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Insomnia and Idiopathic Hypersomnia in Clinical Cases of Repetitive Negative Thinking

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Abstract

Repetitive negative thinking (RNT) is excessive and repetitive thinking about future worry or concern and rumination on past experiences that are difficult to eradicate. Studies have linked cognitive intrusions such as RNTs to sleep problems like insomnia; however, not much is known about the link with idiopathic hypersomnia. Insomnia is a sleep disorder that makes it difficult for the sufferer to fall asleep or remain asleep, while idiopathic hypersomnia refers to a disorder that causes the sufferer to become excessively sleepy and or have difficulties in waking up from sleep, such as prolonged sleep. The aim of this study was to examine the influence of repetitive negative thinking (RNT) in insomnia and idiopathic hypersomnia in clinical cases of RNT. Interpretative phenomenological analysis (IPA) was used in this qualitative case study involving clinical participants (n = 5 cases, all females, age = 35 and above) with anxiety disorders, depression, and an addictive behaviour. Results showed that Insomnia and Idiopathic Hypersomnia were linked with RNT. RNT had a physiological impact on insomnia and idiopathic hypersomnia through its association with fatigue and severe migraines. This study suggests that idiopathic hypersomnia may be linked to RNT, though more research is needed in this area.

Key Words: Insomnia || Idiopathic Hypersomnia || Repetitive Negative Thinking.

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Introduction

Repetitive negative thinking (RNT) is excessive and repetitive thinking about future worry or concern and rumination on past experiences that are difficult to eradicate (Marchant et al., 2020; Hummel et al., 2021; Ehring & Watkins, 2008; Lawrence et al., 2017; Omoregie & Amanze, 2025). RNT is viewed as a transdiagnostic construct, process, or symptom as it has been shown to be linked with several mental disorders (Rocha-Oliveira & Zibetti, 2022; Omoregie & Amanze, 2025). There is an established link between mental disorders and sleep problems such as insomnia and idiopathic hypersomnia. Insomnia is a sleep disorder which makes it difficult for the sufferer to fall asleep or remain asleep, while idiopathic hypersomnia refers to a disorder which causes the sufferer to become excessively sleepy and or having difficulties in waking up from sleep such as prolonged sleep. In Huang and Zhao (2020) study, they examined mental health problems and sleeping patterns during COVID-19 pandemic and found that symptoms of mental disorders were linked to sleep problems.

Currently, there seems to be sparse literature that have explored the association between RNT and insomnia and idiopathic hypersomnia, nevertheless, there are a few studies that have implicated other cognitive intrusions such as unwanted intrusive thoughts in insomnia. For example, in a critical review of evidence regarding intrusive worrisome thoughts, Harvey (2005) established that intrusive thoughts were key in the maintenance of insomnia. Similarly, Harrington and Cairney (2021) concluded in their study that insomnia has a causal link with intrusive thoughts, while intrusive thoughts cause dysregulated behaviours, thus worsening insomnia.

The experience of insomnia has been shown to be a key factor in the development of fatigue (Vasconcelos et al., 2008). For instance, in Taylor, Huntley, Makambi, Sween, …, and Mellman (2012) study on sleep disturbances in breast cancer survivors, it was highlighted that intrusive thoughts influenced insomnia, then, insomnia caused fatigue. These suggest that the link between intrusive thoughts and fatigue may be mediated by the development of insomnia.

On the other hand, there has been a link drawn between insomnia and idiopathic hypersomnia. For example, Ohayon (2008) presented in a study of wakefulness to excessive sleepiness that wakefulness (insomnia) has a strong link with excessive sleep (idiopathic hypersomnia). In addition, Ohayon (2011) also establish in a study of epidemiological overview of sleep disorders that both insomnia and idiopathic hypersomnia are related to psychological disorders.

Very few studies that have drawn links between RNT and insomnia symptoms (e.g., Brodar, La Greca, Hysing, & Llabre, 2020; Olatunji, Knowles, Cox, & Cole, 2023). Leung, Li, and Graham (2022) examined the relationship between RNT, sleep disturbance, and subjective fatigue in women with generalised anxiety disorder (GAD) with a sample of 64 participants. Using regression models, their results revealed that RNT was a factor in group differences in fatigue. They concluded that RNT is linked with heightened fatigue causing sleep disturbances in women with GAD. In a different direction, Cox, Cole, Kramer, and Olatunji (2018) study of 445 community sample found that sleep disturbance may contribute towards the development of RNT. In another study, Nota and Coles (2015) used a sample of 100 undergraduate students to examine sleep timing and duration, and they found that RNT was linked to sleep disturbances such as shorter sleep and delayed sleep timing. Nevertheless, not much is known about the relationship between idiopathic hypersomnia and RNT.

Method

The aim of this study was to examine the influence of repetitive negative thinking (RNT) in insomnia and idiopathic hypersomnia in clinical cases of RNT. Thus, the question was asked; Does RNT influence insomnia and idiopathic hypersomnia?

The current qualitative research used an interpretative phenomenological analysis (IPA), a qualitative research approach that focuses on providing insights into how an individual make sense of a certain phenomenon in a specific context (Smith, Flowers, & Larkin, 2009).

Participants consisted of a clinical sample who were highly religious. Clinical sample were patients receiving treatments or have previously received treatments for anxiety disorders, depression, and an addictive behaviour. Participants were all female adults who were 35 years old and above from diverse ethnic groups and religious background.

Table 1: Participants' characteristics and psychological distress.

Participant	Age	Diagnosis	Comorbidity	CRS	K10	RTQ
Sandra	46	GAD	Depression & ADHD	90	48	49
Roxy	39	GAD	Depression & PPD	75	47	48
Angela	42	PTSD	Depression	85	45	50
Elena	41	PPD	GAD & Depression	85	48	48
Hannah	35	AD	Depression	90	48	50

Note: GAD = Generalised Anxiety Disorder.
PTSD = Post Traumatic Stress Disorder.
ADHA = Attention Deficit Hyperactive Disorder.
PPD = Paranoid Personality Disorder.
CRS = Centrality of Religiosity Scale.
K10 = Kessler Psychological Distress Scale (10-items).
RTQ = Repetitive Thinking Questionnaire.

Means of Recruitment

Recruitment of participants was carried from a variety of sources; (1) the study was promoted online through social media such as Facebook, Twitter, and LinkedIn; (2) through religious communities in the Northwest region of England to collect data from participants who were highly religious with clinical psychological disorders; (3) in addition, this study also used a snowball sampling technique (also known as chain-referral sampling) where willing participants were asked to support the research further by referring others or posting the research promotional contents to their social media networks.

Interview locations

During planning of the interviews, care was taken to ensure that interviews took place in safe and conducive environment for participants. The first interview took place in one of the PhD research rooms at the university of Bolton (now known as University of Greater Manchester [UGM]). The second participant elected to take part in the study in the comfort of her own home. The third interview took place in an hospital in the Greater Manchester area. On the other hand, the fourth and fifth interviews took place online through a real-life online chat platform (Meetyou.me). This was because these two participants experienced severe anxiety that made it difficult for a face-to-face interview.

Means of data collection

IPA research studies generally adopt the use of semi-structured interviews (Reid, Flowers, & Larkin. 2005). The tools for implementing the interviews were the researcher and the interview questions which were semi-structured, open ended, and characterised by "How" and "What" style questions. The interview schedule was developed drawing from the aims and questions developed at the onset of the

current case studies, from the repetitive thinking questionnaire (RTQ - McEnvoy et al., 2010), and (d) the C-CHIME (Carson & Hurst, 2021).

The Centrality of Religiosity Scale (CRS - Huber & Huber, 2012) was used to assess the intensity of religiosity of participants. The CRS has alpha between 0.73 to 0.83 (Huber & Huber, 2012; Abbasi, Kazmi, Wilson, & Khan, 2019).

Kessler Psychological Distress Scale (K10 - Kessler, Andrews, Colpe, Hiripi, ... & Zaslavsky, 2002) was used to identify the presence of non-specific psychological distress. The scale has Cronbach's alpha = 0.88 to0.91 (Searle, Van Hooff, McFarlane, Davies, ... & Steele, 2015; Kessler et al., 2002).

Repetitive Thinking Questionnaire-10 (RTQ-10, McEvoy et al., 2010) measured RNT. The RTQ-10 has high internal reliability ($\alpha s \geq .89$).

Procedure

This research was approved by the Ethics Committee of the University of Bolton (now UGM). Following ethical procedure, participants were briefed and debriefed in due course. Participants were briefed about the nature of the study, told of their right to withdraw at any given time should there be any distress during the interview, as well as their right to withdraw from the study up until 4-weeks from the time of submitting their responses. Participants were first screened to ensure that (a) they were highly religious, (b) they were experiencing some psychological distress, and (c) they were experiencing RNT. Interviews were recorded using Sound Recorder, an android application on an android mobile device, and was stored in a secured data storage

Reading and note making.

Transcripts were read multiple times while listening to audio recordings to be as close to the data as possible. Notes were taken based on personal observations, interpretations, and reflections regarding participants' narratives of their experiences and how they understand or relate with such experiences.

Notes to emergent themes

While turning notes to theme, transcripts were read multiple times to capture comprehensive meaning and understanding. In addition, the notes taken in the previous step were read multiple times and were used to extract emergent themes. The emergent themes were developed to retain the original meaning within participants' responses, and to enable theoretical connections to be drawn.

Writing up the Results

A narrative account of lived experiences of RNT was developed for each participant as well as a cross-case analysis to set up an in-depth understanding of their lived experiences. The process of writing up was initiated by examining common themes across cases and themes that are specific to individual participant. This process would help take the use of Interpretative Phenomenological Analysis to explore not only uncovering meaning, but to also use the double hermeneutic approach. The double hermeneutic approach is a method that employs both the discovery of meaning from live experiences and the interpretation of such meaning, yet, staying attentive to both the person (the subject) and their lived experiences of the phenomenon being studied (Smith, Flowers, & Larkin, 2009).

Trustworthiness

In qualitative research, trustworthiness shows the reliability and validity of the research findings. It demonstrates rigor, which is the level of confidence in the data, the method utilised, and the interpretation of data for research quality assurance (Connelly, 2016; Rodham, Fox, & Doran, 2015). To establish credibility and reliability, there was an identification of the researcher's understanding and experience of RNT, and experiences of working with people with severe RNT; this was useful in preventing bringing preconceived notions and attitudes regarding the concept RNT to the processes involved in the study.

Results

Insomnia and Idiopathic Hypersomnia linked with RNT.

The perception of RNT refers to how an individual feels regarding their experiences of RNT, and how the individual links those thoughts with other experiences in their life. The perception of RNT from all five cases were converged using cross-case analysis, and they were used to develop interpretative thoughts and connections between all cases. The cross-case analysis for the perception of RNT is presented in table 2.

Table 2: Cross-Case Analysis for the Perception of RNT:

Cross Case Analysis	Thoughts / Connections
Insomnia and Idiopathic Hypersomnia linked with RNT.	• Sandra, Roxy, Angela, and Elena experienced insomnia. • Roxy also experience idiopathic hyposomnia.
RNT linked with fatigue and severe migraines.	• Roxy experiences fatigue and severe migraines. • Angela experienced fatigue or excessive tiredness.

Note: RNT = Repetitive negative thinking.

Most participants described their experience of sleeplessness such as being awake all night or having to sleep as little as three hours in twenty-four hours. Sandra believes that her experience of insomnia symptoms was caused by her uncontrollable RNT, such that when experiencing episodes of RNT, she gets engulfed in it, thus unable to find sleep. Sandra related:

"Yeah. But when I go away after some time, such thoughts keep coming back, you know, keep occurring, especially at night. So sometimes it keeps me awake at night thinking."

The nature of Sandra's thought contents caused her extreme distress as she believed such contents "*stain*" her, thus, she may be destined for destruction in "*Hell*" as she described it. The experience of psychological distress due to RNT episodes was alluded to as impacting her sleep.

Angela also described the toll of such chronic sleep deprivation; this was evident in her narrative. Angela narrated how she would lie on her bed and unable to sleep for several hours and not knowing what to do Angela's inability to sleep was linked with episodes of RNT; for example, during RNT episodes, she becomes agitated, fearful, ashamed, and angry due to the nature and contents of her thoughts causing her extreme distress, thus unable to find sleep. Angela related:

"... but my sleep, I have lost my sleeping patterns, which. I don't sleep for four hours in a, I don't sleep for up to four, five hours in the night, so I can be up. This is like, this is daytime, right. I'll be up till 12. And before I go to bed, it'll be around half one to by 4:35 AM. And that's it every day in, day out, day in, day out. If you check me online, if you check, if you between the hours of 12 and five, especially between three and five, am up, I'm up. I, in fact, light sleep, very light sleep."

In Roxy's case, during episodes of RNTs, she experiences heightened physical and psychological distresses causing her to feel sleepy, yet unable to sleep. Roxy related:

"I will just, I will feel sleepy. I'll feel tired, the sleep will not come, uh, and I will have severe migraines too."

Similarly, Elena's episodes of RNTs prompt the feelings of frustration, fear, anxiety, confusion, and anger to the point that she is unable to sleep. Elena related:

"I do not have control over these thoughts, they just come, and they are so frustrating. They make me feel angry, useless, and very anxious. They make me fearful as well. I do feel chocked, unable to sleep."

In addition, there was a case were both insomnia and idiopathic hypersomnia were experienced by the same individual. This co-occurrence of insomnia and idiopathic hypersomnia was linked to the escalation of RNT episodes. For example, Roxy can sleep for about three days in a row during episodes of RNT, similarly, RNT gives her sleepless nights. Roxy related:

"I just want to be by myself, be just in bed sleep all day, sleep two, three days."

Roxy narrated that there were times when her episodes of RNT became too overwhelming that they left her completely drained, both mentally and physically. During these periods, she would retreat into sleep for up to three days in a row, as if her body was trying to escape the relentless cycle of those thoughts. Whereas, on the other hand, there were times that she was unable to sleep due to episodes of RNT. Roxy related:

"But I had period of times when I was just on my own with kids, toddlers, babies that with no support and it was hard because once everybody would be asleep, the thoughts will just come into your head and it will come, and come, and come and by morning, you realize that you even haven't had no sleep."

Roxy's suggests the presence of insomnia and idiopathic hypersomnia in her lived experience of RNT. RNT causes her physical distress and extreme psychological distress as shown in her psychological distress score. Roxy's RNT contents were related to the fear of death, bewitchment, energetic attacks or sleep paralyses, voodoo attacks, and blasphemous thoughts and imageries. These RNT contents caused her more distress as she was a highly religious individual, thus, compounding her agitation, anger, and distress, consequently causing a "*never-ending loop of cognitive intrusions*" as she described it.

Physiological impact.

RNT was found to have a substantial physiological impact, particularly through its strong association with persistent fatigue and severe migraines. Participants often described how the mental strain of constant RNT manifested physically, leaving them not only emotionally depleted but also in significant physical discomfort. For example, Roxy recounts:

"I'll feel tired, or the sleep will not come, uh, or I will have severe migraines because of too much thinking. So, once, I even had to completely black out black in front of my eyes because of the headache, and like three or four days, consecutive days in a row of thinking and thoughts coming in."

Angela also narrated that having RNT episodes have impact on her physically causing exhaustion. Angela related:

"It can be challenging. Cause think about it, you know the feeling? I get tired."

Angela stressed and accentuated the word "*tired*" to emphasise the severity of her experience of fatigue or exhaustion. Angela believes that her feeling of severe tiredness is linked to her experience of heightened and uncontrollable RNTs.

Discussion

The aim of this study was to examine the influence of repetitive negative thinking (RNT) in insomnia and idiopathic hypersomnia in clinical cases of RNT. Thus, the question was asked; Does RNT influence insomnia and idiopathic hypersomnia? Results suggested that insomnia and idiopathic hypersomnia were linked with RNT. Most participants experienced insomnia which they attributed to their experience of RNT episodes. They described their experience of sleeplessness such as being awake all night or having to sleep as little as three hours in twenty-four hours. This is reminiscent of studies that have drawn links between RNT and insomnia symptoms. For example, Brodar, La Greca, Hysing, and Llabre (2020) study data revealed an association between RNT and insomnia symptoms. Similarly, in a more recent study, RNT was found to be both a predisposing and perpetuating factor for insomnia symptoms (Olatunji, Knowles, Cox, & Cole, 2023). Additionally, in Leung, Li, and Graham (2022) study, they examined RNT, sleep disturbance, and subjective fatigue in women with GAD, and they found that RNT had impact on fatigue, thus causing sleep disturbances. Cox, Cole, Kramer, and Olatunji (2018) findings were in a different direction; they found that sleep disturbance may contribute towards the development of RNT. These findings can also be likened to Nota and Coles (2015) study finding that RNT was linked to sleep disturbances.

Furthermore, there was a case where both insomnia and idiopathic hypersomnia were experienced by the same individual. Some studies have explored the links between cognitive intrusions such as obsessional thoughts and RNTS and insomnia, however, not much is known about the relationship between idiopathic hypersomnia and RNT. This is not a surprise because, Ohayon (2008) presented in a study of wakefulness to excessive sleepiness that wakefulness (insomnia) has a strong link with excessive sleep (idiopathic hypersomnia). In addition, Ohayon (2011) also establish in a study of epidemiological overview of sleep disorders that both insomnia and idiopathic hypersomnia are related to psychological disorders.

RNT was associated with physiological distress such as fatigue and severe migraines. OCD is generally characterised by RNT, and it has been linked with the experience of migraine in sufferers (Taylor, Huntley, Makambi, Sween, …, & Mellman, 2012). In a case report of OCD and migraine, Vasconcelos et al. (2008) suggested that OCD may be a factor for the development of migraine. Similarly, in the current study, a participant who experienced migraine and fatigue attributed such experiences to their RNT episodes. This is reminiscent of Taylor et al. (2012) study on sleep disturbances in breast cancer survivors where it was highlighted that indirectly linked negative cognition to fatigue. These suggest that the link between RNT symptoms of insomnia and idiopathic hypersomnia may be mediated by physiological fatigue.

Strength, Limitations, and Future Studies

The current qualitative study utilised IPA, a suitable approach that explores in-depth first-person account about feelings, thoughts, and experiences (Smith, Flowers, & Larkin, 2009). A limitation of this study is that all clinical case studies were female participants. Although, participants are from diverse cultural identities, however, it may have been beneficial to have included male clinical participants. It was not a conscious decision to utilise female only participants, nor was the assumption made that the potential difference between male and female responses are not relevant, however, such occurred only as coincidental as inclusion and exclusion criteria were followed. Thus, future study of RNT in clinical sample should consider using different genders to exploit the benefits of integrating gender dimensions. Integrating gender dimensions in research would help in eliminating gender or perceived gender biases and stereotypes from studies. Another limitation is that all five clinical cases were highly religious Christians from Catholic and Pentecostal backgrounds; consequently, narratives and perceptions from all cases were based on Christian beliefs and culture. This may have impacted on the results as cases from other predominant religions such as Islam, Judaism, Hinduism, and Buddhism were not represented. Thus, future study of RNT in clinical samples should ensure the integration of individual from diverse religious affiliation and non-religious individuals to capture a more robust data

that are more generalisable. In addition, individuals with different religious affiliations and non-religious individuals who experience RNT may have different perception of or may make sense of their experiences in different ways.

Contribution to knowledge

Insomnia and Idiopathic Hypersomnia were linked to the experience of RNT. Some studies have drawn links between RNT and insomnia, however, not much is known about the relationship between idiopathic hypersomnia and RNT.

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