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Thinking too much: How young people experience rumination in the context of loneliness

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Abstract

The recent rise in the prevalence of loneliness, particularly among young adults, coupled with its deleterious effects on wellbeing, makes understanding the issue of pressing concern. As most research on loneliness has focused on older adults, this study explored how 48 young adults aged 18–24 subjectively experienced loneliness through free association-based interviews. Participants were sampled from the four most deprived boroughs in London, as area deprivation has been associated with a higher prevalence of loneliness. This facilitates understanding of contributors and consequences of loneliness within this demographic group. In particular, the focus is on rumination arising from loneliness; while the link between the two is well-established quantitatively, research into rumination and the context of ruminative thoughts in the context of loneliness remains sparse. Thus, this study aimed to understand the subjective experience of rumination in young adults whilst they experienced loneliness. Thematic analysis of interviews using ATLAS.ti 9 revealed five themes capturing these experiences: ‘temporal experience of rumination’, ‘ruminating life and death’, ‘rumination related to others’, ‘outcomes of rumination’ and ‘coping with loneliness-related rumination’. Based upon knowledge of the nature and content of rumination, further research could devise models of rumination

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and interventions targeted at rumination such as mindfulness meditation, journaling and engaging in prosocial behaviour, to mitigate the adverse effects loneliness can have on wellbeing.

KEYWORDS

loneliness, rumination, youth

1 | INTRODUCTION

Loneliness is a universally observed human phenomenon; we are a social species and satisfying social relationships are essential for our mental and physical wellbeing. Conversely, the impairment of these relationships can lead to subjective feelings of loneliness (Andersson, 2010). Loneliness has also been thought to be a result of evolutionary forces: social isolation threatens the health, life and genetic legacy of social species. Thus, loneliness has been theorized to serve an adaptive function against social isolation and its adverse consequences (Cacioppo, Cacioppo, & Boomsma, 2013) by prompting individuals to seek social relationships and connections. The number of people who experience loneliness appears to be growing rapidly (King, 2018), especially in industrialized societies where approximately a third of the population is affected by loneliness (Cacioppo & Cacioppo, 2018), giving credence to the term 'the loneliness epidemic'. The present study explores a key aspect of loneliness: its link to rumination. It examines this link and deciphers the content of ruminative thoughts experienced during bouts of loneliness in young adults, who are currently one of the loneliest groups in Western countries (Fardghassemi & Joffe, 2021).

Loneliness is defined as the emotional distress arising from the perception that one's social needs are not being satisfied by the quality or quantity of one's social relationships (Pinquart & Sorensen, 2010; Wheeler, Reis, & Nezlek, 1983). The subjective nature of loneliness means that individuals can feel lonely not only when they are physically isolated, but even when they are among others with whom they do not feel a strong social connection. Apart from the emotional distress accompanying the experience of loneliness, loneliness is also associated with a number of deleterious effects on physical and mental health. Focusing on mental health, loneliness has been linked to personality disorders and psychoses (De Niro, 1995; Richman & Sokolove, 1992), impaired cognitive performance (Gow, Pattie, Whiteman, Whalley, & Deary, 2007), suicide (Goldsmith, Pellman, Kleinman, & Bunney, 2002), impaired executive control (Hawkley, Thisted, & Cacioppo, 2009) and increased depressive symptoms (Wei, Russell, & Zakalik, 2005).

In the face of the rising prevalence of loneliness and its deleterious impacts on mental and physical health (Rico-Uribe et al., 2018), loneliness poses a growing public health problem. This highlights the pressing need to better understand the experience of loneliness so that effective, targeted interventions can be designed to mitigate its adverse consequences.

1.1 | Loneliness in young adults

Research on loneliness has primarily focused on elderly populations. The model of a positive linear relationship between loneliness and age proposes that older individuals are more likely to experience loneliness as a result of not having regular contact with their families, having to stay home due to an increased need for healthcare services, impaired physical functioning or bereavement of loved ones (Hazer & Boylu, 2010). Supporting this, evidence suggests that around 50% of individuals aged over 80 report frequent feelings of loneliness (Pinquart & Sorensen, 2003). Since loneliness is

conventionally thought to be a problem of old age, younger populations are often assumed to be less lonely due to being more socially connected (Victor & Yang, 2012).

While some evidence supports the aforementioned linear model (Lauder, Mummery, Jones, & Caperchione, 2006), more recent research indicates an increasingly complex, non-linear relationship between age and loneliness. Higher rates of loneliness have been reported in young adulthood and old age, with comparatively lower rates in early- to mid-adulthood, giving rise to a U-shaped distribution (Barreto et al., 2020; MacDonald, Willemssen, Boomsma, & Schermer, 2020; Yang & Victor, 2011). Additionally, findings from a recent survey by the Office of National Statistics (2018) further highlighted and renewed interest in the high prevalence of loneliness in young adults, as well as the possible reasons for it. The survey found that young adults aged 16–24 in the United Kingdom experienced loneliness the most relative to other age groups, with 5% reporting experiencing loneliness ‘often’ or ‘always’ and 16% ‘sometimes’. Higher rates of loneliness within this group were associated with a weak sense of belonging to their neighbourhood, having little trust in their neighbours, as well as area deprivation.

The high prevalence of loneliness in younger adults within this demographic group is garnering attention. In this age group, individuals tend to experience a myriad of developmental transitions, ranging from biological to social, as they become more independent (Crosnoe, 2000). These transitions may induce instability and emotional distress; having strong social relationships is critical in successfully making these transitions (Umberson & Montez, 2010). Apart from the aforementioned adverse effects on health, loneliness also plays a critical role in the development of young adults. Loneliness has also been found to influence many midlife outcomes such as education and labor market inclusion (Von Soest, Luhmann, & Gerstorf, 2020), further stressing the need to understand and develop interventions to target loneliness in this demographic group.

A number of other factors have been implicated as possible contributors to the higher prevalence of loneliness among young people. These include problematic technology use and adopting maladaptive strategies to cope with loneliness and stress, such as withdrawing from others and obsessing over problems, as opposed to seeking help or working towards resolving situations (Matthews et al., 2019). Other contributing factors include ‘the fear of missing out’ resulting from social media use (Hunt, Marx, Lipson, & Young, 2018) and a lack of social support (Lee & Goldstein, 2015).

However, despite the existing literature on individual contributors to loneliness, a holistic understanding of loneliness in young adults remains underdeveloped. While quantitative research has reliably found loneliness to predict rumination, with rumination mediating the adverse consequences of loneliness on wellbeing, little has been done to explore this relationship in detail or further delve into the content of the ruminative thoughts occurring specifically in the context of loneliness (Vanhalst, Luyckx, Raes, & Goossens, 2012; Zawadzki, Graham, & Gerin, 2013).

1.2 | Rumination

According to Response Styles Theory (RST), the most widely referred-to model of rumination, rumination is a distress response that involves repetitively and passively focusing on symptoms of distress and the possible causes of these symptoms (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Rather than focusing on active problem solving, people who ruminate tend to fixate on the problems they face and their distress without taking action to solve them. In line with this theory, rumination has been associated with a variety of maladaptive cognitive styles (Ciesla & Roberts, 2002) and with depression after controlling for other negative cognitive coping styles (Flett, Madorsky, Hewitt, & Heisel, 2002; Spasojevic & Alloy, 2001). Additionally, it has also been found to mediate the relationship between depression and negative inferential styles (Nolan, Robert, & Gotlib, 1998).

While pioneering studies have found evidence suggesting rumination is strongly linked to depression, more recent research on RST has led to further refinement of the theory, giving rise to a two-factor model of rumination (Treyner, Gonzalez, & Nolen-Hoeksema, 2003). The revised model proposes that rumination consists of two components; reflection and brooding. Reflection consists of introspective thoughts aimed at engaging in cognitive problem

solving to alleviate one's depressive symptoms. It serves a more adaptive function compared to the brooding component of rumination, which aligns more with the early RST model of rumination. The brooding component reflects a more passive comparison of an individual's current situation with an unachieved standard. In this revised model, rumination is still linked to depression. However, it is also found to have both adaptive and maladaptive functions in resolving distress, instead of the traditionally maladaptive conceptualization of the early model.

Although the RST model of rumination is referred to most widely, a number of other models propose different definitions of rumination. For example, the Self-Regulatory Executive Function model conceptualizes it as recurring thoughts centred on self-referent information as opposed to immediate goal-directed action (Matthews & Wells, 2004), while the Goal Progress Theory refers to rumination as a 'response to failure to progress satisfactorily towards a goal' (Watkins, 2008). Other models such as the Stress Reactive Rumination model (Alloy et al., 2000) and the Post-Event Rumination model (Clark & Wells, 1995) conceptualize rumination to be focused on negative inferences associated with stressful life events and social interactions respectively. As evident from the above, there appear to be a number of theories of rumination varying in their predictions of the content of ruminative thoughts. However, a common characteristic of these definitions centres on rumination's link to distress and the potential causes and consequences of rumination.

1.3 | Rumination and loneliness: The present study

Regarding rumination in the context of loneliness, a number of quantitative studies have found loneliness to reliably predict rumination in young people (Vanhalst et al., 2012; Zawadzki et al., 2013). Interestingly, in these studies, rumination mediated the adverse effects of loneliness on individual wellbeing via sleep and mood. These studies highlight the complex relationship between loneliness and rumination. While the link between rumination and loneliness has been extensively corroborated quantitatively (Gan, Xie, Duan, Deng, & Yu, 2015), there has been little qualitative research exploring the experience of rumination and the content of ruminative thoughts in the context of loneliness, which may reveal the nuances of the complex relationship between the two.

While a number of studies have explored ruminative thoughts in various contexts such as trauma (Speckens, Ehlers, Hackmann, Ruths, & Clark, 2007), friendships (Rose, 2002) and anger episodes (Sukhodolsky, Golub, & Cromwell, 2001), the literature on the content of ruminative thoughts in the context of loneliness remains lacking.

Hence, this study aims to qualitatively investigate how young people subjectively experience rumination in the context of loneliness. The findings of this study will provide potential insight into how to devise targeted interventions, centred on rumination to mitigate the adverse effects that loneliness can have on individual wellbeing.

1.4 | Research question

How do young people subjectively experience rumination in the context of loneliness?

2 | METHOD

2.1 | Participants

Since the ONS (2018) survey found area deprivation to correlate with loneliness in young people, this study recruited 48 participants (24 males, 24 females) living in the four most deprived boroughs in London: Tower Hamlets, Barking and Dagenham, Newham and Hackney. The ages of participants ranged from 18 to 24 years; participants under 18 were not sampled for ethical reasons. At least five participants of each gender were recruited from each

neighbourhood. Participants consented to participate in the study after the details of the study were explained. Participants were recruited via an agency and received compensation for their participation. Ethical approval was granted by ethics board.

2.2 | Data collection

In-depth interviews were conducted at participants' homes or a local venue chosen by them. The interviews were audio-recorded and transcribed verbatim. Interviews utilized the Grid Elaboration Method (Joffe & Elsey, 2014), a free association method targeted at drawing out the naturalistic thoughts and feelings of individuals, whilst minimizing the influence of the interviewer's knowledge and prior assumptions.

The interview consisted of two phases. The first phase was designed to elicit a more general experience of loneliness, while the second phase intended to elicit location-specific loneliness to draw out more specific instances of experienced loneliness. In the first phase, participants were presented with a four-box grid (Appendix A) and asked to write or draw an idea they associated with 'the experience of loneliness' in each of the four boxes. Participants were then prompted by the interviewer to elaborate on each box, focusing on one box before moving on to the next. This began with 'can we talk about what you have put in box 1, please?' Following this, the interviewer made use of open-ended prompts (e.g., 'can you tell me more about that?', 'how does that make you feel?') to encourage further elaboration from the participant, taking care to avoid interviewer interference. The flow of the interviews was guided primarily by the interviewee.

In the second phase of the interview, participants were presented with a two-box grid (Appendix B) and instructed to write or draw in one a place they felt most socially connected, and in the other, a place they felt loneliest. The participants were encouraged to elaborate on their responses in a similar manner as in the first interview phase.

Following the completion of the interview, demographic data were collected from each participant.

2.3 | Qualitative analysis

The transcribed interview data were analysed using ATLAS.ti 9, which facilitated the creation of codes and themes using thematic analysis (Braun & Clarke, 2006).

Thematic analysis entails a systematic process of identifying recurring themes across participants. The data is coded by attaching codes to relevant phrases. These codes are grouped into overarching themes. Each theme is well-substantiated by excerpts from the data and described in detail (Strauss & Corbin, 1998).

Through this process, inductive codes by the researchers were used to form a coding frame. In accordance with good practice guidelines (Barker & Pistrang, 2005), the coding frame was checked for interrater reliability by an independent coder in approximately 10% ($n = 5$) of the interviews. A reliability score of 67.2% was calculated between the researchers and deemed acceptable (O'Connor & Joffe, 2020). Following the resolution of inconsistencies between the researchers, the interviews were coded with reference to the final coding frame.

3 | RESULTS

Of the 48 interviewees, 34 (70.8%) referenced rumination. Thematic analysis of the data from these 34 interviewees generated 16 codes, regarding how young people subjectively experienced rumination in the context of loneliness. The codes were organized into five themes; 'rumination related to others', 'temporal experience of rumination', 'ruminating life and death', 'outcomes of rumination' and 'coping with loneliness-related rumination'. The percentage frequency of their occurrence among interviewees who referenced rumination is summarized in Figure 1.

Themes	Percentage Frequency
Rumination related to others	64.7%
Temporal experience of rumination	47.1%
Ruminating life and death	14.7%
Outcomes of rumination	64.7%
Coping with loneliness-related rumination	52.9%

FIGURE 1 Table of percentage frequency of themes

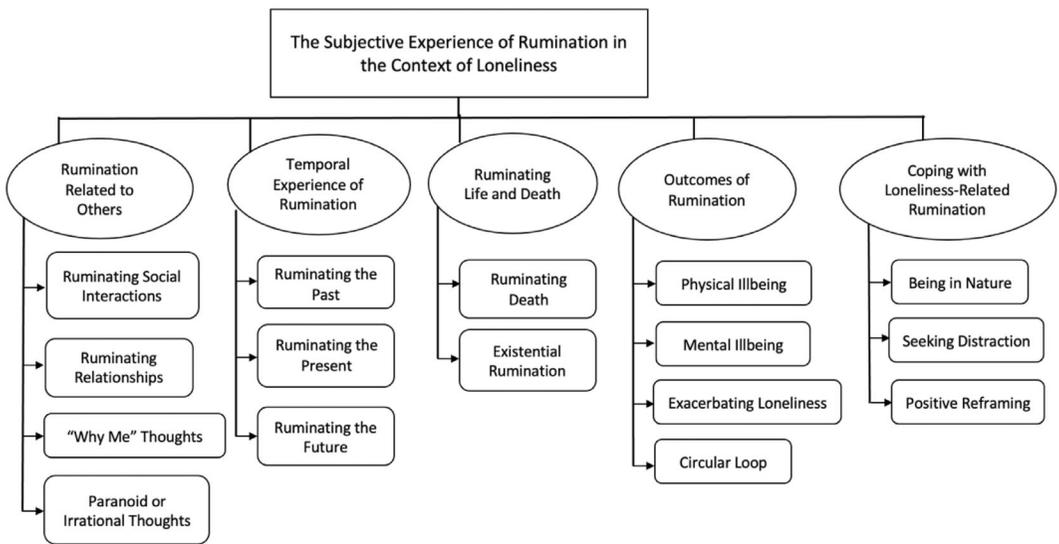


FIGURE 2 Thematic map of themes and codes arising in interviews

The theme ‘rumination related to others’ described rumination related to other people, followed by ‘temporal experience of rumination’, which explored the temporal nature of rumination. The theme ‘ruminating life and death’ provided insight into existential rumination and rumination regarding death. Finally, the themes ‘outcomes of rumination’ and ‘coping with loneliness-related rumination’ described the impacts of rumination and how individuals coped with rumination. These themes and their codes are summarized in Figure 2.

The data were also analysed for possible differences between age subgroups, genders and ethnic groups. No large differences were found between any of these groups. In the following sections, how the codes constitute the theme will be illustrated using network maps, where more prevalent codes are depicted higher relative to the other codes.

3.1 | Theme 1: Rumination related to others

A key theme was ‘Rumination Related to Others’; this included ruminating on one’s relationships and social interactions, both of which often led to ‘why me’ thoughts where interviewees looked introspectively to find reasons for why their social interactions may have played out a certain way or the state of their relationships. The lack of others

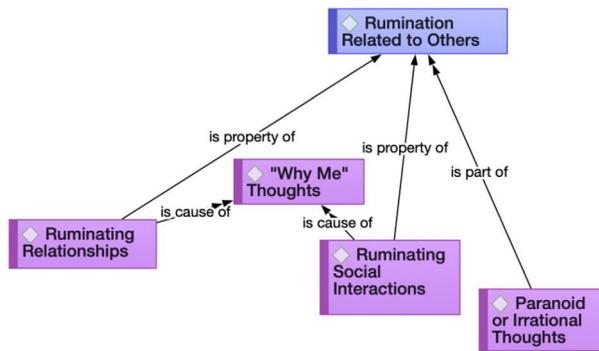


FIGURE 3 Network map of 'rumination related to others' theme

to confide in was also closely linked to paranoid or irrational thoughts, as interviewees discussed how being unable to share their thoughts allowed their ruminative thoughts to run rampant. The network map of the theme is illustrated in Figure 3.

When interviewees experienced loneliness, they tended to reflect and ruminate on their support systems and relationships with others around them, particularly, about who they could call on in times of need.

...thinking man, just thinking about myself, whatever I've done in my life, who is the friend in my life to guide me, where is the family that I need to support me... (Male, 23, Newham¹)

Upon ruminating, if individuals felt lacking in their support systems or close friends and relationships, they tended to introspectively ruminate on possible causes. This included whether it was due to their inability to make friends, or whether they had done something to offend others around them. These thoughts, referenced as 'Why Me' Thoughts', were highly introspective and self-focused. Interviewees often searched for causes in their own behaviour and actions, rather than looking externally at the intentions and behaviours of others, or environmental factors.

I think you end up either asking yourself (a) am I not treating people correctly? Is that why I'm not being treated with the same support that I want to be treated with. (Male, 24, Newham)

Similar to ruminating relationships, when individuals had negative social experiences that made them feel lonely, they often ruminated about these experiences and the possible reasons for them playing out in a particular way. As in the case of ruminating relationships, ruminating about one's social interactions also tended to be highly introspective.

Like being left out in other like other cases, you would question yourself. Like what doesn't anyone like me? Sort of questions you would ask yourself. (Female, 18, Hackney)

There were, however, interviewees who reported that ruminating about negative social interactions allowed them to positively reframe an experience. Instead of reflecting introspectively on what they might have done wrong, rumination allowed them to take on a broader perspective. This facilitated reflection and consideration of other possible reasons for the way a social interaction played out, such as the intentions others may have had in those situations.

...reflecting whilst being lonely can cause you to positively understand people's intentions because with me, I feel, when I, when I feel lonely, I feel like it's the other person not wanting to, to interact with me, but then after reflecting and then becoming a bit more positive, you can find alternative views into why the person acts a way towards you. (Male, 18, Hackney)

In contrast, a number of interviewees also revealed that when they felt lonely and did not have other people to share their thoughts with, their ruminative thoughts ran rampant. With no one to "reign in" their thoughts, they felt that their minds conjured up irrational thoughts, often making a situation they were facing appear more daunting than it was.

...[when you're lonely] you have irrational thoughts because there's no one there to, to sort of tell you that 'that's not right', like I guess the longer it goes on for, the longer you're alone, then the deeper you are sort of thing in like your own mind so you probably start thinking things that aren't true. (Female, 19, Newham)

3.2 | Theme 2: Temporal experience of rumination

Another recurring theme was the temporal nature of rumination. The ruminative thoughts reported by interviewees often involved a temporal element. This included ruminating on the past, the present, or the future (Figure 4).

When they experienced loneliness or were physically alone, interviewees expressed a tendency to ruminate about how events that took place in the past could have played out differently, the actions they could have taken at the moment, or how their own actions could have affected others. There was a particular focus on things that went wrong or what they might have done wrong, which was associated with feelings of worry and sadness. This was most common in the context of social interactions, as described in the prior theme.

I play scenarios over in my head over and over and over again of how I could have possibly done it or if I am having a disagreement on opinions, I would sit up all night and have gone like, I could have said that or they could have said that more politely, and it's just, it's just a play over of how I could do things differently... (Female, 20, Barking and Dagenham)

While most participants focused on things they might have done wrong or things that did not turn out as expected, some described having reflected positively on the past such as reminiscing about the positive aspects of their lives thus far.

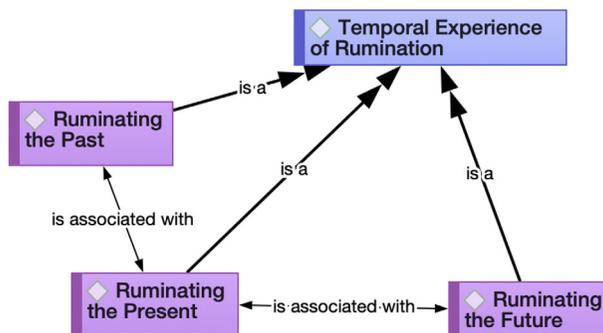


FIGURE 4 Network map of 'temporal experience of rumination' theme

In contrast to ruminating on the past, thoughts that occurred when ruminating on the present during experiences of loneliness tended to be focused on one's life at present. This could be in terms of one's relationships, daily activities, one's feelings and strikingly, one's present loneliness and the possible causes of it.

'Why am I, why am I here?', 'Why am I not with friends or something like that?' (Male, 18, Hackney)

Intriguingly, ruminating on the present appeared closely related to the past, with ruminative thoughts often arising from a comparison of one's present circumstances with the past in some manner. As the interviewee quoted below described, such ruminative thoughts can be maladaptive, leading individuals to feel a sense of failure that they have not progressed as they had expected to.

...it could be where you are in life, it could be, like, you know what, I expected more, could be reflecting back two years ago where you was and where you are now, and feeling like 'wow, it's kind of fail, I fell off and you know, getting emotional, tears come out...' (Male, 24, Barking and Dagenham)

The final facet of the temporal experience of rumination centres around the future. In contrast to ruminative thoughts on the past and present, which appear mostly negative, there are both positive and negative ruminative thoughts on the future. A number of interviewees recognized how ruminating about the future while feeling lonely allowed them to focus on how they were going to approach the future and construct plans. This appears to be a more adaptive form of rumination allowing individuals to think constructively about their future.

... it allows you to just think and generate certain ways of how you're gonna sort things out, how you're gonna work towards better things and how you're gonna strategize to kinda move forward. (Male, 23, Newham)

In contrast, some interviewees expressed that ruminating about the future had a negative side. The uncertainty one felt towards the future could lead to further rumination and consequently, worry about what the future held.

I worry a lot, of like what the future holds and what things are gonna be like, like, are my fam actually gonna be okay, like... just constantly worrying about family and... is my health okay, like am I gonna go down the career path that I want to... (Female, 18, Barking and Dagenham)

3.3 | Theme 3: Ruminating life and death

Another theme that emerged was rumination centred on life and death (Figure 5).

When individuals felt lonely, some engaged in rumination about death, mainly of loved ones, particularly, what would happen in the future following their passing. Such thoughts tended to be emotionally distressing and interviewees discussed how they often worried about their future following the hypothetical loss of loved ones. This appeared to be exacerbated in those who felt they lacked a strong support system.

So like the other night, I was thinking of like my mum and thinking about my future and will she still be here and... and just getting myself worked up, and I worry like a lot. I worry a lot a lot. (Female, 18, Barking and Dagenham)

In contrast to thoughts about death, a number of interviewees expressed that they ruminated about life and existence when they were alone. This included thoughts on the meaning of one's life, and the concept of life in a

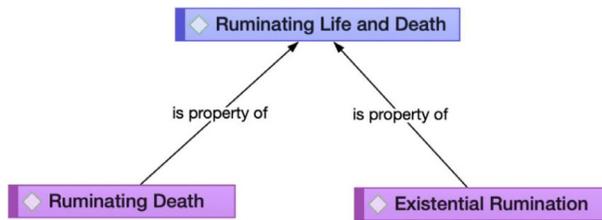


FIGURE 5 Network map of 'life and death' theme

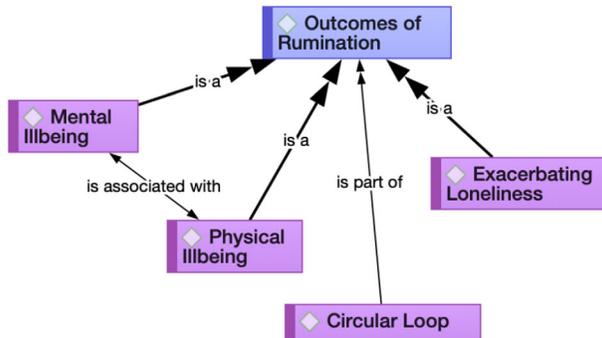


FIGURE 6 Network map of 'outcomes of rumination' theme

'grander' sense. Interestingly, many highlighted that they had such thoughts when they were surrounded by nature, such as in parks. Existential thoughts tended to exacerbate feelings of loneliness as individuals reflected on the meaning of their lives and existence at the scale of the seemingly vast world around them.

... [in parks] you can reflect on life and on a different way... on its beauty, this nat-, um there's natural-istic element more than social, so then you start reflecting on its beauty and then you start thinking and wondering, or I start thinking and wondering what has, like what was life and what has it become, so then that kind of reflection of a deeper meaning, sometimes you can turn to being, feeling, feeling lonely, just, just because you're in a state of mind where you're just really thinking about life... (Male, 18, Hackney)

3.4 | Theme 4: Outcomes of rumination

Another facet of the subjective experience of rumination involved the outcomes of rumination (Figure 6).

Interviewees reported that the intrusive nature of their ruminative thoughts tended to keep them up at night, affecting the amount of sleep they got.

Cause then it stops me from like sleeping a lot as well. Feel like I'm overthinking into the night. There's not like a switch off button... (Female, 22, Newham)

In addition to affecting sleep, some interviewees also discussed how they turned to maladaptive eating habits (e.g., comfort eating, not eating at all) to cope with their ruminative thoughts. Interestingly, physical ill-being arising

from rumination, particularly impaired sleep, was closely tied to mental ill-being. Interviewees described how ruminating late into the night exacerbated feelings of worry, depression and other negative emotions. These feelings also arose from rumination in many interviewees independent from physical ill-being.

Like, that was my constant thought and I'd be like up in the middle of the night crying and stuff...
(Male, 18, Barking and Dagenham)

Another prevalent idea that interviewees raised was how rumination during experiences of loneliness could exacerbate their loneliness. In particular, interviewees described how ruminating made them feel consumed and alone with their thoughts, which led to them feeling lonelier. Some also reported feeling like they could not confide in others about their ruminative thoughts for fear of burdening them. This led to them feeling alone in working through their thoughts, which, in turn, exacerbated their loneliness.

So, it gets lonely in the sense that you, yourself have to sit there and like get through them... Yeah, because it is a handful and that sort of goes back to the burden thing because it's like... I can't offload lots onto one person, because now that person has all of my thoughts or over-thoughts. (Female, 24, Hackney)

Finally, a few interviewees also mentioned how rumination led to a circular loop where they ruminated further about their own ruminative thoughts, leading to self-doubt, loneliness and irrational thoughts.

3.5 | Theme 5: Coping with loneliness-related rumination

The final theme describes the coping mechanisms adopted by young people in relation to their rumination (Figure 7).

The most common strategy interviewees tended to employ was the use of distraction. Interviewees shared how distracting themselves with a company, work, school or activities occupied their minds, keeping them from ruminating negatively. Interviewees also acknowledged that the lack of distraction could lead one to ruminate more, exacerbating feelings of loneliness.

... when you're around people you won't have time to sit down and think do you get what I'm trying to say to you so that's why I said that and at uni I'm always around people, at work, I'm constantly around people as well and always around friends. (Female, 24, Barking and Dagenham)

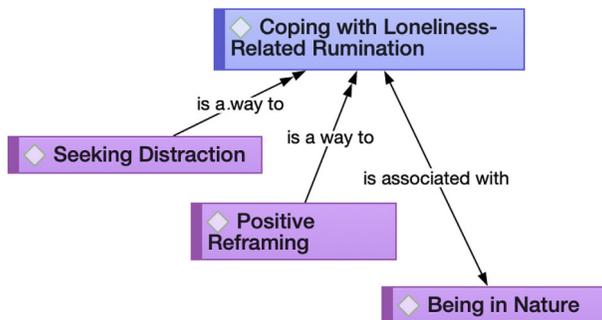


FIGURE 7 Network map of ‘coping with loneliness-related rumination’ theme

Another coping strategy interviewees adopted in response to rumination when they were lonely was positive reframing. When faced with negative thoughts resulting from rumination, some described how they reframed the situation more positively, reflecting on the good in their lives and their thoughts in a more positive and objective manner. This prevented them from being consumed by negative thoughts and helped them to think constructively about how they could ease their loneliness or distract themselves from ruminating.

Yeah, so why I said positive is like, if I link in a positive way like... you know, my family's there for me, if anything happens, you know, I can share with them and tell them, and in my family I have cousins and other people around me who can help me through it, so yeah. I can discuss it with them. (Female, 19, Tower Hamlets)

Finally, a small number of interviewees expressed how being in nature provided a peaceful environment away from others and any worries or negative rumination; this encouraged them to think constructively, notably about their future, allowing them to strategize and make plans, and reflect positively about themselves.

...sometimes for example I am feeling a bit upset about something, I would just walk it out [at the park]. I would literally just go for a walk and you are doing something, it's a quiet place and you are kind of just giving yourself time to think to yourself. (Female, 22, Tower Hamlets)

However, while being alone in nature promoted adaptive forms of rumination and provided respite from negative thoughts, some recognized that physical isolation from others could also lead one to focus on loneliness or ruminate existentially, which could exacerbate loneliness.

4 | DISCUSSION

In this study, 48 participants aged 18–24 residing in London's most deprived boroughs were interviewed on what they associated with the experience of loneliness. The aim of this analysis was to explore the subjective experience of rumination in the context of loneliness and how the two interrelated. Without prompting, 71% of the interviewees discussed rumination when sharing their experiences of loneliness. A thematic analysis of the interview data yielded five themes that captured these experiences: 'rumination related to others', 'temporal experience of rumination', 'ruminating life and death', 'outcomes of rumination' and 'coping with loneliness-related rumination'.

In line with existing research, the prevalence of rumination in the context of loneliness corroborates quantitative studies finding loneliness to reliably predict rumination in young adults (Vanhalst et al., 2012; Zawadzki et al., 2013). Interviewees were not prompted to speak about rumination, yet the frequency of its emergence suggests it is a key component of the experience of loneliness within the sample; young people who experience loneliness appear to engage in high levels of rumination. In addition, the findings of this study highlighted a recurring association between rumination and ill-being in the context of loneliness, specifically concerning sleep and mood. Some interviewees stated that ruminating kept them up at night, exacerbating negative emotions, and having an adverse effect on wellbeing. Apart from corroborating existing research on the relationship between loneliness and rumination, the analysis also identified three previously unidentified facets of the experience of rumination in the context of loneliness in young adults.

The first was captured by the theme 'rumination related to others'. When they felt lonely, interviewees tended to ruminate about their social relationships and past interactions that went awry. They scrutinized their relationships and interactions with a negative, self-focused outlook. This supports Clark and Wells' (1995) social model of rumination, which hypothesises that negative social situations, which can lead to feelings of loneliness, may result in brooding social incidents and relationships with a heavy focus on the past. Such brooding has also been theorized to

give rise to feelings of inadequacy. This may have been more prevalent within the sample due to the age of the interviewees. Cross-cultural research has found that people begin to feel more aware of others and their reactions in social situations in late adolescence to early adulthood (Essau, Sasagawa, Chen, & Sakano, 2010; Takahashi, 1989). This may have contributed towards the observed pattern of self-focused social rumination. Conversely, some interviewees reported that negative social rumination prompted them to take a broader, more objective perspective in thinking about their social interactions, contradicting Clark and Well's model. This could reflect adaptive coping in the form of cognitive reappraisal in response to negative social rumination. This highlights a need for a theoretical extension of the model to encompass possible coping mechanisms that individuals employ in social rumination.

In addition, this social facet of rumination maps onto Weiss' (1973) typology of emotional and social loneliness. In Weiss' typology, emotional loneliness is proposed to arise from one feeling lacking in emotional attachment and close ties with others, and this appears to align with reported instances where individuals ruminated about their social networks and close relationships when they experience loneliness. Social loneliness, on the other hand, is theorized to result from feeling a lack of social integration, and this is reflected when people ruminated about past interactions that went awry and made them feel out of place and isolated in social settings. The findings support Weiss' typology of emotional and social loneliness and also appear to suggest that different sub-types of loneliness could potentially contribute to different contents in ruminative thoughts.

The next novel finding was captured by the theme 'temporal experience of rumination'. Ruminating the past was strongly related to thinking about past social interactions that had gone awry. In contrast, ruminating on the present appeared to be focused on where one is in life, one's feelings and, most strikingly, one's present loneliness and the circumstances surrounding it. This observation supports Conway, Csank, Holm, and Blake's (2000) construct, which conceptualizes rumination as repetitively thinking about present distress, and its circumstances.

Interestingly, there was a recurring association between ruminating on the past and present in the sample. Specifically, interviewees often ruminated on their present in relation to the past. When they felt they did not meet the goals they had set in the past, interviewees expressed a sense of failure. This echoes Martin, Tesser, and McIntosh's (1993) goal progress model of rumination, which proposes rumination arises from a failure to progress towards important goals, and that information related to important unattained goals remains active in memory longer than attained goals. In line with this, interviewees appeared to ruminate more on goal discrepancies between the past and the present, with no mention of ruminating about attained goals. The greater the discrepancy, the more interviewees appeared to ruminate on it. However, the model also assumes that rumination terminates when individuals attain the goal, make satisfactory progress, or give it up. However, even when interviewees had given up on their past goals, they still ruminated about them, contributing to a sense of failure. This highlights the need for revision of the model to account for instances when rumination of a goal may persist despite an individual having given it up.

Lastly, while this study found evidence for a pattern of negative, brooding rumination regarding the future, a key feature in many theories of rumination (Michl, McLaughlin, Shepherd, & Nolen-Hoeksema, 2013), a considerable number of interviewees reported ruminating positively about the future, thinking constructively and strategizing about their future. Positive rumination about the future does not appear to have been studied extensively in the existing literature, yet it appears crucial in moderating the effect of rumination on mental wellbeing. Research has found those who ruminate more hopeful about their future suffer less adverse effects on their mental well-being as a result of rumination (Sun, Tan, Fan, & Tsui, 2014). In conclusion, it appears that the experience of rumination during loneliness in young adults involves a temporal element and while the observations may be largely in line with the current literature, there is a need to review current theories to account for findings that are not explained by existing models. Indeed, positive rumination needs to be incorporated into current theories.

The third and final facet of the experience of rumination was captured by 'ruminating life and death'. In this theme, interviewees expressed feeling fearful or worried when they ruminated about a future following the hypothetical loss of a loved one during experiences of loneliness. While ruminating about death has been studied extensively, existing literature focuses primarily on rumination following bereavement and much less on the anticipatory rumination on death observed in the sample (Eisma et al., 2014). The role of ruminating about death following

bereavement has been proposed to be a result of a maladaptive coping strategy (Nolen-Hoeksema, McBride, & Larson, 1997). Future research will need to discern whether the anticipatory rumination of death during experienced loneliness reflects a similar coping strategy, or if it is simply a product of underlying feelings of anxiety and worry that arise in individuals during experiences of loneliness. Anticipatory rumination also appears to map onto existential loneliness, also described as existential suffering (Moustakas, 1961), which includes fear of death and being left alone (Sand & Strang, 2006). While most research into existential loneliness has concentrated on understanding the concept itself (Ettema, Derkensen, & Leeuwen, 2010), and tends to focus on the elderly in the context of healthcare, the fact that it was a recurring idea within the sample suggests that more research is needed to explore it, in particular, its possible functions, and how young adults experience it.

In contrast to thoughts about death, some interviewees ruminated on the meaning of their existence when they felt lonely. This led some of them to feel disconnected from the world around them, exacerbating their loneliness. This has been identified in the literature as loneliness anxiety (Moustakas, 1961). Moustakas contended that such loneliness may be a product of contemporary living, where urbanization and the increasing competitiveness, self-centredness and materialism of people lead to the loss of the intimate sense of genuine connection to the world and people around them. The findings of this study indicate that both ruminating about death and the meaning of existence form key facets of the experience of rumination in the context of loneliness in young adults.

The remaining two themes captured the outcomes of rumination and how individuals coped with loneliness-related rumination. With respect to outcomes, interviewees found the intrusive nature of ruminative thoughts to impair their sleep, which was associated with mental ill-being, exacerbating negative emotions such as sadness, depression and worry. These feelings also arose in many interviewees independent of impaired sleep. These findings, where rumination arising from loneliness appears to be a pathway through which mental ill-being arises, are in line with existing research (Carney, Edinger, Meyer, Lindman, & Istre, 2006; Guastella & Moulds, 2007). An interesting observation from the present study, which is not captured by the existing literature, is how ruminating when lonely can exacerbate loneliness, making individuals feel consumed by their own thoughts. This could also feed into a negative feedback loop (i.e., rumination feeds into further loneliness, exacerbating mental ill-being, and so on). Additionally, social rumination featured heavily in the sample, and a part of such thinking involved ruminating on past social interactions (e.g., what went wrong, what could have been done better), which could feed into anxiety concerning future social interactions, or even make individuals hyper-aware of how others may perceive them in social interaction.

Finally, with regard to how young adults in the sample coped with loneliness-related rumination, the most common strategy was a distraction. This could include being around friends or immersing themselves in activities that demanded their attention and focus. They reported that distractions kept their mind occupied, preventing them from ruminating and experiencing loneliness. This supports evidence that those who tend to distract themselves as opposed to ruminating observe decreases in depression and anxiety over time (Roelofs et al., 2009). However, distraction may not be a long-term solution, as participants also shared that once they were alone and away from distractions, they tended to find themselves ruminating and feeling lonely again. In contrast, another common coping strategy, positive reframing of situations, may work better. More research is needed to explore whether this strategy works. If it does, it may be a more long-term solution to ruminative thinking that exacerbates loneliness than distractions. The final coping strategy that individuals employed was seeking out nature. Some interviewees reported that nature provided respite from ruminating, corroborating existing research on green spaces and rumination (Bratman, Hamilton, Hahn, Daily, & Gross, 2015). However, a small number of interviewees expressed how being in nature prompted existential rumination on life, which made them feel lonelier. This suggests that the effect that green spaces have on rumination could be far more complex than the literature suggests; it could potentially play a dichotomous role in both facilitating and reducing rumination. Further research will be needed to study the contexts in which facilitation versus reduction prevails.

While the findings of this study corroborate existing literature, they also highlight many aspects of rumination that have not been previously explored. For instance, some young people in this study reported ruminating about

unattained goals despite having given them up, ruminating positively about the future, or ruminating in an anticipatory manner about the death of loved ones. Some interviewees in the sample also ruminated existentially, a phenomenon typically observed in older populations. The study also highlights the dichotomous role played by green space in rumination. The aforementioned findings are not currently accounted for by current models and merit further research. Additionally, the findings of the present study paint a more holistic account of rumination in the context of loneliness, integrating various theories of rumination.

4.1 | Practical implications

In light of the findings, there are certain interventions that may help to tackle rumination, and consequently loneliness, in young people. Firstly, mindfulness meditation enables one to bring one's attention to the present moment hence freeing it from dwelling on the past or the future (Baer, 2003). Mindfulness has also been found to help people to develop a non-judgemental attitude towards their experiences (Kabat-Zinn, 1990). Journaling gratitude on a regular basis may also alleviate rumination by counteracting negative thought patterns and consequently diminishing anxiety, depression and loneliness (Bartlett & Arpin, 2019; Iodice, Malouff, & Schutte, 2021; Smyth et al., 2018). For example, in one study, 15 min of online positive affect journaling three times a week for 12 weeks reduced mental distress and increased wellbeing (Smyth et al., 2018). Prosocial behaviour has also been shown to help diminish rumination by improving mindful awareness and attention to the present (Meng & Meng, 2020). Focusing on helping other people in need allows one to disengage from one's own thoughts and emotions and invest one's cognitive resources elsewhere. For example, volunteering for charitable organizations may lend a sense of purpose.

4.2 | The relationship between rumination and loneliness

Rumination was found to frequently arise in the context of loneliness for a large proportion (71%) of the sample. This supports the findings from quantitative literature in viewing loneliness as giving rise to rumination. Additionally, this study also supports existing literature in that rumination mediated the effect of loneliness on mental and physical ill-being. However, a novel finding from this study was how there might be a bidirectional or even circular relationship between the two. Participants mentioned a circular negative feedback loop, where they reported how loneliness led to rumination, and how ruminating made them feel lonelier, having an adverse impact on their mental wellbeing. The findings also indicated how different types of ruminative thoughts mapped onto different forms of loneliness (e.g., social, emotional and existential), which could suggest that the content of ruminative thoughts may be context-specific, depending on the type of loneliness an individual experiences.

4.3 | Limitations

While the findings of this study provide an in-depth exploration of young adults' experience of rumination in the context of loneliness, they must be considered in light of a number of methodological issues.

Firstly, the interviewees consisted of young adults from the most deprived boroughs of London, as the ONS (2018) survey found that loneliness in young people correlated with area deprivation. In this study, while participants did not explicitly focus on area deprivation, literature has cited it as a potential impediment to social interactions in neighbourhoods (e.g., poorer quality and access to neighbourhood amenities, feeling unsafe due to crime, less neighbourly trust) and a contributor to area-based loneliness (Victor & Pokhartova, 2020). Participants in this study reported high levels of social rumination, most notably, about their social and support networks or the lack thereof;

this could arise, in part, from impeded social interactions that result from residing in deprived boroughs. In contrast, we may expect less social rumination, or variations in the content of social rumination, in individuals from less deprived areas. In light of this, care must be taken when interpreting these findings, as the experience of loneliness in young adults may vary with levels of area deprivation (Manstead, 2018). While the sample may not represent the general population, it is a good starting point for studying loneliness in young people, especially in those who are most vulnerable.

In addition, as the interviewees were interviewed on their experiences of loneliness, the spontaneous experiences with rumination shared may have been negatively biased as loneliness tends to be associated with negative thoughts (Abeyta, Routledge, & Kaslon, 2020). The nature of how the interviews were conducted may not have captured the full occurrence of more positive forms of rumination that could help young adults cope with negative emotions and thoughts during loneliness. Future research could focus on interviewing young adults specifically on rumination, without the context of loneliness, to explore this facet of rumination in greater detail.

4.4 | Implications and directions for research

Despite the aforementioned limitations, this study contributes to the growing literature exploring loneliness in young adults, specifically the phenomenon of rumination, which appears to be a key component of loneliness. Further research could explore the identified facets of rumination to construct a comprehensive model of rumination in the context of loneliness, particularly in young adults. The facets of rumination could also form a base to design quantitative scales assessing ruminative thinking, that could predict loneliness in young adults. With the construction of such quantitative measures, we could further explore and quantify the extent to which different contexts, such as social isolation, may impact rumination in the context of loneliness.

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CONFLICT OF INTEREST

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by UCL Research Ethics Committee (CEHP/2013/500). Participants provided their written informed consent to participate in this study.

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ENDNOTE

¹ Each quote is followed by the gender, age and borough the interviewee resides in.

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APPENDIX A: INTERVIEW GRID EXPLORING THE EXPERIENCE OF LONELINESS

INSTRUCTIONS

We are interested in what you associate with 'the experience of loneliness'. Please express what you associate by way of images and/or words. Please elaborate one image/idea per box. Sometimes a really simple drawing or idea can be a good way of portraying your thoughts and feelings.

1	2
3	4

Name:

APPENDIX B: INTERVIEW GRID EXPLORING SOCIALLY CONNECTED AND LONELY PLACES

INSTRUCTIONS

Please think about your local neighbourhood and any locations or places that you associate with social connectedness or loneliness. Please choose one place in your neighbourhood where you feel most socially connected to other people and one where you feel most lonely. Think about those places – and now I would like you to draw and/or write your choices in each box below. Please also write what it is about that place that makes you feel the way you do.

<u>Box 1 – Place you feel most socially connected</u>	<u>Box 2 – Place you feel most lonely</u>