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Association of Hikikomori Syndrome Symptoms and Internet Addiction in Young Adults

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ABSTRACT

Hikikomori syndrome is no more a Japanese phenomenon as it has been rapidly spreading across the globe, especially in South Asian countries. Among those individuals who tend to confine themselves within the walls of their homes, internet addiction has turned out to be a major component further fueling the isolation. **Objectives:** To explore the association between internet addiction and Hikikomori symptoms and to assess gender differences in Hikikomori symptoms and internet addiction. **Method:** This cross-sectional research study assessed 318 individuals attending a private university in Lahore. The participants for this study were selected through a non-probability purposive sampling technique and included 23% men and 75% females, and 1.6% selected '3'(rather not say) while two respondents did not provide gender information. Structured measures with well-established psychometric features were used to collect data. **Results:** Participants who felt socially isolated and lacked emotional support might have stronger internet addiction ($p<0.05$). Meanwhile, there weren't big differences between men and women in how isolated they feel ($p>0.05$), but men scored significantly higher than women on the socialization and emotional support domain ($p<0.05$). Men also tended to be more addicted to the internet than women ($p<0.01$) in the present study. However, demographic variables when correlated with Hikikomori and internet addiction, showed varying patterns of association. **Conclusions:** It was concluded that findings provided significant insights into internet addiction and socialization, isolation and emotional support dimensions of hikikomori syndrome in young adults in Lahore.

INTRODUCTION

The two major psychological consequences of pandemic restrictions were noted to be the higher incidence rates of hikikomori symptoms [1] and internet addiction particularly among young adults [2]. The term Hikikomori emerged in the late 1970s and became extremely popular by the end of the 80s and 90s decades primarily to describe the cases of social withdrawal among young adults in Japan [3] but later was observed in many other countries [4] including the increasing incident rates among Asian countries [5] which makes it relevant to study this new silent pandemic in Pakistan as well. Hikikomori describes a phenomenon where young adults continuously withdraw from social situations, isolating themselves at home for prolonged periods; sometimes lasting years [6]. This withdrawal is typically marked by disinterest in school or work and minimal interaction with family and friends. It's a complex issue influenced by psychological, sociocultural, and economic factors, contributing to its development and endurance [7]. Determining the precise prevalence of Hikikomori poses a considerable challenge due to data limitations globally. Estimates vary but with figures ranging from over one million cases to approximately 410,000 cases, studies have reported over 14,000 consultations related to Hikikomori within a single year, highlighting the substantial number of individuals seeking assistance for this phenomenon [6]. Hikikomori has turned out to be an emerging and distinctive condition marked by profound social withdrawal, indicating its relevance in contemporary

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discourse on mental health and social behaviour [7]. Psychological factors, notably mood and personality, were common triggers for Hikikomori, especially among teens. Social and cultural influences were significant in most countries, except Bangladesh and Iran. Parental influences were also termed notable however Japanese psychiatrists valued psychosis, mood, and personality equally, while others emphasized mood and personality, especially in teens [8]. Individuals suffering from this disorder hinder familial interaction; they immerse themselves in extensive internet usage, reserving outdoor activities solely for dire necessities. A significant portion of Hikikomori individuals devote more than 12 hours daily to computer activities leading over half of these individuals at the risk of internet addiction [9, 10]. Internet addiction is characterized as a behavioural disorder which is a result of excessive and compulsive use of the internet through various formats resulting in individuals neglecting their mental and physical health while also experiencing withdrawal symptoms [11]. The American Psychiatric Association's decision to include Internet use disorder in the Diagnostic and Statistical Manual for Mental Disorders (DSM-5) highlights the seriousness with which internet addiction is regarded clinically. This recognition aligns with findings that internet addiction shares similarities with substance-related addictions, evidenced by symptoms like mood modification, salience, tolerance and withdrawal [12]. Hikikomori typically manifests later, around the average age of 22.3 years, suggesting a potential progression from earlier withdrawal tendencies to more severe isolation [10]. In contrast, internet addiction in adolescence, particularly among boys, could be influenced by factors such as greater access to technology, peer influences, and societal expectations regarding online engagement [12, 13]. Boys may be more prone to extreme internet usage due to a combination of cultural norms, social pressures, and specific interests or activities available online [13]. The widespread internet addiction worsens this isolation, leading to psychological distress and withdrawal from society. Consequently, Hikikomori arises as a manifestation of these complex societal shifts, where individuals retreat from real-world interactions into the safety of their virtual worlds [14]. Specific socio-economic circumstances in Japan and other Asian-Pacific nations, such as intense academic pressure and limited employment prospects, intensify feelings of alienation and disengagement from society, amplifying the widespread of Hikikomori [8]. Internet addiction has been linked to measured levels of depression and signs of being socially isolated [12]. In many cases, social isolation symptoms have resulted in shame from the families of the individuals which hinders the need to seek help [15]. For those individuals who are already experiencing withdrawal symptoms, the internet acts as a deadly contributing factor by further deteriorating their emotional, social and physical well-being as these individuals find solace in the internet, fostering feelings of isolation and largely affecting socialization tendencies [16, 17]. As traditional social structures have evolved and emphasized individualization, communal ties weaken, leaving individuals, especially young people, feeling disconnected and marginalized [18]. The breakdown of traditional social bonds and emphasis on personal autonomy exacerbate feelings of isolation, paving the way for Hikikomori [19]. Individuals at times find it challenging to navigate new situations or social environments due to their fear of failure and rejection. This fear leads them to withdraw from social interactions as a way of protecting themselves from potential negative outcomes, their withdrawal serves as a defence mechanism against the perceived threats of failure and rejection in social settings [20].

This study aims to explore the association between Hikikomori and internet addiction in young adults and assess gender differences for both Hikikomori and internet addiction among young adults.

METHODS

A cross-sectional study was employed using non-probability convenient sampling technique to select the sample of 318 participants attending a private university in Lahore. The sample size was calculated using g-power analysis. Participants were enrolled in undergraduate and postgraduate courses as regular students. The sample included 73 men, and 238 women whereas 7 individuals did not reveal their gender. The sample's age was between 17 and 26 years [M=21.55 ± 2.02 years]. All participants signed an informed consent form containing information on the participant's rights, and the description and purpose of the research. A demographic form was designed for this study and recorded the general information of all the participants which included information about age, gender, year of study, family system, monthly income, impact of internet consumption and the number of hours spent on the internet. The Hikikomori symptoms were assessed by using the 25-item Hikikomori questionnaire (HQ-25) recording responses on 25 statements through 4 point Likert scale. HQ-25 had 3 subscales including socialization, isolation, and emotional support with internal consistency reported to be 0.94, 0.88 and 0.89 respectively and validity indices ranging from 0.81 to 0.88. The cut-off score was 42, a score above 42 used as an indicator of high risk of hikikomori syndrome [21]. To assess the internet addiction tendencies in participants, the Internet Addiction Test (IAT) was used. IAT is 20 items scale and respondents rate each question on a 5-point Likert scale with the internal consistency reported to be 0.91. The scoring categories were determined using the response description guidelines provided by the authors, a score above 31 indicated internet

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addiction [22]. The design and procedures were finalized keeping in mind the ethical standards and the procedures were approved by the concerned ethical and research review board of the Department of Psychology Forman Christian College and University, Lahore through letter number EERC-116-11-2022. The data were collected between August and October 2023 and all the participants filled out the questionnaires in English language and followed the same sequence of questions. All the measures were taken to keep the information anonymous and confidential and participants were thanked for their time. Special considerations were taken into account particularly seeking formal permission before using the study measures, informed consent was sought after sharing the ethical standards, particularly regarding voluntary participation, the right to withdraw, confidentiality and privacy and the right to know the results with the participants. The data were analyzed using statistical software of SPSS IBM version 23.0. Descriptive analysis included the calculation of frequencies, percentages, mean and standard deviations, these procedures helped summarize the demographic characteristics and main study variables. The association between hikikomori symptoms score, internet addiction and demographic variables was assessed through correlation analysis, whereas, a t-test was run to assess the gender-wise score differences in hikikomori symptoms scores and internet addiction score.

RESULTS

A descriptive analysis of the demographic characteristics of the respondents revealed that 26% percent of respondents lived in joint families and 74% lived in nuclear families. On average the time respondents spend on the Internet is 7.7 ± 1.90 hours a day and 53% reported that the Internet negatively affected their studies and other aspects of life (Table 1).

Table 1: Demographic Characteristics of the Participants

Subscale Practice	F (%)
Gender	
Men	73 (%)
Female	238 (%)
Family system	
Nuclear	235 (74%)
Joint	83 (26%)
Duration of Internet Use	
Less than 3 hours a day	59 (19%)
Up till 6 hours a day	131 (41%)
More than 6 hours a day	128 (40%)
Dysfunctional Impact of Internet Use	
Yes	168 (53%)
No	150 (47%)

Women participants outnumbered men significantly in this sample. Participants who spent up till 6 or more than six hours a day is almost same, whereas, majority of the participants acknowledged that the use of internet adversely impacted their lives.

Table 2: Correlation between Hikikomori and Internet Addiction

Variables	1	2	3	4
Socialization	-	-	-	-
Isolation	0.712**	-	-	-
Emotional Support	-0.428**	0.316*	-	-
Internet Addiction	-0.225*	0.265**	0.112	-

**p<0.01(2-tailed), *p<0.05

Almost 31 percent of participants scored above the cutoff point of hikikomori syndrome with men making most of the participants in moderate risk of hikikomori syndrome category. The moderate inverse correlation between socialization and IAS total scores suggests that individuals who score higher on socialization tend to have a slightly lower tendency towards internet addiction. A moderate positive correlation between isolation and IAS suggested a stronger internet addiction among those who are more socially isolated. Individuals with higher perceived emotional support had a lower tendency towards internet addiction, but this association was insignificant (Table 2).

Table 3: Correlation of Hikikomori Symptoms, Internet Use and Demographic Variables

Variables	Income	Age	Family Systems	Daily Internet Use	Perceived Impact of Internet Use
Socialization	-0.18*	-0.17*	-0.20*	-0.26*	-0.18*
Isolation	-0.27*	-0.20*	0.23*	0.24*	0.28*
Emotional Support	-0.19*	-0.31*	-0.18*	-0.20*	-0.32**
IAS	0.57**	-0.42**	0.38**	0.33**	-0.29**

**p<0.01, *p<0.05(2-tailed)

The analysis of the relationship between Hikikomori symptoms and demographic variables revealed interesting trends. The weak negative correlation observed between socialization, emotional support and monthly family income (p<0.05) suggests that those with higher income were less social. Similarly, an inverse correlation between isolation and monthly family income (p<0.05) indicated that lower income was associated with more isolation. These findings suggest that monthly family income appeared to be a significant correlate of Hikikomori symptoms in this sample. Age also showed an inverse correlation with all dimensions of Hikikomori symptoms, indicating that younger age was associated with restricted socialization, more isolation and lack of emotional support. Meanwhile, those living in the nuclear family system had lower scores on socialization and emotional support; participants of nuclear family systems were more likely to experience more isolation, however. People who socialize more tend to perceive less negative impact of internet use on their daily

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lives (p<0.05). Those experiencing more isolation tend to perceive a greater negative impact from internet use on their daily lives, particularly on studies. Individuals with better emotional support available were observed to have related lower perceived negative impact of internet use on daily life (p<0.01). Individuals with higher socialization levels (p<0.05) and better emotional support showed lower daily internet consumption. However, stronger feelings of isolation were associated with more daily internet consumption (p<0.05). Meanwhile, a significant negative correlation showed that those who perceived internet use to hurt their lives had lower levels of internet addiction (p<0.01)(Table 3).

Table 4: Hikikomori Symptoms Scores of Men and Women

Measure	Gender	Mean ± SD	T	Df	p-value	95% CI	Cohen's d
Socialization	Men*	21.93 ± 5.772	3.78	309	0.0002	1.32 - 4.21	0.496
	Women**	19.16 ± 5.387					
Isolation	Men	15.89 ± 4.783	1.294	309	0.19	-0.46 - 2.24	0.177
	Women	15.00 ± 5.244					
Emotional Support	Men	12.63 ± 3.661	4.130	309	0.000	0.97 - 2.74	0.535
	Women	10.77 ± 3.271					

Note.* Men (n=73), ** Women (n=238)

Further study presents the gender-wise distribution of main scores indicating that the scores of men and women revealed mixed trends; the difference in scores of isolation (p>0.05) was not strong enough to meet the usual standards for statistical significance. However, scores on socialization and emotional support conclusively suggested significant differences in men and women on these two dimensions (Table 4).

Table 5: Internet Addiction Differences between Men and Women

Measure	Gender	Mean ± SD	T	Df	p-value	95% CI	Cohen's d
IAS	Men	50.63 ± 17.921	4.043	309	0.0001	4.83-13.98	0.535
	Women	41.22 ± 17.230					

Table 5 indicated that there was a statistically considerable difference in IAS scores of men and women (p<0.001) indicating that men tend to have higher levels of internet addiction tendencies as compared to women

DISCUSSION

For years Hikikomori syndrome has been defined as a culturally specific phenomenon restricted to a few countries and or racial groups [6]. However recent years have seen a significant presentation of the Hikikomori symptoms in other countries as well particularly after covid-19. A strong positive association was observed between Hikikomori symptoms and internet addiction in the present sample which aligned well with the findings of other studies that particularly observed these two phenomena among high school and university populations [23]. The reason might be that Hikikomori syndrome and internet addiction share similarities in symptoms primarily the lack of interest in everything followed by isolation. However, internet addiction involves tolerance and withdrawal symptoms, while functional impairment is presumed to stem from the addiction. For this overlap, previous studies have reported that up to 56% of Hikikomori individuals may be at risk of Internet addiction, with 9% diagnosed as addicted to the internet in South Korea [15]. This also supports the findings of the present study which revealed a significant association between these two variables. Individuals experiencing Hikikomori symptoms retreat into isolation as a form of passive rebellion against societal expectations, often seeking solace in the virtual world. This exacerbates their real-life challenges and sometimes the individuals get excessively engaged with online platforms, to cope with mood swings and escape reality [17] and those patterns of association were noted in the findings of the present study. The data from recent studies suggests gender disparity in internet addiction, with men being more likely to be addicted to the internet compared to women as several studies found that a higher proportion of male respondents exhibited dependent or pathological internet usage compared to females [24]. Present study findings also align with the idea that males are more prone to internet addiction compared to females. However, some studies found no significant gender differences in internet usage and or addiction. The discrepancy in findings could be the result of variations in methodology, sample characteristics and the methods of data collection [11]. The researches were conducted in sociocultural contexts significantly different from the Pakistani context, these contextual variations must have led to score variations. Another reason might be that internet access is more readily available to men compared to women contributing to higher scores of internet addiction. Increased internet use is also correlated with socialization scores as well in males as they may find solace in the internet to socialize which in turn leads to high scores on isolation as well [25]. Several studies link Hikikomori symptoms and internet addiction with various factors like psychological triggers, cognitive dysfunctions, age, gender and familial dynamics, and lack of social support which further explains how individual experiences and broader social contexts shape these two phenomena. Families which overprotect and over-indulge with their children economically or emotionally result in their kids experiencing social withdrawal [18, 19] this can be easily applied to the Pakistani cultural context as a collectivistic culture where families indirectly contribute to social withdrawal in an attempt to protect children,

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whereas lack of social support from family's result in social isolation linked with internet addiction [16]. This is highlighted in the present findings which linked hikikomori and internet addiction with family dynamics. Another study conducted in Pakistan observed higher hikikomori symptoms in those between 22 and 25 years of age [26] but current findings showed an opposite trend, the difference might be attributable to differing sample characteristics. In the present analysis, significant gender differences were evident when it comes to Hikikomori, as men reported to have significantly higher scores which correlates with findings of other studies reporting that men tend to score higher on Hikikomori symptoms [27]. Social isolation was the only dimension where men and women showed small differences in their scores, this diverged from the findings of studies conducted in other countries. The present study is one of the initial studies providing information on hikikomori symptoms in Pakistan. Despite some of the limitations involved in the study, the findings will help provide preliminary information on this new social disorder becoming prevalent at a very fast pace.

CONCLUSIONS

It was concluded that Hikikomori symptoms are associated positively with internet addiction in young adults and reveal significant gender differences. These findings will help understand the typography of hikikomori and design management strategies to counter its adverse impacts on young adults.

Authors Contribution

Conceptualization: AN, HS
Methodology: AN, HS, AS, SS
Formal Analysis: KI, IS, HS, AS
Writing Review and Editing: AN, HS, AS, KI, IS, SS.

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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