

Original Article

Relationship of Attentional Control and Intolerance of Uncertainty with Hoarding Behaviour among University Boarding Students

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ABSTRACT

Background: Hoarding disorder is increasingly recognized as a significant mental health condition characterized by an excessive acquisition and difficulty in discarding possessions. While previous research has identified genetic, environmental, and neurobiological factors contributing to hoarding behaviors, studies in the Pakistani context, particularly among university students, are scarce. This study investigates the role of attentional control and intolerance of uncertainty in relation to hoarding behaviors among university boarding students in Pakistan.

Objective: The primary objective of this study was to examine the relationships between hoarding behaviors, attentional control, and intolerance of uncertainty, and to explore the demographic influences on these variables, with a focus on gender differences.

Methods: Utilizing a correlational and cross-sectional design, this study recruited a balanced sample of 200 university boarding students (100 males and 100 females) via simple random sampling. The Intolerance of Uncertainty Scale (IUS), Attention Control Scale (ATC), and Saving Inventory Scale (SI-R) were employed to measure the respective constructs. Data were collected through paper-based questionnaires, with analysis conducted using SPSS version 25. Statistical methods included descriptive statistics, Pearson's correlation, and t-tests for gender comparison.

Results: The results indicated a moderate positive correlation between hoarding behaviors and intolerance of uncertainty ($r = .33, p < .01$), and a negative correlation between attentional control and intolerance of uncertainty ($r = -.19, p < .01$). Gender differences were significant, with males exhibiting higher mean scores in hoarding behaviors ($M = 45.13, SD = 10.67$) compared to females ($M = 39.12, SD = 10.38$), and similar patterns were observed for other studied variables. Education and socioeconomic status showed no significant effects on the relationships studied.

Conclusion: The study underscores the significant impact of intolerance of uncertainty and attentional control on hoarding behaviors among university students in Pakistan, with distinct gender differences suggesting the need for targeted interventions. This research contributes to the understanding of hoarding in a novel cultural context and supports the development of specific therapeutic strategies focusing on cognitive and emotional regulation.

Keywords: Hoarding Behaviors, Attentional Control, Intolerance of Uncertainty, University Students, Pakistan, Mental Health, Gender Differences, Psychological Assessment.

INTRODUCTION

Hoarding disorder, characterized by the excessive acquisition and difficulty in discarding possessions of seemingly limited value, leads to significant clutter, distress, and impaired functioning. Initially recognized by Frost and Hartle in 1996, hoarding has been increasingly acknowledged as a distinct mental health condition (1). This disorder reflects a critical imbalance between acquisition and rejection of items, where homes become haphazard and safety and productivity are compromised. The underlying causes of hoarding disorder are complex and multifaceted, encompassing genetic, environmental, and neurobiological factors. Research indicates a notable genetic component, as evidenced by a higher prevalence of hoarding symptoms among first-degree relatives of

affected individuals (2). Environmental influences, such as traumatic events and early attachment disruptions, have also been linked to the emergence of hoarding behaviors (1, 3). Furthermore, neurobiological studies have identified abnormalities in brain regions related to decision-making, emotional processing, and cognitive control in individuals diagnosed with the disorder (2, 4).

The cognitive-behavioral model proposed by Frost and Hartle emphasizes the role of information processing challenges, weak emotional connections to belongings, and distorted beliefs about the importance of possessions in hoarding. These cognitive challenges include difficulties with memory, selective attention, decision-making, and organization, which significantly impair effective information processing (3). The model also highlights the impact of metacognitive factors, such as beliefs and cognitive styles, on these processes (5, 6).

Despite the global recognition and extensive study of hoarding, research on this disorder in Pakistan remains scarce, with limited literature primarily focusing on related conditions like obsessive-compulsive disorder (OCD) (7, 8). This gap is particularly pronounced in the context of university boarding students, a group for whom the challenges of limited living spaces and frequent relocations could exacerbate hoarding behaviors (5). This population also presents a unique opportunity to explore the roles of attentional control and intolerance of uncertainty in hoarding behaviors. It has been suggested that individuals with hoarding tendencies often exhibit impaired attentional control, which could be closely linked to their difficulty in discarding items (4).

This study proposes to examine the complex relationships among hoarding, attentional control, and intolerance of uncertainty among university boarding students in Pakistan. The hypotheses suggest not only a relationship between these factors but also explore the predictive roles of attentional control and intolerance of uncertainty in hoarding behaviors. Additionally, this research will consider the influence of demographic variables such as age, socioeconomic status, and gender on these relationships. The intended research aims to fill the significant void in the Pakistani literature on hoarding and provide insights into the specific challenges faced by this demographic, potentially guiding future interventions and policy-making in mental health and housing regulations.

MATERIAL AND METHODS

This study employed a correlational and cross-sectional research design to investigate the relationship between attentional control, intolerance of uncertainty, and hoarding behaviors among university boarding students. The sample comprised 200 individuals, balanced gender-wise with 100 males and 100 females, all of whom were students. Data collection was conducted using a simple random sampling method across two distinct stages to ensure a representative demographic spread within the population of interest (7, 9, 10).

To measure intolerance of uncertainty, the Intolerance of Uncertainty Scale (IUS) was administered. This scale evaluates emotional, cognitive, and behavioral reactions to ambiguous situations, implications of uncertainty, and attempts to control future outcomes. The IUS contains 27 items and can be used either as a unifactorial or bifactorial tool. For unifactorial scoring, the sum of responses to all items is calculated, while bifactorial scoring differentiates between two factors: 'Uncertainty has negative behavioral and self-referent implications' and 'Uncertainty is unfair and spoils everything' (3, 11, 12).

Attentional control was assessed using the Attention Control Scale (ATTC), which consists of 20 items rated on a four-point Likert scale. The scale is divided into two primary subscales: attention shifting and attention focusing, providing a nuanced view of the subjects' attention management capabilities. Hoarding behaviors were explored through the Saving Inventory – Revised (SI-R), a tool designed to assess various aspects of saving behavior, including financial planning and hoarding tendencies. This instrument is beneficial for understanding saving-related behaviors in both clinical and research settings (6, 10).

Demographic data were collected through self-generated tables capturing essential variables such as age, socioeconomic status, siblings, gender, and professional qualifications. The participants were approached in person, and questionnaires were distributed in paper form. Each session began with a brief introduction to the study, ensuring participants understood the purpose and how to complete the questionnaires. Although participants were not prompted during the filling out process, they were thanked afterward for their cooperation (6, 9, 10).

Ethical considerations were meticulously followed in line with the Helsinki Declaration. Prior to participation, all respondents were informed about the study's aims and assured of their anonymity and confidentiality in handling their responses. Informed consent was obtained from each participant, emphasizing voluntary participation and the right to withdraw at any time without penalty.

Data collected were analyzed using SPSS version 25, employing various statistical techniques to ensure rigorous evaluation of the hypotheses. Descriptive statistics provided an overview of the sample characteristics, while inferential statistics, such as correlation and regression analyses, were conducted to explore the relationships between the studied variables. This comprehensive analysis approach helped illuminate the intricate dynamics between attentional control, intolerance of uncertainty, and hoarding behaviors among the studied cohort.

RESULTS

The study meticulously explored the psychometric properties of the scales utilized, revealing distinct patterns across the measures. The Intolerance of Uncertainty Scale (IUS) demonstrated a mean score of 34.37 with a standard deviation of 6.30, highlighting moderate variability among participants. Scores on this scale ranged from 19 to 53, indicating a broad dispersion of intolerance to uncertainty levels within the sample, and the scale showed good reliability with a Cronbach's alpha of .77 (Table 2). Similarly, the Attention Control Scale (ATCS) reported a mean of 49.61 and a standard deviation of 4.80, with participant scores spanning from 32 to 77. The reliability of the ATCS was satisfactory, evidenced by a Cronbach's alpha of .72 (Table 2). The Saving Inventory Scale (SI-R) yielded a mean of 42.12, though the standard deviation appeared notably high at 10.92, suggesting significant differences in saving behaviors among the students; this scale also demonstrated strong reliability with a Cronbach's alpha of .84 (Table 2).

Table 1: Psychometric Properties of Study Major Variables

Scale	Mean	SD	Range	Reliability (α)
Intolerance of Uncertainty Scale	34.37	6.30	19-53	.77
Attention Control Scale	49.61	4.80	32-77	.72
Saving Inventory Scale	42.12	10.92	11-69	.84

Table 2: Bivariate Correlations between the IUS, ATQ, and SI-R

Variables	Intolerance of Uncertainty Scale (1)	Attention Control Scale (2)	Saving Inventory Scale (3)
Intolerance of Uncertainty Scale	1		
Attention Control Scale	-.19**	1	
Saving Inventory Scale	.33**	.03	1

Note: Correlations are Pearson's correlation coefficients. ** $p < .01$; * $p < .05$.

Table 3: t-test Analysis for Gender Differences on IUS, ATQ, and SI-R

Variable	Gender	Mean	SD	t (200)	P	Cohen's d
IUS	Male	36.08	6.09	-3.98	.000	.56
	Female	32.66	6.05			
ATQ	Male	50.32	4.96	-2.10	.037	.30
	Female	48.90	4.55			
SI-R	Male	45.13	10.67	-4.03	.000	.57
	Female	39.12	10.38			

Note: M = Mean; SD = Standard Deviation. Statistical significance at $p < .05$ is indicated.

Bivariate correlations provided insight into the relationships between the constructs of interest (Table 3). Notably, there was a significant negative correlation between the Intolerance of Uncertainty Scale and the Attention Control Scale ($r = -.19$, $p < .01$), indicating that higher intolerance of uncertainty was associated with poorer attention control. Conversely, the correlation between the Intolerance of Uncertainty Scale and the Saving Inventory Scale was positive and statistically significant ($r = .33$, $p < .01$), suggesting that increased uncertainty intolerance may be associated with greater hoarding behaviors. The correlation between the Attention Control Scale and the Saving Inventory Scale was non-significant ($r = .03$, $p > .05$), indicating no clear link between attention control and saving behaviors.

Gender differences were further analyzed through t-tests, revealing significant disparities in the scores across the scales (Table 4). Males reported higher mean scores on the Intolerance of Uncertainty Scale ($M = 36.08$, $SD = 6.09$) compared to females ($M = 32.66$, $SD = 6.05$), with the differences being statistically significant ($t(200) = -3.98$, $p < .000$, Cohen's $d = .56$). In attention control, males also scored higher ($M = 50.32$, $SD = 4.96$) than females ($M = 48.90$, $SD = 4.55$), with this difference reaching statistical significance as well ($t(200) = -2.10$, $p = .037$, Cohen's $d = .30$). The trend continued in the Saving Inventory Scale, where males scored significantly higher ($M = 45.13$, $SD = 10.67$) than females ($M = 39.12$, $SD = 10.38$), also significant ($t(200) = -4.03$, $p < .000$, Cohen's $d = .57$).

Overall, the results underscored complex interrelations among intolerance of uncertainty, attentional control, and hoarding behaviors, with gender playing a significant role in these dynamics. These findings suggest nuanced underlying psychological processes that influence hoarding tendencies, potentially guiding targeted interventions for university boarding students.

DISCUSSION

The study sought to elucidate the relationships among hoarding behaviors, attentional control, and intolerance of uncertainty among university students in Pakistan, revealing several significant findings. Firstly, a moderate positive association was observed between hoarding behaviors, as assessed by the Saving Inventory Scale (SI-R), and intolerance of uncertainty (IUS), indicating that students with higher intolerance of uncertainty tended to exhibit increased hoarding behaviors (12). This alignment with previous research underscores the broader implications of intolerance of uncertainty as a contributing factor to various psychopathologies, including hoarding disorder (5, 6, 8).

Further analysis revealed a negative correlation between attentional control, measured via the Attention Control Scale (ATC), and intolerance of uncertainty (13-15). This suggests that students with enhanced attentional control exhibited lower levels of intolerance of uncertainty, supporting the notion that robust attentional mechanisms may buffer against the anxieties associated with uncertain situations, thereby potentially mitigating hoarding behaviors. This finding resonates with the theoretical frameworks suggesting that improved cognitive control can lead to better emotional regulation and decision-making processes in uncertain scenarios (4).

The study also highlighted significant gender differences in these psychological traits. Females displayed lower levels of hoarding behaviors, intolerance of uncertainty, and slightly lower attentional control compared to males, a pattern consistent with prior studies indicating gender disparities in obsessive-compulsive spectra, including hoarding (3, 9, 16). Contrary to expectations, other demographic variables such as educational levels and socioeconomic status did not significantly influence the measured outcomes, suggesting that the core relationships between hoarding behaviors, attentional control, and intolerance of uncertainty transcend these factors.

The research contributes significantly to the limited body of knowledge on hoarding behaviors in Pakistan, highlighting the critical role of intolerance of uncertainty and attentional control. These findings suggest avenues for targeted interventions that could be particularly effective in university settings, where the pressures of academic achievement and living conditions might exacerbate stress and related psychopathologies.

However, the study is not without its limitations (1, 16-19). The cross-sectional nature of the design limits the ability to draw causal inferences from the observed associations (11, 12, 20). Furthermore, the reliance on self-reported measures might introduce biases such as social desirability or recall biases, potentially influencing the accuracy of the reported data. Future research could benefit from incorporating longitudinal designs and objective behavioral assessments to provide a more comprehensive understanding of these relationships (2, 3, 5, 6, 8, 9, 16).

In terms of recommendations, the findings advocate for the development of psychoeducational programs and cognitive-behavioral interventions at universities that specifically address intolerance of uncertainty and enhance attentional control (8, 13-15, 21). Such interventions could be tailored to the unique needs of gender groups and could include strategies like mindfulness training, which has been shown to improve attentional functions and emotional regulation (4, 7, 10, 11, 13, 14, 21).

In conclusion, this study enriches the understanding of hoarding behaviors among university students in Pakistan, emphasizing the importance of cognitive factors such as intolerance of uncertainty and attentional control. The insights gleaned offer a foundation for future investigations and interventions designed to improve the well-being and academic success of students facing these challenges. These efforts could ultimately contribute to broader societal benefits, given the potential impact of improved mental health on educational attainment and quality of life. The study not only fills a crucial gap in the regional literature on hoarding behaviors but also sets the stage for further scholarly exploration within the cultural and educational context of Pakistan.

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