

# Digital Hoarding as Predictor of Mental Health Problems among Undergraduate Students

Imran Khan<sup>1</sup>, Arif Nadeem<sup>2</sup>, Muhammad Saleem<sup>3</sup>

<sup>1</sup>Lecturer, Department of Applied Psychology, Chenab College of Advanced Studies, Faisalabad, Pakistan.

<sup>2</sup>Assistant Professor, Department of Applied Psychology, Government College University, Faisalabad, Pakistan.

<sup>3</sup>Professor, Department of Applied Psychology, The Islamia University of Bahawalpur, Pakistan.

Correspondence: [arifnadeem@gcuf.edu.pk](mailto:arifnadeem@gcuf.edu.pk)

## ABSTRACT

**Aim of the Study:** Pathological hoarding practices result in a great deal of clutter in the individuals' life areas, which interferes with daily activities and causes extreme anxiety or disruption of regular activities (Gulotta et al., 2013). The current study looked into how undergraduate students' mental health problems were affected by their digital hoarding habits.

**Methodology:** The study was conducted using a correlational research design. A Sample of ( $N= 248$ ) was collected with the age range of 18 to 25 ( $M=21.60$ ,  $SD= 1.68$ ) years. Data was collected from undergraduate students from the different government and private colleges and universities of Faisalabad city. A purposive sampling strategy was implemented for the data collection. The Study measures include the demographic information sheet, Digital Hoarding Questionnaire (Neave et al., 2019), and Depression, Anxiety, and Stress Scale (Lovibond & Lovibond, 1995) were used for data collection. The data were assessed by using SPSS 23 Version.

**Findings:** The study's results indicated that there is a significant positive association between digital hoarding and mental health problems, specifically, depression, anxiety, and stress. Regression results indicated that the R-square values for depression anxiety and stress were 19, .38, and .15 respectively depicting that digital hoarding causes a 19% change in depression level, 38% change in anxiety level, and 15% in stress level in the participants.

**Conclusion:** Having a strong positive link with mental health issues like stress, anxiety, and depression, digital hoarding is a strong predictor of these issues among undergraduate students.

**Keywords:** Digital Hoarding, Depression, Anxiety, Mental Health Problems, Undergraduate Students.

## Introduction

The condition known as hoarding disorder is considered an excessive accumulation of items and an inability to part with them for aesthetic reasons, emotional reasons, or future use considerations (Bennekome, 2015). A person with a hoarding problem feels upset when thinks about getting rid of the

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material. Regardless of the actual worth, they wind up with an excessive accumulation of items in their home. Hoarding is the inability to consistently part with one's belongings; it can be a standalone problem or a sign of another mental illness, such as obsessive-compulsive disorder (Sedera, 2022). Clothing, periodicals, food cartons, books, food, packaging, and even animals are the things that are hoarded the most frequently. Most significantly, excessive emotional attachment to possessions is displayed by hoarders (Grisham and Barlow, 2005, Grisham et al., 2009, Nedelisky and Steele, 2009).

A fascinating case study of a married 35-year-old man who gathered numerous small, meaningless objects warrants notice here. The man's primary care physician referred him to a psychiatrist. The majority of his living space was cluttered with these items, which were scattered over his home. He claimed that part of his emotional suffering stemmed from his wife discarding some of these items. About ten years ago, the behavior pattern started, and with time, it became more and more bothersome. Hoarding disorder is a serious problem that impacts the person as well as their friends and family, despite the fact that it is frequently underreported. The patient's mental state was negatively affecting their relationship, as evidenced by the results, and he was feeling distressed by his wife's cleaning attempts. Giving up things he didn't need was upsetting for him. His recent mood swings of depression and lethargy were attributed to these aggressive thoughts towards his wife (Neeraj et al., 2022).

We may develop strong attachments to some digital resources since we live in a more digitally connected world and individuals share more information online. These digital materials are also becoming more and more integrated into our personal and professional lives. Regarding the presence of digital hoarding and its possible issues, there has been a lot of speculation in the media. The prevalence of digital hoarding is hardly unexpected considering how depressing and agitated our lives are getting in terms of technology (Gulotta et al., 2013).

Digital hoarding is the practice of accumulating digital files to the point of losing perspective, which ultimately results in stress and disorganization (Bennekome et al., 2015). Numerous studies have been conducted from psychological, therapeutic, and sociological perspectives to examine the personal information, social, and personality traits of people who hoard physical goods (Frost & Gross, 1993; Grisham & Barlow, 2005; Nordsletten et al., 2013; Steketee et al., 2003; Tolin, 2011). According to van Bennekome et al. (2015), a case study of a physical hoarder who developed an obsession with hoarding photos in digital form. Classic signs of physical hoarding, he showed significant degrees of connection to the digital photos, which he has difficulty to delete, and the time he spent arranging the thousands of photos hindered his everyday functioning and led him to great grief.

Depression is a type of mood illness that is characterized by a person's persistent sadness, lack of interest, emptiness, or irritated mood. It also involves physical and cognitive variations that have a substantial impact on the person's ability to function (Chand & Arif, 2021). Stress is characterized by tension and mental pressure. Reduced stress levels may be advantageous, desirable, and even healthful. Positive stress can enhance biopsychosocial health and promote performance (Shahsavarani et al., 2015). This causes significant distress and/or impairment of normal functioning (Frost & Gross, 1993). It is a common phenomenon all around during human life. It's something that everyone has dealt with throughout history (Shahsavarani et al., 2015). Stress is an unavoidable part of life, it is very present (Blanco et al., 2008) and becoming more prevailing among university students (Gallagher, 2008, Mackenzie et al., 2011). The existing literature as given below, highlights the relationship between digital hoarding and certain mental health issues (i.e., depression, anxiety, and stress)

A study was conducted to find out if there are any similarities between physical and digital hoarding practices, and whether they can cause the same psychological distress. Online questionnaires measuring compulsive acquisition, digital and physical hoarding, OCD, indecisiveness, and mood were completed by 282 participants. The study's findings indicated that specific digital items were clearly associated with strong emotional ties, particularly with regard to images and movies. Positive and significant connections were observed among all the measuring variables. Regression analysis, however, showed that the only

factors that were significant predictors of digital hoarding were physical hoarding scores and OCD (Thorpe et al., 2019).

A qualitative investigation was carried out to examine the negative impacts of digital hoarding. An open-ended questionnaire conducted online comprising structured questions regarding digital management practices was administered to 46 participants, of which 24 were female and 21 were male. The participants were asked to complete all sections of the questionnaire. Thematic analysis was used to examine the open-ended responses. First contents of the data were coded and then gradually expanded into themes that best reflected the opinions of the participants. The results show that some individuals felt more stressed and anxious as a result of their perception that the amount of digital data they had accumulated was negatively affecting their psychological well-being (Sweeten et al., 2018).

A recent survey study done to explore the effect of digital hoarding on mental health problems in 846 participants indicated that digital hoarding can lead to higher levels of anxiety. Results also indicated that females are 27% more likely than males to experience the negative effects of digital hoarding, accounting for 37% of an individual's overall degree of anxiety (Sedera & Lokuge, 2022). Another study was conducted to find out how participants' digital hoarding habits, IT anxiety, and self-efficacy related to each other. 478 college students provided data for this study, which was carried out using a survey research design. The study's findings showed a strong correlation between digital hoarding, IT anxiety, and IT self-efficacy (Tugtekin, 2022).

Furthermore, it is clear that digital hoarding habits can be just as psychologically distressing as physical hoarding behaviors and seem to share certain characteristics with them. An online survey was used to measure the degrees of compulsive acquisition, digital and physical hoarding, OCD, indecisiveness, and mood in a sample of 282 participants. The study's findings show that there was a strong emotional attachment to specific kinds of digital possessions. All of the measured variables showed significant positive associations (Thorpe et al., 2019).

Another study was carried out to explore the potential role that these diverse interpersonal demands could have in explaining the correlations between depression and hoarding symptoms. By using the interpersonal constructs of interest, data on 125 individuals with increased hoarding symptoms were gathered. Even after adjusting for general levels of negative affect, the study's findings show a substantial relationship between the degree of hoarding and perceived burdensomeness. Furthermore, a significant mediating factor in the link between the degree of hoarding and depressed symptoms was perceived burdensomeness (Raines et al., 2016).

### ***The Rationale of the Study***

In the age of smartphones, cloud storage, and digital communication, individuals are accumulating digital content at an unprecedented rate. Many people find it challenging to manage and declutter their digital possessions, which can result in the accumulation of unnecessary data. Through this research, we can determine how widespread this behavior is and whether it has implications for mental health. The digital environment is integral to modern life, and an individual's ability to manage their digital possessions can significantly impact their overall well-being. When digital hoarding leads to mental health issues (i.e., depression, stress, and anxiety) it can hinder one's ability to fully enjoy the benefits of digital technology. Therefore, a number of studies as cited above have been conducted around the globe but the phenomenon under investigation has not been touched in Pakistan yet. Thus, the current study was designed to investigate the association between digital hoarding and mental health problems as well as to determine the predictive role of digital hoarding in the development of mental health problems (i.e., depression, anxiety, and stress) in undergraduate students.

## ***Hypotheses***

**H 1:** There is likely to be a significant positive relationship between digital hoarding and mental health problems (i.e., depression, anxiety, and stress) among undergraduate students.

**H 2:** Digital hoarding is a predictor of mental health problems among undergraduate students.

## **Method**

### ***Participants***

In the current correlational research, 248 participants (men=125, women=123) with the age range of 18 to 25 years ( $M=21.60$ ,  $SD=1.68$ ) were chosen using a purposive sampling strategy from different colleges and universities in Faisalabad city, Pakistan.

### ***Instruments***

#### ***Demographic Sheet***

Personal information relating to the participants of the study was gathered by a demographic sheet. The asked information was; name (optional), age, education, marital status, family system, and religion.

#### ***Digital Hoarding Questionnaire (Neave et al., 2019)***

The Digital Hoarding Questionnaire (Neave et al., 2019) is a reliable and valid instrument to measure digital hoarding. It consists of 10 items. It was originally a 5-point rating scale (not at all to very much) having two subscales; *Difficult Deleting and Accumulating*. The first subscale difficulty deleting consists of 6 items that convey the concept of difficulty deleting and the second subscale consists of 4 items that indicate the concept of accumulating.

#### ***Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995)***

The Depression, Anxiety, and Stress Scale (Lovibond & Lovibond, 1995) was implemented to measure mental health problems in undergraduate students. It is a widely used 21-item (DASS-21) collection of three self-report scales intended to measure stress, anxiety, and depression. These three subscales consist of seven items in each of the three DASS-21 scales with comparable content.

### ***Procedure***

First of all, permission was taken from the authors of the scales, following the seeking permission students were approached and different colleges and universities of Faisalabad, and permission was obtained from the principles of colleges and research management authorities. A printed informed consent was taken from the selected respondents and they were asked to participate in the study willingly. Finally, instruments were administered to the participants considering all the ethical principles, and data was assessed by using Statistical Package for Social Sciences (SPSS, V-23).

## **Results**

Table 1: *Demographic Characteristics of Participants (N=248)*

<b>Demographic Variables</b>	<b><i>f</i></b>	<b><i>%</i></b>	<b><i>Skewness</i></b>	<b><i>Kurtosis</i></b>
<b>Age</b>			<i>.05</i>	<i>-.82</i>
18-20	70	28.2		
21-25	178	71.8		
<b>Gender</b>			<i>.02</i>	<i>-2.02</i>
Male	125	50.4		
Female	123	49.6		
<b>Education</b>			<i>1.44</i>	<i>1.15</i>

Undergraduate	177	71.4		
Graduate	62	25.0		
Master	09	3.6		
<b>Marital Status</b>			-2.34	3.50
Married	30	12.1		
Unmarried	218	87.9		
<b>Religion</b>			4.70	20.27
Muslims	238	96.0		
Non-Muslims	10	4.0		
<b>Family System</b>			.95	-1.12
Joint	176	71.0		
Nuclear	72	29.0		

Table 2: Reliability Coefficients of the Study Measures (N= 248)

Scales	$\alpha$
Digital Hoarding Questionnaire	.86
Depression	.75
Anxiety	.77
Stress	.73
Depression Anxiety Stress Scale	.89

The data given in Table 2 shows the high internal consistency ( $\alpha = .73 - .89$ ) of the instruments used in the current study.

Table 3: Inter-correlations, Means, and Standard Deviations of Digital Hoarding Questionnaire, Depression, Anxiety, and Stress Scale among Undergraduate Students (N=248)

	1	2	3	4	5	6
1. DD	...	.66***	.42**	.40**	.34**	.95***
2. Accum.		...	.37**	.28**	.35**	.87***
3. Depression			...	.65***	.72***	.44**
4. Stress				...	.64***	.39**
5. Anxiety					...	.38**
6. DHQ						...
<i>M</i>	24.17	17.14	8.98	7.40	9.11	41.31
<i>SD</i>	8.54	5.54	4.69	3.20	4.61	12.88

$p < .01$  \*\*,  $p < .001$  \*\*\*,

**Note:** DD= Difficulty Deleting; Accum.= Accumulating; DHQ= Digital Hoarding Questionnaire.

Table 3 shows that digital hoarding is positively correlated with depression, anxiety, and stress. The subscales of digital hoarding (Difficulty deleting and accumulating) are also positively associated with all three subscales of DASS (depression, anxiety, and stress).

Table 4: Linear Regression Analysis indicating Digital Hoarding as Predictor of Depression among Undergraduate Students (N= 248)

Predictors	<i>B</i>	<i>SEB</i>	$\beta$	<i>t</i>	<i>p</i> <
$R^2 = .194$ , $\Delta R^2 = .191$					
Constant	2.34	.90		2.60	.01
Digital Hoarding	.16	.02	.44	7.70	.001

Data given in Table 4 displays that digital hoarding is a significant predictor of depression in undergraduate students, as it accounts for 19.1% of the variance  $R^2 = .194$ ,  $F(59.31)$ , \*\*\*  $p < .001$ .

Table 5: *Linear Regression Analysis indicating Digital Hoarding as Predictor of Stress among Undergraduate Students (N= 248)*

Predictors	<i>B</i>	<i>SEB</i>	$\beta$	<i>t</i>	<i>p</i> <
$R^2=.152, \Delta R^2=.148$					
Constant	3.41	.63		5.40	.001
Digital Hoarding	.10	.02	.39	6.63	.001

Table 5 displays that digital hoarding emerged as a significant predictor of stress in undergraduate students, as it accounts for 14.8% of the variance  $R^2=.152, F(43.96), ***p<.001$ .

Table 6: *Linear Regression Analysis indicating Digital Hoarding as Predictor of Anxiety among Undergraduate Students (N= 248)*

Predictors	<i>B</i>	<i>SEB</i>	$\beta$	<i>t</i>	<i>p</i> <
$R^2=.375, \Delta R^2=.140$					
Constant	3.58	.91		3.92	.001
Digital Hoarding	.13	.02	.37	6.34	.001

Table 6 shows that digital hoarding is also a significant predictor of anxiety in undergraduate students, as it accounts for 37.5% of the variance  $R^2=.140, F(40.20), ***p<.001$ .

## Discussion

Since Our daily lives are getting more and more digital (Gulotta et al., 2013), the association between digital hoarding and mental health problems has gained the attention of researchers around the globe in the past few decades (e.g., Bennekome et al., 2015; Sedera & Lokuge, 2022; Sweeten et al., 2018). However, such kind of investigation could not be traced conducted in Pakistan. Thus, the current study was planned to investigate the association between digital hoarding and mental health problems (i.e., depression, anxiety, and stress) as well as to determine the predictive role of digital hoarding (if any) in the development of mental health problems among undergraduate students from different universities and colleges in Faisalabad City, Pakistan.

Keeping in view the aforementioned existing literature, it was predicted that there would be a strong relationship between mental health issues and digital hoarding (i.e., depression, anxiety, and stress) among undergraduate students. The hypothesis was supported by the results of the current study as it was found that digital hoarding is positively associated with depression ( $r=.44, p<.01$ ), anxiety, ( $r=.38, p<.01$ ), and stress ( $r=.39, p<.01$ ) as well as the factors of digital hoarding Difficulty Deleting and Accumulating are also found to be significantly positively associated ( $p<.01, p<.001$ ) with mental health problems among undergraduate students. Furthermore, digital hoarding was also found to be a significant predictor of depression ( $R^2=.194, F=59.31, p<.001$ ), stress ( $R^2=.152, F=43.96, p<.001$ ), and anxiety ( $R^2=.140, F=40.20, p<.001$ ) in the participants.

While relating these findings to the prior studies, it can be asserted that digital hoarding leads the hoarders to a wide range of mental health problems particularly, emotional distress and ultimately to depression and anxiety (e.g., Neeraj et al., 2022; Nutley et al., 2022; Sweeten et al., 2018; Tugtekin, 2022). Based on the literature that is currently available, hoarding symptoms are driven by concerns about memory, while the number of loss or deprivation-related events that occur after the onset of hoarding is associated with an increased emotional attachment to possessions (Fontenelle et al., 2021) causing mental health problems as a result.

Since hoarders exhibit extreme emotional bounding to things (Grisham and Barlow, 2005, Grisham et al., 2009, Nedelisky and Steele, 2009) and exhibit high levels of attachment to the digital stuff that they can't bear to delete, and time they spend organizing the digital stuff might interfere with their daily functioning causing distress and mental health issues eventually (van Bennekome et al., 2015). Another possible reason behind this association might be the compulsive acquisition of digital hoarders that might cause

indecisiveness and mood problems (Thorpe et al., 2019) along with a negative effect on their psychological well-being and excessive feelings of stress and anxiety (Sweeten et al., 2018).

## **Conclusion**

Digital hoarding has not only a significant positive correlation with mental health problems (i.e., depression, anxiety, and stress) but is also a significant predictor of such mental health problems among undergraduate students.

## ***Implications of the Study***

Investigating the role of digital hoarding in mental health can help us recognize the importance of achieving a balance in the digital world. Understanding this relationship is crucial because offline hoarding has been recognized as a potential indicator of underlying mental health issues. By investigating digital hoarding as a predictor of mental health problems (i.e., depression, anxiety, and stress) we may gain insights into potential risk factors for offline hoarding.

Therefore, the current research can pave the way for the development of intervention strategies. Identifying the warning signs of digital hoarding and its association with depression, anxiety, and stress can help mental health professionals tailor their approaches and offer support to individuals who may be at risk. This research can inform discussions about the effect of the digital age on mental health and provide insights for policymakers, educators, and individuals on how to cultivate a healthy digital environment.

## ***Limitations and Recommendations***

- The data was only collected from one city in the Punjab Province, Pakistan. In the future samples from different cities should be selected for better external validity of the findings.
- In the current research, only college and university students were selected. In the future, researchers should approach professionals as well especially media personnel and IT professionals.

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## **ORCID iDs**

Imran Khan <sup>1</sup>  <https://orcid.org/0000-0001-7673-1449>

Arif Nadeem <sup>2</sup>  <https://orcid.org/0000-0003-0004-0224>

Muhammad Saleem <sup>3</sup>  <https://orcid.org/0000-0003-0230-1571>

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