panic and anxiety affected their relationship, one participant described it in terms of unobtainable standards (P5) whereas others reported a shift in a relationship:

*“...it also affects my relationships a lot (...) sometimes I have high expectations, or I just have very high worry about the relationship status which I know is because of my own worry but I can’t help it (...) I overreact about a lot of things because of worry and I know that it’s because of my anxiety...”* (P 5)

*“...I lost friends because of fear, because of worry...”* (P 1)

*“...I have a brother, it affected him a little bit, he wasn’t convinced and he doesn’t believe it, I used to try to avoid him...”* (P 8)

The extract from the above participant alluded to another aspect of panic and anxiety’s effect on relationships in which a minority of participants (5/14) attempted to hide or keep their panic and anxiety symptoms a secret:

*“...I couldn’t tell anyone, what would I tell people? Do I tell them I’m scared? Scared of what?”* (P 6)

**Summary.** Symptoms related to acute panic attacks were described in terms of specific physical sensations such as fast heart rate. These symptoms were associated with intense fear which, for some participants, permeated to include fear of other experiences such as travelling. In doing so, fear itself became synonymous with panic. Symptoms of panic and anxiety extended towards more enduring manifestations of distress affecting participants' ability to work, and maintain relationships. However, overall the themes in part one do not address the meaning that participants derived from their symptoms leading them to associate panic with fears. Such meaning-making or interpretation is the topic of the next section and constitute part two of the results.

### **Part two: How Do Saudi Arabian Interpret Symptoms Related to Panic?**

Participants' interpretations of symptoms were associated with three broad categories of experiences; first, participants described an overall sense of uncertainty about the nature and cause of their symptoms. Second, they described specific feared consequences of symptoms. Within the former, some participants reported on Jinn<sup>5</sup> and other supernatural experiences as a possible explanation for their symptoms. Within the latter, participants described fearful outcomes of bodily sensations which were in relation to three main forms of imminent danger: death, social exclusion, and separation and loss. In the third category, participants' interpretations of symptoms extended beyond their immediate panic attack, and described changes in their sense of identity post onset of panic. This section outlines all three master themes reflecting

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<sup>5</sup> Spirit possession within an Islamic tradition where Jinn (plural form Jinni) refers to demon-like creatures that are created by God (Sakat et al, 2015).

participants' interpretations of their symptoms. Figure 2 below illustrates the themes and the relationship between them.

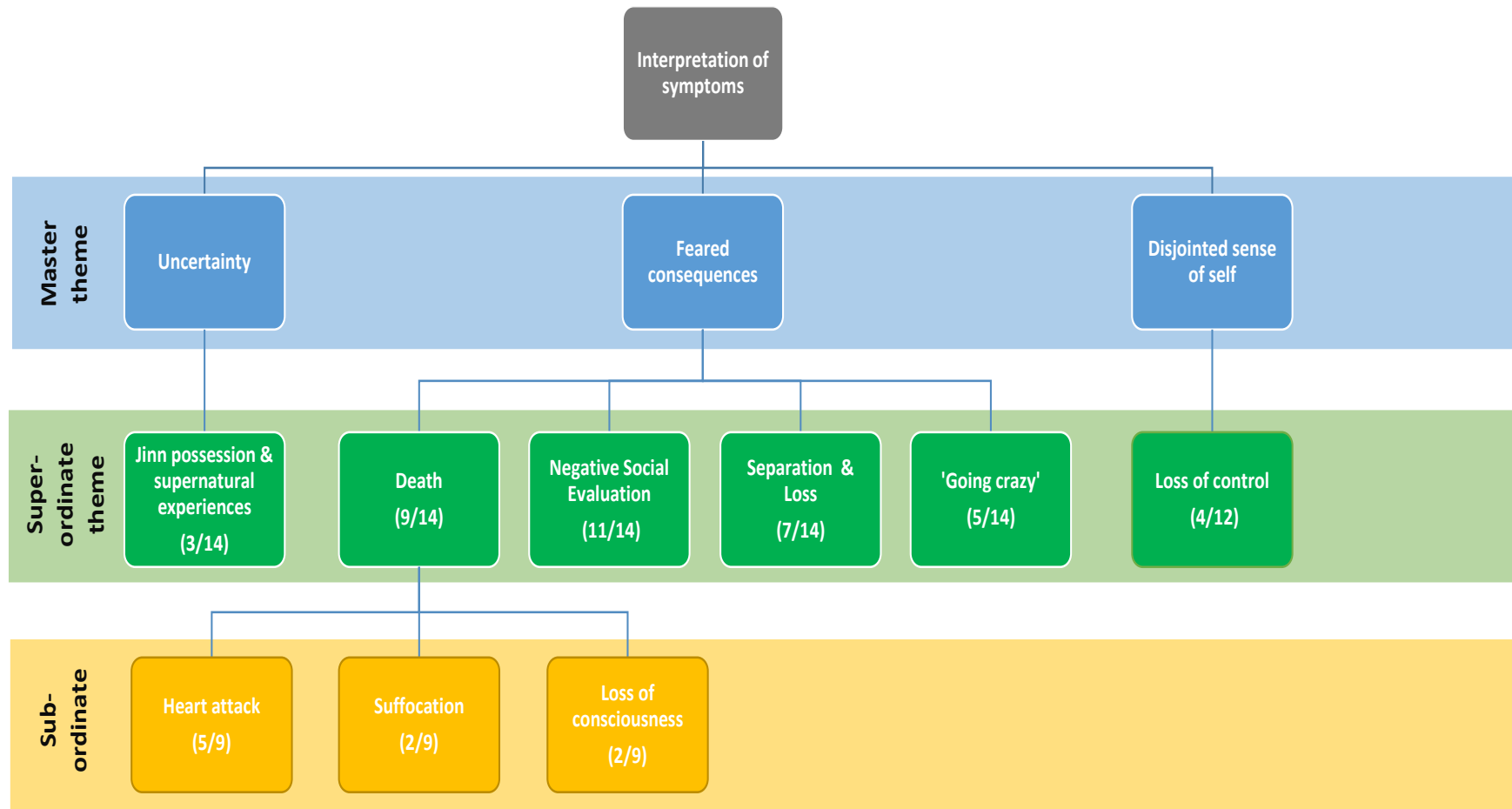


Figure 2: A hierarchical representation of the themes and connections between them. Numbers in brackets display the number of participants that endorsed a super-ordinate or sub-ordinate theme.

**2.1. Uncertainty.** Throughout participants' accounts, the onset of panic attack was interpreted as threatening and unexpected in its occurrence. The unexpectedness of a panic attack was reflected in participants' description of panic symptoms as appearing 'suddenly' (8/14), leading to a sense of precariousness;

*"...my body suddenly feels hot (...) suddenly and I am in a completely disheveled state..."* (P 7)

*"...it increased my worries and made me unsure of anything I want to do. Anything I want to do has multiple factors I became unsure of if it's right or wrong..."*(P 11)

When participants spoke about the unexpectedness of a panic attack, they often emphasised the uncertainty about the cause of the symptoms and tended to debate between psychological or physical causes. This led some participants to seek medical attention in an effort to uncover the underlying reasons for the symptoms experienced, but usually they discovered no medical condition:

*"...I knew I was upset but I didn't know the reason, is it something physical? Is it depression? Is it lots of things added up that is scaring me? I didn't know, I didn't know what's wrong with me..."* (P 4)

*"...I immediately went to hospital and they did all the medical tests and made sure I was clear of anything..."* (P 3)

**2.1.2. Jinn possession & supernatural experiences.** It was within the context of uncertainty that participants attempted to make sense panic symptoms, with some suggesting a supernatural explanation. For participant 2, this was in relation to a fear of loss of a loved one where she emphasised that the intolerability of the loss could lead to supernatural experiences:

*"...I get these ideas that either there is a Jinni in me or I'm going to go crazy...I can't comprehend that I might lose any other person in my life (...) and I feel like I'm*

*in something not right (...) you're not able to handle it, like there are people that –Oh my God- aren't able to tolerate (...) you genuinely feel that he's present like I'd hear his voice (...) they're not imaginations like you've reached a stage where you're delusional. No.” (P 2)*

Jinni possession was also identified by an additional participant (P6) as one of many other possible explanation for panic symptoms which she describes in terms of her susceptibility to suggestions from other people:

*“...it gets stored in my unconscious...for example when [others] talk about Jinn, about magic, about crime, about war, about fear....it increases [the panic] for me...it scares me and I feel like I'm in between heaven and earth...” (P6)*

Whilst the prospect of being possessed by a Jinni was presented as an explanation for panic symptoms, this explanation was not applied beyond the immediate context of panic symptoms and did not feature elsewhere in participants' reports.

**2.2. Feared Consequences.** All participants, except for participant 13, described a range of thoughts during a panic attack. These thoughts were an attempt to make sense of the bodily sensations experienced during a panic attack and were feared consequences that predicted either physical or mental suffering. As more participants came to report similar predictions, these were grouped under five main categories of super-ordinate themes described below. Some of the participants ascribed to more than one category (see table 2).

**2.2.1. Death.** A large proportion of participants reported interpreting bodily sensations experienced during a panic attack as indicating imminent death:

*“...felt tightness in my chest started not seeing very well and feeling like I was going to fall, felt like was going to die now...” (P 1)*



*“...[I was thinking] 'OK this is death let me get up to have a shower because I'm going to die' ...” (P10)*

Whilst the above participants did not identify the exact physical symptoms they thought were leading to death, others expressed more specifically what they thought they were going to die from. These thoughts fell under three main categories, the first was death by Heart Attack, followed by death by Loss of Consciousness, with the third category being death by Suffocation:

*“...yes, because of how many heartbeats there are you think it's going to suddenly stop...” (P10)*

*“...breathing quickly, increased heart rate, severe sweating- these might make you think you're going to lose consciousness. These are symptoms of losing consciousness...” (P 9)*

**2.2.2. Negative Social Evaluation.** The majority of participants described thoughts during a panic attack that pertained to a fear of being evaluated negatively by others. This was expressed through feelings of embarrassment and humiliation, and indicated a prediction of being rejected by others:

*“...the thoughts that run through my mind as I'm going through [the panic attack] is that I now need to stop, this is embarrassing, and I'm embarrassing myself, embarrassing myself if I don't stop. And I feel pathetic, I feel humiliated...” (P 7)*

This feeling of embarrassment appeared to be linked with an implicit sense of shame as participants described that the feeling permeated their social standing. Additionally, some participants articulated explicitly the prediction of being rejected and condemned by others:

*“...also what people might say...so I was worried they'll say '[own name] is going to fail at work', so people's perception of me...” (P 8)*

*“...it’s the fear, the fear that you feel in that circumstance, it’s the fear of people looking at you and paying attention to you...you might get punished for behaving a certain way...” (P 7)*

**2.2.3. Separation and Loss.** Accounts from some of the participants indicated a fear of separation from loved ones expressed as thoughts during a panic attack that pertained to previous losses and/or the prediction of the possibility of future losses. For some participants a bereavement that had occurred either recently or several years ago influenced their thoughts during a panic attack and was associated with fear of losing other loved ones. Participant 2 described the thoughts of loss she experienced during a panic attack by linking previous losses to the possibility of future losses:

*“...yes of course suddenly (...) they’d die, they’d die just like my husband died...in the end you’re going to lose them whether it’s suddenly or not. They’ll exit your life, they won’t be present in your life...” (P 2)*

The extract from the above participant also illustrates the familiar theme ‘Uncertainty’ expressed as ‘suddenness’ of death. However, this is expressed in the context of a loss through death of a loved one as opposed to participants themselves dying. Moreover, participants emphasised a fear of losing family members that were present or described a separation from others in what could be interpreted as abandonment:

*“...losing my parents, losing my mum, losing my daughter, losing my wife, these were also things to give me bitterness and increase my worry...” (P 3)*

*“...that people around me will leave me and I am alone when dealing with this situation or circumstance...” (P 12)*

**2.2.4. ‘Going crazy’.** A subset of participants reported thoughts during a panic attack that pertained to mental illness or loss of control over mental capacity as feared

consequences. The extracts below illustrated this interpretation of bodily sensations experienced during a panic attack:

*“...I’m scared of going crazy (...) I’m scared that I will start hallucinating...”*  
(P 4)

*“...you feel like you’re almost going to faint and lose a sense of control over yourself, or madness or something...”* (P 2)

*“...I’m losing my mind, I started crying...”* (P 10)

**Endorsement of themes.** Table 2 below represents each participant’s endorsement of the super-ordinate and sub-ordinate themes discussed in the section above. The table shows that endorsements ranged from 1-8 fearful consequences, and most participants endorsed more than one fearful consequence. The most endorsed theme was ‘Negative Social Evaluation’, and ‘Death’ (unspecified) was the second most endorsed. The endorsements of the rest of the themes were spread sporadically across the sample.

Table 2. Super-ordinate themes.

Participant number, gender	Uncertainty	Death	Death by heart attack	Death by loss of consciousness	Death by suffocation	'Going crazy'	Jinn possession & supernatural experiences	Separation & Loss	Negative Social Evaluation
1, M		X		X					
2, F	X					X		X	X
3, M		X	X					X	
4, F	X	X				X	X		X
5, F	X	X							X
6, F	X	X					X	X	X
7, M	X	X	X						X
8, M									X
9, M	X	X	X	X	X	X		X	X
10, F	X	X	X		X	X		X	X
11, F	X	X							X
12, F						X		X	X
13, F	X								
14, F	X		X					X	X

*List of super-ordinate themes endorsed by each participant. Where 'X' indicates endorsement of theme. F and M denotes female and male participants respectively.*

**2.3. Disjointed sense of self.** As participants spoke about their interpretation of symptoms, they moved beyond acute thoughts in relation to panic symptoms and drew comparisons between their identity pre and post onset of panic. This revealed that for the majority of participants, panic and anxiety symptoms influenced the perception of their identity. Participants reported a change post onset of panic which for them meant

that their sense of self was somewhat disjointed. They described themselves as secure pre onset of panic compared to insecure post onset of panic. However this description was implied rather than overt, and was usually described in the context of previous abilities, as reflected in the extract below:

*“...I always compare myself to the past, and maybe that’s wrong but you know when you’re a very tidy and neat person who’s on top of everything and you know everything in the house and suddenly you don’t know anything?...”* (P 10)

Participants indicated a sense being disjointed by their description of parts of themselves as ‘broken’ or separated from what once was a whole. Some participants expressed this disjointedness explicitly whilst other described it implicitly:

*“...inside of me that’s it something’s broken that can’t be fixed...”* (P 10)

*“...I was just sitting with my friends with people, and it [panic attack] suddenly started and I was scared and I started taking the things apart that were in front of me and I just wasn’t comfortable...”* (P 4)

**2.3.1. Loss of Control.** Moreover, participants identified Loss of Control over their reactions during a panic attack which may reflect a lack of coherent sense of self:

*“...I feel like I can’t control myself...”* (P 11)

*“...I continue to cry and I continue to go round, and I jump and run around the house...I don’t have time to control myself anyways... because it’s not even in my hands...”* (P 2)

**Summary.** Symptoms of panic, which included a set of bodily sensations described in Part 1, were interpreted by participants to mean they were in immediate danger in the forms of either physical (e.g. heart attack), supernatural (e.g. jinn possession), or social (e.g. social exclusion). The interpretation of the symptoms were synonymously linked with the cause of the symptoms, so for some participants the

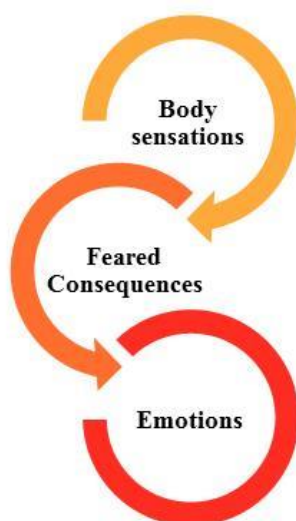
cause could be physical (e.g. heart attack) or mental (e.g. mental illness). Some participants reported uncertainty about the cause and this served to maintain the sense of danger that they experienced and seemed to invite supernatural explanations (e.g. Jinn possession). Participants' interpretations also extended toward their sense of identity with the majority of participants interpreting their cumulative panic and anxiety symptoms as an indication of a disjointed identity post onset of panic.

### **Relationship Between Master Themes**

Although the data presented in the results section is organised by themes, participants did not experience each theme in isolation. Rather, participants' descriptions were interwoven, connecting each experience with another, and therefore connecting each theme with the other. In doing so, participants' accounts illustrated the connected nature between the themes. The order in which participants reported their symptoms and interpretations followed a link between Bodily Sensations-Feared Consequences-and-Emotions. Participant 4 described this sequence:

*“...suddenly I felt as if something like cold water was being poured all from my head, from the top of my head to the edges of my hands (...). When the coldness increased, I felt a panic I was very scared. (...) I kept imagining something scary was going to come to me (...) either there is a Jinni in me or I'm going to go crazy (...). So I was just getting more scared...”*

The above extract illustrates that participants interpret bodily sensations (e.g. ‘coldness’) as dangerous (e.g. Jinni possession) which naturally prompts emotions of fear (e.g. ‘scared’). However, as the above extract demonstrates, the emotion itself perpetuates feared interpretations- in this case Jinni possession or mental illness- and in doing so increases their fear (e.g. “so I was getting more scared”). Figure 3 below illustrates this sequence. All three master themes are therefore part of the experience of panic attacks with the predictions as central to the link between Bodily sensations and Emotions.



*Figure 3: A representation of the interconnection between master themes in which Feared Consequences mediates the link between Body sensations and Emotions.*

## **Discussion**

This part of the empirical paper presents a summary of the findings and recommendations of this study. The first section summarises the key findings, with the subsequent section dedicated to considering similarities and differences between the present findings and those of other recent studies. The third section outlines some of the clinical implications of the findings, including a discussion of the extent to which the interpretations of symptoms in this study appear to be consistent with Clark's model

of panic. The fourth section is dedicated to a reflective account of the process of analysis with an emphasis on the influences of my own ethnic background. The final section considers the limitations of the study with recommendations for future directions.

### **Summary of Results**

Misinterpretations of bodily symptoms may be informed by a cultural understanding, and therefore variations in culture may lead to variations in interpretations of bodily symptoms (Hinton et al., 2004, 2005). Hence this study aimed to examine the content of anxiety and panic related symptoms and cognitions in a sample of Saudi-Arabian individuals diagnosed with panic disorder and to compare the extent to which said cognitions could be seen to constitute misinterpretations of bodily symptoms as described by Clark's model.

Results from the thematic analysis showed that participants experienced panic as a set of bodily sensations. These were closely followed by emotions that included predominantly fear and a sense of helplessness which was associated with an inability to stop the bodily sensations. Fear permeated other aspects of participants' lives that included fear of experiences such as travelling. Thus, participants consequently experienced difficulties that extended beyond their panic attacks.

Participants' interpretations of bodily sensations comprised of three types of imminent dangers: physical, mental, and social. Perceived physical dangers pertained to a number of different causes for injury or death, such as heart attack or suffocation. Participants varied in their interpretations of the cause for possible death, however the cause was usually associated with the type of bodily sensations experienced. For example, a participant sensing fast heart rate interpreted this to mean an impending



heart attack. Despite this association, none of the participants had in actuality experienced a feared outcome such as a heart attack.

The analysis suggests that participants' interpretations of bodily sensations mediated the relationship between bodily sensations and feelings (fear); sensing fast heart rate and interpreting this to mean danger (e.g. heart attack), leads participants to experience feelings of fear. Fear itself perpetuates the interpretation, leading to increased arousal and a panic attack.

This study used culturally validated tools to screen for anxiety (KUAS) and depression (BDI) symptoms/. The results from the anxiety scale suggested that, on average, women were slightly more anxious than men. Both genders in the current clinical sample obtained higher anxiety compared to the non-clinical sample from Ahmed and Alansari (2004). Results from the depression scale suggested that on average, participants obtained scores in the moderate range of depression, which may reflect the co-morbidity often found between anxiety disorders and depression (Gorman, 1996; Kessler, 2008). The results may have been affected participant's treatment regime, as all participants were receiving medication for anxiety with some undergoing adjacent psychotherapeutic intervention.

### **Findings in Relation to Previous Evidence**

The results from this study were compared with recent literature in order to assess the extent to which the findings from this study were unique or similar to the catastrophic cognitions proposed by Clark's model, in particular with a study by Raffa et al. (2004) who conducted the most recent in-depth exploration of panic disorder symptoms. This was a comprehensive study underpinned by Clark's model of panic that included both a qualitative and quantitative analysis of anxiety and panic related

symptoms and cognitions in participants diagnosed with panic disorder. The authors examined a large sample of 207 Caucasian American participants. Similar to the current study, Raffa et al.'s (2004) were mostly women (65%), with an average of age 35 (range 18 to 66 years), most of whom (59%) had completed college or beyond.

Raffa et al. (2004) found a total of five main types of misinterpretations of bodily sensations: physical (e.g. death), ability to maintain role functioning (e.g. job related concerns), loss of behavioural control (e.g. 'going crazy'), social evaluation concerns (e.g. being considered a failure), and discomfort (e.g. unable to get help, panic may never end). These misinterpretations were consistent with Clark's model and other literature measuring misinterpretations in panic disorder (e.g. Agoraphobic Questionnaire, Chambless et al., 1984; Thulin, 2001). Owing to the comprehensiveness of this study, and its similarities with the current study in terms of aim and qualitative analysis, Raffa et al.'s (2004) study serves as a reference with which to compare the current study's results on panic cognitions with a typical Caucasian sample.

Some similarities and differences in the type and frequency of symptom expression were evident when comparing both studies. Both studies identified heart palpitations and shortness of breath<sup>6</sup> as the most common symptoms of panic. Similarities also extended to less immediate symptoms and included restrictions in travel and impact of panic on relationships. However, whilst cold sensations in the extremities were the second most common symptom reported by participants in the current study, this was not identified by Raffa et al. (2004). Conversely, a large

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<sup>6</sup> Referred to in the current study as 'Fast heart rate' and 'Breathlessness' respectively.

proportion of participants in the latter study endorsed symptoms of dizziness (71%) and sweating (56%) which, although present in a minority of participants' accounts, were not reported to a similar extent in the current study, and therefore was not represented as a theme within the current sample. Similarly, participants of Arab ethnicity reported less symptoms of sweating compared to Caucasian participants (Wagner et al., 2008).

Both the current study and Raffa et al. (2004) showed participants interpreted bodily sensations to indicate fear of specific physical catastrophe which included fear of death and/or series of medical emergencies such as heart attack and suffocation. Likewise, findings from both studies showed that mental illness (e.g. 'going crazy') and loss of control over behaviour were fearful interpretations of symptoms. In addition, participants from both studies reported interpretations of negative social evaluation, which included embarrassment and being considered a failure. However, whilst nearly all the participants in the current study indicated fears of negative social evaluation (78%), a smaller proportion of Raffa et al.'s (2004) sample (33%) endorsed similar interpretations. This suggests that Saudi-Arabian participants may place more emphasis on negative social evaluation than Caucasian participants. This emphasis may be derived from a Middle-Eastern cultural context in which shame and stigma have consistently been found to be highly linked with mental illness (Abu-Ras, 2003; Al-Krenawi et al., 2000; Okasha, 2003).

However, whilst there was an overlap in symptom expression and types of interpretations between Raffa et al. (2004) and the current sample, there were also some key differences in terms of interpretations. The first relates to a minority of participants who reported Jinn possession as an interpretation of their bodily

sensations. A similar interpretation was not reported by the Caucasian sample in Raffa et al.'s (2004) study, nor in Clark's original description. Perhaps this is not surprising given that Jinn possession is noted in Islamic tradition and is therefore mainly expressed within majority Muslim cultural contexts (Dein & Illaiee, 2013).

However, the association between supernatural possession and mental illness is not unique to Muslim patients - similar attributions have been made by followers of other religions, such as Christianity (Morisson, 2001), Judaism (Greenberg & Witztum, 2001), and Hinduism (Halliburton, 2005). Nevertheless, within a Muslim and Middle Eastern context, both psychiatric and medical symptoms have been attributed to Jinn possession (Atallah et al., 2001; Dein & Illaiee, 2013; Lim, Hoek, & Bloom, 2015; Obeid et al., 2012). Additionally, Middle Eastern participants show stronger causal beliefs in ascribing symptoms to supernatural causes (including Jinn), compared to British-Caucasian participants (Hamid & Furnham, 2012). Furthermore, in studies examining Jinn possession and mental health problems, a greater proportion of participants ascribed symptoms to Jinn possession compared to participants in the current study. Where percentages were reported, these ranged from 62% (Obeid et al., 2012) to 36% (Atallah et al., 2001), compared to 21% (3/14) in the current study.

Additionally, in studies examining Jinn possession and mental health problems, participants ascribed the cause of physical symptoms to Jinn possession in the presence of confirmed biological or psychiatric diagnosis (Dein & Illaiee, 2013; Lim, Hoek, & Bloom, 2015; Obeid et al., 2012). This is comparatively different from the current study's sample in which references to Jinn possession were uttered with some uncertainty, and reported as causal beliefs participants entertained prior to diagnosis and treatment. Of particular note, for participants in the current study Jinn

possession was entertained as one of several alternative causes for their symptoms rather than as the only cause. Jinn possession was also only entertained as a cause during an actual panic attack. In contrast, descriptions of Jinn possession in the aforementioned literature appear to suggest that people ascribe Jinn possession to a wider range of on-going symptoms (e.g. hallucinations, epilepsy) and to changes in personality or circumstances (e.g. loss of job or social status).

Regarding sociodemographic factors, some studies showed a significant association between low educational background and belief in Jinn possession (Dein, Alexander, & Napier, 2008; Khalifa, Hardie, & Mullick, 2012), while others found no such association (Obeid et al., 2012). With one exception (Khalifa, Hardie, & Mullick, 2012), studies have not examined gender differences in attribution of symptoms to Jinn possession. Khalifa et al. (2012) reported that more women than men believed in Jinn possession, and related this to differences between women and men's educational attainment, noting that women in their sample were less educated. However, they did not specify whether participants' belief in Jinn possession was simply part of their religious beliefs, or that physical symptoms were caused by Jinn possession.

Whilst a fear of negative social evaluation was a recurrent theme within accounts in both the current study and Raffa et al. (2004), the current study identified another social theme, namely a fear of separation and loss. Half of the participants in this study expressed a fear of being separated from or losing loved ones. These thoughts were reported to occupy participants' minds during a panic attack and pertained to either previous bereavements and/or the possibility of future losses. In contrast to the misinterpretations discussed in Clark's model (1986), in which the feared consequences directly affect the person making them (e.g. death, mental illness,

social isolation), in this theme the feared consequence affects significant others. Given the lack of similar findings in previous studies, this theme may tap into culturally specific ways of relating. One possibility is that the theme may be informed by Middle-Eastern collectivist culture in which nurturing and maintaining close relationships with family members are paramount (Dwairy, 2002; Sayed, 2003).

For participants in the current study, the range of their panic symptoms was itself interpreted as reflecting a defect in their identity. Participants indicated a sense of self as disjointed through their description of parts of themselves as 'broken'. Reflective of this is their description of a lack of control over their behaviour during a panic attack. Whilst this theme does not necessarily constitute a misinterpretation of symptoms as outlined in Clark's classic model, it nevertheless featured consistently within this sample. A similar theme was not identified by Raffa et al. (2004). However, the effects of panic disorder have been shown to affect quality of life through a variety of means such as restrictions in travel (Fava et al., 2001). Findings from previous research, whilst not specific to panic disorder, suggest a fusion of mental health problems with identity, such that the experience of mental health problems becomes self-defining (Karp, 1994; Thoits, 2016). However, this does not account for the current findings of a disjointed experience of identity, and to this author's knowledge to date research has not examined the effects of panic disorder on identity, making it impossible to draw inferences about the degree to which this theme is unique to the present Saudi-Arabian sample.

### **Clinical Implications**

The comparisons in the sections above make it possible to draw conclusions between results from the current study and those of Raffa et al. (2004), and by

extension - Clark's model. Clark's model of panic posits that individuals with panic disorder misinterpret benign bodily sensations to mean imminent physical or mental catastrophe (e.g. heart attack or mental illness) known as 'catastrophic cognitions'. Overall, the above comparisons suggest that there is large overlap in presentation of panic symptoms and the type of interpretations of bodily sensations. Given the definition of catastrophic cognitions, the overlap in symptoms suggests that interpretations of bodily symptoms expressed by participants in the current study constitute *misinterpretations* in a way that is consistent with Clark's model.

Despite differences in ethnicity and culture, the overlap in symptomatology suggests that Saudi-Arabian participants on the whole identify the same symptoms as their Caucasian counterparts, and importantly interpret these in a similar manner. For example, both groups seem to focus on the same range of bodily symptoms which are usually associated with the body's stress response that is activated by anxiety (e.g. increased heart rate). In addition, both groups appear to interpret these symptoms to mean imminent danger (e.g. heart attack). These similarities further suggest that Clark's model, and by extension CBT for panic, is applicable to clients of Saudi Arabian ethnicity. Indeed, findings from this study support previous findings that show CBT to be equally effective for Arab and Caucasian participants with anxiety, depression and panic disorder (Kayrouz et al., 2015, 2016; Wagner et al., 2008).

Whilst there were similarities in symptom expression and interpretation between Saudi-Arabian and Caucasian participants, there were also a few differences; Saudi-Arabian participants identified panic symptoms of cold sensations in the extremities which were not noted by Raffa et al. (2004). Additionally, fewer Saudi-Arabian participants endorsed symptoms of dizziness and sweating. This may have

implications for assessment, for although cold sensations are one of many common symptoms of panic as categorised by the DSM 5 (American Psychiatric Association, 2013; Meuret et al., 2006), they are not always identified by common self-report measures (e.g. GAD-7; Hallgreen & Morten, 2007). Further, the absence of symptoms such as sweating and dizziness together with other differences in presentation may lead clinicians to underestimate the severity of a client's panic related distress, which may in turn influence diagnostic and treatment decisions.

Unlike previous research that identified Middle Eastern participants as expressing symptoms more somatically (Al-Krenawi, 2005; Hamdi, Amin, & Abu-Saleh, 1997), this study found no qualitative differences in the type or rate of somatic expression of symptoms between Saudi-Arabian participants and Raffa et al.'s (2004) Caucasian participants. However, previous research did not focus solely on panic disorder and differences may therefore be reflective of other mental disorders.

Differences in catastrophic cognitions may have implications for delivering CBT with this client group, and may act as culturally bound cognitions affecting the outcome of CBT for Saudi-Arabian clients; in seeking to enhance therapeutic outcome, the results from this study indicate that incorporating and addressing the aforementioned culturally distinct cognitions may be of benefit for Saudi-Arabian clients. Moreover, the large overlap in symptoms and catastrophic cognitions surmised from this study supports a culturally sensitive approach drawing on existing models and treatment approaches within CBT as opposed to systematic modification of CBT for panic.



## **Limitations and Directions for Future Research**

This study's findings, and by extension clinical implications, are bound by its limitations. Employing an in-depth qualitative approach, that is not constricted by pre-determined questionnaires, provided an opportunity to uncover catastrophic cognitions not previously identified. Rather than seeking to obtain generalizability of the results, the aim of this qualitative study was to explore and contextualise participants' experiences. In doing so, information about the participants' demographics and levels of anxiety and depression can inform the potential transferability of the results to similar sociocultural contexts (Kuper, Lingard, & Levinson, 2008). Thus, the present findings may provide guidance for future research in developing more comprehensive understanding, and questionnaires that include less represented catastrophic cognitions for further examination using quantitative methods.

However, specific limitations that affect the credibility of the results, and by extension their transferability, include the retrospective nature of the interview questions. These questions may have produced less accurate data given that participants may have been unaware of their exact thoughts during a panic attack. Future research could take a more rigorous approach by asking participants to note down thoughts they have during panic attack(s). Another limitation of the use of interviews pertains to sociocultural aspects of interviewing, where participants' disclosure of personal information may have been influenced by gender norms (e.g. a woman interviewing a man), and social desirability. Future research may therefore wish to limit the effects of such variables by using anonymous methods such as questionnaires.

Whilst this study's sample characteristics were similar to Raffa et al.'s (2004) sample, on a socio-economic level the results may be skewed towards higher income and younger participants. As described above, some studies have found differences in beliefs about mental health problems that were associated with lower educational attainment. Future research would therefore benefit from including participants from a broader socio-economic spectrum. Furthermore, the mixed levels of anxiety and depression in the sample make it difficult to draw confident conclusions from the current study's results of moderate depression and anxiety as it may be these scores are higher or lower than what is expected given their panic disorder diagnosis. Future research may therefore benefit from screening out participants with lower anxiety and moderate to high depression levels.

One of the main limitations of the study is related to participants' exposure to different treatments for their panic symptoms. All 14 participants were taking psychotropic medication, in addition three had completed a brief course of CBT (6-8 sessions) within the last two years, and a further three were undergoing psychotherapy (of an eclectic modality) at the time of interview. Both the use of medication and psychological intervention may have affected the results of the study in a number of ways, two of which are pertinent. The first is in relation to access to panic cognitions, and the second is the extent to which psychological intervention, CBT in particular, may have altered participants' original conceptualisations of their symptoms and cognitions. In regards to the former, psychotropic medication aims to reduce the physical symptoms of panic, hence, coupled with the retrospective nature of the interview, participants' ability to identify their panic symptoms and cognitions pre-medication may have been hindered by their use of psychotropic medication. As a

result, participants' accounts of symptoms and cognitions may have been incomplete or fragmented.

As for the latter limitation, the fact that three of the 14 participants underwent CBT, regardless of its brevity, may have had a priming effect on responses and provided participants with a framework with which to view their symptoms that was the direct result of their CBT. For example, the psycho-educational component of CBT, in which physiological responses implicated in anxiety are outlined, may have affected the way in which participants interpreted their symptoms. Through this and other components of CBT, participants may have adopted a bio-psychological Westernised perspective of their symptoms. This may be the case for a minority of participants who underwent CBT, however the themes derived from the analysis do not rely on said minority, rather they are reflective of a pattern that is consistent across the whole sample.

Furthermore, the aim of the study was not to assess the extent to which a CBT framework naturally fits Saudi Arabian clients' view of their symptoms. Rather, the aim was to explore where possible the object of their fears, in other words the content of catastrophic cognitions. CBT aims to emphasise the benign nature of the feared object. For example noting that increased heart rate is not necessarily lethal (Clark, 1986). This form of reasoning in CBT is referred to as 'cognitive restructuring' and seeks to re-frame the presumed consequences of the object of the fear (e.g. increased heart rate) into a more benign presence. To that end, CBT does not aim to directly change or replace what is feared (e.g. increased heart rate). It is therefore cautiously assumed that the data including the content of catastrophic cognitions identified in the current study remain unaltered by psychological intervention. Nevertheless, for a more

rigorous study, future research may need to include participants that have not had access to interventions in order to limit the effect of psychological intervention on the presentation and content of participants' difficulties.

## **Conclusion**

The current study provides insight into the symptoms and catastrophic cognitions of Saudi-Arabian participants diagnosed with panic disorder. Study limitations notwithstanding, the findings support the notion that Saudi-Arabian participants misinterpret their symptoms in the way predicted by Clark's model of panic disorder. Additionally, participants expressed similar symptoms and catastrophic cognitions to a large Caucasian sample studies in previous research. It also provided evidence of possible differences in symptom expression and the content of catastrophic cognitions. In doing so, the study enhanced the clinical knowledge of culturally dependent symptoms and cognitions. This supports the notion of delivering culturally sensitive CBT for panic disorder to Saudi-Arabian clients, and suggests the possibility that other Middle Eastern clients may benefit in a similar fashion.

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### **Part 3: Critical appraisal**

## **Critical Appraisal**

This appraisal will address some of the limitations of the empirical study presented in part 2, with an emphasis on quality and validity. The limitations are addressed in two parts, the first highlights the appropriateness of the methods, which includes a discussion of the methodology and sampling strategy. The second part outlines some of the factors that informed the analysis process, noting in particular the role of the researcher, and credibility checks. This part concludes with a personal reflection on the wider motivating factors that guided the selection of this research topic.

### **The appropriateness of methods**

With the advent of an interconnected global economy, international trade is no longer bound to merchandised goods. The export of Western developed psychological interventions has been one of many imports to the Middle East (Al Gelban, 2009). However, unlike merchandised goods, psychological interventions define the aetiology of psychological distress and its subsequent treatment through a culturally specific lens, in a manner that may preclude other interpretations. Thus, research into the relevance of interventions to the intended population is paramount when seeking to alleviate psychological distress.

This type of research needs to move beyond predetermined psychological measures in order to illuminate possible differences in presentation and socio-cultural understanding of psychological distress. This study therefore employed a qualitative design to examine the differences in panic and anxiety cognitions between Saudi-Arabian and Caucasian participants. The sampling strategy targeted participants diagnosed with panic (with or without depression) to address the central question,

namely; are anxiety cognitions influenced by culture? In addition, participants were recruited from a psychiatric outpatient clinic in their country of origin, maintaining fidelity to the culture and further limiting the influences of other cultural settings. However, the diagnosis itself was based on Western criteria (ICD-10), and thus may have excluded participants with non-normative presentations.

Another caveat relates to the inclusion of participants who were undergoing pharmaceutical and psychological intervention. All 14 participants were taking psychotropic medication to alleviate their acute symptoms of panic. A reduction in panic symptoms may in turn influence participants' ability to retrospectively identify and report panic and anxiety related cognitions. Thus, there may be more or different types of cognitions that were not identified because of this. Furthermore, three participants in particular had undergone a brief course of CBT. Although CBT does not seek to replace cognitions in relation to panic symptoms (but rather, to emphasise the benign nature of the feared object; Clark, 1986), socialising participants to the therapeutic framework (e.g. thoughts influencing feelings and behaviour) may have influenced participants' interpretations of symptoms.

A related topic concerning the sampling strategy is the study's sample size. Brocki and Wearden (2006) note that sample size is guided by a study's aim to generalise the findings; a study seeking to develop new insights into a previously unreported phenomenon may require a smaller sample to facilitate an in-depth analysis of unique characteristics. However, studies seeking to enhance understanding of existing constructs may benefit from an expanded sample. This will allow a pattern of data to emerge, and by extension provide a strengthened position through which to situate the transferability of findings. Thus, given this study's theoretical grounding in

Clark's model of panic (1986) and aims of enhancing our understanding of existing constructs (i.e. catastrophic cognitions), this study obtained an appropriate sample size consisting of 14 participants. A related topic is the issue of reaching data saturation. Brocki and Wearden (2006) advocate for data saturation when a balance has been reached between patterns across the dataset, whilst maintaining the unique characteristics from which the set emerge. The sample size in this study was large enough to reach data saturation as the results showed themes that were both familiar (e.g. death through heart attack) and novel (separation from loved ones), and new themes did not emerge with the addition of the later participants.

### **Factors informing analysis**

Whilst the methodological design and sampling strategy may, on the whole, strengthen the credibility of this study's findings, a number of limitations that affect the process of analysis and by extension the results of the analysis merit consideration. These pertain to the format of data collection, the role of the researcher in interpreting the results, and credibility checks, each discussed in turn.

The differences in geographical location between myself as the researcher and the participants meant data were collected through telephone interviews. My training in interviewing skills as part of my clinical work enabled me to conduct interviews over the telephone with proficiency, establishing and maintaining rapport with the participants. However, my clinical interviewing skills do not overcome some of the limitations imbedded in telephone vs. to face-to-face interviews, which are unrelated to skills. These pertain to non-verbal communication such as the interviewees' facial and bodily gestures, which may convey meaning beyond verbal statements (Brocki & Wearden 2006). Gestures can have a powerful effect in directing the course of the

conversation whereby either party in conversation may attend to subtle cues that shift the conversation towards a range of avenues. Indeed, non-verbal communication has been found to influence the type of psychiatric diagnoses ascribed to patients (Annen, Roser, & Brüne, 2012). As such, conducting interviews over the telephone may have influenced the content of the interviews.

Semi-structured interviews are commonly used in qualitative research as it aims to balance non-constricted insights from participants with a pre-set structure in order to maintain the focus of interest (Brocki & Wearden, 2006). This approach was chosen in this study because whilst a set number of questions maintained consistency across the interviews, the semi-structured approach allowed the interviewer to ask further questions or expand on statements. With the intention to reduce the influences of leading questions and maintain a non-directive approach, the interview questions in the current study were designed to be broad and open-ended without guiding the answers to fit within a CBT framework. For example, “what does anxiety or panic mean to you?” and “What thoughts did you have [during a panic attack]?” However, despite this intention, the questions that the interview consisted of were underpinned by this study’s theoretical basis, namely CBT. As such they may have prompted responses from participants that were more aligned with a CBT model. This, in turn, may have influenced the interpretation of the data during analysis and consequently the results of the study, such that participants were less inclined to provide cultural and/or religious interpretations. Nevertheless, the extended aim of this study was to view the data from a CBT perspective in order to compare the results between the established literature, which is predominately based on Western-Caucasian participants, and less known accounts from Middle Eastern-Arabic participants.

Another caveat concerns the translation process. This study followed a rigorous approach using the Delphi method; two independent transcribers produced transcripts that were assessed by a panel of three independent bi-lingual psychologists for accuracy and culturally appropriate translation. This resulted in only one contentious issue regarding the use and appropriate translation of the Arabic word for 'Panic'. A consensus was easily reached between all parties, which included a discussion with the supervisors of this study. Due to a lack of further contentious issues and limitations in resources, this process was only completed for three transcripts. However, the lack of contentious issues does not guarantee a culturally accurate translation across all transcripts, and as such, meanings and insight that are more susceptible to errors in translation may have been lost or overlooked. In turn, this may have affected the overall quality of information resulting in lack of nuance or one-dimensional accounts of participants' experiences. Despite these limitations, the results obtained showed both similarities and differences in symptom expression and anxiety cognitions between Arab and Caucasian samples. This indicates that the translation process retained at the very least some of the important topics that participants relayed.

The above also highlights the role of the researcher in data analysis, as both their personal and professional characteristics may become a lens through which to view the data. The analysis, and consequently the results, may thus be influenced by the researcher's position. In my case as the researcher, several characteristics could have influenced the analysis, one of which is my clinical training in CBT, which may have predisposed me into categorising participants' information within a CBT framework. For example, my awareness of maintaining factors led me to notice the cyclical pattern of avoidance, which reinforces the belief in catastrophic thoughts.

However, other characteristics may have also influenced the analysis. As I share a similar culture with the participants in this study, beliefs stemming from my Arab cultural heritage informed the initial ideas behind this study and may have influenced my analysis of data. Such beliefs pertained to the culture's emphasis on social evaluation, and though I did not know at the time how such cultural influences could manifest as anxiety cognitions, they nevertheless featured in participants' accounts during the interview. In concordance with the nature of semi-structured interviews, my role as an interviewer was active in that although respondents were asked the same set of questions, there was some inevitable variability whereby I encouraged elaboration of information on topics deemed novel (e.g. Jinn possession). In this way, I influenced what information was provided which would later be used in the analysis stage.

With the multitude of factors that can influence the analysis of data in qualitative research, credibility checks are commonly undertaken to help limit the influences of some of the factors described above. Differences in aims and procedures mean that the criteria for validity in qualitative research are different from quantitative research. Unlike quantitative studies, the analysis and subsequent results are to an extent contingent on the researcher, such that no two researchers will interpret the data in exactly the same way (Brocki & Wearden, 2006).

Elliott et al. (1999) provide several suggestions for credibility checks and emphasise a 'grounding' whereby verbatim quotes from participants are provided as evidence of the themes rooted in the data. They also provide the reader with the opportunity to make their own appraisal of the interpretations. These criteria were adhered to in the current study, in addition to complying with the 'coherency' criterion in which the hierarchy of sub-themes and themes were presented along with the



number of participants who endorsed each sub-ordinate. The latter was provided as an indicator of the level of endorsement of themes and sub-ordinate themes amongst the data. Moreover, the credibility of the themes was also supported by a process in which a selection of transcripts in this study were independently analysed by two research supervisors before my own interpretations were presented. Although as previously mentioned, an identical interpretation of themes is not possible, there was overall good agreement in terms of themes. Disagreements pertained to some of the themes' titles and position within the hierarchy and were resolved through discussion.

However, a more rigorous approach, whereby all transcripts are coded independently using the same codes and the rate of agreement is calculated, may have revealed more discrepancies in the coding process and thus highlight areas for further discussion. Whilst this was not achievable within the time-frame of this doctoral thesis, other avenues for credibility helped to validate the results. These included the aforementioned grounding technique, transparency of endorsed sub-themes, and independently analysed themes. An additional approach to strengthening the credibility of the findings may have been achieved through inviting participants to read through their own transcripts for accuracy of meaning and subsequently comment on the results. Regrettably, this was not possible due to the tight time-frame of this doctoral thesis. Elliott et al. (1999) also advise 'situating the sample' through a description of participants' demographic information which was presented in the current study, which permitted further comparison with a Caucasian sample (i.e. Raffa et al., 2004). Thus, most of Elliott et al.'s (1999) advice for credibility, validity, and quality was adhered to in this study.

## **Personal reflections and journey into the research topic**

My position as a researcher of Arab ethnicity, who grew up in Europe, and is training in clinical psychology, may have influenced both the interview process and research analysis. I was aware that my own assumptions that Arab people may have different ways of viewing mental illness, and by extension symptoms of panic, could have implications for psychological treatment. With limited existing research to draw on, using my clinical training this assumption was translated into a research hypothesis which guided the initial conceptualisation of this study. This assumption may have also influenced the analysis of the results by heightening my sensitivity to data that may have been unique to Arab participants. For example, the impact of panic symptoms on participants' relationships with loved ones, or the degree to which religion influenced their interpretations of symptoms. It was therefore crucial that a system of reliability checks was adopted in order to arrive at a balanced view (Elliott, Fischer, & Rennie, 1999).

As an Arab woman growing up in a European culture, I was often puzzled by the differences that people around me ascribed to my cultural heritage and the European culture within which I live. Such ascribed differences were expressed to me in a myriad of ways that included subtle remarks intended to be received as compliments (e.g. "You speak Norwegian<sup>7</sup> so well!"), and more overt aggressions designed to highlight the differences in 'their' vs. 'my' culture (e.g. "We do things differently here"). Such remarks were drawn from inferences based on a number of personal factors such as my skin colour or accent. Over the years, as a result I have

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<sup>7</sup> From the age of 9, my family settled in Oslo, the capital of Norway. I moved to London to pursue higher education and have lived in the UK for the past 12 years.

often felt rather rejected by a European culture that I know to be my own. I turned to science to help elucidate on what I felt to be true; that cultural differences are mere details adorning our unique personalities, far outweighed by our shared values. It was this journey for meaning and context that was the driving force behind this thesis.

Literature on cultural variations in mental health seems to me to be more invested in the idea of differences between cultures than the similarities between them. Articles on the symptoms of common mental health problems such as depression and anxiety (e.g. Beshai, Dobsen & Adeel, 2012; Tanios et al., 2009), and commentary on the use of psychotherapy in Middle Eastern Arab countries (e.g. Dwairy & Van Sickle, 1996) were riddled with divisive language that implied differences in symptom expression between two cultures were vast and inevitable. When interpreting results, the articles highlighted differences in symptom expression in terms of the “Arab world” or “Islamic World “, vs. the “Western world” (e.g. Beshai, Dobsen & Adeel, 2012; Tanios et al., 2009). The use of the word ‘world’ suggests a difference of such vast reaching characteristics that they are literally ‘worlds apart’. What were the differences that warranted this divisive emphasis? Depressed Egyptian undergraduates were found to express more negative thoughts compared to their Canadian counterparts (Beshai, Dobsen & Adeel, 2012), and rates of common mental health disorders are lower or comparable to data in Western cultures (Tanios et al., 2009). Not only is the use of the plural form ‘Arab World’ as equal to a selection of Egyptian students inaccurate and misleading, the majority of findings in both studies actually highlight more commonalities than differences in symptom expression and prevalence rates.

Furthermore, articles that do not use this type of exaggeration to convey areas of difference have focused on religion as the main channel from which Middle Eastern individuals process and express all manner of human emotion and interaction: with poor methodological design (e.g. no consideration for the impact of age, educational attainment, and socioeconomic status), little regard for context and nuance (foreign medical system), authors often interpret participants' preferences (e.g. 'modesty'), and cultural heritage, with their religion (Islam) as the main source for differences in help seeking (Kulwicki, Miller, & Schim, 2000), and symptom expression (Beshai, Dobsen & Adeel, 2012; Hansen, 2008; Lim, Hoek, & Bloom, 2015; Khalifa, Hardie, & Mullick, 2012). The latter is disguised as the oft-cited 'tendency for Arab patients to somatise their symptoms' (e.g. Dwairy & Van Sickle, 1996; Hamdi, Amin, & Abu-Saleh, 1997; Wagner 2008). However, I have found no studies that examined qualitative differences in such expressions between those of Arab and European culture, and yet they are flagged as a characteristic of Arab patients. These thoughts, and others, motivated me to embark on this thesis, examining both the similarities and differences in symptom expression and giving equal weight to each domain. The findings of this study appear to reflect my personal observations, that we have more similarities across culture than differences.

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## **Appendices**

**Appendix 1: Grid tables of search terms for each database**

**Psyc INFO**

<b>Cognitive behaviour therapy</b>	<b>Mental illness</b>	<b>Middle Eastern country</b>	<b>Number of articles found</b>
cognitive behavior therapy.sh OR cognitive behave\$ therap\$.tw OR CBT.tw	mental health.sh OR mental health.tw OR mental illness.sh OR mental illness.tw OR mental disorder.sh OR mental disorder.tw	arab.sh. or arab.tw. or arabic.tw. or middle east.tw. or middle eastern.tw.	15
		Saudi Arabia.tw OR Saudi Arabian.tw	1
		Egypt.tw OR Egyptian.tw	0
		Iraq.tw OR Iraqi.tw	0
		Lebanon.tw OR Lebanese.tw	0
		United Arab Emirates.tw OR UAE.tw	0
		Jordan.tw OR Jordianian.tw	0



**Appendix 1 continued: Grid tables of search terms for each database**

**PubMed (includes medline)**

<b>Cognitive behaviour therapy</b>	<b>Mental illness</b>	<b>Middle Eastern country</b>	<b>Number of articles found</b>
"cognitive therapy"[MeSH Terms] OR cognitive behavior therapies[Text Word]	"Mental health difficulties"[Mesh] OR "Mentally Ill Persons"[Mesh])	"Middle East " OR "Arabic" OR "Middle Eastern"	115
		Saudi Arabia OR Saudi Arabian	0
		Egypt OR Egyptian	0
		Iraq OR Iraqi	0
		Lebanon OR Lebanese	0
		United Arab Emirates OR UAE	0
		Jordan OR Jordanian	0

**Appendix 1 continued: Grid tables of search terms for each database**

**Web of Science (core search)**

<b>Cognitive behaviour therapy</b>	<b>Mental illness</b>	<b>Arab</b>	<b>Number of articles found</b>
TS=("cognitive behavioural therapy" OR "cognitive behavioral therapy" OR "CBT" OR "cognitive behaviour therapy" OR "cognitive behavior therapy")	TS= ("mental illness" OR "mental disorder" OR "mental health")	TS=("Arab" OR "Arabic" OR "Middle east" OR "Middle eastern")	2
		Saudi Arabia OR Saudi Arabian	0
		Egypt OR Egyptian	0
		Iraq OR Iraqi	0
		Lebanon OR Lebanese	0
		United Arab emirates OR UAE	0
		Jordan OR Jordanian	0

## **Appendix 2: Participant Information sheet- English version**

### **Participant Information Sheet (English version)**

**Study title: Are Panic and Anxiety Cognitions Culturally Dependent? An exploration with Arab service users**

**Date: 30.1.2016**

**Researcher: Zainab Al-Noor, Trainee Clinical Psychologist.**

**This study has been approved by the UCL Research Ethics Committee (8429/001):**

We would like to invite you to take part in this study. Before you decide we would like you to understand why this study is being done and what it would involve for you.

Your doctor will go through the information sheet with you and answer any questions you have. We suggest this should take about 10 minutes. (Part 1 tells you the purpose of this study and what will happen to you if you take part. Part 2 gives you more detailed information about the conduct of the study).

Please ask your doctor if there is anything that is not clear.

#### **Part 1**

##### **What is the purpose of the study?**

People all over the world experience anxiety. Despite this, little research has been done to find out whether anxiety is experienced differently in different cultures. Most of the research is focused on people from a Western culture, so we do not know if anxiety is experienced differently or the same in a middle-eastern, Arab culture.

We therefore seek to speak to people from Saudi Arabia who can tell us what it is like for them to experience feelings of anxiety. We are interested in hearing about how they feel and what thoughts they have in relation to their anxious feelings. For each participant agreeing to help us with this research we wish to carry out an interview focused on their experiences of anxiety. They will be asked about their anxiety in general, and then we will explore the thoughts that they have in relation to their anxiety. We hope our results will show whether there is a cultural difference in the way people experience their anxiety.

This study is supervised by Drs. Neil Ralph, Katrina Scior, and Caroline Selai at University College London.

**Why have I been invited?**

You have been invited because you are a patient being treated for anxiety in one of our collaborating clinics in Saudi Arabia and your doctor has suggested that you might be interested in taking part.

**Do I have to take part?**

It is up to you to decide to join the study. Whether or not you take part will not affect your treatment in any way. If you agree to take part, we will then ask you to sign a consent form. You are free to withdraw at any time, without giving a reason and it will not affect the standard of care you receive.

**What will happen to me if I take part?**

If you decide to take part you will first be asked to complete two online questionnaires that your local doctor will share with you. Then, with your permission, your doctor will give us your email or telephone number so we will agree together on a suitable time for you to complete an interview. This interview will be over the internet using Skype, WhatsApp or Viber. You can choose which of these options will best suit you. By using any of these options to do the interview, can have the interview at a place that is most comfortable and private for you. The interview will last approximately 45 minutes to 1 hour.

The interview will be recorded to help us remember the information. This recording will only be accessed by the researcher that interviewed you. It will be deleted as soon as the study is finished.

**What are the possible disadvantages and risks of taking part?**

The questions you will be asked in the interview may at times be on topics which you may find difficult. These questions however are the same sort that you will be asked as part of your treatment or discussions with your doctor. You also have the right to stop the interview whenever you want or to not about a topic.

**What are the possible benefits of taking part?**

We cannot promise the study will help you but the information we obtain from this study may help improve the treatment of people with anxiety and may also lead to new ideas for work in the area of anxiety.

**What if there is a problem?**

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. The detailed information on this is given in Part 2.

**Will my taking part in the study be kept confidential?**

Yes. We will follow ethical and legal practice and all information about you will be handled in confidence. The details are included in Part 2.

**If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making any decision.**

## **Part 2**

### **What will happen if I don't want to carry on with the study?**

You will be able to stop at any stage, and if you wish, your interview data can be deleted within a period of two months.

### **What if there is a problem?**

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions: [zainab.al-noor.09@ucl.ac.uk](mailto:zainab.al-noor.09@ucl.ac.uk).

### **Will my taking part in this study be kept confidential?**

All information that is collected about you during the course of the research will be kept strictly confidential, and any information about you will have your details removed so that you cannot be recognised. The only situation where confidentiality would have to be broken is where a participant made statements suggesting that they had the intention to harm themselves or another person.

### **What will happen to the results of the research study?**

The data will be written up in a doctoral thesis and scientific journals.

### **Who has reviewed the study?**

This research has been reviewed by an independent group of people called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favourable opinion by the University College London Research Ethics Committee (8429/001), and also by your local clinic (E-16-1898).

### **Contact for further information**

To further discuss this research you can contact Zainab Al-Noor on [zainab.al-noor.09@ucl.ac.uk](mailto:zainab.al-noor.09@ucl.ac.uk).

### **Thank you for reading this and taking part in the research.**

When completed: 1 for participant; 1 for researcher site file; 1 (original) to kept in medical notes.

### Appendix 3: Participant consent form-English version

#### CONSENT FORM (English version)

Title of Project: Are Panic and Anxiety Cognitions Culturally Dependent? An exploration with Arab service users

Name of Researcher: Zainab Al-Noor

Please initial each box

1. I confirm that I have read and understood the information sheet dated 30.01.2016 for the above study. I have had the opportunity to consider the information, ask questions, and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, and without my medical care or legal right being affected.

3. I agree to take part in the above study.

Name of Patient:

Date:

Signature:

Name of Person  
taking consent:

Date:

Signature:

## Appendix 4: Demographic Information Form-(English version)

**Instructions:** Please provide a response for each of the following questions:

1. **What is your date of birth?** \_\_\_\_\_

2. **What is your gender?**

Female • Male •

3. **What is your marital status?**

Single • Married • Separated • Divorced • Widowed •

4. **What is your employment status?**

Employed • Retired • Un-employed •

5. **With which racial or ethnic category do you identify?**

Arab • Mixed • Caucasian • Other •

Other: \_\_\_\_\_

6. **What is your highest educational status?**

No formal schooling •

Completed primary school

Completed secondary school

University graduate •

## Appendix 5: KUAS- Arabic version

KUAS		استفتاء للشخصية	
السن :	عاما .	الجنس ( ذكر / أنثى ) :	
<p><b>تعليمات:</b> أمامك عدد من العبارات التي يمكن أن تصف أي شخص ، اقرأ كل عبارة ، وحدد مدى انطباقها عليك بوجه عام ، وذلك بوضع دائرة حول كلمة واحدة فقط مما يلي كل عبارة منيا وهي : نادرا ، أحيانا ، كثيرا ، دائما .</p> <p>ليس هناك إجابات صحيحة وأخرى خاطئة ، وليست هناك عبارات خادعة. أجب بسرعة ولا تفكر كثيرا في المعنى الدقيق لكل عبارة . ولا تترك أي عبارة دون إجابة.</p>			
1-	أعصابي مشدودة .....	نادرا	أحيانا كثيرا دائما
2-	أشعر بالخوف .....	نادرا	أحيانا كثيرا دائما
3-	أعاني من ضيق في التنفس .....	نادرا	أحيانا كثيرا دائما
4-	أفكر في أمور مزعجة .....	نادرا	أحيانا كثيرا دائما
5-	قلبي يدق بسرعة .....	نادرا	أحيانا كثيرا دائما
6-	أصاب بدوخة أو دوام .....	نادرا	أحيانا كثيرا دائما
7-	أتوقع أن تحدث أشياء سيئة .....	نادرا	أحيانا كثيرا دائما
8-	أنا شخص عصبي .....	نادرا	أحيانا كثيرا دائما
9-	دقات قلبي غير منتظمة .....	نادرا	أحيانا كثيرا دائما
10-	أشعر بالعصبية .....	نادرا	أحيانا كثيرا دائما
11-	أخاف أن أفقد السيطرة على نفسي ..	نادرا	أحيانا كثيرا دائما
12-	أنا متوتر .....	نادرا	أحيانا كثيرا دائما
13-	أشعر بالقلق .....	نادرا	أحيانا كثيرا دائما
14-	أنا غير مرتاح .....	نادرا	أحيانا كثيرا دائما
15-	المستقبل يقلقني .....	نادرا	أحيانا كثيرا دائما
16-	أشعر بأنني متقلب (غير ثابت) .....	نادرا	أحيانا كثيرا دائما
17-	عضلاتي متوترة .....	نادرا	أحيانا كثيرا دائما
18-	أنا متترفض .....	نادرا	أحيانا كثيرا دائما
19-	أشعر بالامزعاج .....	نادرا	أحيانا كثيرا دائما
20-	أنا متململ (غير مستقر) .....	نادرا	أحيانا كثيرا دائما



## **Appendix 6: Interview guide- preliminary draft (English version)**

Below is a list of questions aimed to give the participants the opportunity to describe in their own words their understanding of anxiety and panic, and the thoughts associated with the escalation of anxiety to panic. The interview takes a funnelling approach to questioning; starting with orienting the participant to the setting before tentatively beginning the interview with broad open-ended questions. For each main question (in **bold**) there are a series of prompt question (in *italics*) that can be used to help elaborate on the topic. There are a total of 4 broad categories of questions. The last category (4) aims to end the interview with a review of the participants' way(s) of coping to help orient the participant to end of the interview process.

### Ensuring confidentiality:

“Thank you very much for taking the time to speak to me. Dr \_\_\_\_ (collaborating clinician) \_\_\_\_ said that you might be interested in speaking to me, is that right? [ensuring consent]. The topic of our conversation will be your feelings and thoughts related to anxiety/panic. I'd like to remind you that this conversation is entirely voluntary and will not affect your current treatment with Dr \_\_\_\_ (collaborating clinician) \_\_\_\_ [ensuring consent and right to withdraw participation]. I'd also like to remind you that what you say to me is confidential and that you will not be identifiable in any reports on this study.”

### **Audio recording- check and switch on recorder**

#### 1. Understanding anxiety/panic sensations and definitions

**2. “Can we start by talking about what anxiety/panic means to you?”**

3. *“What would you typically consider to be body sensations or signs of anxiety/panic?”*

1. *“What word(s) would you use to describe these sensations?”*

- *“Do you think that other people experience these sensations similarly or differently to you?”*

2. Delineating where anxiety/panic comes from

**• “Why do you think that you experience anxiety/panic [or word chosen by participant to refer to anxiety]”**

- *“What do you think started or brought on [anxiety/panic]?” (e.g. is there anything that might have made you vulnerable to anxiety/panic?)*
- *“How long have you experienced this for?” (e.g. Has there been a time in your life when this [anxiety/panic] was not there?)”*
- *“When did you first notice this [anxiety/panic]?”*
- *“Is there anything that makes it [anxiety/panic] worse? (e.g. do you notice if these feelings escalate at certain times?)”*
- *“Is there anything that makes it better, i.e. that helps reduce it [anxiety/panic]?”*
- *“Do you think anyone can be affected by panic/anxiety? Or do you think it’s something about you that’s made you more vulnerable to this [anxiety/panic or these experiences]?”*

1. *“In what way(s) can or does the panic/anxiety affect your life? (e.g. who else in your life does this affect- - family, relationships with others, work, social life, role as parent, view of self?)”*

3. Panic related thoughts

**• “Can you tell me about the last time you experienced [anxiety/panic]?”**

- *“What happened before the anxiety/panic attack started?”*
- *“What was the first sign of it?”*

**• “When those sensations were happening, what was going through your mind at that moment (e.g. What thoughts did you have?)”**

- **“What seemed to you, at that moment, to be the worst thing which could happen? (e.g. When you felt \_\_[thoughts identified during feeling of anxiety/panic]\_\_\_ what did you think would happen?”**
- **“Did any images appear in your mind?”**
- **“What were you noticing in your body as you experiencing anxiety/panic attack?”**

- “Is this different from how you are when you not feeling anxious (*If so, how is this different?*)”

#### 4. Ending questions

- **“What do you do to help calm yourself?”**

- “Is there anything you do that helps you to calm down? (e.g. is there anything you do, or anything you say to yourself that helps you calm down? - Is there anything anyone else does or says that helps you to calm down? (who? what?)

- “What do you do after you’ve calmed down?”

- “Is there anything you enjoy doing that might help you feel less anxious?”

**Thank person for taking part**

**Any comments or questions they have regarding the interview?**

## Appendix 7: List of body sensations reported by participants in this study

	<b>Bodily sensations</b>	<b>Number of participants endorsed</b>
1	Fast heart rate	12/14
2	Cold Sensations	10/14
3	Breathlessness	5/14
4	Dizzy	5/14
5	Blurred vision	4/14
6	Sweating	4/14
7	Hot	4/14
8	Shaking	4/14
9	Bowel movements	3/14
10	Pain	3/14
11	'Freeze'	3/14
12	'Falling sensation'	3/14
13	Crying	2/14
14	Dry mouth	2/14
15	Nausea	2/14
16	Numbness	2/14
17	Vomiting	1/14
18	Headache	1/14
19	Heaviness	1/14

*List of bodily sensations reported by participants, arranged according to the number of endorsements for each sensations.*

**Appendix 8: Ethics approval (UCL and External clinic)**



24 March 2016

Dr Katrina Scior  
Research Department of Clinical, Educational and Health Psychology  
UCL

Dear Dr Scior

**Notification of Ethical Approval**  
**Project ID: 8429/001: Are panic anxiety cognitions culturally defendant?**

Further to your satisfactory responses to the committee's comments, I am pleased to confirm in my capacity as Chair of the UCL Research Ethics Committee (REC) that your study has been approved by the REC for the duration of the project i.e. until 24<sup>th</sup> March 2017.

Approval is subject to the following conditions:

1. You must seek Chair's approval for proposed amendments to the research for which this approval has been given. Ethical approval is specific to this project and must not be treated as applicable to research of a similar nature. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing the 'Amendment Approval Request Form': <http://ethics.grad.ucl.ac.uk/responsibilities.php>
2. It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator ([ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)) immediately the incident occurs. Where the adverse incident is unexpected and serious, the Chair or Vice-Chair will decide whether the study should be terminated pending the opinion of an independent expert. The adverse event will be considered at the next Committee meeting and a decision will be made on the need to change the information leaflet and/or study protocol.

For non-serious adverse events the Chair or Vice-Chair of the Ethics Committee should again be notified via the Ethics Committee Administrator ([ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)) within ten days of an adverse incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Chair or Vice-Chair will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

On completion of the research you must submit a brief report of your findings/concluding comments to the Committee, which includes in particular issues relating to the ethical implications of the research.

Yours sincerely



**Professor John Foreman**  
**Chair of the UCL Research Ethics Committee**

Academic Services, 1-19 Torrington Place (9<sup>th</sup> Floor),  
University College London  
Tel: +44 (0)20 3108 8216  
Email: [ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)  
<http://ethics.grad.ucl.ac.uk/>

25.04.2016 (18.07.1437)  
Ref. No. 16/0223/IRB

To: **Ms. Zainab Al-Noor**  
Department of Clinical, Educational  
And Healthy Psychology  
University College of London  
Email: zainab.al-noor.09@ucl.ac.uk

Subject: **Research Project No. E-16-1898**

Project Title: "Are Panic and Anxiety Cognitions Culturally Dependent? An  
Exploration with Arab Service Users"

Dear Ms. Zainab Al-Noor,

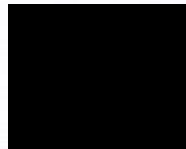
I am pleased to inform you that your above-mentioned research project was reviewed by the Institutional Review Board on 21 April 2016 (14 Rajab 1437). The project was **approved**. Work on this project may begin.

We wish you success in your research and request you to keep the IRB informed about the progress and final outcome of the study in a regular basis. Please quote the project number shown above in any future correspondence or follow-ups related to this study.

If you have any question, please feel free to contact me.

Thank you!

Sincerely yours,



**Prof. Khalid M. Al-Faleh**  
Chairman, Institutional Review Board  
King Saud University College of Medicine  
P.O. Box 7805 Riyadh 11472 K.S.A.  
E-mail: kfaleh@ksu.edu.sa



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