RELATIONSHIP BETWEEN INTERNET ADDICTION, PERCEIVED STRESS AND AGGRESSIVE BEHAVIOR AMONG UNIVERSITY STUDENTS

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A Research Thesis submitted to the
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CERTIFICATE OF APPROVAL

It is certified that the Research Thesis titled "Relationship between Internet Addiction, Perceived Stress and Aggressive Behavior among University Students" was carried out by AYMAN BASHIR, Reg. No. BSP201051, under the supervision of Ma'am. Sadaf Zeb, Capital University of Science & Technology, Islamabad, is fully adequate, in scope and in quality, as a Research Thesis for the degree of BS Psychology.

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DEDICATION

This study is wholeheartedly dedicated to my beloved parents and my supervisor who have been my source of inspiration and gave me strength when I thought of giving up.

DECLARATION

I (Ayman Bashir), certify that to the best of my knowledge the research work embodied in this thesis, titled "Relationship between Internet Addiction, Perceived Stress and Aggressive Behavior among University Students" was entirely carried out by me (Ayman Bashir, BSP201051) under direct supervision and guidance of (Ma'am Sadaf Zeb) from (20th February, 2023) to (30th Jan, 2024). This work has not been submitted in partial/complete fulfillment of the award of any other degree from any other institution.

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January 2024

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Firstly, I am filled with immense gratitude towards Allah Subhanahu wa Ta'ala, the lord of universe, the Most Gracious and the Most Merciful. It is through his blessings that I have been granted the strength and ability to comprehend, learn, and successfully complete this report.

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ABSTRACT

The internet has entered everyday life and addiction, perceived stress, poor sleep, and aggressive behavior are just a few of the harmful effects of excessive internet use that have been connected. University students are at greatest risk because they use the internet for social and academic purposes so frequently. The aim of this study is to examine the connection between internet addiction, perceived stress, and aggressive behavior among university students. A quantitative correlational research design was used in this study. Using a convenient sampling; 300 university students taken from different universities of Rawalpindi and Islamabad. This study made use of the Internet Addiction Test, the Perceived Stress Scale, and the Aggression Questionnaire. The collected data was analyzed using statistical methods to determine the extent and nature of the relationships between these variables. The findings revealed a positive correlation between internet addiction and perceived stress. Moreover, a strong positive correlation emerged between internet addiction and aggressive behavior. Furthermore, perceived stress demonstrates a significance correlation with aggressive behavior. Institutions should implement educational programs that raise awareness about the potential consequences of internet addiction and provide support services to address the psychological, academic, and social challenges associated with excessive internet use. By promoting a healthy balance between online and offline activities, universities can help students with severe stress, improve academic performance, and promote positive interpersonal relationships, contributing to their overall well-being.

Keywords: Internet Addiction, Perceived Stress, Aggressive Behavior

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IAT	Internet addiction scale
PSS	Perceived stress scale
AGQ	Aggression Questionnaire

CHAPTER 1

INTRODUCTION

In the past twenty years, the number of people using the internet has grown a lot. In 2020, over half of the world's population could go online, which was more than eleven times the number from twenty years ago. This huge increase has brought significant changes to how people live their lives (Gong et al., 2021). The internet has become an important component of modern life due to the remarkable advancements in technology over the last ten years; in 2021, there were 4.9 billion internet users worldwide, or more than two-thirds of the world's population. The health and well-being of the human population are seriously threatened by inappropriate and excessive use of the internet and its related technologies, even if the internet has greatly benefited human society in the areas of science, communication, and commerce. Compared to other people, college and university students are more likely to use the internet for multiple purposes, which increases their risk of developing an internet addiction. The symptoms of internet addiction include cravings, loss of control, withdrawal, and poor judgment (Duc et al., 2024).

Over the past two decades, the advent of internet technology has aroused the curiosity of people to research the potential effects of internet-related behaviors one of the most learned problems is internet addiction (Younger & Rogers, 1998). In Chinese young adults, internet addiction is being identified as a major mental health issue. 10.6% to 13.6% of Chinese college students were found to be Internet addicts through the study. According to research done among college students in Taiwan, 15.3% of them suffer from internet addiction (Zenebe et al., 2021). Although the internet can lead to addiction and other issues, people live in a time where it is essential to our daily lives while others use it for many different

reasons. Many students have become addicted to the internet, which has a big impact on their lives (Fengqiang et al., 2016).

University students have experienced significant changes in their daily routines, relying heavily on the internet for communication, research, and entertainment. However, excessive internet use can adversely affect their health, academic performance, interpersonal relationships, sleep quality, and behavior. Researchers have been studying how these three factors are connected among university students (Monteiro et al., 2023). It has been found that spending too much time on the internet can increase stress levels. This happens when students neglect their responsibilities, perform poorly in academics, and become socially isolated. On the other hand, when students are already stressed, they may turn to the internet to cope, which can make their addiction worse (Dhaka & Naris, 2019).

Therefore, it is vital that students are aware of these consequences and exercise control over their internet usage (Dhaka & Naris, 2019). For example, in one university, 80% of the students who dropped out were addicted to the internet and could not do well in their classes. In another university, 13 out of 205 students who dropped out failed their exams because they spent too much time online (Fengqiang et al., 2016).

It is important to address internet addiction and its effects. Researchers need to find a balance between utilizing the internet for constructive purposes and avoiding excessive utilizing. Students need to learn about responsible internet use and get support to manage their time online. Schools, parents, and society as a whole need to work together to create an environment where people use the internet in a healthy way and avoid harmful habits (Fengqiang et al., 2016). To address these challenges, a comprehensive approach is essential. Educational institutions can raise awareness and integrate digital literacy into

curricula. Counseling services should be readily available, offering support and coping strategies. Technology-assisted interventions, such as mobile applications to track and limit screen time, can empower students to self-regulate internet use (King et al., 2020). Moreover, involving parents and peers in setting boundaries for internet use and fostering open communication can contribute to a supportive environment.

The implications of internet addiction on mental health are substantial, with studies linking excessive internet use to anxiety and depression (Kuss & Lopez-Fernandez, 2016). Another research highlighted the academic consequences are also pronounced, as students may neglect studies and perform poorly in exams, adversely affecting their educational experience. Other consequences include social isolation and strained relationships as a result of students preferring online relationships, which restricts social connections and increases loneliness (Kraut et al., 1998).

Internet Addiction

Internet addiction is defined as the loss of control over the use of the internet by individuals, and it is stated that this addiction leads to various problems and social incompatibilities in the daily lives of individuals. Researchers have frequently found that excessive internet usage leads to internet addiction, which has a negative impact on people's personal, financial, and professional lives, despite the fact that the simple access to information is thought to be one benefit of using the internet. According to KFF a full 21 % of youth are defined as heavy internet users who spend more than 16 hours with media a day. Another 63% are defined as moderate users who use internet 3-16 hours a day (Grohol, 1999). Another research found students who use internet more than six hours are consider in internet addiction and psychiatric symptoms (Koc, 2011). A significant amount

of research has been done on the elements that contribute to internet addiction as well as the addictive aspect of accessing the internet (Manap et al., 2023).

The internet has significantly influenced individuals and society, shaping cognitive processes, communication patterns, and economic structures. According to a survey conducted in 2018 by the Malaysian Communications and Multimedia Commission, 28.7 million people use the Internet, getting up 87.4% of all users (Cheah et al., 2022). In 1996, research on internet addiction was first conducted, and results were presented to the American Psychological Association. Using a modified version of the DSM-IV criteria for excessive gambling, the study examined more than 600 cases of heavy Internet users who displayed symptoms of addiction (Young, 1998). Another research examining 80 studies from 31 different nations, reported that Internet addiction was 6.0% common worldwide, with the Middle East having the highest rate at 10.9% (Cheng & Li, 2014).

On an individual level, research suggests that increased internet usage has altered attention spans and cognitive habits, with individuals adopting rapid skimming rather than in-depth reading (Carr, 2010; Baron, 2015). Socially, the internet's impact is evident in both positive and negative aspects. While social media enhances global connectivity and facilitates relationships, excessive engagement has been linked to mental health issues and the presentation of idealized online identities (Kuss & Griffiths, 2017; Twenge & Campbell, 2018; Valkenburg & Peter, 2013). At the societal level, the internet has transformed communication, politics, and the economy. Social media platforms influence public opinion and mobilize movements but concerns about misinformation and online echo chambers have emerged (Tufekci, 2017; Pennycook & Rand, 2018). Studies suggest that the use of the internet has grown rapidly in Pakistan. It is a behavioral addiction that

has become increasingly prevalent in modern society due to the widespread availability and accessibility of internet-connected devices. Research on internet addiction in Pakistan has gained increasing attention, shedding light on the prevalence and associated factors (Iqbal et al., 2019).

The growing use of social media platforms and online gaming has contributed to concerns about internet addiction among the population, with a notable impact on the younger demographic (Rehman et al., 2018). People suffering from internet addiction often experience a loss of control over their internet usage, neglecting their responsibilities, relationships, and physical well-being. They may spend excessive amounts of time online, engaging in activities such as social media browsing, online gaming, or compulsive shopping. Internet addiction can have severe impacts on mental health, including increased feelings of anxiety, depression, and loneliness. It can also adversely affect academic or professional performance, as individuals find it challenging to concentrate or prioritize offline activities. Various studies and research have examined the causes and consequences of internet addiction, shedding light on the underlying psychological, social, and environmental factors that contribute to its development. It is essential to address internet addiction as a significant public health concern and develop interventions and support systems to promote healthy internet use and minimize its adverse effects on individuals and society as a whole. Internet addiction has also been linked to increased aggressive behavior. Spending too much time online can reduce self-control and empathy, making students more likely to be hostile and aggressive. Additionally, the internet provides platforms for cyberbullying and confrontations, which can further contribute to aggressive behavior (Wong & Cheung, 2019). Internet addiction is the term for excessive or

uncontrolled desires, obsessions, and behaviors related to using the internet that trigger discomfort or impairment (Joarder et al., 2020). The internet has significantly transformed university experience, impacting academics, social interactions, and personal development. In academics, the internet serves as a vast resource, enabling students to access information through online libraries and databases, enriching their learning (Smith, 2018).

Perceived Stress

Perceived stress refers to an individual's subjective evaluation of the amount and intensity of stress they experience in their daily lives. It is a personal assessment of the level of stressors present and the perceived ability to cope with those stressors. Perceived stress thus represents the relationship between an individual and their surroundings that they interpret as threatening or overcoming their capabilities in ways that will impact their well-being (Lazarus & Folkman, 1984). Stress is an internal state that can be brought on by physical demands on the body (illnesses, physical activity, high or low temperatures, etc.) as well as from social and environmental factors that are viewed as potentially damaging, uncontrollable, or beyond an individual's capacity for coping. Many emotional responses, including anxiety, hopelessness, anger, depression, or an overall feeling of not being able to handle life, can result from a stressed-out state. Almost all environmental changes, including positive events like vacations, test an individual's capacity for adjustment, and even a small amount of stress may help in our ability to adjust. But "stress" turns into "distress" after some time (Lella et al., 2023).

It is important to note that perceived stress may not always align with objective measures of stress but represents an individual's interpretation and appraisal of their stress levels (Cohen et al., 1983). Several factors can contribute to the perception of stress, such

as the individual's personality traits, coping mechanisms, social support, and environmental circumstances. High levels of perceived stress have been associated with negative physical and mental health outcomes, including anxiety, depression, cardiovascular problems, and impaired immune function. Research studies have examined perceived stress levels in different populations and contexts to better understand its impact on well-being. Since stress is associated with a number of health outcomes and disorders, such as cancer, diabetes, cardiovascular disease, asthma, and rheumatoid arthritis, it has long been a prominent research topic in the field of health science .The study of the concept of stress in research can be divided into three perspectives: Environmental stressors or life events are the focus of (a) environmental stress assessment; psychological stress appraisal and affective reactions are evaluated; and (c) biological stress assessment is concerned with the activation of the physiological systems involved in the stress response. One of the more widely used instruments for assessing psychological stress is the Perceived Stress Scale. According to Cohen et al. (1983), the purpose of the self-reported questionnaire is to measure "the degree to which individuals perceive situations in their lives as stressful." The PSS items assess people's perceptions of how disorganized, impossible and stressful their lives have been over the past month. The items being evaluated are not specific to any one event or experience; rather, they are wide in personality (Lee, 2012).

When students experience high levels of perceived stress, it can manifest in various ways, impacting their overall well-being and educational achievement. This, in turn, can lead to negative consequences, including impaired concentration, decreased motivation, and challenges in time management (Misra & McKean, 2000).

Studies, such as the one conducted, have focused on understanding the prevalence of perceived stress among university students. This type of stress involves the subjective evaluation of the requirements that are given to people, which include the requirements of their studies, their financial situation, and the difficulties they have when adjusting to university life. Recognizing the perceived stress is essential for tailoring interventions to address the unique stressors faced by students (Misra & McKean, 2000). Perceived stress has a significant effect on learning. The academic pressures and demands of university life contribute significantly to the stress experienced by students, potentially hindering their ability to succeed academically (Smith & Brain, 2000).

Similarly, such as the one research indicated perceived stress is a subjective experience, meaning that two students in the same university and facing similar challenges may perceive and react to stress differently. It encompasses the feelings of tension, pressure, and psychological distress experienced by students as they navigate academic expectations, assignments, exams, time management, financial pressures, social relationships, and other demands associated with university life (Cohen, Kamarck & Mermelstein, 1983).

Aggressive Behavior

The World Health Organization predicts that aggressive behavior affects 1.6 million individuals each year. According to Buss, aggression is a response that causes another organism to experience unpleasant stimuli (Tordjman, 2022).

Aggressive behavior among university students is a significant concern that can have profound effects on both the individuals involved and the broader academic community.

Research studies provide insights into the prevalence of aggressive behavior, its impact on students' academic experiences, and the associated health effects. Aggressive behavior refers to actions or conduct that is intended to cause harm, injury, or distress to others. It involves acts that are forceful, hostile, or violent, either physically or verbally. Aggression is defined as a behavior that intentionally causes physically or psychological harm to another person. Aggression can be influenced by a variety of factors, including individual factors, the media, society, and family issues (e.g., the attitudes and behaviors of parents, domestic violence) (Yilmaz et al., 2023). A research article explored the aggressive behavior in university settings, highlighting the various forms it can take, including verbal aggression (e.g., hitting, pushing), physical aggression (e.g., insults, threats), relational aggression (e.g., social exclusion, spreading rumors). The study emphasized the need for a comprehensive understanding of aggressive behavior to develop effective preventive measures (O'Malley et al., 2019).

These situations may negatively impact the learning environment overall by promoting a hostile learning environment. Aggressive behavior among undergraduates has negative impacts on their mental and physical health in addition to their academic achievement (Smith & Brain, 2000).

Studies examining the health effects that arise with aggressive behavior have found a relationship between these experiences and higher levels of stress, anxiety, and depression in students. The study emphasized the need for targeted interventions to address the mental health implications of aggressive behavior. Aggressive behavior can create a psychosocial burden on students, affecting their emotional and social well-being (Thompson et al., 2017).

Research studies have examined the causes and consequences of aggressive behavior in various populations, such as children, adolescents, and adults (Fengqiang et al., 2016). Aggressive behavior can be influenced by various factors. Some of these factors are related to individuals themselves, such as their personality, difficulties in relationships with others, and biological factors. Biological factors, such as genetic predispositions or imbalances in brain chemicals, may influence an individual's propensity for aggression (Anderson, & Bushman, 2002).

Family factors, like how parents raise their children and the environment at home, can also contribute to aggression. Social factors like feeling frustrated or under pressure, as well as exposure to violent media, can play a role in promoting aggressive behavior (Fengqiang et al., 2016). According to Griffiths (1999; Kjaervik and Bushman, 2021).

Additionally, environmental factors play a crucial role, including exposure to violence, harsh parenting, witnessing aggression in the family or community, and social norms that condone or encourage aggression (Anderson, & Bushman, 2002). Research studies have examined the causes and consequences of aggressive behavior in various populations, such as children, adolescents, and adults (Fengqiang et al., 2016).

Emotional Aggression

Emotional aggression, also known as impulsive aggression, is a type of aggressive behavior that arises from strong negative emotions. It is characterized by quick and impulsive reactions to internal or external threats. This form of aggression occurs without much planning or thinking ahead, as it is driven by intense emotional responses to perceived challenges or provocations (Anderson, & Bushman, 2002).

Instrumental or Hostile Aggression

Instrumental or hostile aggression is a deliberate form of aggression that is driven by the intention to achieve a specific objective or fulfill a personal need. It involves purposeful actions taken to attain a desired outcome (Buss, 1966).

Physical Aggression

Physical aggression refers to acts of aggression where a person uses physical force to harm someone else as a way to express their anger or frustration. It involves physically hurting or attempting to hurt another individual as a means of dealing with their negative emotions (Le et al., 2023).

Non-Physical or Verbal Anger

Non-physical or verbal anger involves causing harm without physical force, using words or psychological tactics to inflict emotional pain or manipulate others. This includes verbal aggression and psychological forms of violence (Baron et al., 1994)

Literature Review

Internet Addiction and Perceived Stress

Studies examining the relationship between internet addiction and perceived stress among university students have reported significant associations between these two factors. Excessive internet use has been found to contribute to higher levels of perceived stress. The literature of previous studies examines the relationship between perceived stress and internet addiction (Smith, Johnson & Williams, 2022).

Other researchers have highlighted that there were significant associations among perceived stress and internet addiction (Gong, Wang & Wang, 2021). Similarly, in another research results show a significant positive correlation between internet addiction and perceived stress among university students (El Zein, Daher & Tabet, 2020). According to Smith, research examines the positive association between perceived stress and internet addiction. Higher levels of perceived stress were consistently associated with greater severity of internet addiction symptoms across different populations (Smith, Johnson & Williams, 2022). Another study highlights a positive correlation between perceived stress and problematic smartphone usage (a form of internet addiction) in Chinese undergraduates (Zhao et al., 2021). Similarly, recent research indicates a strong positive relationship between perceived stress and internet addiction among undergraduate students. (Sharma et al., 2023).

Another research highlights an internet addiction significantly positively correlate with perceived stress among university students (Bhardwaj & Majeed, 2023). Similarly, another study indicates that there was a significant positive correlation between internet addiction and perceived stress. This means that people who use the internet excessively are more likely to feel stressed. It's like a two-way street when stress goes up, internet use tends to go up, and when internet use goes up, stress tends to increase too. Understanding this connection is important because it helps us figure out how to support people dealing with stress and internet use issues (Tajik, Talepasand & Booger, 2020).

Internet Addiction and Aggressive Behavior

The connection between internet addiction and aggressive behavior among university students has been extensively investigated, and studies consistently show a strong link

between these two factors. Excessive use of the internet has been found to contribute to the development of aggressive tendencies. When individuals become addicted to the internet, it can fuel aggression by removing inhibitions, reducing their ability to empathize with others, and causing social isolation. Moreover, specific online environments like gaming platforms or social media sites can encourage aggressive behavior due to the presence of violent content, cyberbullying, and conflicts that occur online. Several studies have examined the significance and positive relationship between aggressive behavior and internet addiction (Joarder et al., 2021). Similarly, aggressive behaviors and internet relying have been shown to be highly correlated (Yen et al., 2007). Another research examines the internet addiction was significant positive correlated with aggressive behavior (Yang et al., 2023).

According to recent studies have highlighted the link of aggressive behavior was positively correlated with internet addiction (Fengqiang et al., 2016). Research has consistently shown the positively correlation between internet addiction and aggressive behavior, with higher levels of addiction leading to more aggressive behavior and this study concluded that Internet addiction was more common among undergraduate university students (Dhaka & Naris, 2019). According to previous study examines the relationship between internet addiction and aggressive behavior (Deshotels & Forsyth, 2007).

Similarly, other research examines the association between problematic internet use and aggressive behavior. It revealed a positive correlation between problematic internet use and aggressive behavior, suggesting that excessive internet use may contribute to increased aggression in this population (Jang, Hwang & Choi, 2008). Researchers

conducted many studies on the relationship between internet addiction and aggressive behavior.

Similarly, another research examines the positive correlation between internet addiction and aggressive behavior (Weinstein et al., 2022). Another research examines the positive correlation between internet addiction and aggressive behavior (Lee et al., 2018). Internet addiction has been associated with increased engagement in aggressive behavior, although the individual characteristics that may elevate the risk for these problematic behaviors are unknown. The current study investigated that Internet addiction was positively associated with aggressive behaviors (Agbaria et al., 2021).

Perceived Stress and Aggressive Behavior

Several research was conducted to find out the relationships between perceived stress and aggression. Similarly, in another study results show significantly correlation between perceived stress and aggression (Estévez Lopez et al., 2018).

Another research result indicated that there is strong correlation was found between the perceived level of stress and aggressive (Fatma 2021). Researchers conducted research to find out the results. According to Johnson research indicates a positive association between perceived stress and aggressive behavior.

Another study found a positive correlation between perceived stress and aggressive behavior. This means individuals experiencing higher levels of perceived stress were more likely to engage in aggressive behavior (Almeida et al., 2022). Similarly, another study found a positive correlation between perceived stress and aggressive behavior. This means

that university students who reported higher levels of perceived stress were also more likely to engage in aggressive behaviors (Shin & Han, 2023).

Higher levels of perceived stress were significantly correlated with increased levels of aggressive behavior (Johnson, Smith & Williams, 2022). Moreover, a correlation was found between the perceived level of stress and aggressive behavior in university students (Hena, 2022). Similarly, another research results indicated that there is significance correlation was found between the perceived stress and aggressive behavior (Chatterjee, 2013). Another research results indicated that there is significant correlation between perceived stress and aggressive behavior ((Abbas, 2015).

Theoretical Framework

General Strain Theory

The General Strain Theory (GST) was proposed by sociologist Robert Agnew (1992), which provides a framework for understanding the connection between internet addiction, stress, negative emotions, and the risk of aggressive behavior. According to the GST that people deal with a variety of pressures and stresses in their lives, and that these stresses can appear as negative emotions, which may lead to aggressive behavior is a way to cope (Agnew, 1992).

When people become addicted to the internet and find themselves using it excessively, lots of difficulties and stress can arise. Social isolation becomes an impactful challenge as online interactions take the lead over face-to-face connections, resulting in feelings of loneliness and disconnection. Furthermore, the consequences extend to academic or work performance, introducing stress and frustration into the mix. Relationships that are stressed

whether from abuse or problems brought on by internet addiction, add to the general stress that people involved in this online struggle experience (Agnew, 1992).

Negative emotions like frustration, anger, or anxiety can become excessive when the pressures and stressors increase. According to the GST, people may use aggressive behavior as a coping strategy in reaction to these increased unpleasant feelings. This aggressiveness can take various shapes, including angry statements to physical fights. This association gets made worse by perceived stress, which is an individual's subjective evaluation of their level of stress. When people think they are under a lot of stress, the effects of pressures and stressors get worse, which makes them feel worse. As a result, there is a higher probability that someone will turn to aggressive behavior to deal with their emotions (Agnew, 1992).

It is important to remember, though, that not everyone who suffers with internet addiction will behave aggressively. The GST highlights that excessive internet use can increase tensions, stress, and negative emotions, which in certain situations may result in anger rather than making an immediate and accurate connection. Importantly, people are able to use several coping mechanisms to efficiently handle stress and reduce the likelihood of reacting aggressively (Agnew, 1992).

Developing successful interventions requires an understanding of the complex interactions that exist between internet addiction, stress, negative emotions, and possible aggression. Interventions and support systems can be intended to promote healthy coping mechanisms, stress management, and the reduction of aggression as a coping mechanism by considering seriously the role which strains, stressors, and unpleasant emotions play in internet addiction. Within the framework of the General Strain Theory, this detailed

knowledge provides the basis for creating comprehensive solutions that address the many difficulties people have while managing the dangerous environment of internet addiction. Such interventions can empower individuals to seek social support, engage in healthy recreational activities, and implement measures to cultivate healthier online habits, ultimately fostering a more balanced and resilient relationship with the digital world (Agnew, 1992).
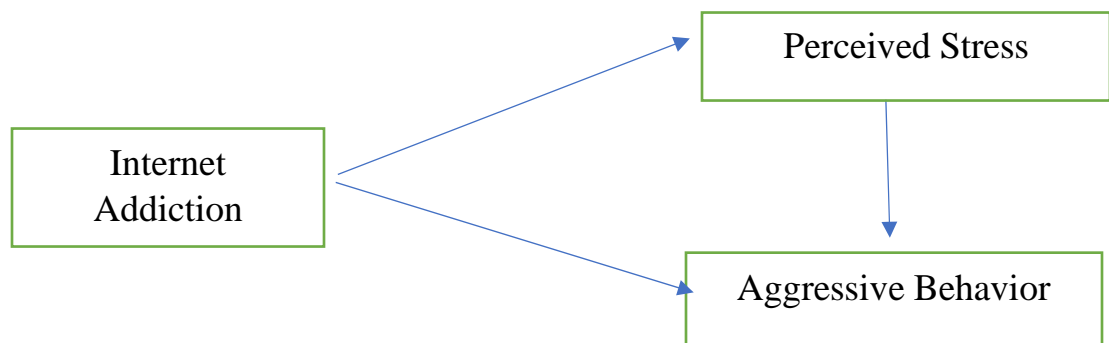
Rationale

The quantitative study aims to examine the relationship between internet addiction, perceived stress, and aggressive behavior among university students. In today's digital age, internet addiction has emerged as a prevalent issue, particularly among young individuals with easy access to the internet, such as university students. Drawing on General Strain Theory, we aim to uncover how various factors, including demographics like gender, marital status, and institutional dynamics, contribute to students' experiences. Understanding how internet addiction relates to aggressive behavior is crucial for identifying potential risk factors and devising effective interventions to tackle this growing concern. Perceived stress is a shared experience among university students, stemming from academic demands, social pressures, and transitional challenges. Investigating the association between perceived stress and aggressive behavior offers valuable insights into

how stress levels may contribute to aggressive tendencies within this specific population. While prior research has explored these variables in adolescents, college students, and adults, there remains a notable gap in the literature concerning university students. By examining the combined variables associated with internet addiction, perceived stress, and aggressive behavior among undergraduates, this study aims to close this gap and provide a deeper understanding of their related relationships. Limited studies focus on the Murree-Islamabad-Rawalpindi region, creating a gap in understanding how the unique socio-cultural context influences internet addiction, perceived stress, and aggressive behavior among university students in this area. Existing literature often fails to explore the interconnectedness of internet addiction, perceived stress, and aggressive behavior, especially within the university setting. This study aims to bridge this gap by comprehensively examining these variables and their relationship. The literature lacks in-depth exploration of how demographic factors, such as gender and marital status, interact with internet addiction, perceived stress, and aggressive behavior among university students. This study seeks to fill this gap by considering demographic distinction in the context of the chosen region and population. It is predicted that the study's empirical findings would clarify the specific ways in which these variables affect one another among university students. With the rate of internet addiction increase and its negative effects on people's physical and mental well-being including increased hostility and stress this study attempts to provide a greater understanding on the particular challenges experienced by undergraduates. Previous study has shown the negative effects of excessive internet use on health, therefore in order to develop effective treatments, it is essential that one examine all of these factors together (Joarder et al., 2021; Menon et al., 2018),

In a world where using the internet is necessary, it is important to understand the complex impact on stress levels, behaviors, and mental health. The goal of the study aims to fill current gaps in the literature while providing the way to a greater understanding of the relationships that exist between university students' aggressive behavior, perceived stress, and internet addiction. In the end, the research findings aim to guide establishing methods that encourage more responsible internet use, effectively manage stress, and reduce the risk of aggressive behavior among undergraduates. (Joarder et al., 2021; Menon et al., 2018).

Objectives

This study is conducted to achieve the following objectives.

1. To investigate the associations between internet addiction, perceived stress, and aggressive behaviors among university students.
2. To investigate the differences among internet addiction, perceived stress and aggressive behavior among university students on the basis of demographics (i.e., gender)

Hypotheses

Following are the hypotheses of this study.

1. There will be a connection between internet addiction and aggressive behavior among university students.
2. There will be a connection between perceived stress and aggressive behavior among university students.
3. There will be a connection between internet addiction and perceived stress among university students.

4. There will be a gender difference in internet addiction, perceived stress, and aggressive behavior among university students.

CHAPTER 2

METHOD

Research Design

The study investigated the relationships between internet addiction, perceived stress and aggressive behavior among university students using a cross sectional design. With the use of this research design, information might be gathered at a certain time point, providing an overview of the crucial elements.

Ethical Consideration

Permission was taken from the department of Capital University of Science and Technology for the conduction of this research. After that, permission was taken from different institutes from which data is collected. All the Participant was informed about the nature and purpose of the study in the start. Then researchers obtain voluntary and informed consent from the participants before their involvement in the study. Participants were fully aware of the study's purpose, procedure, potential risks, and benefits. Whenever they wish to withdraw, they can quit without any penalty. Researchers protect participant's privacy by ensuring the confidentiality of their personal information. They ensure that participants were not subjected to any form of discrimination or undue influence. All the data is kept safe, private, and confidential. APA guidelines were followed to keep the process within ethical boundaries, participants were provided with a consent form and made sure about their privacy and confidentiality.

Population and Sample

The sample size was determined via G Power software. Both females and males 300 university students from private, semi government and government universities of Rawalpindi and Islamabad was selected.

Sampling Technique

In this research, a convenient sampling method was employed to collect data from university students, who represented the young adult population. The decision to use convenient sampling was based on practical considerations, allowing for the collection of data within the limitations of time, resources, and accessibility. University students were easily accessible and readily available for research purposes, making them a convenient sample to work with. By focusing on university students as the target population, the research aimed to gain insights into the experiences and perspectives of young adults. This diversity contributed to the richness of the collected data and enhanced the potential generalizability of the findings to university students.

Inclusion Criteria

1. Age limit (18-26 years) currently enrolled in any university. According to research (Park & Vance, 2021).
2. Participants shall be able to understand the scales in English.

Exclusion Criteria

1. Participants with any mental health issues or physical disability were excluded.

Demographics

Demographics sheet was prepared for this study to take the information about participants, which include participants gender, age, education, marital status, institution, access of internet, currently live, how much time use of internet, purpose of use.

Instruments

Aggression Questionnaire (AGQ) (Buss & Perry, 1992)

It was developed by Buss and Perry (1992). It is a 29-item. It measures or evaluates the level of aggression in individuals. It helps assess how prone someone is to display aggressive behavior or react aggressively in various situations. It is able to better understand someone's behavioral patterns and gain knowledge about their aggression behaviors through using this measure. Participants are presented with a series of statements and are asked to rate each statement on a 5-point continuum, ranging from 1, which indicates that the statement is "extremely uncharacteristic of me," to 5, which indicates that the statement is "extremely characteristic of me." The aggression scale measures four distinct dimensions of aggression: physical aggression (9 items), verbal aggression (5 items), anger (7 items), and hostility (8 items). The total score will range from 29 to 145. Physical Aggression Subscale (Items 1-9): Higher scores indicate a greater tendency towards physically aggressive behaviors, such as hitting, pushing, or physically harming others. Verbal Aggression Subscale (Items 10-14): Higher scores suggest an inclination towards aggressive language, including insults, threats, or verbally abusive behavior. Anger Subscale (Items 15-21): Higher scores signify an intensity and frequency of feelings of anger and irritability. Hostility Subscale (Items 22-29): Higher scores reflect overall negative attitudes and hostility towards others. Greater levels of hostility are indicated by

higher sub-scale or overall scores. Scores above 95 may indicate severe aggression, while scores between 65 and 95 often suggest moderate to high levels of aggressive behavior. It is crucial to remember that these scoring ranges are only general recommendations, and that each person's score should always be understood in context with their unique background and other factors. Some items of aggression have reversed scoring. There are two reverse items first need to be reversed (item 9, 16) "It has high internal consistency α = 0.89 (Buss & Perry, 1992).

Internet Addiction (IAT) (Young, 1998)

It was developed by Young (1998). It consists of 20 items. It assesses both the occurrence and severity of internet addiction. Each item is scored on a five-point Likert scale, where respondents can select a response ranging from 0, indicating "does not apply," to 5, indicating "always". "The scale covers various aspects of an individual's life, including the extent to which internet use affects their daily routine, social life, productivity, sleeping patterns, and emotions. The total score on the scale can range from a minimum of 20 to a maximum of 100. A higher score indicates a greater level of internet addiction. Based on the original scheme proposed by Young, different types of internet users can be identified. A score below 20 indicates a normal user, while scores ranging from 20 to 49 suggest minimal internet usage. Scores falling between 50 and 79 indicate moderate internet usage, and scores from 80 to 100 indicate excessive internet usage. In terms of classification, minimal users are considered problematic internet users, while moderate and excessive users are categorized as internet addicts. Internet addiction scale is valid and reliable. It has high internal consistency α = 0.89 (Joarder et al., 2021).

Perceived Stress Scale (PSS) (Cohen, 1998)

It was developed by Cohen, (1998). It consists of 10 items that assess how individuals perceive and evaluate stressful situations. It is measuring an individual's perception of stress in their life. The scale aims to understand how they view and judge the events happening around them. The higher the level of stress they associate with those events, the more stressful they consider them to be. The items in the PSS are designed to determine how individuals perceive their lives as unpredictable, uncontrollable, and overloaded. Respondents rate their responses on a Likert scale, which typically ranges from 1 to 5. Some items of perceived stress scale have reversed scoring. There are four positively state item first need to be reverse (item 4, 5, 7, 8). They provide ratings based on their feelings and thoughts over the past month. The total scores on the PSS can range from 0 to 40, with higher scores indicating higher levels of perceived stress. By utilizing the PSS, researchers and professionals gain insights into how individuals subjectively perceive and experience stress in their lives. It helps provide a measure of their perceived stress levels based on their own assessment of the situations they encounter. This information can be valuable in understanding the impact of stress on individuals' well-being and guiding appropriate interventions or support strategies. The PSS has a high level of reliability, with $\alpha = 0.80$ (Nielsen et al., 2016).

Procedure

A permission letter to conduct the study was obtained from Capital University of Science and Technology, CUST. Permission was acquired from different institutes for the conduction of study. Participants were approached by their willingness about the study purpose, benefits of their participation for future potential and their right to withdrawal

without any penalty if faced by any kind of distress. Data was collected from university students between the age range of 18 to 26 years. Participants were selected using a convenient sampling technique, which involves selecting individuals based on their easy availability and accessibility. Participants was given a consent form clearly outlining their voluntary participation and the confidentiality of their responses. After that they were provided with a document containing demographic data questions (gender, marital status, education, institution, access of internet, how much time use internet, which purpose use internet addiction) and the three questionnaires. They were also be provided with both verbal and written informed consent to make sure they were participating in the study and they can withdraw at any time. After getting consent from the participants, they were given self-report questionnaires Internet Addiction Scale (IAT), Perceived Stress Scale (PSS) and Aggressive Behavior (AGQ) for measuring internet addiction, perceived stress and aggressive behavior respectively. They were instructed as well to fill the questionnaires with care and were requested to complete all the items.

CHAPTER 3

RESULTS

The present study aimed to examine the relationship between Internet Addiction, Perceived Stress and Aggressive Behavior among university students. Data analysis was carried out using SPSS- version 26. Initially, the demographics characteristics were identified through frequencies and percentages. Descriptive statistics and alpha reliability coefficients were computed. The core of the investigation involved Spearman's correlation analysis, aimed at discerning the relationships between Internet Addiction, Perceived Stress and Aggressive Behavior. This statistical methodology, chosen for its suitability in analyzing non-parametric relationships, elucidated the strength and directionality of associations between these variables.

Table 1

Demographic Characteristics of Sample (N=300)

Characteristics	N	%
Gender		
Male	94	31.3
Female	206	68.7
Age		
18-22	245	81.7
22-26	49	16.3
26 & above	6	2.0
Marital status		
Single	261	87.0
Married	8	2.7
Engaged	31	10.3
Education		
1st semester -3rd semester	170	56.7
3rd semester – 5th semester	66	22.0
5th semester – 8th semester	64	21.3
University/Institution		
Government	229	76.3
Semi-Government	12	4.0

Private	59	19.7
Currently live or reside with		
Parents	261	87.0
Guardians	23	7.7
Hostel	16	5.3
Access of internet		
Yes	300	100
No	-	-
Spend time on internet		
1 to 3 hours	118	39.3
3 to 6 hours	94	31.3
6 to 8 hours	51	17.0
More	37	12.3
Use of internet for		
Education	133	44.3
Entertainment	98	32.7
Job/work	29	9.7
Communication	25	8.3
Others	15	5.0

Note: n= number of participants, %= percentage

The table 1 intend the greater number of female (n=206, 68.7%) participated in the study compared to male students (n= 94, 31.3%) with the majority students aged group 18-22 (n= 245, 81.7%) and age group 22-26 (n=49, 16.3%) while few students were from age

group 26 & above (n=6, 2.0). There was total 260 single students in which 181 females were single and 79 males were single. Total 8 married students in which 2 were males and 6 were females. There were 32 total engaged students in which 13 males were engaged and 19 females were engaged. Data was collected from different universities and students were from different semesters like 1st semester to 3rd semester (n=170, 56.7%), 3rd semester to 5th semester (n=66, 22.0%), 5th semester to 8th semester (n=64, 21.3%). They primarily attended government institutions 230 total student in which females were 150 and males were 80. In Private sector total students enrolled 57 in which females were 45 and males were 12 and some total students enrolled in semi-government in which males were 2 and females were 11. The vast majority of participants (87.0%) reported living with their parents. This highlights the significant role of familial residence in this population. A smaller percentage reside with guardians (7.7%) and some are living in hostels (5.3%). Nearly all had internet access (100%) and spent a significant amount of time online, with most dedicating 1-3 hours per day (39.3%) some students use 3-6 hours (31.3%), 6 to 8 hours (17.0%) and few students use internet not more than 8 hours (12.3%). Education and entertainment were the main drivers of internet use (44.3% and 32.7%, respectively) use for the communication (8.3%) and some are using internet for other purposes (5.0%).

Table 2

Psychometric Properties of Scales

Scale	N	M	SD	Range		a
				Actual	Potential	
IAT	20	44.65	12.34	4-78	0-100	.73
PSS	10	19.70	4.88	5-36	0-40	.67
AGQ	29	84.46	12.74	34-122	29-145	.68
PA	9	26.00	5.50	9-41	9-45	.42
VA	5	15.03	3.36	5-25	5-25	.36
ANGER	7	20.05	4.07	8-30	7-35	.29
HOSTILITY	8	23.37	4.44	8-35	8-40	.40

Note: Note: N= no. of items, M= median, SD= standard deviation, a= alpha reliability, IAT= Internet Addiction Scale, PSS= Perceived Stress Scale, AGQ= Aggression Questionnaire, SUB- PA= Sub Scale Physical Aggression, SUB-VA= Sub Scale Verbal Aggression, SUB-Anger= Sub Scale Anger, SUB- Hostility= Sub Scale Hostility.

Table 2 intends those psychometric properties for the scales used in present study. The Cronbach's α value for internet addiction scale was (α=.73, m= 44.65, SD=12.34) which shows high internal consistency. The Cronbach's α value for perceived stress Scale was (α=.67, m= 19.70, SD= 4.88) which also shows good internal consistency. The Cronbach's α value for aggression questionnaire was (α =.68, m=84.46, SD=12.74) which also shows good internal consistency. The Cronbach's α value for sub-scale physical

aggression was (α =.42, m= 26.00, SD= 5.50). The Cronbach's α value for sub-scale verbal aggression was (α =.36, m= 15.03, SD= 3.36). The Cronbach's α value for sub-scale anger was (α =.29, m= 20.05, SD= 4.07). The Cronbach's α value for sub-scale hostility was (α =.40, m= 23.37, SD= 4.44).

Table 3

Descriptive Statistics: Mean, Median, Mode, SD, Skewness, Kurtosis, KS (N=300)

Measure	M	Median	Mode	SD	Skewness	Kurtosis	KS	P
IAT	44.65	45.00	53	12.34	-.28	.22	.05	.02
PSS	19.70	20.00	21	4.88	.02	.25	.07	.00
AQ	84.46	85.00	87	12.74	-.66	2.01	.09	.00

Note: M=mean, SD=standard deviation, KS= Kolmogorov- Smirnov, IAT= Internet addiction Scale, PSS=Perceived Stress Scale, AGQ= Aggression Questionnaire

Table 3 presents the descriptive statistics of IAT, PSS and AGQ. IAT shows (mean=44.65, SD = 12.34), PSS shows (mean = 19.70, SD = 4.88) and AGQ shows (mean = 84.46, SD 12.74). IAT shows non-normal distribution with respect to (skewness= -.282) and (kurtosis= .228) values. PSS shows non- normal distribution with respect to (skewness= .027) and (kurtosis= -.252) values. AGQ shows non- normal distribution with respect to (skewness= -.666) and (kurtosis= 2.01) values.

Distribution Curve

Histogram showing the distribution curve for Internet Addiction Scale, Perceived Stress Scale, Aggression Questionnaire for (N=300) are represented below.

Figure 1: Distribution of Score for Internet Addiction Scale

This figure demonstrates the skewness is concentrated on the left side of the distribution, confirming the negative skew. The overall shape deviates from a symmetrical bell curve, highlighting that the data is not normally distributed.
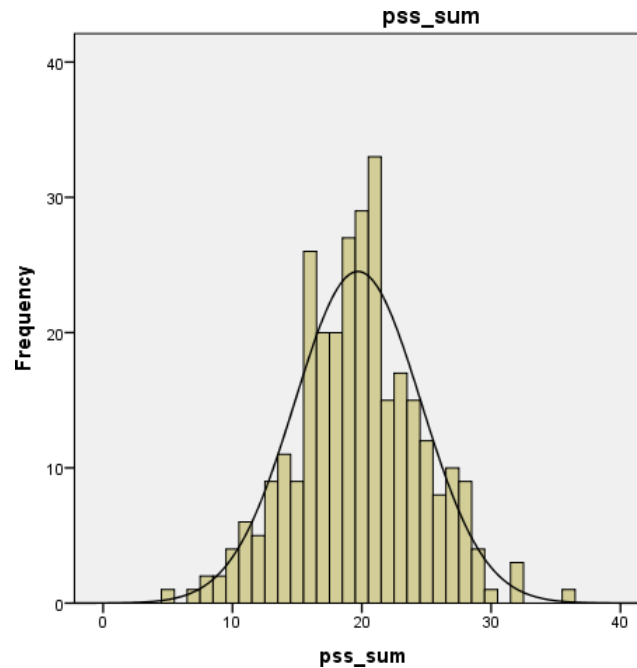
Figure 2: Distribution of Score for Perceived Stress Scale

This figure demonstrates the skewness is concentrated on the left side of the distribution, confirming the negative skew. The overall shape deviates from a symmetrical bell curve, highlighting that the data is not normally distributed. A normal distribution would have a balanced curve with roughly equal amounts of data on both sides of the center.
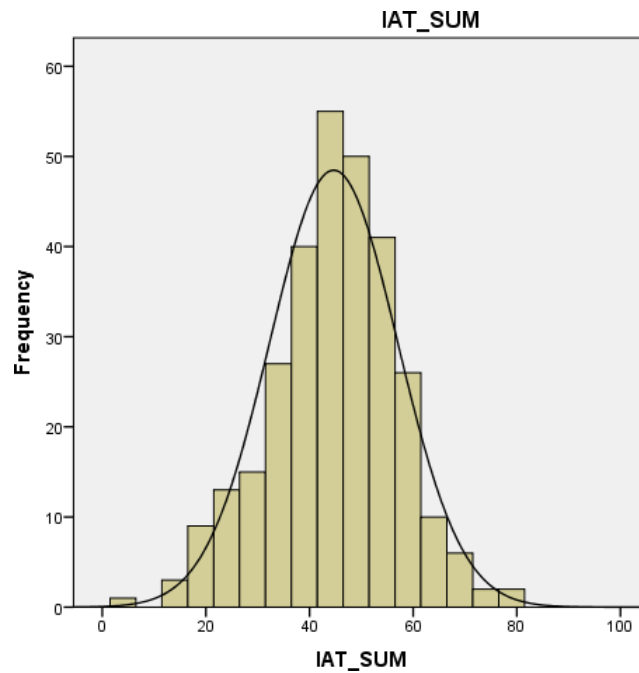
Figure 3: Distributed of Score for Aggression Questionnaire

This figure demonstrates the skewness is concentrated on the left side of the distribution, confirming the negative skew. The overall shape deviates from a symmetrical bell curve, highlighting that the data is not normally distributed.
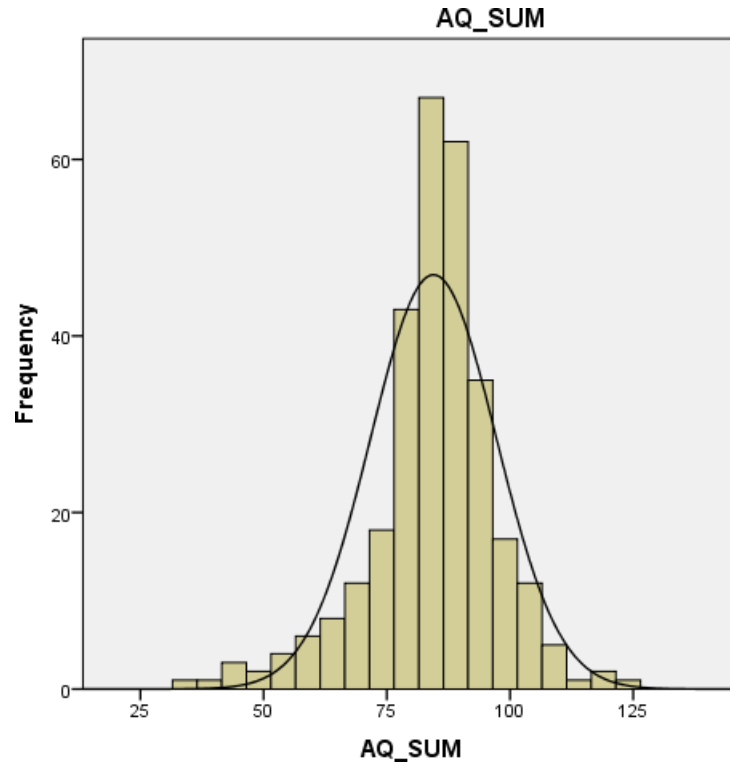
Table 4

Descriptive Statistics and Correlation Between Internet Addiction Scale, Perceived Stress Scale and Aggressive Behavior using Spearman's Rho Correlation (N=300)

Variable	N	M	SD	1	2	3
IAT	300	44.65	12.34	-	.25**	.11*
PSS	300	15.30	5.87	-	-	.34**
AGQ	300	85.01	12.89	-	-	-

*Note: *p < .05. **p < .01 (2-tailed), IAT= Internet Addiction Scale, PSS= Perceived Stress Scale, AGQ= Aggressive behavior.*

Table 4 shows Spearman's Correlational analysis was used to analyze the relationship between internet addiction scale (IAT), perceived stress scale (PSS) and aggression questionnaire (AGQ) as data was non-normally distributed. Result show that internet addiction and perceived stress has strong positively correlated (r= .252, p < .01) with significant correlation at 0.01 level (p < .01), so its mean along with the increase of internet addiction, perceived stress also increased. Similarly, Internet Addiction and aggressive behavior has strong positively correlated (r= .342, p < .01) with highly significant at 0.01 level (p < .01), so its mean along with increase of internet addiction, aggression behavior also increased. Perceived stress has significant positive correlated with aggressive behavior (r= .115*, p < .05).

Table 5

Mann-Whitney test along with gender (N=300)

Variables	Male		Female		U	p
	N	M	N	M		
IAT	94	134.51	206	157.80	8179.00	.02
PSS	94	144.73	206	153.13	9139.00	.00
AGQ	94	145.39	206	152.83	9202.00	.00

Note: N= Number of Participants, IAT= Internet Addiction, PSS= Perceived Stress and AGQ Aggressive Behavior

Table 5 intent that the internet addiction in male (M=134.51) have lower scores as compared to females (M=157.80). The Mann-Whitney U statistics is 8179.0. The p value associated with the Mann-Whitney U test is .02. This suggests a significant difference in Internet addiction between genders. Males have a mean rank of Perceived stress (M=144.73), while females have (M=153.13). The Mann-Whitney U statistics is 9139.0. The p value associated with the Mann-Whitney U test is .00. Suggests a significant difference favoring females have higher scores on Perceived stress. Findings show males exhibit a lower score on aggressive behavior (M=145.39) as compared to female (M=152.83). The Mann- Whitney U statistics is 9202.0. The p value associated with the Mann-Whitney U test is .00. This suggests that there is a significant difference in aggressive behavior between genders.

CHAPTER 4

DISCUSSION

This chapter focuses on discussing the findings and results of the study we statistically analyzed using various analyses in SPSS. The present study aimed to find a relationship between internet addiction, perceived stress, and aggressive behavior among university students. The research encompassed a diverse sample of 300 participants from government, semi-government, and private universities in Islamabad, Rawalpindi, and Murree. The study's significance lies in unraveling how internet addiction may serve as a pivotal factor in shaping both perceived stress and aggressive behavior among university students. Research shows the profound impact of internet addiction on student mental health (Joarder et al., 2021). Exploring the consequences of internet addiction is crucial, given its potential results on various aspects of adolescents' and young adults' lives. Excessive internet use in early life has been related with disturbances in brain development, difficulties developing an identity, deficiencies in social skills, difficulties managing emotions, and changes in educational achievement. Moreover, the rapid increase in internet use has been associated with symptoms of anxiety, depression, and heightened hostility among this demographic. The conceptual framework surrounding internet addiction further suggests negative outcomes, highlighting a concerning positive correlation between internet addiction and aggressive behavior among university students (Dhaka, 2019). It's noteworthy that the study emphasizes the gap in existing research within the context of Pakistan, particularly in relation to these variables. According to the scale author, the Cronbach's alpha reliability of the Internet Addiction Scale (IAT) was found to be 0.89. In a current study, the reliability of internet addiction stands at 0.73 (Table 2) which is

considered good reliability. The second measure used was the perceived stress scale, developed by Cohen in 1998. It is a valuable instrument in this study for measuring how university students subjectively interpret and judge stress in their lives. The scale provides an in-depth awareness of the emotional and cognitive aspects of stress because it focuses a strong emphasis on individual perception. The PSS provides a thorough understanding of the stressors that students face through examining various aspects of stress in various kinds of situations. This knowledge can guide specific tasks that focus on reducing stress and improving university students' overall health. The Cronbach's alpha of perceived stress scale (PSS) was found to be 0.80. In current study, the reliability of perceived stress stands at 0.67 (Table 2). The Aggression Questionnaire, with its 29 items and four distinct dimensions, serves as a valuable tool for a more detailed and specific analysis of aggressive behavior. Its focus on hostility, anger, physical aggression, and verbal aggression provides knowledge that may provide focused supportive systems for dealing with aggressive behavior in a student's population. The reported reliability score of 0.68 in the current study (Table 2), compared to the author's reported score of 0.89, raises considerations about the consistency of the Aggression Questionnaire in this specific context (Joarder et al., 2021).

The existing literature consistently suggests a noteworthy connection between higher levels of internet addiction, heightened perceived stress, and an increase in aggressive behavior among university students. This study has four major hypotheses that were explained. According to the first hypotheses of the current study is, there would be a strong positive relationship between internet addiction and perceived stress, and it is approved. Our study findings show that (Table 4) r= .252**, p < .01 there is a relationship between strong internet addiction and perceived stress among university students. Pervious

literature supported that hypothesis there will be a positive link between two variables when internet addiction is high, perceived stress will also be high. According to Smith (2022), research examines the positive association between perceived stress and internet addiction. Higher level of perceived stress was consistently associated with greater severity of internet addiction symptoms across different populations (Simth et al., 2022). Another previous research has highlighted the link of perceived stress was significantly correlated with internet addiction. Many research consistently shown a positive correlation between internet addiction and perceived stress (Gong, Wang & Wang, 2021).

The second hypothesis, there would be a significant relationship between perceived stress and aggressive behavior among university students and it is approved. Our study findings show that (Table 4) r= .115*, p < .05 there is a relationship between perceived stress and aggressive behavior among university students. Previous studies support or are consistent with study findings. Prior research literature examines the significant relationship between perceived stress and aggressive behavior among university students (Estevez Lopez et al., 2018).

According to Johnson (2022), research indicates a positive association between perceived stress and aggressive behavior. Higher levels of perceived stress were significantly correlated with increased levels of aggressive behavior. This conclusion aligns with a growing body of research emphasizing the complicated connection between stress perception and aggressive tendencies. The understanding that heightened stress levels contribute to increased aggression has implications for various aspects of individuals' lives, including interpersonal relationships, academic or occupational settings, and overall mental well-being (Johnson, Smith & Williams, 2022). Another study

literature supports our study result a strong correlation was found the perceived level of stress and aggressive behavior in university students (Hena, 2022). Similarly, another study found a positive correlation between perceived stress and aggressive behavior. This means that university students who reported higher levels of perceived stress were also more likely to engage in aggressive behaviors (Shin & Han, 2023).

The third hypothesis, there would be a strong positive relationship between internet addiction and aggressive behavior among university students. Our results support the third hypothesis. The previous studies literature also supports our results in (Table 4) r= .342**, p < .01. Excessive use of the internet has been found to contribute to the development of aggressive tendencies. When individuals become addicted to the internet, it can fuel aggression by removing inhibitions, reducing their ability to empathize with others, and causing isolation. Several studies have examined the significance and positive relationship between aggressive behavior and internet addiction (Joarder et al., 2021).

Researchers found that an extensive amount of aggressive content is available on the internet in the present situation. Additionally, there are other important factors that support these connections, such as increased media violence exposure, online social interaction, and the loss of identity that occurs when using the internet. So, these factors could be the most probable reasons for the previously shown connection. This finding is also supported by the social learning theory. Social learning theory addressed that people could develop violent behaviors unconsciously and decrease the inhibition of violence on the internet for a long time, thus the aggression will be strengthened (Joarder et al., 2021). Similarly, another study examines the relationship between internet addiction and aggressive behavior (Kim, 2013).

Research has consistently shown the positively correlation between internet addiction and aggression, with higher levels of addiction leading to more aggression and this study concluded that Internet addiction was more common among undergraduate university students (Dhaka & Naris, 2019).

According to the fourth hypotheses, there would be a significant gender differences between internet addiction, perceived stress, and aggressive behavior among university students. Our study results show that there are significant gender differences between internet addiction, perceived stress, and aggressive behavior among university students.

Our findings showed that female is more aggressive as compared to male (Table 5). This finding is also supported by prior studies that there are gender differences in aggressive behavior. Previous study results indicate females were more aggressive behavior as compared to males (Joarder et al., 2021; Ostrov & Keating 2004). Another research result indicates that female internet addiction rates increasing day by day (Chou & Hsiao, 2000). Similarly, another prior study also supported that there are gender differences in aggressive behavior. Females were more aggressive behavior rather than to male (Björkqvist et al., 1982; Crick et al., 2004).

The researchers said that the reason for different levels of aggression between boys and girls could be because of things like how evolved, biological differences, and what we learn from our surroundings.

According to our study findings there are gender differences in perceived stress among university students. In our result females have more in perceived stress as compared to males and the findings of pervious research also showed the level of perceived stress

were higher in females as compared to males. In that study result also indicated females suffered more perceived stress as compared to males (Graves et al., 2021).

Similarly, another study results that are conducted on university students also indicated males had much lower level of perceived stress among in females (Harutyunyan et al., 2020). The findings of our study clearly showed females are highly internet addicted as compared to males (table 5). And previous studies also supported those results that females have severe internet addiction as compared to males (Chiu et al. 2013; Joarder et al., 2021). Another pervious finding also indicated internet usage in females are significantly higher than in males. In that study females have greater percentage as compared to males, so it's mean females are highly affected from internet addiction as compared to males (Fernández-Villa et al., 2015). Similarly, in other study results indicated female have severe internet addiction as compared to males. In that study result some students have normal, some have suffered moderate internet addiction and most of those who were highly addicted are females (Al-Gamal et al., 2016).

Conclusion

The primary purpose of this study was to investigate and understand the relationships among internet addiction, perceived stress, and aggressive behavior among university students. The study examines that there is a significant correlation between spending excessive time on the internet and exhibiting aggressive behavior, as well as to examine the connection between internet addiction and heightened levels of perceived stress. Finally, the study also examines that there are gender differences between internet addiction, perceived stress, and aggressive behavior. The findings revealed a positive correlation between internet addiction and perceived stress. Moreover, a strong positive

correlation emerged between internet addiction and aggressive behavior. Furthermore, perceived stress demonstrates a significant correlation with aggressive behavior. Universities and educational institutions stand to benefit significantly from the insights gained, as the study provides a foundation for the development of targeted interventions and support services that cater to the specific challenges faced by students. The findings directly impact the well-being of university students, offering a basis for proactive measures, educational programs, and counseling services to help them navigate the digital landscape responsibly, manage stress effectively, and reduce the likelihood of engaging in aggressive behaviors.

Limitation

Firstly, one limitation is the reliance on self-report measures. The data collected for this study will primarily rely on participants' self-reported responses, which may be subject to recall bias, social desirability bias, or inaccurate reporting. Participants may underreport or overreport their internet usage, perceived stress levels, or aggressive behavior, which can affect the accuracy of the findings. Another limitation is the potential for sampling bias. The study's findings may only be applicable to the specific university and students' population from which the sample was drawn. Generalizing the results to other universities or diverse student populations may be limited. Ensuring a diverse and representative sample is crucial for obtaining more generalizable findings. Lastly, the study's cross-sectional nature and potential limitations in sample size may limit the generalizability of the findings. The results may not apply to other populations or be representative of the broader university student population. Furthermore, the study may face challenges related to the measurement of variables. Valid and reliable measures for assessing internet

addiction, perceived stress, and aggressive behavior need to be carefully selected. Different measurement instruments may yield varying results, potentially impacting the study's internal validity and comparability to other studies.

Suggestions/ Implications

To enhance the representativeness and stability of future research, it is imperative to consider employing larger sample sizes and expanding the scope of investigation across diverse geographical and cultural contexts. A more in-depth study of several topics, such as differed educational disciplines or socioeconomic backgrounds, can offer a detailed knowledge of the ways that aggressive behavior, perceived stress, and internet addiction appear in a variety of student populations. This approach could improve the generalizability of results and provide helpful ideas on possible differences that can arise among students with specific characteristics.

Further study works may find it useful to replicate the findings using different variables in order to clarify further aspects of the detailed correlation between internet use and mental health. Examining variables such as coping methods, social support networks, or time management abilities may provide a more comprehensive understanding of the factors controlling aggressive behaviors, perceived stress, and internet addiction in undergraduates. This comprehensive approach has the potential to enhance our understanding and lead the development of targeted interventions that address specific areas of life for students.

Expanding the age range of study participants represents another approach for future research. Investigating internet addiction, perceived stress, and aggressive behavior across different age groups within the university setting can provide valuable insights into

how these phenomena evolve over the course of an academic journey. Institutions of higher education play a crucial role in promoting student well-being. Future research can inform the implementation of educational programs designed to raise awareness about the potential consequences of internet addiction. These programs should not only focus on the psychological implications but also address the academic and social challenges associated with excessive internet use. By integrating such initiatives into university curricula, institutions can empower students with the knowledge and tools needed to maintain a healthy balance between online and offline activities.

Support services within universities should be expanded to incorporate the psychological, academic, and social dimensions of students' lives. Counseling services that specifically address internet addiction can be instrumental in assisting those struggling with excessive online activities. Moreover, academic support programs could help students manage their time effectively and enhance their overall academic performance. Social support initiatives can foster positive interpersonal relationships and reduce the potential isolation that may arise from extensive internet use. Encouraging universities to promote a healthy balance between online and offline activities is most important. This not only involves awareness campaigns but also the integration of strategies within the academic environment. For instance, incorporating breaks during classes, encouraging outdoor activities, and creating designated spaces for face-to-face interactions can contribute to a more balanced lifestyle. By addressing the root causes of severe stress, universities can create an environment helpful to positive mental health, ultimately benefiting students' overall well-being.

The implications of the study's findings extend beyond the academic area. Raising awareness among individuals, parents, educators, and policymakers about the potential risks associated with excessive internet use is essential. This collective awareness can work the way for the development of preventive measures and educational programs at various levels of society. Schools, for instance, can integrate digital literacy programs to equip students with the skills to navigate the online world responsibly. Parental involvement and education can contribute to fostering healthy technological habits from a young age.

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Appendices

Appendix A

Informed Consent

I acknowledge that this study is being conducted by a student from the Department of Psychology at Capital University of Science and Technology, Islamabad, as part of their research project.

I willingly and voluntarily confirm my participation in this project. I understand that my name and any demographic information will not be disclosed in the research reports to ensure my confidentiality as a participant. I am aware of my right to withdraw and discontinue my participation at any time without facing any penalties.

Signature: _____

Dated: _____

Appendix B

Demographic Information Form

For the following items, please select the response that is most descriptive of you or fill in the blank as appropriate.

Gender: Male ☐ Female ☐

Age: 18-22 ☐ 22-26 ☐ 26 & above ☐

Marital Status: Single ☐ Married ☐ Engaged ☐

Education: Undergraduate (Current semester enrolled) _____

University/Institution:

Government ☐ Semi-Government ☐ Private ☐

Could you please tell me where you currently live or reside?

Parents ☐ Guardians ☐ Hostel ☐

Have you any type of Access to the Internet? Yes ☐ ☐

If yes? Then.

How much time, on average, do you spend using the internet per day?

0 to 3 hours ☐ 3 to 6 hours ☐ 6 to 8 hours ☐ More ☐

What are the primary reasons or activities you use the internet for?

Education ☐ Entertainment ☐ Job/Work ☐ Communication ☐ Others ☐

Scale 1

This questionnaire consists of 20 statements. After reading each statement carefully, based upon the 5-point Likert scale, please select the response (0, 1, 2, 3, 4 or 5) which best describes you. If the two choices seem to apply equally well, circle the choice that best represents how you are most of the time during the past month. Be sure to read all the statements carefully before making your choice. The statements refer to offline situations or actions unless otherwise specified.

0 = Not Applicable

1 = Rarely

2 = Occasionally

3 = Frequently

4 = Often

5 = Always

S.no	Statements	0	1	2	3	4	5
1	How often do you find that you stay online longer than you intended?	0	1	2	3	4	5
2	How often do you neglect household chores to spend more time online?	0	1	2	3	4	5
3	How often do you prefer the excitement of the Internet to intimacy with your partner?	0	1	2	3	4	5

4	How often do you form new relationships with fellow online users?	0	1	2	3	4	5
5	How often do others in your life complain to you about the amount of time you spend online?	0	1	2	3	4	5
6	How often do your grades or schoolwork suffers because of the amount of time you spend online?	0	1	2	3	4	5
7	How often do you check your email before something else that you need to do?	0	1	2	3	4	5
8	How often does your job performance or productivity suffer because of the Internet?	0	1	2	3	4	5
9	How often do you become defensive or secretive when anyone asks you what you do online?	0	1	2	3	4	5
10	How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?	0	1	2	3	4	5
11	How often do you find yourself anticipating when you will go online again?	0	1	2	3	4	5
12	How often do you fear that life without the Internet would be boring, empty, and joyless?	0	1	2	3	4	5
13	How often do you snap, yell, or act annoyed if someone bothers you while you are online?	0	1	2	3	4	5
14	How often do you lose sleep due to being online?	0	1	2	3	4	5
15	How often do you feel preoccupied with the Internet when off-line, or fantasize about being online?	0	1	2	3	4	5

16	How often do you find yourself saying "just a few more minutes" when online?	0	1	2	3	4	5
17	How often do you try to cut down the amount of time you spend online and fail?	0	1	2	3	4	5
18	How often do you try to hide how long you've been online?	0	1	2	3	4	5
19	How often do you choose to spend more time online over going out with others?	0	1	2	3	4	5
20	How often do you feel depressed, moody or nervous when you are off-line, which goes away once you are back online?	0	1	2	3	4	5

Scale 2

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

0 = Never

1 = Almost Never

2 = Sometimes

3 = Fairly Often

4 = Very Often

S.no	Statements	0	1	2	3	4
1	In the last month, how often have you been upset because of something that happened unexpectedly	0	1	2	3	4
2	In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3	In the last month, how often have you felt nervous and stressed?	0	1	2	3	4
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5	In the last month, how often have you felt that things were going your way?	0	1	2	3	4

6	In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7	In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8	In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	0	1	2	3	4
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Scale 3

Rate each of the following items in terms of how characteristic they are of you. Use the following scale:

1 = Extremely uncharacteristic

2 = Somewhat uncharacteristic

3 = neither uncharacteristic nor characteristic

4 = Somewhat characteristic

5 = Extremely characteristic

S.no	Statements	1	2	3	4	5
1	Some of my friends think I am a hothead (short tempered)	1	2	3	4	5
2	If I have to resort to violence to protect my rights, I will.	1	2	3	4	5
3	When people are especially nice to me, I wonder what they want.	1	2	3	4	5
4	I tell my friends openly when I disagree with them.	1	2	3	4	5
5	I have become so mad that I have broken things.	1	2	3	4	5
6	I can't help getting into arguments when people disagree	1	2	3	4	5

	with me.					
7	I wonder why sometimes I feel so bitter about things.	1	2	3	4	5
8	Once in a while, I can't control the urge to strike another person.	1	2	3	4	5
9	I am an even-tempered person.	1	2	3	4	5
10	I am suspicious of overly friendly strangers.	1	2	3	4	5
11	I have threatened people I know.	1	2	3	4	5
12	I flare up (get angry) quickly but get over it quickly.	1	2	3	4	5
13	Given enough provocation, I may hit another person.	1	2	3	4	5
14	When people annoy me, I may tell them what I think of them.	1	2	3	4	5
15	I am sometimes eaten up with jealousy.	1	2	3	4	5
16	I can think of no-good reason for ever hitting a person.	1	2	3	4	5
17	At times I feel I have gotten a raw deal out of life.	1	2	3	4	5
18	I have trouble controlling my temper.	1	2	3	4	5

19	When frustrated, I let my irritation show.	1	2	3	4	5
20	I sometimes feel that people are laughing at me behind my back.	1	2	3	4	5
21	I often find myself disagreeing with people.	1	2	3	4	5
22	If somebody hits me, I hit back.	1	2	3	4	5
23	I sometimes feel like a powder keg ready to explode.	1	2	3	4	5
24	Other people always seem to get the breaks.	1	2	3	4	5
25	There are people who pushed me so far that we came to blows.	1	2	3	4	5
26	I know that "friends" talk about me behind my back.	1	2	3	4	5
27	My friends say that I'm somewhat argumentative.	1	2	3	4	5
28	Sometimes I fly off the handle (become angry) for no good reason.	1	2	3	4	5
29	I get into fights a little more than the average person.	1	2	3	4	5

<div align="right">**Appendix D**</div>

Permission of Internet Addiction Scale:
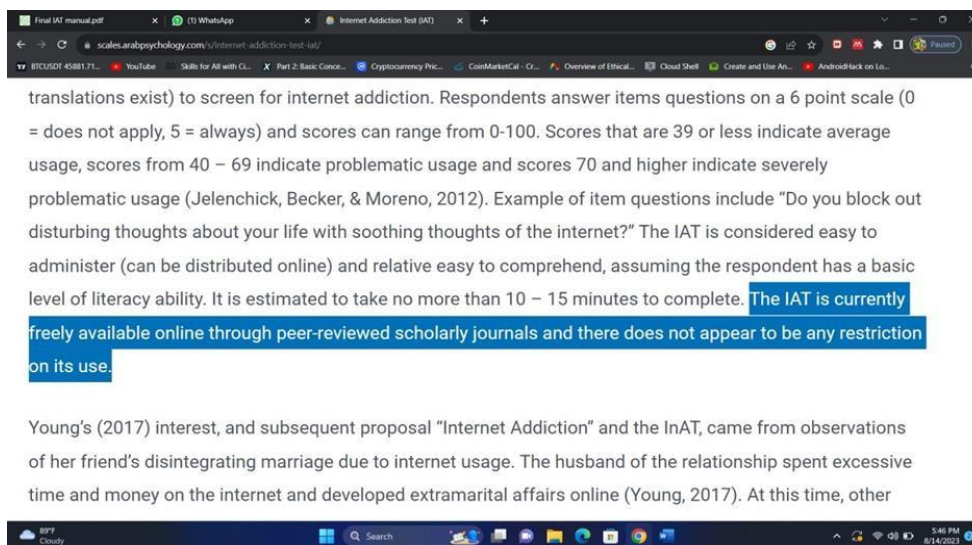
Perceived Stress Scale Permission:
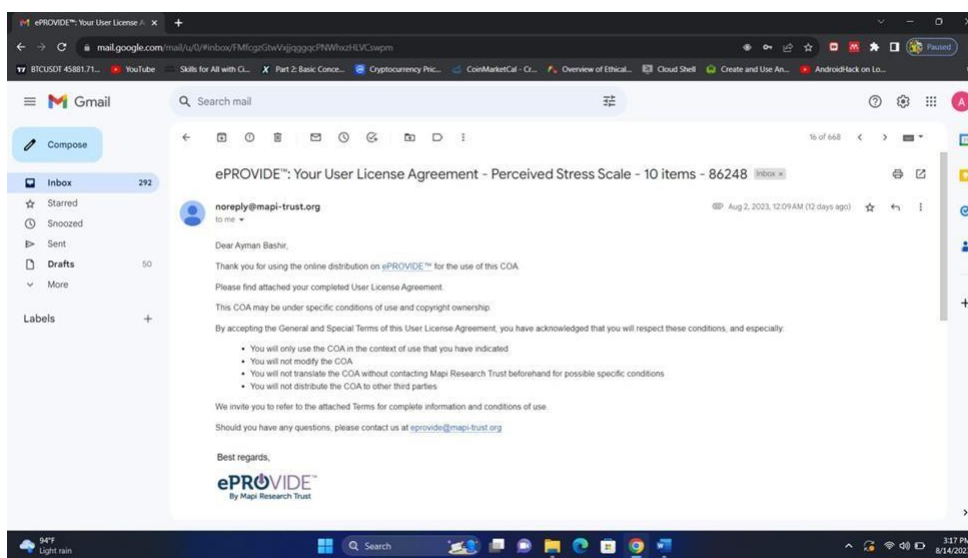
Aggression Questionnaire Permission:

Buss Perry Aggression Questionnaire Permission It is clearly mentioned in Journal of Personality and Social Psychology, 1992, Vol. 63, No 3, 453 that this questionnaire is free to use.