

Mind over Myths: Exploring the Public Endorsement of Mental Illness

Misconceptions and their Associated Factors

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Abstract

Objectives: Research on the formation and persistence of misconceptions, particularly in relation to mental illness, highlights the need to explore the broader network of beliefs that collectively influence rational thinking. The present study investigated whether pseudoscientific beliefs, paranormal thinking and cognitive reflection each predict misconceptions about mental illness, and examined their endorsement rate among the general public. **Method:** A total of 157 participants completed an online questionnaire examining their endorsement of mental illness misconceptions, as well as measures assessing their pseudoscientific beliefs, paranormal thinking and cognitive reflection. Preliminary analyses were carried out to account for the influence of several covariates (age, education, history of mental health diagnosis, religious and political affiliation), following a hierarchical multiple regression analysis using SPSS version 28.0.1.1. **Results:** The findings of the present study support the hypothesis that higher levels of pseudoscientific thinking are positively correlated with increased misconceptions about mental illness and its treatment. Contrary to expectations, neither paranormal beliefs nor cognitive reflection significantly predicted the endorsement of mental illness misconceptions, thus rejecting these hypothesized associations. However, lower education levels emerged as a significant contributing factor. **Conclusion:** These results emphasize the importance of addressing pseudoscientific beliefs in an effort to reduce misconceptions about mental illness. Improving the ability to differentiate between pseudoscience and evidence-based science, especially in earlier stages of education, may help prevent the formation of flawed inferential frameworks, thereby reducing susceptibility to misconceptions endorsement. This approach may subsequently contribute to a reduction in stigmatization and negative societal attitudes toward mental illness.

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Introduction

Unlike physical illnesses, mental health conditions are frequently treated as subjects for debate rather than subjects of comprehension. Observation and speculation of human behaviour appear to be within reach for everyone, irrespective of their educational background or expertise, making them amateur psychologists. This accessibility fosters the proliferation of personal theories grounded in intuition or anecdotal evidence rather than empirical data. If the field of psychology were indeed as intuitive as claimed, one would expect a lower prevalence of psychological misconceptions. Despite this, studies report endorsement rates of psychological misconceptions as high as 71% (Lilienfeld et al., 2009). Beliefs such as "mentally ill and mentally restored individuals are unpredictable, potentially violent and dangerous" or "people in contact with mentally ill tend to develop odd or strange behavior" (Kaur et al., 2016, p.5) are further sustained by the growing acceptance of common sense and intuitive thinking (Lilienfeld, 2010). Consequently, these misconceptions of mental illness can significantly impact the self-perception of individuals experiencing mental health challenges (Corrigan & Watson, 2002; Pescosolido, 2013), contribute to social marginalization and reinforce discriminatory attitudes (Al-Rawashdeh et al., 2021; Corrigan, 2004; Digiuni et al., 2013; Sirey et al., 2008), making mental health literacy an increasing priority.

Understanding Misconceptions

The concept of misconception generally refers to knowledge that is incompatible with or diverges from established scientific consensus and fails to adequately explain observable scientific phenomena (Sanger & Greenbowe, 1997). Deriving from the term "conception," which refers to a collection of individuals' beliefs and ideas about a particular topic, misconception is seen as a set of interconnected beliefs that build upon each-other and lead to the development or acceptance of scientifically unsupported ideas (Dellantonio & Pastore,

2021). Such misconceptions, which can be found across all areas of knowledge, are not unique to mental health. Similar nature of misconceptions exist in disciplines such as physics (Potvin & Cyr, 2017), medicine (Boshuizen & Marambe, 2020; Pressman, 2011), biology (Gregory, 2009), and psychology (Bensley et al., 2014; Kowalski & Taylor, 2017; LaCaille et al., 2019). In the context of mental health, misconceptions can be referred to as erroneous beliefs or stereotypes surrounding mental illness that, despite being widely held, are inconsistent with current scientific understanding (Dellantonio & Pastore, 2021; Taylor & Kowalski, 2004). Such beliefs hinder the advancement of mental health literacy by influencing public attitudes, behaviours, and policies (Lilienfeld et al., 2009; Reavley & Jorm, 2011). While mental health literacy encompasses the comprehension and beliefs concerning mental disorders that facilitate their identification, treatment, and mitigation (Jorm, 2012), its central component is understanding and correcting these misconceptions.

One of the most pervasive misconceptions about mental health is that mental illness is a precursor and a cause of violent behaviour (Ahonen et al., 2017; Basterfield et al., 2023; Bensley & Lilienfeld, 2015). This belief persists despite substantial research demonstrating that mental illness accounts for only a small proportion of violent acts, with attributable risk estimates ranging from less than 1% to 5% (Fazel & Grann, 2006; Taylor, 2008; Vinkers et al., 2012). Even within populations diagnosed with conditions such as schizophrenia with command hallucinations and bipolar disorder, meta-analyses indicate that the association with violence is significantly weakened when accounting for confounding factors such as substance use and previous history of violence (Ahonen et al., 2017). Moreover, the majority of existing literature relies on cross-sectional studies, which do not capture long-term or causal relationships. In fact, longitudinal research tends to report even weaker associations between mental illness and violent behavior (Douglas et al., 2009). In their longitudinal study, Elbogen et al. (2016) demonstrated that, after controlling for various confounding

factors, individuals with mental illness were, in fact, less likely to engage in violent behavior. Despite these findings, media representations frequently reinforce the stereotype that individuals with mental illness are inherently violent (Ahonen et al., 2019; Corrigan, 1998). As such, this belief serves as a prime example of a mental illness misconception because it is built on a set of interconnected beliefs that lack scientific support, contributes to stigmatisation, fosters fear-based attitudes that shape public perceptions and ultimately leads to discriminatory behaviors (Link et al., 2014).

It may be argued that expecting the general public to keep up with the latest scientific understandings in mental health and accurately identify misconceptions is unrealistic. After all, what is considered a misconception can change over time as scientific knowledge evolves. While this perspective is understandable, a lack of mental health literacy may lead to lower acceptance of evidence-based mental health interventions, contribute to the use of unverified practices, and increase the likelihood of individuals failing to recognize their own or others' symptoms (Jorm, 2000). Research supports this, showing that the general public struggles to correctly identify various mental health disorders and understand basic psychiatric terminologies. For instance, Jorm et al. (1997) presented participants with vignettes of individuals displaying symptoms of a major depressive disorder or schizophrenia. Only 27% accurately identified schizophrenia, and 39% identified major depressive disorder, with 11% attributing the symptoms to a physical illness. Misidentification rates were found to be even higher for other mental health conditions, such as anxiety disorders and ADHD.

The Impact of Mental Health Myths

Despite substantial empirical findings refuting various misconceptions regarding mental health, there is still inadequate attention given to addressing them considering the seriousness of their repercussions. This contributes to the endurance of myths based on opinions rather

than evidence, such as the notion that humans utilize only 10% of their brain, or that schizophrenia entails having several personalities (Howard-Jones, 2014). This also extends to other superstitious beliefs, such as the notion that psychiatric hospitalisations and crimes increase during full moons, as well as the perception of illusory correlations, such as those involving the number 13 and negative outcomes (Lilienfeld et al., 2009).

While some might argue that superstitious beliefs such as the purported relation between the celestial objects and mental illness is relatively harmless, it is precisely this dismissive attitude towards misconceptions that contributes to their persistence (Lilienfeld et al., 2009). Illusory correlational thinking demands heightened attention for its concerning potential progression; in fact, rejection of vaccines due to unfounded fear of autism correlates to overconfidence about one's knowledge on overall mental health (Motta et al., 2018). This way of thinking not only perpetuates a societal acceptance of intuition-based thinking (Sirota et al., 2021), but promotes a culture where misconceptions are left unchallenged and potentially harmful repercussions are disregarded. Moreover, the internalization of misconceptions surrounding disabilities or illnesses can significantly undermine the self-worth of impacted individuals, decreasing the probability that they will seek appropriate care and support (Schnyder et al., 2017; Sirey et al., 2008; Yang et al., 2008).

To further underscore this notion, Schnyder et al. (2017) found that an individual's perception of their disability or illness, which is largely shaped by public opinion (Pescosolido, 2013), significantly impacts active help-seeking behaviours. In fact, they identified stigma associated with mental illnesses or mental health services to be the biggest contributing factor to the low rate of help-seeking. Encountering a different outcome, a systematic review of qualitative and quantitative studies by Clement et al. (2015) found that stigma had a rather small to moderate negative impact on help-seeking behavior. However, their research revealed that the prevalence of mental health misconceptions in the community

affects the efficacy of mental health interventions. Such erroneous beliefs can shape public attitudes toward different treatment modalities, leading to preferences for certain interventions over others. While several cross-sectional studies suggest that older adults are more prone to the endorsement of health-related misconceptions than younger individuals (Roozenbeek et al., 2020; Seo et al., 2020), there is also research reporting a reversed association (Allington et al., 2020; Nan et al., 2022). Despite these conflicting findings, Sirey et al. (2008) discovered mental health illiteracy leads older adults to favour informal support from family and friends instead of seeking professional help. Similarly, Yang et al. (2008) discovered that stigma based on false information regarding treatments like psychiatric medication can influence individuals towards pseudoscientific remedies, such as alternative healing methods or avoiding treatment altogether.

Susceptibility to Misconceptions

As previously discussed, misconceptions have similar traits across different fields. They often result from faulty reasoning or misinterpretation of several ideas, and all disciplines are prone to them. While education has been shown to mitigate susceptibility to health-related misconceptions (Glass et al., 2008; Nan et al., 2022), even those with extensive education or expertise are susceptible to these errors in judgment. This became particularly evident during the COVID-19 pandemic, where there was a noticeable divide in opinions between some medical professionals and the broader scientific community, highlighting the role of individual beliefs and biases in shaping public acceptance of misconceptions. In fact, much of this divide was worsened by political ideologies, which have been found to significantly influence medical preferences and acceptance of misleading health claims (Nan et al., 2022). For example, Republicans in the U.S. are more likely to endorse vaccine misinformation due to their heightened skepticism towards scientific authorities (Motta, 2021), suggesting that political identity can lead to the acceptance of health related misconceptions.

Specific to mental health, Jugal et al. (2007) examined the attitudes of medical professionals towards mental health and found that some of them held misconceptions, with just above 5% believing that mental illness was a form of divine punishment and 18% attributing it to poor diet. Additionally, 8% of these medical professionals considered mental illness to be untreatable, while nearly 12% believed that faith healing is a reliable form of treatment for mental illness. However, several limitations must be considered. The study may not reflect current attitudes, as perceptions of mental health have likely evolved in the past 18 years. Additionally, the research was conducted with medical professionals in India, and cultural differences may limit the applicability of the findings to Western or more secular societies. This is consistent with the findings of Al-Rawashdeh et al. (2021), who identified culture and religiosity as significant factors influencing the endorsement of mental illness misconceptions.

To address these limitations, a scoping review by Stone et al. (2019) examined the attitudes of general medical clinicians toward individuals with serious mental illness across different cultures and countries. The review, which included 16 studies, highlighted that general medical clinicians tend to have more negative attitudes toward patients with serious mental illness compared to individuals without. While their review did not focus specifically on misconceptions, they found that medical experts often view individuals with serious mental illness as difficult to treat or as having dangerous tendencies, and that these negative attitudes tend to influence their clinical decision-making and treatment outcomes.

Furthermore, several studies have shown that individuals studying psychology are also susceptible to misinformation about mental health, with many holding various misconceptions regarding mental illness (Basterfield et al., 2023; LaCaille et al., 2019). Through their study on abnormal psychology misconceptions among college students, Bensley et al. (2014) discovered a correlation between endorsing psychological

misconceptions and having a lower proclivity to engage in critical thinking, as well as being more accepting of paranormal claims. In an aim to find an educational intervention that could combat such beliefs, LaCaille et al. (2019) and Kowalski and Taylor (2017) utilized refutational-style posters to eradicate mental health misconceptions among undergraduates. As stated by Goris and Dyrenfurth (2010), "to overcome existing misconceptions, some kind of conceptual change has to occur in the student's mind" (p.6). While their findings were promising, they focused primarily on students and addressed psychological misconceptions broadly, maintaining a modest body of literature regarding the prevalence and treatment of specifically mental illness misconceptions in the general public.

While psychological misconceptions cover a wide range of incorrect assumptions about human behaviour and cognition, misconceptions about mental illness specifically relate to beliefs regarding psychiatric disorders and their treatment (Corrigan & Watson, 2002). This distinction is especially important because the latter reinforces the stigma associated with mental illness by promoting misinformation and damaging stereotypes to a greater degree than mere psychological misconceptions about non-diagnosed individuals (Corrigan, 1998). Aiming to address this gap, Basterfield et al. (2023) administered an abnormal psychology misconceptions questionnaire, along with measures that assessed their critical thinking skills, their attitudes toward paranormal phenomena and science, and their vocational interests. While their study is limited in its exclusive focus on students, they found that having a history of mental health issues and endorsing misconceptions about mental illness were not significantly associated, which conflicts with several other studies on predictors of health misconceptions and persistence of stigma (DeLuca & Yanos, 2016; Griffiths et al., 2008; Jorm & Wright, 2008). However, rejection of these misconceptions was associated with having a diagnosed family member or a friend. Most notably, they demonstrated that those who endorse mental illness misconceptions frequently take a less

scientific approach to general knowledge, exhibit weaker critical thinking skills and are more receptive to pseudoscience.

The Science of Rational Thinking

Based on the literature, it can be concluded that misconceptions can be challenging to alter because they are fixed within our belief system (Dellantonio & Pastore, 2021; Nan et al., 2022). When conclusions are drawn from faulty inferences or wrong explanations, they lead to the generation of new misconceptions based on these inferences (Dellantonio & Pastore, 2021). The authors argue that this impedes the understanding of new information because combining new knowledge with a flawed system of inferences creates inconsistencies. In fact, people can maintain conflicting beliefs within their own belief system, yet such contradictions would be considered irrational. In this context, irrationality should not be defined by a single belief but by inconsistencies within a belief system (Davidson, 1985; Sullivan-Bissett, 2025). These inconsistencies can be explained through the concept of mental compartmentalization (Davidson, 1985; Dellantonio & Pastore, 2021), which may help explain why higher levels of education or IQ can mitigate susceptibility to misconceptions (Glass et al., 2008; Nan et al., 2022), but do not fully prevent their endorsement.

Considering the earlier example from Jugal et al. (2007), which found that 12% of medical professionals believed faith healing to be a reliable form of treatment for mental illness, it is evident that this standalone belief is embedded in a broader system of beliefs. This should include beliefs such as that supernatural forces exist, that events can be influenced by spiritual or divine intervention, and that there is a soul that can affect the body's health in ways that go beyond traditional medical explanations. Since these beliefs are a part of an interconnected system, challenging any single belief is difficult, as the entire network of causal and ontological principles supporting them must be questioned

(Dellantonio & Pastore, 2021). For this reason, to fully understand the formation and persistence of misconceptions, particularly those surrounding mental illness, it is necessary to investigate the broader framework of interconnected beliefs that in conjunction influence rationality.

Stanovich's (2016) pioneering work on judgment and decision-making, central to the field of cognitive science, has greatly contributed to the understanding of rational thought processes. Stanovich (2016) conceptualizes rational thinking as encompassing a broad range of cognitive processes, including both automatic and reflective thinking. The extensive length and duration of his comprehensive assessment of rational thinking prompted an in-depth examination at several of its more specialised subcategories. According to his work, there are separate components of different types of thinking categories that in conjunction develop a(n) (ir)rational mind. Amongst many outlined, it includes the concept of cognitive reflection, which refers to the ability to suppress intuitive and impulsive responses in favour of more deliberate and analytical thinking (Frederick, 2005); pseudoscientific belief endorsement, also known as acceptance of unsubstantiated or scientifically invalidated claims as valid explanations for natural phenomena or human behaviour (Boudry et al., 2015); and superstitious thinking or endorsement of paranormal beliefs, which encompasses beliefs in supernatural phenomena such as ghosts, psychic abilities, and astrology (Irwin, 2009). The last two concepts are related but distinct; the latter tends to focus on personal beliefs that may be difficult to falsify, thereby raising the issue of the burden of proof, while the former refers to claims that can generally be tested and empirically validated. However, all three variables represent a specific subcategory of rational thought, collectively able to form a concise yet comprehensive assessment of rational thinking.

More recently, Nan et al. (2022) offered a similar perspective in their systematic review on individual differences in susceptibility to health misinformation. They suggest that

health misinformation should be addressed according to the psychological mechanisms that underlie its susceptibility. Specifically, their findings suggest that resistance to misinformation is strengthened by factors such as subject knowledge, trust in science, analytical thinking, etc. In contrast, conspiracy thinking, religiosity, and conservative ideology are associated to greater susceptibility. Moreover, in their integrative psychological model of susceptibility to health misinformation, the authors use the term "analytical thinking", which is conceptually similar to cognitive reflection and aligns with System 2 thinking in dual-process theory (Kahneman, 2012). In fact, many of the studies they reviewed that evaluated analytical thinking have used cognitive reflection tasks to measure it (Lyons et al., 2018; Pennycook & Rand, 2019; Rosenzweig et al., 2021), and found that greater cognitive reflection is associated with reduced likelihood of endorsing health-related misconceptions.

While several studies have found a correlation between the aforementioned variables and the endorsement of misconceptions, it is essential to highlight that there is no study that had a dedicated category for evaluating the effect of cognitive reflection specifically on mental illness misconceptions. Cho (2022) utilized a variation of a cognitive reflection task and found a significant negative relationship with the endorsement of psychology misconceptions. However, it is worth noting that in addition to limiting the sample only to undergraduates, the study utilized a questionnaire consisting of only four questions, which may not comprehensively measure reflective thinking for several reasons. First, the limited number of items could lead to a ceiling effect (Wang et al., 2008), where individuals with higher cognitive abilities score similarly, reducing the variability of responses. Second, the scale's focus on numerical tasks may confuse cognitive reflection with mathematical ability, potentially causing individuals with lower mathematical aptitude to score lower, despite being reflective thinkers. Additionally, this could contribute to a floor effect if the tasks are

too difficult for many participants. These limitations were potentially limiting the study's ability to accurately assess reflective thinking and identify deficiencies in this regard.

The Present Study

This study intended to investigate the prevalence as well as associations with mental illness misconceptions among the general public. Despite existing research on psychological misconceptions within the public domain (Furnham & Hughes, 2014; Lilienfeld et al., 2009), the focus on mental illness misconceptions remains minimal. While LaCaille et al. (2019) and Basterfield et al. (2023) have both focused exclusively on mental illness misconceptions, both have limited their findings only to undergraduate psychology students. Moreover, the fact that LaCaille et al. (2019) have only looked at five of these misconceptions further restricts their capacity to evaluate people's endorsement of false beliefs in a thorough manner. Furthermore, neither of these studies have investigated the association between such false beliefs and cognitive reflection, an essential variable in understanding the cognitive processes involved in analytical thinking (Lyons et al., 2018; Nan et al., 2022; Pennycook & Rand, 2019; Rosenzweig et al., 2021). While Cho (2022) used a variation of this type of reflective task, they also limited their findings only to undergraduates, and the questionnaire was limited to only four items.

Considering the limited research in this area, there is a clear need to investigate mental health literacy in the public, as mental illness misconceptions can negatively affect self-perception, contribute to social marginalization, and reinforce discriminatory attitudes (Al-Rawashdeh et al., 2021; Corrigan, 2004; Corrigan & Watson, 2002; Digiuni et al., 2013; Pescosolido, 2013; Sirey et al., 2008). A lack of literacy may also hinder acceptance of evidence-based mental health interventions, encourage the use of unverified practices and reduce the ability to identify symptoms in themselves or others (Jorm, 2000). Thus, in order to have a better understanding of the predictors of misconceptions specifically pertaining to

mental illness, it is imperative to investigate their level of prevalence within the broader population as well as their association with other beliefs and cognitive processes. This will help us understand the scale and complexity of the problem, enabling us to inform effective strategies that can help in decreasing stigma.

Given previous research indicated the influence of age (Nan et al., 2022), education (Glass et al., 2008; Nan et al., 2022), religious beliefs (Al-Rawashdeh et al., 2021; Jugal et al., 2007), political leanings (Motta, 2021; Nan et al., 2022), and previous diagnoses (DeLuca & Yanos, 2016; Griffiths et al., 2008; Jorm & Wright, 2008) in shaping beliefs about illness-related misconceptions, these variables have been examined as possible covariates in the regression analysis. Gender was not considered a variable of interest in this study, as prior research by Basterfield et al. (2023) found no significant correlation between gender and endorsement of mental illness misconceptions on the APMQ, which serves as the criterion variable in the present study. This approach controlled for the potential effect of these covariates, allowing for a more precise evaluation of whether pseudoscientific endorsement, paranormal beliefs, and cognitive reflection are associated with misconceptions about mental illness and its treatment. In addition, by examining the association between mental illness misconceptions, aforementioned belief patterns and cognitive processes, we could explore how the development and dissemination of these fallacies is conceptualized and perceived in greater detail. It is also crucial for creating specialised interventions and educational initiatives meant to expose fallacies and promote factual information regarding mental health on a larger scale.

Given this context, the current study had two primary objectives: a) to understand the prevalence and features of misconceptions about mental illness and its treatment among the general public, and b) to investigate whether pseudoscientific beliefs, paranormal thinking and cognitive reflection each predict misconceptions about mental illness. Based on these

objectives, it was hypothesized that higher levels of pseudoscientific endorsement and paranormal thinking are positively correlated with increased misconceptions about mental illness and its treatment. Whilst there is a negative relationship between cognitive reflection and the endorsement of mental illness misconceptions.

Methodology

Participants

The sample for the current study comprised 157 individuals (30.6% male; 66.9% female; 1.3% non-binary, and 1.3% preferring not to disclose their gender) from the general population. Participants' ages ranged from 18 to 73 ($M = 38.46$ $SD = 14.43$). The required sample size was calculated using Tabachnick and Fidell's (2013) formula for calculating sample size in multiple regression analyses ($N > 50 + 8m$; n = number of participants, m = number of PVs). Based on this calculation, the minimum required sample size was $n = 114$.

This study utilized non-probability sampling methods, specifically convenience and snowball sampling to recruit participants. These methods were selected as they effectively facilitated reaching a sufficient sample size despite the constraints of limited funding and time. The researcher shared a concise study description and link through personal social media platforms (WhatsApp, Viber, Facebook) inviting participants to take part. Participants were also encouraged to share the link with others who met the eligibility criteria.

Materials

The study included a questionnaire consisting of demographic questions (Appendix A), followed by four scales administered through Google Forms. In order to obtain a more comprehensive understanding of the participants, demographic questions assessed their age, gender, level of education, religious and political affiliation, as well as their history of mental health diagnoses or treatments.

Abnormal Psychology Misconceptions Questionnaire

The Abnormal Psychology Misconceptions Questionnaire (APMQ; Basterfield et al., 2023) is a 20-item scale designed to measure the endorsement of mental illness misconceptions, which serves as a criterion variable in the present study. Participants are presented with a series of statements and are asked to indicate whether they believe each statement to be true or false. Items on the APMQ are coded so that higher scores indicate lower endorsement of

misconceptions about mental illness. Of the 20 items, 16 are incorrect, while 4 are correct and are reverse-coded, specifically items 6, 11, 15, and 18 (Appendix B).

The initial study by Basterfield et al. (2023) introduced two versions of the scale, A and B, which differed only in the phrasing of the items, with one version presenting items phrased positively and the other negatively. It was observed that there was no significant difference between the scores of Version A ($\alpha = .83$; $r = .05$) and Version B ($\alpha = .84$; $r = .04$), indicating that the wording did not affect the total scores, or the level of misconception endorsement ($t(373) = .27$, $p = .79$, $d = 0.03$). They combined the versions into a single standardized one, which they then used for all subsequent analyses. These findings suggest acceptable internal consistency but not high homogeneity. This suggests that while the scale overall was reliable, some questions may have been less relevant than others. For this reason specifically, this study used the most relevant and informative 20 questions, which their study considered best determinants in understanding whether one has mental illness misconceptions, comprised of both A and B versions from a larger pool of 105 questions. This approach attempted to maintain the questionnaire's internal consistency while ensuring that participants were presented with a manageable yet comprehensive set of questions. While this strategy minimized respondent burden that doing 105 questions would have led to, especially considering this was the first of four distinct questionnaires administered in the study, the Cronbach's alpha coefficient for the current study is 0.602 (Appendix J), indicating questionable reliability (Pallant, 2016).

The Revised Pseudoscientific Belief Scale

The Revised Pseudoscientific Belief Scale (PBS-R; Fasce et al., 2021) is a 19-item questionnaire measuring individuals' level of pseudoscientific endorsement. This revised and shorter version exhibited excellent internal consistency ($\alpha = 0.90$), while the correlation with the original scale was extremely high ($r = 0.97$, $p < 0.001$). Moreover, in the current study,

the Cronbach alpha coefficient was .79 (Appendix J), which is considered acceptable (Pallant, 2016). The scale consists of 17 incorrect statements and 2 correct, reverse coded statements, specifically items 6 and 15. The scale uses either "True" or "False" answers to evaluate a participant's knowledge regarding each statement, with higher scores indicating lower pseudoscientific endorsement (Appendix C).

The Revised Paranormal Belief Scale

The Revised Paranormal Belief Scale (RPBS; Tobacyk, 2004) comprises 26 items, presented as statements, out of which item 23 is reverse coded. Participants indicate their level of superstitious endorsement by either choosing "Agree" or "Disagree", with higher scores indicating lower paranormal thinking (Appendix D). The RPBS has demonstrated high levels of reliability and validity over time with alpha coefficient ($\alpha = .88$), and test-retest coefficient ($r = .95$), which represents excellent internal consistency. Similarly, the Cronbach alpha coefficient for the current study was .89 (Appendix J).

Unlike the original scales, this study restricted PBS-R (Fasce et al., 2021) and RPBS (Tobacyk, 2004) to only two response options, removing those that typically allowed participants to indicate uncertainty. This decision was made for two reasons: a) selecting an "I don't know" option may reflect a lack of motivation rather than a lack of knowledge (Bensley & Lilienfeld, 2015), and b) its inclusion could lead to significant missing data (Krosnick, 2018). This approach aligns with the rationale behind the APMQ scale (Basterfield et al., 2023), which was designed to use only true/false responses.

The Verbal Cognitive Reflection Test

The Verbal Cognitive Reflection Test (CRT-V; Sirota et al., 2021) is comprised of 10 questions that require participants to engage in reflective thinking, by inhibiting their desire to use intuitive responses (see Appendix E). Each question requires a written response, with one point awarded for each correct answer. Therefore, higher scores indicate a greater level

of cognitive reflection. The scale's internal consistency was acceptable ($\alpha = 0.85$), while the correlation with original scale was moderate and statistically significant ($r = .53$). Slightly lower but considered good, the Cronbach alpha coefficient for the current study was .81 (Appendix J). This test was shown to complement other tests of cognitive reflection, while also being appropriate for use in people with a low level of education and/or mathematical anxiety. This change is important due to the prevalent emphasis on mathematical concepts in many existing cognitive reflection tests (Sirota et al., 2021).

Design and Analyses

The current study employed a quantitative method with a cross-sectional research design. Given existing research suggests variation in belief systems and cognitive abilities across age (Allington et al., 2020; Nan et al., 2022; Roozenbeek et al., 2020; Seo et al., 2020), education level (Glass et al., 2008; Nan et al., 2022), religious affiliation (Al-Rawashdeh et al., 2021; Jugal et al., 2007), political affiliation (Motta, 2021; Nan et al., 2022) and history of mental health diagnosis (DeLuca & Yanos, 2016; Griffiths et al., 2008; Jorm & Wright, 2008), distinct preliminary analyses were carried out as checks to account for the influence of these covariates on predictor variables. This approach controlled for their potential effects before deciding on their inclusion in the regression analysis, allowing for a more precise evaluation of whether pseudoscientific endorsement, paranormal beliefs, and cognitive reflection (predictor variables), are associated with misconceptions about mental illness and its treatment (APMQ). Furthermore, in addition to age, those categorical covariates that were statistically significant were subsequently dummy coded. Specifically, Education, with a High School/Secondary School Diploma serving as the reference group; Political Affiliation, with Conservatives as the reference group; and Religious affiliation, with Religious Individuals as the reference group.

The analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 28.0.1.1. To address the research question, Pearson's correlation coefficient was used to examine the strength and direction of the relationships between the total score on the criterion variable (APMQ) and the total scores on the predictor variables (PBS-R, RPBS, and CRT-V), as well as the included covariates; Age, Education, Political Affiliation and Religious Affiliation. Following this, a hierarchical multiple regression analysis was conducted to determine whether PBS-R, RPBS, and CRT-V predict the total APMQ score, while also accounting for shared variance among them.

Procedure

The data was collected using an online questionnaire on Google Forms, which included all four scales. Participants accessed the study through links shared on social media (Facebook, WhatsApp) and posters on university noticeboards (Appendix K). Before beginning, participants reviewed an information sheet (Appendix F) outlining the study's aims, procedures, and inclusion criteria (e.g., only those aged 18 or older could participate). They then provided informed consent (Appendix G), confirming their voluntary participation and agreement to data usage. The questionnaire began with a demographic form and proceeded through the APMQ, PBS-R, RPBS, and CRT-V. After completing the questionnaires, participants were provided with a debriefing form (Appendix H) containing further details about the study and contact information of a helpline service. The study took approximately 20–25 minutes to complete. Responses were anonymized, and data was securely stored in password-protected files accessible only to the researcher, adhering to ethical standards.

Ethical Considerations

This study received ethical approval from the National College of Ireland's Ethics Committee (Appendix L), and adhered to the ethical standards outlined by The Psychological Society of Ireland Code of Professional Ethics, as well as NCI's Ethical Guidelines and Procedures for

Research Involving Human Participants. The consent form informed participants of their right to withdraw from the study at any point, outlined the procedures for data storage and usage in compliance with NCI's data retention policy, and assured that all data would be kept confidential in an encrypted file accessible only by the researcher. While there were no apparent risks associated, a mental health helpline service was provided in the debriefing form.

Results

Descriptive Analyses

Descriptive Statistics for categorical variables (Gender, Level of Education, Religious Affiliation, Political Affiliation, and History of Mental Health Diagnosis) have been performed and presented in Table 1 below.

Table 1
Descriptive Statistics for all Categorical Variables (N=157)

Variable	Frequency	Valid %
Gender		
Male	48	30.6
Female	105	66.9
Non-Binary	2	1.3
Prefer not to say	2	1.3
Level of Education		
High School Diploma or Equivalent	36	22.9
College or Associate Diploma (Level 5/6)	19	12.1
Bachelor's Degree	51	32.5
Master's Degree Postgraduate Degree	46	29.3
Doctoral Degree or Higher	5	3.2
Religious Affiliation		
I consider myself religious	49	31.2
I do not identify with any religious beliefs	108	68.8
Political Affiliation		
Conservative	7	4.5
Liberal	44	28
Centrist	19	12.1
None (A-political)	73	46.5
Other	14	8.9
History of Mental Health Diagnosis		
Yes	49	31.2
No	106	67.5
Prefer not to say	2	1.3

The descriptive details for the continuous variables of Age, Abnormal Psychology Misconceptions, Pseudoscientific Beliefs, Paranormal Beliefs and Cognitive Reflection are presented in Table 2. A significant result ($p < .05$) of the Kolmogorov-Smirnov statistic was found for all aforementioned variables, indicating that these variables are non-normally distributed. Following this, the inspection of histograms revealed varying distribution patterns, with all variables but PBS-R exhibiting skewness, ranging from slight to strong. Additionally, the inspection of boxplots revealed the presence of multiple outliers, particularly in the APMQ and RPBS variables. In light of this, non-parametric tests were utilized in the subsequent inferential analyses.

Table 2
Descriptive Statistics for all Continuous Variables (N = 157)

Variable	M [95% CI]	SD	Range
Age	38.46 [36.18 – 40.73]	14.43	18 – 73
APMQ	16.28 [15.87 – 16.69]	2.58	7 – 20
PBS-R	10.76 [10.11 – 11.41]	4.11	2 – 18
RPBS	19.92 [19.11 – 20.73]	5.14	4 – 26
CRT-V	6.67 [6.23 – 7.11]	2.80	1 – 10

Note: APMQ = Abnormal Psychology Misconceptions Questionnaire; PBS-R = Pseudoscientific Belief Scale - Revised; RPBS = Revised Paranormal Belief Scale; CRT-V = Cognitive Reflection Task – Verbal

Regarding the prevalence of mental illness misconceptions (APMQ), the endorsement rates ranged from 0.6% to 91.1% ($Mdn = 22.3\%$). See Table 3, which shows the results of the top 5 misconceptions about mental illness. The most endorsed misconception was: Psychiatric labels do not cause harm by stigmatizing people (91.1%). The least endorsed misconception was: The fact that the substance is “natural” means that it’s safe (0.6%).

Table 3*Top 5 Mental Illness Misconceptions (Abnormal Psychology Misconceptions Questionnaire)*

APMQ	Correct answer	% who endorsed misconception
(6) Psychiatric labels do not cause harm by stigmatizing people.	True	91.1%
(11) Suicide is not especially common during the dark days of winter.	True	84.7%
(18) Most people who were sexually abused in childhood do not develop severe personality disturbances in adulthood.	True	80.3%
(15) People are not especially likely to repress memories that are extremely traumatic.	True	78.3%
(20) Testimonials from individuals who have undergone a particular therapy (for example, "This therapy really helped me") are the best way to learn about the effectiveness of that therapy	False	40.8%

Inferential Analyses

Preliminary analyses were conducted to examine the influence of potential confounding variables on the predictor variables (PBS-R, RPBS, and CRT-V), and subsequently determine their inclusion in the hierarchical regression. Due to the non-normal distribution of the data, non-parametric tests were employed. Specifically, a series of Kruskal-Wallis H tests were conducted to evaluate differences in the predictor variables based on Education and Political Affiliation. Mann-Whitney U tests were employed to examine differences in relation to History of Mental Health Diagnosis and Religious Affiliation. Additionally, Spearman's rank correlation matrix was used to explore the associations with Age and interrelations among the predictors.

As shown in Table 4, age demonstrated a weak positive correlation with RPBS, $r(155) = .19, p = .017$, sharing 3.6% of variance ($R^2 = .036$), suggesting that as age increases, there is a slight decrease in the endorsement of paranormal beliefs (higher scores on RPBS

scale). Furthermore, significant positive correlations were found among the predictor variables; PBS-R and RPBS shared 42.3% of variance, $r(155) = .65$, $R^2 = .423$, $p < .001$, suggesting a strong positive correlation. PBS-R and CRT-V shared 9.9% of variance, $r(155) = .314$, $R^2 = .099$, $p < .001$, indicating a moderate positive correlation, while RPBS and CRT-V shared 7.7% of variance, $r(155) = .28$, $R^2 = .077$, $p < .001$, indicating a weak positive correlation. Results indicate that higher scores on one predictor variable (e.g., reduced endorsement of pseudoscience, reduced endorsement of paranormal beliefs, or better cognitive reflection) are positively associated with higher scores on another predictor variable.

Furthermore, education level had a significant effect on PBS-R scores, $H(4, n = 157) = 10.312$, $p = .035$, though the effect size was small (eta squared = .042). Political affiliation significantly influenced PBS-R scores, $H(4, n = 157) = 30.973$, $p < .001$, with a large effect size (eta squared = .173), and RPBS scores, $H(4, n = 157) = 24.663$, $p < .001$, with a medium effect size (eta squared = .132). Additionally, religious affiliation demonstrated significant effect on PBS-R scores, $t(155) = -4.09$, $p < .001$, $d = 3.92$, and RPBS scores, $U = 4333$, $Z = 6.43$, $p < .001$, $d = .513$. These variables were therefore entered as covariates in Block 1 of the hierarchical multiple regression. No significant effects were observed for mental health history on predictor variables.

Table 4
Spearman's product-moment correlations between study variables

Variable	1.	2.	3.	4.
1. Age	-			
2. PBS-R	.04	-		
3. RPBS	.19*	.65***	-	
4. CRT-V	.07	.31***	.28**	-

Note: PBS-R = Pseudoscientific Belief Scale - Revised; RPBS = Revised Paranormal Belief Scale; CRT-V = Cognitive Reflection Task – Verbal; Statistical significance: ** $p < 0.1$; *** $p < .001$

Hierarchical Multiple Regression Analysis

Hierarchical Multiple Regression was performed to investigate whether Abnormal Psychology Misconceptions Questionnaire (AMPQ) scores were predicted by Pseudoscientific Beliefs (PBS-R), Paranormal Beliefs (RPBS), and Cognitive Reflection (CRT-V), controlling for Age, Education Level, Political Affiliation, and Religious Affiliation. Despite deviations from normality in the preliminary analyses, the large sample size ($N = 157$) provided justification for assuming that the distribution of sample means approximated a normal distribution, in accordance with the central limit theorem (Lumley et al., 2002). Therefore, the sample size was considered sufficient to meet the assumptions of normality, satisfying the conditions for subsequent regression analysis. The correlations between covariates, predictor variables and a criterion variable are presented in Table 5. The correlations between the predictor variables were assessed and r values ranged from $-.39$ to $.62$, while the range of r values for covariates ranged from $-.58$ to $.21$. Tests for multicollinearity also indicated that all Tolerance and VIF values were in an acceptable range; The Durbin-Watson statistic of 1.69 suggests no significant autocorrelation in the residuals, supporting the Gauss-Markov assumptions and confirming the validity of regression results.

Table 5*Inter-correlations (Pearson's r) between model variables*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
APMQ	-													
Age	.01	-												
ED. – College/L5-6	.04	-.05	-											
ED. – BSc	.07	-.26***	-.26***	-										
ED.– MSc/PGD	.09	.08	-.24***	-.45***	-									
ED. -Doc. or higher	.21**	.12	-.07	-.13	-.12	-								
Politics – Liberals	.11	.16*	-.06	-.01	-.06	.13	-							
Politics – Centrists	.08	-.06	.04	.04	.06	-.07	-.23**	-						
Politics – None/A-Political	-.22**	-.10	.09	-.07	.05	-.17*	-.58***	-.35***	-					
Politics – Other	.11	-.03	-.05	.12	-.10	.07	-.2**	-.12	-.29***	-				
Religion – Not Religious	.09	.09	-.003	-.002	.04	.04	.21**	.08	-.23**	.11	-			
PBS-R	.43***	.02	.02	-.09	.08	.22**	.21**	.21**	-.39***	.16*	.31***	-		
RPBS	.22***	.14*	-.04	-.19**	.08	.09	.26***	.16*	-.32***	.08	.51***	.62***	-	
CRT-V	.26***	.07	-.02	.03	.11	.11	.11	.16*	-.24***	.03	.14*	.33***	.25***	-

Note: ED. = Education; AD = Associate Degree; APMQ = Abnormal Psychology Misconceptions Questionnaire; PBS-R = Pseudoscientific Belief Scale - Revised; RPBS = Revised Paranormal Belief Scale; CRT-V = Cognitive Reflection Task – Verbal; Statistical significance: *p < .05; **p < 0.1; ***p < .001

The Analysis followed a predetermined order of entry for variables. In step 1, Age was entered alongside dummy-coded variables of Education, Political Affiliation, and Religious Affiliation, explaining 15.9% of the variance in Abnormal Psychology Misconceptions scores, $F(10,146) = 2.75, p = .004$. Accounting for Pseudoscientific Beliefs (PBS-R), Paranormal Beliefs (RPBS), and Cognitive Reflection (CRT-V) as predictors entered in Step 2, the total variance explained by the model was 27.8%, $F(13,143) = 4.24, p = <.001$. The introduction of PBS-R, RPBS, and CRT-V explained an additional 12% of variance in APMQ scores, after controlling for Education, Political Affiliation, and Religious Affiliation; this change was statistically significant (R^2 Change = .120; $F(3,143) = 7.91, p = <.001$).

Two variables, Education and PBS-R, were found to uniquely predict the endorsement of abnormal psychology misconceptions to a statistically significant degree. PBS-R was the strongest positive predictor of abnormal psychology misconceptions scores ($\beta = .36, p <.001$), indicating that individuals with lower pseudoscientific beliefs (higher PBS-R scores) are less likely to endorse misconceptions related to abnormal psychology. Additionally, education at all levels was a significant predictor of abnormal psychology misconceptions compared to the reference group (participants with a high school/secondary school diploma). Higher levels of education were associated with lower endorsement of these misconceptions, as indicated by increased scores on the APMQ. Bachelors' degree had the strongest association ($\beta = .3, p = .003$) compared to the reference group. Overall, the endorsement of abnormal psychology misconceptions was primarily predicted by lower scores on PBS-R (indicating stronger pseudoscientific beliefs) and lower educational background. See table 6 for full details.

Table 6
Hierarchical Multiple Regression model of predictors of Abnormal Psychology Misconceptions.

Variable	R^2	R^2 Change	B	SE	β	t	p
Step 1	.159**						
Age			.004	.01	.02	.26	.794
ED. – College / AD (L5/6)			1.79	.71	.23	2.53	.012
ED. – BSc			1.59	.56	.29	2.85	.005
ED. – MSc/PGD			1.82	.55	.32	3.28	.001
ED. – Doctorate or higher			3.9	1.2	.27	3.25	.001
Politics – Liberals			.70	1.04	.12	.67	.503
Politics – Centrists			.66	1.12	.08	.59	.556
Politics – None (A-political)			-.26	1.00	-.05	-.26	.792
Politics – Other			1.04	1.18	.12	.88	.380
Religion – Not Religious			.04	.45	.01	.09	.927
Step 2	.278***	.12***					
Age			.007	.01	.04	.50	.616
ED.– College/AD (L5/6)			1.56	.67	.20	2.32	.022
ED. - BSc			1.65	.55	.30	3.01	.003
ED. – MSc / PGD			1.50	.53	.27	2.81	.006
ED. – Doctorate or higher			2.70	1.16	.18	2.33	.021
Politics – Liberals			.24	.98	.04	.25	.805
Politics – Centrists			-.12	1.07	-.02	-.11	.914
Politics – None (A-political)			-.04	.94	-.01	-.04	.966
Politics – Other			.42	1.11	.05	.38	.705
Religion – Not Religious			-.47	.47	-.08	-.99	.324
PBS-R			.23	.06	.36	3.60	<.001
RPBS			.01	.05	.03	.26	.793
CRT-V			.08	.07	.09	1.12	.265

Note: ED. = Education; AD = Associate Degree; APMQ = Abnormal Psychology Misconceptions Questionnaire; PBS-R = Pseudoscientific Belief Scale - Revised;

RPBS = Revised Paranormal Belief Scale; CRT-V = Cognitive Reflection Task – Verbal; R^2 = R-squared; B = unstandardized beta value; SE = Standard errors of B; β = standardized beta value; t = t value; p = p value; N = 157; Statistical significance: **p < .01; ***p < .001

Discussion

The present study aimed to investigate whether pseudoscientific beliefs, paranormal thinking and cognitive reflection each predict misconceptions about mental illness, and examined their endorsement rate among the general public. Despite the overall low prevalence (*Mdn* = 22.3%), the findings suggest that pseudoscientific beliefs strongly predict the endorsement of mental illness misconceptions, supporting the hypothesis that higher levels of pseudoscientific thinking are positively correlated with increased misconceptions about mental illness and its treatment. However, contrary to expectations, neither paranormal beliefs nor cognitive reflection significantly predicted mental illness misconceptions.

Comparison with Existing Literature

The findings of the present study align with prior research indicating that pseudoscientific beliefs significantly predict misconceptions in psychology (Bensley et al., 2014; Lilienfeld et al., 2009), including that of Basterfield et al. (2023) that was investigating specifically mental illness. Consistent with their findings, the ability to distinguish between pseudoscience and evidence-based science appears to be a highly important factor in shaping beliefs about mental illness. Moreover, Basterfield et al. (2023) examined pseudoscientific beliefs by using various questionnaires that explored topics such as the scientific nature of psychology, paranormal beliefs, and critical thinking skills, rather than relying on a single, specific measure. As a result, their use of the term "pseudoscientific" was more broadly applied to findings that contrasted with several different aspects of scientific reasoning. As such, by using a reliable, targeted measure of pseudoscientific thinking, the present study offers a more focused examination of the relationship between pseudoscientific thinking and the endorsement of mental illness misconceptions. Given the limited research in this area, the present study also extends these findings beyond student population, highlighting the

relevance of pseudoscientific beliefs as a predictor of mental illness misconceptions in the general population as well.

While misconceptions about mental illness remain prevalent with endorsement rates ranging from 0.6% to 91.1%, there was a relatively low overall acceptance ($Mdn = 22.3\%$). This is especially evident when compared to the original APMQ scales, where the top 20 misconceptions, used in the present study, had much higher medians of 74.1% and 76.1% (Basterfield et al., 2023). Furthermore, only one participant (0.6%) in the present study endorsed the misconception that "The fact that a substance is “natural” means that it is safe" while Basterfield et al. (2023) reported a significantly higher endorsement rate of 94.4% for this specific belief. In contrast, the most frequently endorsed misconception in the present study was reverse-coded: "Psychiatric labels do not cause harm by stigmatizing people" which was endorsed by 91.1% of participants. A similar rate was seen in Basterfield et al.'s (2023) study, where 85.6% of participants endorsed this misconception, aligning with their higher median scores. It is important to note that the original scale included 105 misconceptions related to mental illness, whereas the present study examined only 20, which may have contributed to differences in endorsement rates.

In contrast to prior research, the present study found no significant association between paranormal thinking and the endorsement of mental illness misconceptions, rejecting the hypothesis that higher levels of paranormal thinking are positively correlated with increased misconceptions about mental illness and its treatment. This finding contradicts studies that have reported a positive relationship between paranormal beliefs and misconceptions in psychology (Bensley et al., 2014; Lilienfeld et al., 2009), as well as mental illness specifically (Basterfield et al., 2023). Given the shared features of pseudoscientific and paranormal claims, a possible explanation for this finding could be the aforementioned compartmentalization of beliefs (Davidson, 1985; Dellantonio & Pastore, 2021).

Compartmentalization could help explain why pseudoscientific claims, often presented as scientifically plausible explanations for natural phenomena or human behaviour, are stronger predictors of misconceptions about mental illness. In contrast, paranormal beliefs, which focus on supernatural or spiritual phenomena, may not have the same direct connection to specifically mental health issues, at least in their presentation, thereby making their impact on mental illness misconceptions less pronounced. Moreover, Basterfield et al. (2023) used the same scales to examine the relationship between paranormal beliefs and mental illness misconceptions and found a significant association. Given their sample was limited to undergraduate psychology students, this discrepancy may suggest that psychology students are more likely to endorse misconceptions about mental illness compared to the general population. However, their considerably larger sample size ($n = 375$) compared to the present study ($n = 157$) should be taken into consideration when making this conclusion.

While prior research by Cho (2022) found a significant negative association between cognitive reflection and the endorsement of general psychology-related misconceptions, the present study did not observe such significant relationship in the context of mental illness misconceptions, thus rejecting the hypothesized negative relationship between cognitive reflection and the endorsement of mental illness misconceptions. As this is the first study to specifically examine this association in the context of mental illness misconceptions, this distinction may help explain the discrepancy in findings compared to broader psychology misconceptions. However, Cho (2022) utilized a 4-item scale, which may not fully capture reflective thinking, as it may fail to differentiate between genuine reflective reasoning and potential ceiling or floor effects. In contrast, the present study may have addressed some of the deficiencies in this regard as it employed a more comprehensive 10-item cognitive reflection task that did not focus solely on mathematical abilities. Furthermore, the lack of significant association in the present study may be explained by the idea that individuals can

engage in reflective reasoning but still reach incorrect conclusions due to a lack of knowledge or the layers of false beliefs. This finding may help inform future interventions by highlighting that intuitive thinking does not necessarily lead to incorrect beliefs in this domain. However, further research is needed to explore the reasons behind this discrepancy in findings.

Although cognitive reflection and paranormal beliefs were not identified as significant predictors, all three predictor variables were found interrelated, with significant correlations observed. This suggests that greater endorsement of pseudoscience, higher paranormal beliefs, and lower cognitive reflection are all interrelated and positively associated with each other. These findings align with Stanovich's (2016) conceptualization of rational thinking, which argues that these belief systems and cognitive abilities collectively contribute to the prediction of rational thought processes. Given this is a relatively under-researched area, future research could further explore the interrelated nature of these factors in greater detail.

Contribution of the Current Findings

The present study offers several contributions to this area of research. First, it contributes to the research on psychological misconceptions (Bensley & Lilienfeld, 2015; Furnham, 2018; Taylor & Kowalski, 2004) and expands the limited literature on specifically mental illness misconceptions (Besterfield et al., 2023; LaCaille et al., 2019) by demonstrating lower endorsement rates, providing a contrasting perspective on their prevalence in the general public. Furthermore, it highlights the strong predictive role of pseudoscientific beliefs in shaping misconceptions about mental illness specifically, and extends these findings to the general population, moving beyond the student-focused research. In addition, these findings contribute to the limited research on the relationship between cognitive reflection and mental illness misconceptions, and challenge reported negative association between reflective thinking and the endorsement of psychology-related misconceptions, especially in the context

of mental illness. Although further research is needed, this finding suggests that reflective thinking does not necessarily reduce susceptibility to endorsing misconceptions within this domain.

Furthermore, while preliminary analyses did not identify age as a significant predictor, the present study found a weak negative correlation between age and paranormal thinking, suggesting that older participants may be less likely to endorse paranormal thinking, possibly contributing to the conflicting literature on the association between age and susceptibility to misinformation (Nan et al., 2022). Furthermore, the endorsement of mental illness misconceptions was not significantly influenced by religious or political affiliation, which is in contrast with prior research on their association to general health-related and psychology misconceptions (Al-Rawashdeh et al., 2021; Jugal et al., 2007; Motta, 2021; Nan et al., 2022). However, both were identified as significant predictors of pseudoscientific as well as paranormal beliefs, with different political orientations exhibiting varying levels of endorsements. Future research could investigate the impact of different political orientations on endorsement of various belief patterns in greater detail, especially given the current climate of political division globally.

Alongside this, preliminary checks identified the role of education as a significant contributing factor to the endorsement of mental illness misconceptions, with lower educational levels associated with increased endorsement. Previous research focusing on psychology-related misconceptions has primarily been conducted with undergraduate students (Basterfield et al., 2023; Bensley et al., 2014; Cho et al., 2022; Glass et al., 2008), leaving a gap in understanding the impact of education itself on the endorsement of mental illness misconceptions specifically. While Nan et al. (2022) examined broader health-related misinformation in the general public, their findings indicate that higher educational levels are associated with a lower susceptibility to health misinformation. The present study supports

their finding on the role of education in misconceptions endorsement, but extends them to misconceptions about mental illness in particular.

Major Implications

The overall findings of the present study suggest that interventions focusing solely on mental illness misconceptions may be insufficient, and that efforts should be directed towards improving general scientific reasoning and evidence-based thinking. For example, educational initiatives focused on strengthening critical evaluation skills in scientific thinking may reduce susceptibility to pseudoscientific beliefs, thereby decreasing the endorsement of mental illness misconceptions.

In fact, strategies for mitigating misconceptions about mental illness can be informed by Rowe et al. (2015), who developed an interdisciplinary science course designed to improve critical thinking and scientific literacy. Their findings indicate that this type of educational initiative, which contrasts science with pseudoscience and addresses underlying psychological factors that lead to the rejection of scientific ideas, was found to have the potential to reduce the endorsement of pseudoscientific beliefs. This approach led individuals to critically evaluate claims and recognize logical fallacies, making them more open to engaging with controversial scientific topics (e.g. evolution or vaccines). In simpler terms, the process and application of scientific thinking over memorizing facts is a more effective strategy for reducing the endorsement of misconception. To further support this claim, O'Rear and Radvansky (2020) found that misinformation often persists even after correction due to people's reluctance to change their beliefs, a phenomenon known as the continued influence effect. This makes debunking challenging, as cognitive biases like belief perseverance reinforce such false beliefs. Therefore, effective interventions must go beyond simply providing correct information and focus on strategies that actively support belief revision.

Given the present study supports prior findings on the role of education in misconceptions endorsement, and extends them to misconceptions about mental illness in particular, strategies aiming to improve general understanding of mental illnesses could benefit from educational interventions targeting individuals with lower levels of formal education. Moreover, it could support the idea of integrating supplementary educational programs on mental health (and mental illness myths specifically) into earlier stages of formal education, such as secondary schools.

In light of aforementioned research on misinformation persistence, Brashier et al. (2021) examined the timing of fact-checking interventions and their impact on belief revision. Their study found that debunking information provided after exposure to misinformation was more effective in improving subsequent truth discernment compared to when corrections were made before or during exposure. This suggests that providing correct information after individuals have already encountered false information allows them to better adopt the correction, decreasing their vulnerability to related misinformation. Consistent with this approach, recent efforts to specifically reduce mental health misconceptions have utilized refutational approaches to myth debunking, where a myth was explained in great detail and then countered with evidence (Kowalski & Taylor, 2017; LaCaille et al., 2019; Lassonde et al., 2017), and all found promising results in long-term belief revision.

Given these findings, future interventions should incorporate these educational approaches by first presenting misconceptions about mental illness before refuting them with evidence, while also emphasizing the development of scientific reasoning. This would not only support long-term retention of information but also address underlying psychological factors that lead to the rejection of scientific ideas, shifting the focus from memorization to critical evaluation.

Strength and Limitations

While this research offers relevant findings, it should be interpreted with respect to certain limitations. First, the use of a true/false and agree/disagree formats, while strategically chosen in order to minimize motivational biases (Bensley & Lilienfeld, 2015) and reduce the possibility of missing data (Krosnick, 2018), limits the ability to explore varying levels of misconception endorsement. Additionally, the absence of an "I don't know" option may have led some participants to respond correctly/incorrectly due to uncertainty rather than genuinely held beliefs. Given that limited knowledge and high endorsement of misconceptions tend to be associated with overconfidence in one's understanding of mental health (Motta et al., 2018), highlighting the possibility of the Dunning-Kruger effect in this context, future research should consider the use of Likert-type scales to better capture the confidence with which these beliefs are held.

Second, participants had the ability to revise their responses, which could have influenced their cognitive reflection scores, especially once they recognized the nature of the task. However, revision of responses could also indicate a genuine level of reflection, as it suggests they actively reconsidered their answers. Additionally, one question on the cognitive reflection test; "How many of each animal did Moses put on the ark?", may have been more indicative of participants' biblical knowledge than their reflective nature, especially since the question's difficulty could vary depending on one's cultural and religious background. This could possibly explain why religious affiliation did not affect cognitive reflection scores, despite being associated with other predictors.

Third, while the sample size of 157 exceeded the required number for multiple regression analysis (Tabachnick & Fidell, 2013), the findings should still be interpreted with caution. For example, the statistics on religious affiliation would likely change with a larger sample size, as global data shows a greater proportion of theists than atheists (Wasserman,

2024). Therefore, the findings may be more reflective of the sample used than the general population.

Fourth, while both the abnormal psychology misconceptions score and paranormal belief score were treated as unitary constructs, future research could examine their distinct subcategories. For example, 30.6% (48) of participants in the present study endorsed the misconception "Reincarnation does occur", while 79% (124) endorsed "There is life on other planets". These beliefs represent different subcategories of paranormal thinking (Tobacyk, 2004), with the latter likely reflecting a misunderstanding of the distinction between certainty and possibility, which is more aligned with scientific literacy than paranormal endorsement.

Fifth, for most of the APMQ questions (16/20), the correct answer was "false," which may have led to response-set bias. Additionally, four reverse-coded questions with "true" as the correct answer, were found to be the most commonly endorsed misconceptions. This could be attributed to either; a) a response-set bias, or b) confusion due to their phrasing. For example, the statement "People are not especially likely to repress memories that are extremely traumatic" might have been unclear to some, resulting in answers that may not reflect their real beliefs.

In addition, while Basterfield et al. (2023) assessed the impact of wording bias by comparing positively and negatively phrased scales, future research should explore how variations in the construct of sentences themselves might influence endorsement rates. For example, the misconception "The fact that a substance is "natural" means that it is safe" was endorsed by only 0.6% of participants in the present study, making it the least endorsed misconception. It remains an open question whether slightly rephrasing this statement to "Natural substances are safe to consume" would influence endorsement rates. However, even if individuals logically recognize that natural substances are not inherently safe and can easily recall examples of poisonous mushrooms or plants, their response may not fully capture

implicit biases seen in consumer behavior, as products marketed as "natural" are often preferred despite no biochemical difference after consumption. This suggests that endorsement rates in APMQ responses may not directly translate into real-world decision-making choices.

Despite these limitations, the present study makes a valuable contribution to the literature by providing contrasting findings on the endorsement of mental illness misconceptions among the general public, with lower levels of endorsement compared to previous studies. This study also strengthens existing theoretical and empirical research by demonstrating that the endorsement of mental illness misconceptions is shaped by a broader framework of false inferences, which are sustained and magnified by scientific illiteracy. Given the significant association between higher education levels, lower pseudoscientific thinking and reduced endorsement of mental illness misconceptions, these findings support the combination of myth debunking with scientific reasoning into early educational curriculum to decrease the formation of flawed inferential frameworks that subsequently contribute to stigmatization and negative societal attitudes toward mental illness.

Practical Implications

The findings of this study suggest that interventions aimed at reducing misconceptions about mental illness should not be limited to correcting these misconceptions, but focus on addressing the broader framework of interconnected beliefs that in conjunction influence rationality. Given the identification of pseudoscientific beliefs as a significant predictor of mental illness misconceptions, in addition to the identification of lower education level being a contributing factor, this study advocates for early educational interventions to employ refutational approach to misconceptions while promoting scientific literacy. Improving the ability to differentiate between pseudoscience and evidence-based science in earlier stages of education may help prevent the formation of flawed inferences about mental illness.

Conclusion

The present study provides lower prevalence of mental illness misconceptions in the general public compared to previous research, emphasizing the role of pseudoscientific thinking as the main predictor. Despite being examined, paranormal thinking and cognitive reflection were not significant predictors, indicating that superstitious beliefs and intuitive thinking do not necessarily make one more susceptible to mental illness misconceptions. Future research should explore these relationships further, with the recommendation of using different measurement scales that capture confidence in such misconceptions, as well as exploring how variations in the construct of questions/statements might influence endorsement rates. Moreover, given lower level of education emerged as a contributing factor, implications of these findings support the need for future educational initiatives to incorporate debunking of these misconceptions with teaching how to critically evaluate information. If implemented in early educational stages, this may reduce the formation of flawed inferences that contribute to misconception endorsement, further decreasing stigmatization and negative societal attitudes toward mental illness.

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Appendix A

Demographic Questionnaire

Age: _____

Gender:

- ☐ Male
- ☐ Female
- ☐ Non-binary
- ☐ Prefer not to say
- ☐ Prefer to self-describe: _____

Highest level of Education completed or currently pursuing:

- ☐ High school diploma or equivalent (Secondary school)
- ☐ Some college or associate degree (For example; Level 5/6 NFQ)
- ☐ Bachelor's degree
- ☐ Master's degree / Postgraduate degree
- ☐ Doctoral degree or higher

Religious Affiliation:

- ☐ I consider myself religious
- ☐ I do not identify with any religious beliefs

Political Affiliation:

- ☐ Conservative
- ☐ Liberal
- ☐ Centrist
- ☐ Other
- ☐ None (A-political)

Have you ever been diagnosed with, or sought treatment for, a mental health condition?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

Appendix B

Abnormal Psychology Misconceptions Questionnaire (APMQ)

Please indicate whether you think each item is true or false by circling the right response.

1. All people who confess to crimes are guilty of them.
2. Children never lie about whether they were abused.
3. Nicotine is much less addictive than other drugs.
4. More crimes, suicides, and psychiatric hospital admissions occur during full moons than at other times.
5. The fact that the substance is “natural” means that it’s safe.
6. Psychiatric labels do not cause harm by stigmatizing people. (R)
7. Sleepwalking is associated with deep-seated psychological problems.
8. Mental illnesses are due almost entirely to people’s life experiences.
9. Asking people about suicide increases the chances that they will kill themselves.
10. Psychosomatic disorders are entirely in “people’s heads”.
11. Suicide is not especially common during the dark days of winter. (R)
12. Antidepressants are much more effective than psychotherapy for treating depression.
13. Because Prozac, which increases the activity of serotonin in the brain, has been shown to effectively treat depression, we can conclude that depression is caused by a deficiency of serotonin in the brain.
14. Most patients with severe mental disorders have a history of violence.
15. People are not especially likely to repress memories that are extremely traumatic. (R)
16. All people who call themselves “psychotherapists” have advanced degrees (for example, Ph.D., M.A) in mental health.
17. A psychological test is biased if it diagnoses more women than men with a specific disorder.
18. Most people who were sexually abused in childhood do not develop severe personality disturbances in adulthood. (R)
19. If a traumatic experience precedes schizophrenia, then we should conclude that this traumatic experience contributes to schizophrenia.
20. Testimonials from individuals who have undergone a particular therapy (for example, “This therapy really helped me”) are the best way to learn about the effectiveness of that therapy.

Note: (R) = Reversed encoded = also “True”

Appendix C

Revised Pseudoscientific Belief Scale (PBS-R)

Please indicate whether you think each item is true or false by circling the right response.

1. All the cells of our body store memories (cellular memories), ours or of our ancestors
2. The collective memory inherited and shared by the organisms belonging to the same species ('morphic field' or also 'morphic resonance') explains several biological phenomena
3. Quantum mechanics has great implications in the explanation of consciousness and/or in the treatment of diseases
4. Osteopathy and/or chiropractic are scientifically backed branches of physiotherapy
5. There are areas of our body surface, such as the feet, hands and/or ears in which we find representations of our entire anatomy
6. The theoretical basis of acupuncture is incongruent with current knowledge about human anatomy (R)
7. It is a proven fact that the enthusiastic repetition of desires or asking them to the universe (law of attraction) could cause them to come true
8. While it is true that evolution is a fact, there are issues that require an intelligent intervention to be explained
9. It has been scientifically proven that some people have extrasensory abilities (such as telepathy or precognition)
10. Due to well demonstrated biological reasons, negative emotions and unsolved conflicts or traumas increase the probability of having cancer
11. Neuro-linguistic programming (NLP) is accepted as part of psychology
12. The main ideas of psychoanalysis are supported by scientific evidence
13. Food should be chosen according to the blood group of each person
14. The use of stem cells and/or DNA improves the effectiveness of facial creams
15. GMOs are medically and ecologically safe (R)
16. There is archaeological evidence of ancient contacts with 'astronauts' or 'space visitors' (for example, in cultures such as Sumerian, Egyptian, Maya or Nazca)
17. It is demonstrated that, in some contexts and cases, being exposed to magnetic fields is positive for health
18. Many of the pesticides and additives used by the food industry are unsafe
19. Vaccines are unsafe, some of them cause diseases such as autism

Note: (R) = Reversed encoded.

Appendix D

Revised Paranormal Belief Scale

Please choose either agree or disagree beside each statement. There are no right or wrong answers. This is a sample of your own beliefs and attitudes. Thank you.

1. The soul continues to exist though the body may die.
2. Some individuals are able to levitate (lift) objects through mental forces.
3. Black magic really exists.
4. Black cats can bring bad luck.
5. Your mind or soul can leave your body and travel (astral projection).
6. The abominable snowman of Tibet exists.
7. Astrology is a way to accurately predict the future.
8. There is a devil.
9. Psychokinesis, the movement of objects through psychic powers, does exist.
10. Witches do exist.
11. If you break a mirror, you will have bad luck.
12. During altered states, such as sleep or trances, the spirit can leave the body.
13. The Loch Ness monster of Scotland exists.
14. The horoscope accurately tells a person's future.
15. I believe in God
16. A person's thoughts can influence the movement of a physical object.
17. Through the use of formulas and incantations, it is possible to cast spells on persons.
18. The number "13" is unlucky.
19. Reincarnation does occur.
20. There is life on other planets.
21. Some psychics can accurately predict the future.
22. There is a heaven and a hell.
23. Mind reading is not possible.
24. There are actual cases of witchcraft.
25. It is possible to communicate with the dead.
26. Some people have an unexplained ability to predict the future.

Note. Item 23 is reverse scored. Traditional Religious Belief = Mean of Items (1, 8, 15, 22); Psi = Mean of Items (2, 9, 16, 23); Witchcraft = Mean of Items (3, 10, 17, 24); Superstition = Mean of Items (4, 11, 18); Spiritualism = Mean of Items (5, 12, 19, 25); Extraordinary Life Forms = Mean of Items (6, 13, 20); Precognition = Mean of Items (7, 14, 21, 26).

Appendix E

10-Item Verbal Cognitive Reflection Task (CRT-V)

You will see several short-answer items that vary in difficulty. Answer as many as you can. You are given short text box beside each question to answer.

1. Mary's father has 5 daughters but no sons—Nana, Nene, Nini, Nono. What is the fifth daughter's name probably? _____
correct answer: Mary, intuitive answer: Nunu
 2. If you were running a race, and you passed the person in 2nd place, what place would you be in now? _____
correct answer: 2nd, intuitive answer: 1st
 3. It is a stormy night and a plane takes off from JFK airport in New York. The storm worsens, and the plane crashes-half lands in the United States, the other half lands in Canada. In which country do you bury the survivors? _____
correct answer: we do not bury survivors, intuitive answer: USA
 4. A monkey, a squirrel, and a bird are racing to the top of a coconut tree. Who will get the banana first, the monkey, the squirrel, or the bird? _____
correct answer: there is no banana on a coconut tree, intuitive answer: bird
 5. In a one-storey pink house, there was a pink person, a pink cat, a pink fish, a pink computer, a pink chair, a pink table, a pink telephone, a pink shower— everything was pink! What colour were the stairs probably? _____
correct answer: no stairs in a one-storey house, intuitive answer: pink
 6. How many of each animal did Moses put on the ark? _____
correct answer: none, intuitive answer: two
 7. The wind blows west. An electric train runs east. In which cardinal direction does the smoke from the locomotive blow? _____
correct answer: no smoke from an electric train, intuitive answer: west
 8. If you have only one match and you walk into a dark room where there is an oil lamp, a newspaper and wood— which thing would you light first? _____
correct answer: match, intuitive answer: oil lamp
 9. Would it be ethical for a man to marry the sister of his widow? _____
correct answer: not possible, intuitive answer: no
 10. Which sentence is correct: (a) 'the yolk of the egg are white' or (b) 'the yolk of the egg is white'? _____
correct answer: the yolk is yellow, intuitive answer: b
-

Appendix F

Participant Information Sheet

You are offered the chance to participate in a research study. If you are interested in taking part, please take a moment to read over this document explaining the purpose of carrying out this research and what it would involve for you. If you have any queries or questions regarding the study, please get in touch with me through the contact details provided below.

Before deciding to partake in this study it is important that you understand both the purpose of this study and what it will mean for you as the participant. Please carefully read the provided information regarding the details of the study and if you seek clarification surrounding any aspects of the research, please do not hesitate to make contact through the details provided below. Please ensure all the details below are comprehensively understood before making the decision to participate in this study.

What is this study about?

I am currently a third year student in the BA in Psychology programme at National College of Ireland. Currently, I am conducting an independent research study as part of my final year thesis. The aim of this study is to understand what is the prevalence of misconceptions about mental illness and its' treatment among the general public, and how are these misconceptions associated with certain demographic and cognitive factors, specifically level of education, religious and political affiliations, history of mental diagnoses, endorsement of pseudoscience, superstitious thinking and cognitive reflection.

What will taking part in the study involve?

Taking part in this research will firstly involve completing a questionnaire that should take 20-25 minutes to complete, taking longer if needed. You can complete the questionnaire at your own convenience, and are free to take as many breaks as needed. The questionnaire is divided into five separate sections. The first will consist of several questions asking about your demographic details. The second section will focus on your understanding of mental illness and its' treatment. The second section will explore your attitudes toward various unconventional beliefs and practices regarding natural phenomena or human behavior. The third section will examine your attitudes toward superstitions, including beliefs in luck, fate, or supernatural events. The fourth and final section will measure your level of cognitive reflection, which involves your ability to question and critically evaluate information.

Who can take part?

Eligibility for participation is restricted to individuals aged 18 years and older. Exclusion applies only to minors or those under the age of 18.

Do I have to take part?

Participation in this research is voluntary, and you are not obligated to take part. Opting not to participate will have no consequences for you. However, once you have submitted your questionnaire, withdrawal of your data will not be possible, as the questionnaire is anonymous, and individual responses cannot be identified. It is unlikely that participation in the study will cause you to experience any significant distress. However, some questions related to cognitive reflection are introspective, providing an opportunity to reflect on one owns' thinking, which may feel uncomfortable. If you do not feel comfortable with this or feel that there may be a possibility of you experiencing a significant level of distress, you are advised not to take part in the study.

What are the possible risks and benefits of taking part?

Participating in this research does not offer direct personal benefits, and it is not expected to pose any psychological or physical risks. That being said, some questions in the questionnaire may prompt reflection on personal beliefs, which could cause mild discomfort. Should you feel uncomfortable at any point up until submission, you have the option to discontinue your participation without facing any consequences. Notably, your contribution remains invaluable, significantly advancing our understanding of misconceptions surrounding mental illness and its treatment. By taking part in this research, you are contributing to the advancement of strategies that may reduce stigma and expand on the body of knowledge regarding the causes of mental illness misconceptions.

Will taking part be confidential and what will happen to my data?

The questionnaire is anonymous, it is not possible to identify a participant based on their responses to the questionnaire. Anonymised data will be stored on NCI servers in line with NCI's data retention policy. It is envisaged that anonymised data will also be uploaded to a secondary data repository to facilitate validation and replication, in line with Open Science best practice and conventions.

What will happen to the results of the study?

The results of this study will be presented in my final dissertation, which will be submitted to National College of Ireland, and may be presented at conferences and/or submitted to an academic journal for publication. You will have the opportunity to access the study's results on the NCI website.

Who should you contact for further information?

If you have any further questions about the research you can contact:

Researcher: Paola Miletic (x22739851@student.ncirl.ie)

Supervisor: Dr Fearghal O'Brien (fearghal.obrien@ncirl.ie)

I HAVE READ THIS INFORMATION AND WOULD LIKE TO CONTINUE ☐

Appendix G

Participant Consent Form

**Please read this consent form carefully before you decide to participate in this study.
Please ask any questions or concerns to the researcher before signing the form.**

I understand that if agree to participate now, I can withdraw or refuse to participate at any point before data submission by closing my browser window, without any possible consequences.

The method proposed for this study has been approved by the Departmental Ethics Committee within the National College of Ireland. Thus, the committee does not have any concerns regarding the procedure as described by the researcher. It is the researcher's responsibility to abide by ethical guidelines in their interactions with participants and the collection of data.

Once the point of data submission and once the test has finished and my questionnaire and test responses are linked, due to the nature of the information being un-identifiable I cannot retract my data.

I have read the purpose of the study and voluntarily agree to participate, with no concerns.

All data from the study will be treated with confidentiality and that the data will be statistically analysed and submitted in a report to the Psychology Department in the School of Business.

I understand that my information will be stored on NCI servers in line with NCI's data retention policy, and that the data will also be uploaded to a secondary data repository to facilitate validation and replication, in line with Open Science best practice and conventions.

I understand that if I have any concerns or general questions regarding any aspect of the research, that they will be fully addressed by the individuals involved in the research.

By clicking this box, you are confirming that you have read, and agree with all the above details and that you are suitable to take part in the study according to the inclusion criteria

☐

By clicking this box, you are providing informed consent to partake in the study

☐

Appendix H

Participant Debriefing Sheet

Thank you for your participation in this research study. The purpose of this study was to investigate the prevalence and associated factors of misconceptions regarding mental illness and its' treatment among the general public.

The questionnaire you completed was divided into five sections. The first consisted of several questions asking about your demographic details. The second section was adapted from Basterfield et al. (2023) and aimed to assess your understanding of mental health and any misconceptions you may hold regarding mental illness and its treatment. The third section explored your endorsement of pseudoscientific beliefs using the Revised version of the Pseudoscientific Belief Scale (Fasce et al. (2021)). The fourth section focused on measuring your endorsement of superstitious beliefs using the Revised Paranormal Belief Scale (Tobacyk, 2004). Finally, the last section aimed to measure your level of cognitive reflection, which involves your ability to question and critically evaluate information, and was adapted from Sirota et al. (2021). This research will employ correlational statistical analysis to investigate the relationship between aforementioned variables.

Your participation in this study will contribute to the understanding of mental illness misconceptions and their correlates among the general public. This study and your participation will contribute to and benefit the research surrounding the identification and prevalence of mental illness misconceptions and its' treatment, as well as their underlying factors. As such, this research aims to assist in informing interventions aimed at rectifying misconceptions, enhancing mental health literacy, and ultimately assist in reducing stigma associated with mental illness.

To further reiterate, all the information that you have provided throughout this study will remain anonymous once your questionnaires are submitted, in line with utmost confidentiality.

If you have been in any way affected by the included topics in this session, please see the details of a free helpline that provides safe places to share concerns or worries helping to promote healthy mental well-being: www.samaritans.org/ireland

Thank you once again for your valuable contribution to this research, it is greatly appreciated. If you have any further questions about this study or would like additional information, please don't hesitate to contact me through my email: x22739851@student.ncirl.ie , or my academic supervisor Dr Fearghal O'Brien by email: fearghal.obrien@ncirl.ie .

Thank you.

Output 2 from ANALYSIS.spv [Document2] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Graphs Utilities Extensions Window Help

Nonparametric Test: Means
Nonparametric Test: Means
Nonparametric Test: Means
Nonparametric Test: Means
Nonparametric Test: Means
Nonparametric Test: Means
Explore
Explore
Nonparametric Test: Means
Means
Nonparametric Test: Means
Means
T-Test
Nonparametric Test: Means
Nonparametric Test: Means
Regression
Title
Notes
Descriptive Statistics
Correlations
Variables Entered/Removed
Model Summary
ANOVA
Coefficients
Excluded Variables
Collinearity Diagnostics
Residuals Statistics
Charts
Title
*zresid Normal Q-Q Plot
*zresid by *
Frequencies
Regression
Explore

Total Score, RPBS Total Score^a

a. Dependent Variable: APMQ Total Score
b. All requested variables entered.

Model Summary^c

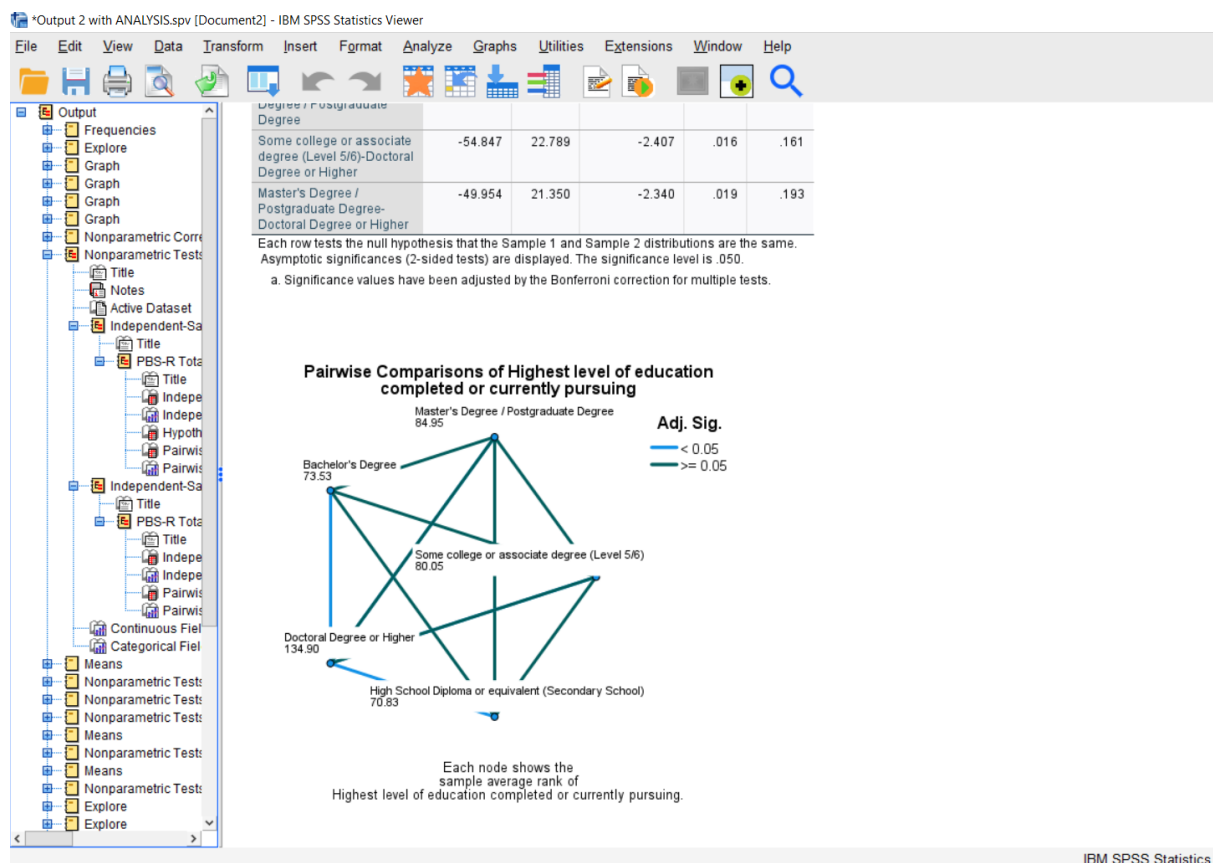
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.398 ^a	.159	.101	2.445	.159	2.753	10	146	.004
2	.528 ^b	.278	.213	2.288	.120	7.907	3	143	< .001

a. Predictors: (Constant), Religion - Not religious, Education - Bachelor's Degree, Politics - Centrists, Education - Doctorate or Higher, Politics - Other, Education - College/Associate Degree, Age, Politics - Liberals, Education - Master's Degree, Politics - A-Political
b. Predictors: (Constant), Religion - Not religious, Education - Bachelor's Degree, Politics - Centrists, Education - Doctorate or Higher, Politics - Other, Education - College/Associate Degree, Age, Politics - Liberals, Education - Master's Degree, Politics - A-Political, CRT-V Total Score, PBS-R Total Score, RPBS Total Score
c. Dependent Variable: APMQ Total Score

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	164.644	10	16.464	2.753	.004 ^b
	Residual	873.025	146	5.980		
	Total	1037.669	156			
2	Regression	288.852	13	22.219	4.243	< .001 ^c
	Residual	748.817	143	5.236		
	Total	1037.669	156			

a. Dependent Variable: APMQ Total Score
b. Predictors: (Constant), Religion - Not religious, Education - Bachelor's Degree, Politics - Centrists, Education - Doctorate or Higher, Politics - Other, Education - College/Associate Degree, Age, Politics - Liberals, Education - Master's Degree, Politics - A-Political
c. Predictors: (Constant), Religion - Not religious, Education - Bachelor's Degree, Politics - Centrists, Education - Doctorate or Higher, Politics - Other, Education - College/Associate Degree, Age, Politics - Liberals, Education - Master's Degree,



File	Edit	View	Data	Transform	Analyze	Graphs	Utilities	Extensions	Window	Help	
											
66	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
67	Scale3_Q19	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
68	Scale3_Q20	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
69	Scale3_Q21	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
70	Scale3_Q22	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
71	Scale3_Q23	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
72	Scale3_Q24	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
73	Scale3_Q25	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
74	Scale3_Q26	Numeric	1	0	Revised Paran...	{0, Agree}...	-99	8	Right	Nominal	Input
75	Scale4_Q1	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	13	Right	Nominal	Input
76	Scale4_Q2	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	12	Right	Nominal	Input
77	Scale4_Q3	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	14	Right	Nominal	Input
78	Scale4_Q4	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	12	Right	Nominal	Input
79	Scale4_Q5	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	13	Right	Nominal	Input
80	Scale4_Q6	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	13	Right	Nominal	Input
81	Scale4_Q7	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	13	Right	Nominal	Input
82	Scale4_Q8	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	12	Right	Nominal	Input
83	Scale4_Q9	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	14	Right	Nominal	Input
84	Scale4_Q10	Numeric	1	0	Verbal Cognitiv...	{0, Incorrect...	-99	14	Right	Nominal	Input
85	APMQ_Total	Numeric	8	0	APMQ Total Sc...	None	-99	12	Right	Scale	Input
86	PBS_R_Total	Numeric	8	0	PBS-R Total Sc...	None	-99	12	Right	Scale	Input
87	RPBS_Total	Numeric	8	0	RPBS Total Sc...	None	-99	12	Right	Scale	Input
88	CRTV_Total	Numeric	8	0	CRT-V Total Sc...	None	-99	12	Right	Scale	Input
89	Dummy_E...	Numeric	8	0	Education - Col...	None	-99	17	Right	Nominal	Input
90	Dummy_E...	Numeric	8	0	Education - Ba...	None	-99	17	Right	Nominal	Input
91	Dummy_E...	Numeric	8	0	Education - Ma...	None	-99	19	Right	Nominal	Input
92	Dummy_E...	Numeric	8	0	Education - Do...	None	-99	15	Right	Nominal	Input
93	Dummy_P...	Numeric	8	0	Politics - Liber...	None	-99	19	Right	Nominal	Input
94	Dummy_P...	Numeric	8	0	Politics - Centri...	None	-99	20	Right	Nominal	Input
95	Dummy_P...	Numeric	8	0	Politics - A-Poli...	None	-99	22	Right	Nominal	Input
96	Dummy_P...	Numeric	8	0	Politics - Other	None	-99	17	Right	Nominal	Input
97	Dummy_Re...	Numeric	8	0	Religion - Not r...	None	-99	20	Right	Nominal	Input
← Data ViewVariable View											

Appendix J

Evidence of Chronbach's Alpha's for the current sample

Scale: Abnormal Psychology Misconceptions Questionnaire

Case Processing Summary

		N	%
Cases	Valid	157	100.0
	Excluded ^a	0	.0
	Total	157	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics



Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.602	.588	20

Scale: Paranormal Belief Scale (Revised)

Case Processing Summary

		N	%
Cases	Valid	157	100.0
	Excluded ^a	0	.0
	Total	157	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.889	26

Scale: Pseudoscientific Belief Scal (R-PBS)

Case Processing Summary

		N	%
Cases	Valid	157	100.0
	Excluded ^a	0	.0
	Total	157	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.790	.792	19

Scale: Verbal Cognitive Reflection Scale

Case Processing Summary

		N	%
Cases	Valid	157	100.0
	Excluded ^a	0	.0
	Total	157	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.809	.808	10

Appendix K

Evidence of Project Poster

EVER WONDER WHY SOME PEOPLE
BELIEVE IN THINGS THAT MAKE
YOU GO, '*REALLY?*'



YOU ARE INVITED TO TAKE
PART IN A STUDY ABOUT
BELIEFS AND **MISCONCEPTIONS**

SCAN THE QR CODE TO BEGIN...



Appendix L



National College of Ireland
Mayor Street, IFSC, Dublin 1, Ireland
Coláiste Náisiúnta na hÉireann
Sráid an Mhéara, IFSC
Baile Átha Cliath 1, Éire

Tel: +353 1 449 8500
Fax: +353 1 497 2200
email: info@ncirl.ie
Website: www.ncirl.ie

Date: 29/10/2024

Ref: Ethics Approval Number: 29102024x2273985

Proposal Title: *Mind Over Myths: Exploring the Public's Endorsement of Mental Illness Misconceptions and its Associated Factors*

Applicant: Paola Miletic

Dear Paola,

Thank you for your application to the NCI Psychology Ethics Filter Committee, and for responding to clarification requests related to the application. I am pleased to inform you that the ethics committee has approved your application for your research project. Ethical approval will remain in place until the completion of your dissertation in part fulfilment of your BA Honours Degree in Psychology at NCI.

Please note that:

- Students are responsible for ensuring that their research is carried out in accordance with the information provided in their application.
- Students must abide by PSI ethics guidelines in completing their research.
- All procedures and materials should be approved by the supervisor prior to recruitment.
- Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made.

Sincerely,

A handwritten signature in black ink, appearing to read 'Robert Fox'.

Dr Robert Fox

Chairperson, Psychology Ethics Filter Committee

Ethics Committee members: *Dr Robert Fox (representative on the NCI Research Ethics Subcommittee), Dr Michelle Kelly, Dr Amanda Kracen, Dr Conor Nolan, Dr Lynn Farrell, Dr Fearghal O'Brien, Dr David Mothersill, Dr Michele Kehoe, Dr Barry Coughlan, Dr Conor Thornberry, Dr Brendan Cullen, Cassandra Murphy, Eden Bryan.*