



**INDIVIDUAL AND ENVIROMENTAL PREDICTORS OF  
PSYCHOLOGICAL DISTRESS AMONG UNIVERSITY STUDENTS**

**Research Project Presented to**

**Bahria School of Professional Psychology**

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**BS Psychology**

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DISTRESS AMONG UNIVERSITY STUDENTS**

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## THESIS REVISION CERTIFICATE

It is to clarify that **Hala Qamar** and **Eisha tur Razia**, enrolment numbers **01-171202-027** and **01-171202-089** respectively, session Fall 2020 from School of Professional Psychology, Bahria University Islamabad conducted their undergraduate thesis entitled “INDIVIDUAL AND ENVIROMENTAL PREDICTORS OF PSYCHOLOGICAL DISTRESS AMONG UNIVERSITY STUDENTS” under my supervision. They have revised their thesis in the light of the examiners’ suggestions, and to my satisfaction and to the best of my belief, its standard is appropriate for acceptance. Moreover, this thesis is an excellent work in terms of scope and quality for the award of the degree of BS psychology.

**Principal Supervisor:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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## APPROVAL SHEET

### SUBMISSION OF RESEARCH PROJECT

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I hereby affirm that the above candidate's work, including the research project, has been completed to my satisfaction, and that the research project is in an editorial format that the faculty/department has approved for evaluation.

**Signature(s)**

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**The undersigned signifies that:**

1. During a pre-completion seminar, the applicant presented an overview and synthesis of the thesis's main findings, demonstrating that the study meets the project submission requirements.
2. I reviewed the candidate's research project, including its scope and formality. The faculty/department recognizes editorial standards as acceptable.

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**Date:** \_\_\_\_\_

## DECLARATION OF AUTHENTICATION

We emphasize that, to the best of our knowledge, all the research presented in this project is our own. All sources used and assistance received during the preparation of this thesis have been acknowledged. We hereby state that we did not submit this material, in whole or in part, for any other degree at this or any other institution.

**Signature(s):**

**Hala Qamar:** \_\_\_\_\_

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## **DEDICATION**

*First and foremost, to Allah Almighty Who has aided our progress by providing us with the necessary capabilities of power, knowledge, and wisdom, at each step of our journey.*

*Secondly, this thesis is dedicated to us for working tirelessly on it even on our bad days to ensure its completion to the best of our abilities. Lastly, this thesis is devoted to Munnu and Tiger, Eisha's cats, both of whom recently passed away by the Will of The Almighty.*

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## List of Abbreviations

1	IV	Independent Variable
2	DV	Dependent Variable
3	<i>M</i>	Mean
4	<i>SD</i>	Standard Deviation
5	<i>k</i>	Number of Items
6	$\alpha$	Cronbach's Alpha Reliability
7	<i>p</i>	Significance Level
8	<i>CI</i>	Confidence Interval
9	BIS	Barratt Impulsiveness Scale
10	DGI	Delaying Gratification Inventory
11	SDS	Smartphone Distraction Scale
12	KPDS	Kessler Psychological Distress Scale
13	DSM-5	Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition
14	PIU	Problematic Internet Usage
15	$\beta$	Regression Coefficient
16	<i>SE</i>	Standard Error
17	$R^2$	Coefficient of Determination

## ABSTRACT

The study aimed to investigate the predicting role of individual (impulsivity and instant gratification) and environmental (smartphone distraction) predictors of psychological distress among university students. The study involved 375 university students aged 18-28 from public, private, and semi-government universities, comprising 139 males and 236 females, using a cross-sectional correlational research design. The Barratt Impulsiveness Scale (BIS-11) (Barratt, 1994), Delaying Gratification Scale (Hoerger et al., 2011), and Smartphone Distraction Scale (Throuvala et al., 2021), and Kessler's Psychological Distress Scale (Kessler et al., 2003) were used to assess the constructs along with a demographic information sheet and informed consent. Pearson Product Moment Correlation revealed that impulsivity, instant gratification, and smartphone distraction were significantly positively correlated with psychological distress. The regression analyses revealed that a subscale of impulsivity (attentional impulsivity) and a subscale of smartphone distraction (online vigilance) significantly predicted psychological distress. T-test analyses also found significant differences in impulsivity, smartphone distraction, and psychological distress among students who were distracted compared to those who weren't, with gender differences also showing significant differences. Students with mental health issues also showed disparities in psychological discomfort, impulsivity, instant gratification, and smartphone distraction compared to their peers without mental health issues. This study emphasizes the importance of considering the dynamic relationship between impulsivity, instant gratification, smartphone distraction, and psychological factors to minimize their negative impact on psychological health.

*Keywords:* impulsivity, instant gratification, smartphone distraction, psychological distress.

**CHAPTER - I****Introduction**

The increasing prevalence of psychological distress in individuals globally is one of the most predominant problems of today's world. In 2019, one in every 8 people in the world were living with a mental disorder, of which anxiety and depression related disorders seemed most prevalent. Since 2020, we have been living in a post pandemic era, and this situation has only gotten bleaker after the COVID-19 outbreak when the rate of people suffering from anxiety and depression disorders increased significantly (World Health Organization, 2022). The world population review of depression rates by country (2024), recorded that depression was reported by 1 in 15 adults in a year while 1 in every 6 people were expected to experience depression at some point in their life.

University students are at a transitional period in life where they must go through a lot of big changes and adjust in a short time. It can be a highly stressful time for them because they are about to embark on a journey into adulthood and tougher responsibilities. This is when they must make a future for themselves. That coupled with everyone's personal struggles can be a contributing factor for psychological distress. Moreover, according to Kang et al. (2023), people with some personality traits are more prone to developing social dysfunction and mental health disorders than others. In post pandemic 2020 to 2021 year, more than 60 percent of college students across the United States were reported to meet the criteria for at least one mental health problem which was about a 50% increase from the data collected in the same longitudinal study back in 2013 (Lipson et al., 2022). That is a dangerous level of pervasive prevalence when it comes to psychological issues.

There are certain factors that contribute to or aggravate existing psychological distress in people. Literature has shown that there is a significant link between impulsivity and psychological distress as can be seen by the heightened level of suicidal ideation and attempts in people who are higher in impulsiveness (Abdullah et al., 2023). Impulsive people are shown to display dangerous and harmful behaviors such as gambling (Leppink et al., 2016) and can even lead people to start engaging in non-suicidal self-injury (Cassels et al., 2020) which has a clear link to psychological distress.

Moreover, studies have noted that a delay of gratification causes the general life satisfaction to increase while decreasing depressive symptoms (Poon et al., 2019). The reason being that delay of gratification goes hand-in-hand with an individual's capacity for self-control and literature has showed us that self-control processes have a positive impact on an individual's psychosocial well-being (Visserman et al., 2016). Hence, it can be inferred that if a person has low self-control and is unable to deny the instantaneous reward-based urges and is high on the need for instant gratification then they will face a considerable negative influence on their psychosocial life and therefore, face more distress.

Additionally, life has gotten increasingly fast-paced in the modern world with numerous inventions and improvements in technology. In the past it was easier to stay up to date with the happenings of the world. But in today's modern world, there is something new every day. Although the advancements of the modern era have revolutionized the world, they have also given birth to more issues. Two of those issues are data generation and data consumption. Research conducted by Northeastern University in 2016 stated that 2.5 quintillion bytes of data are created each day. And they estimated that by 2020 each person in the world will be generating 1.7 megabytes of data per second. Upon doing the math, it was seen that in 2020 there were roughly 7.8 billion



people in the world and multiplying 1.7 with 7.8 billion takes us up to the number of 13.2 billion. That is an approximation of how much data each person on Earth was estimated to produce, every second, by the year 2020. That number has surpassed today.

We can observe how nowadays people are busy endlessly doom-scrolling posts, comments, reels, videos, and consuming millions of gigabytes of data worldwide per second in the process. This contributes further to the increase in the generation of data. A rapid increase in the total amount of data generated and consumed globally was predicted. The researchers estimated that till 2025, global data creation is projected to grow to more than 180 zettabytes. This has been hugely impacted by the pandemic because people had to rapidly adjust to online modes of working, teaching and learning (Statista, 2023).

These intricacies and swift progression of contemporary life have also made numerous individuals vulnerable to stress, anxiety, depression, and other psychological ailments. Moreover, while smartphones and other gadgets can greatly boost efficiency and achievements, overuse of these tools and social platforms could hinder one's effectiveness in professional endeavors, interpersonal connections, and educational pursuits. Nonetheless, the primary consequence continues to be psychological distress (Robinson, 2024). Among young adults, this condition is widespread, with prevalence rates varying from 15.2% to 99.7% (Notara et al., 2021).

### **Smartphone Distraction**

Smartphone distraction (SD) relates to the occurrence wherein the utilization of smartphones results in diminished attention, impaired cognitive function, and disruption of higher-order cognitive processes (Throuvala et al., 2021). The inherent nature of cell phones is distracting, diverting our focus from tasks and endeavors. Recent studies indicate that the mere presence of a smartphone, regardless of whether they are powered

off or on silent mode, suffices to diminish our attention and cognitive abilities towards the current task (Skowronek et al., 2023). Furthermore, excessive smartphone usage and succumbing to this distraction result in various psychological challenges like depression, anxiety, stress, and attention deficits, accompanied by an upsurge in issues such as work burden, decreased academic achievement, impulsivity, and instant gratification (George, 2021; Gordon, 2021; Ratislavová et al., 2023; Robinson, 2024).

### **Impulsiveness**

The construct of impulsiveness has long since been the interest of studies because it relates to numerous different psychological conditions and is also recognized as part of the diagnostic criteria for several disorders in the DSM-5 (Bakhshani, 2014). It is considered to be a multi-dimensional concept which describes various rapid, under-regulated behavioral reactions to internal or external stimuli, coupled with little forethought to possible negative consequences of such reactions. If researchers study how impulsivity is related to emotional constructs, they can generate a more comprehensive understanding of how the emotional experience is regulated (or dysregulated), and it is evident that the tendency to act on impulses influences how we express and experience emotions. Which if not done appropriately, can lead to significant psychological distress. During the experience of negative emotions, strong feelings of urgency are likely to facilitate impulsive behaviors which may alleviate the negative emotions in the short term but may have harmful long-term consequences (Gröndal et al., 2023). Basically, internal distraction caused by feelings of impulsivity and the ensuing thought can lead to impulsive behavior.

Similarly, research is increasingly showing that media multi-tasking is negatively associated with cognitive performance. Studies on the cognitive profiles of heavier/high

media multitaskers (HMMs) compared to lighter/low media multitaskers (LMMs) indicate that HMMs show reduced performance in different cognitive domains, especially in working memory and inhibitory control which leads to impulsive behavior in individuals (Müller et al., 2021). Repeated use of social media via smartphones and heightened reward expectations can lead to habitual, everyday use and impulsive responses to social media-related material. Social media, with its frantic pace, may increase an impulsive cognitive style to be able to reorient attention repeatedly and constantly on the newest stimulus (Filippone et al., 2022).

### **Gratification**

Delay of gratification is the ability to let go of an immediate reward in order to opt in favor of pursuing a more important but delayed reward. It is shown by studies that the habit of delaying gratification can lead to positive changes in a person's life, such as increased self-control and positive psychosocial wellbeing (Visserman et al., 2016). Additionally, it can also help in improving a person's cognitive functions and working memory (Chen & Yeung, 2023; Zhou et al., 2012). Meanwhile, instant gratification can be defined as behaviors that offer an immediate reward and a delayed punishment to people and how they may seem more appealing than practices that provide only a delayed reward (Magen & Gross, 2007).

Instant gratification (IG) is prevailing in the world today, where individuals focus more on immediate rewards instead of opting for a more extensive and delayed reward in the future. It is associated with acquiring satisfactory results in the shortest time possible and not appreciating the long run (Tobin & Graziano, 2010). Matama et al. (2020) states that this type of behavior is fueled by activities that produce immediate returns e.g., gambling games that involve wagering money or something of value on the outcome of a

game, contest, or other events. In today's modern fast-paced world, people are choosing the path of immediate gratification over delayed gratification more frequently and it is leading towards harmful consequences. People are losing the ability to wait and have self-control (Samuel, 2018). They are more likely to want what they want immediately, and the level of patience is diminishing.

### **Psychological Distress**

Psychological distress (PD) is a condition of emotional turmoil brought about by stressors or unmet needs, impacting various facets of life such as health and productivity (Sangsefidi et al., 2023). It includes manifestations of depression, anxiety, PTSD, and general stress (Chen et al., 2022; Viertiö et al., 2021). The research delves into the ways in which specific internal and external elements influence psychological distress, leading to a notable escalation. An external factor like excessive use of mobile phones is linked to symptoms resembling addiction, including withdrawal, sleep disturbances, and diminished self-regulation. When an individual perceives a stressor to surpass their coping capacity (resulting in distress), it can threaten performance across various domains, including cognitive functions. Distress hinders an individual's ability to concentrate on current tasks, as focus tends to shift towards personal and often negative distressing thoughts, indicating that feeling overwhelmed by stress can trigger enduring cognitive impairments, like heightened distractibility and reduced concentration (Mesghina et al., 2021). Psychological distress represents an unfavorable emotional ordeal that emerges when individuals are incapable of managing stress independently, leading to occurrences of depression and anxiety (Chen et al., 2022).

## Literature Review

Excessive utilization of smartphones within educational settings has the potential to result in disruptions, impacting the learning process and concentration of students. The impact of this phenomenon varies among different societies, underscoring the diverse effects of technology on various cultures (Mahsud et al., 2020). While smartphones present a multitude of advantages, their inappropriate usage can give rise to a range of challenges, encompassing classroom disturbances and mental health issues. These challenges are frequently compounded by emotional hurdles and struggles with emotional management. In addition to academic settings, interruptions stemming from smartphones can significantly affect mental health, resulting in issues like depression, anxiety, and stress. This tendency is particularly observable within the nursing student population, where rumination and social isolation serve as intervening factors, further complicating the scenario (Li et al., 2023). Moreover, research has identified a robust connection between psychological discomfort, challenges in emotion regulation, and problematic smartphone utilization. Despite the advantages linked to smartphones, these issues can foster detrimental usage behaviors. Individuals may encounter difficulties in effectively handling their emotions, thereby fostering problematic smartphone usage. Challenges in emotional regulation could impede individuals from successfully pursuing their objectives due to emotional obstacles. Additionally, individuals who struggle to manage impulses during intense emotional experiences are more inclined to engage in problematic smartphone usage patterns (Squires et al., 2020).

A fundamental concept in comprehending the adverse consequences of relying excessively on smartphones is nomophobia, which was introduced in 2008. This term denotes the apprehension or unease individuals feel when they are apart from their cell phones or unable to utilize them, thus resulting in an extreme level of being distracted

through their smartphone. Among young adults, this condition is widespread, with prevalence rates varying from 15.2% to 99.7%. Overuse of smartphones, often associated with nomophobia, can result in heightened psychological, emotional, social, and physical side effects. This reliance detrimentally impacts emotional wellness and overall mental well-being, leading to social seclusion, diminished in-person communication, and challenges in establishing and sustaining relationships.

From a physical standpoint, prolonged smartphone usage can contribute to improper posture, eye discomfort, disturbed sleep patterns, and reduced physical movement. Moreover, individuals might encounter elevated levels of stress and anxiety when parted from their smartphones, suggesting a potential reliance on these devices for emotional solace and safety (Notara et al., 2021). This dependency encompasses a range of concerns including online addictions (gaming, trading, e-commerce), virtual connections (dating applications, messaging potentially leading to virtual relationships), information overload, and cybersex addiction (online pornography, sexting). Intensive smartphone utilization also leads to feelings of stress, anxiety, despondency, and solitude; concurrently, it can exacerbate these emotions further. For instance, individuals who utilize smartphones as a means to alleviate feelings of loneliness, discomfort, and anxiety in public environments may inadvertently distance themselves from others, thereby complicating genuine social interactions in the long run. Put simply, the coping mechanism chosen to alleviate anxiety may actually exacerbate it (Robinson, 2024).

Phubbing, the acts of ignoring someone in favor of one's smartphone, has been associated with negative outcomes. It can lead to emotional changes, decreased emotional intelligence, and negative affect (García et al., 2023; Joshi, 2023). This behavior can cause feelings of being ignored and interpersonal conflicts. Moreover, phubbing negatively impacts well-being, leading to feelings of neglect and isolation that

affect an individual's mental health. While smartphones offer advantages, they also divert attention from significant events, hindering our ability to stay present. As Reinke (2024) emphasizes, prioritizing meaningful human interactions over smartphones is crucial.

Smartphones have introduced significant functionality into our lives, enhancing our daily routines by facilitating efficient scheduling and constant communication with our loved ones, regardless of time or location. Nonetheless, this perpetual connectivity around the clock, seven days a week, can give rise to societal hazards and health concerns. Adolescents, encompassing both hostel residents and day scholars, are notably susceptible to sleep disturbances due to contemporary lifestyle elements, impacting their overall well-being and academic performance (Hartley, 2022). The association between smartphone diversion and psychological distress in students has been validated (Qureshi et al., 2022). Research indicates that hostel residents are more prone to psychological distress, poorer sleep quality, and unhealthy dietary patterns compared to day scholars (Jawed et al., 2020). Moreover, emotional disruptions like anxiety and depression are more common among hostel residents than day scholars (Ahmed et al., 2023). The consequences of smartphone distraction on mental well-being are disregarded because of problematic smartphone utilization, leading to emotions of anxiety, depression, and stress (Rasool et al., 2022). Hence, it can be deduced that smartphone diversion may contribute to psychological distress among both hostel residents and day scholars, potentially worsening existing emotional disturbances and unhealthy behaviors observed in these student cohorts.

Several researchers have raised apprehensions that the mere presence of a mobile phone could already be distracting (Skowronek et al., 2023). For example, individuals in the vicinity of an active smartphone exhibited lower performance in neuropsychological

assessments compared to those without a nearby smartphone during the tests. The distracting impact of smartphone presence or availability has also been evident in social engagements; it has been proven that the presence or availability of a smartphone hinders the establishment of connections between individuals by impeding the cultivation of interpersonal intimacy and familiarity (Skowronek et al., 2023). Humans, being naturally inclined to distraction, and smartphones being crafted to cater to our insatiable hunger for amusement, current events, and the urge to express ourselves on social platforms doesn't help the situation (Hynes, 2021). In this era of digitization, particularly in the aftermath of the pandemic, which has transitioned education and work to remote setups, managing cognitive resources poses a continual challenge. Concerns have been voiced that the escalating demands of digital and remote work, alongside juggling social and familial obligations, could lead to challenges in upholding a harmonious work-life equilibrium and the emergence of mental health issues like job-related burnout (Throuvala et al., 2021).

The average individual typically engages in work activities for a mere three minutes before succumbing to distractions, such as checking emails, glancing at notifications on electronic devices, or responding to inquiries from colleagues (Steinhorst, 2023). Nonetheless, the repercussions of these interruptions are noteworthy, as it takes an average of 23 minutes to refocus on the initial task post-disturbance, and nearly a quarter of the interrupted work remains incomplete on the same day.

Distractions are not confined to professional settings. Thornton et al. (2014) emphasizes the potential for distractions arising from the mere presence of a cell phone, leading to a diversion of attention from the primary task at hand. "Even if it is just mental, your focus is not on the task at hand... your mind is elsewhere" (Worland, 2014). This viewpoint is also echoed in academic environments. Scott Campbell (2020) notes



that "young people turn to digital media as an immediate way to relieve boredom," especially in classrooms.

The impacts of distractions in educational establishments are substantial. Studies show that ringing phones in class are the most common external distraction for 68% of students, with 21% significantly affected by it. Additionally, students talking during lessons create a self-imposed distraction for 72% of students, negatively impacting their concentration and learning abilities. A considerable 42% of students consider this type of distraction as severe (Attia et al., 2017). Furthermore, the issue of distractions extends beyond students to the workforce. Based on Steinhorst's (2023) research, professionals lose around 720 work hours annually due to distractions, leading to significant financial setbacks. Smartphones, with their constant notifications, play a central role in these distractions. Even if individuals do not interact directly with these notifications, the mere interruption caused by the alerts can completely shift their focus (Skowronek et al., 2023).

The impacts of these distractions extend beyond the immediate and can also result in enduring consequences. According to literature, smartphone distraction affects attention, inhibition, and working memory, thereby leading to decreased attention and productivity. Various research studies emphasize the adverse effects on sleep, stress levels, and academic achievements. Prolonged exposure to distractions or addictions caused by cell phones can potentially alter the brain's reward system by diminishing dopamine receptors, consequently lowering overall mood, and impairing the ability to sustain focus and attention (Steinhorst, 2023).

Aside from environmental distraction in the form of a smartphone, there are also other factors that impact a person's psychological health. For a significant number of

people, part of the reason for this level of pervasive psychological distress in all parts of life is impulsivity. Literature has indicated a strong link between impulsivity, mental health disorders and psychological distress. In a systematic review, Fields et al. (2021) indicated that there is a role of impulsivity in major depressive disorder. The goal of the review was to examine evidence of impulsivity, in the past 5 years, using a database of data to collect and cross-check information to include in the review following a strict selection criterion. It included data highlighting the differences between major depressive disorder groups compared to control groups and also data which showed associations between impulsivity and self-reported depressive symptomatology. The findings of the study showed higher levels of impulsivity in people who had major depressive disorder compared to the control groups. Moreover, the self-reported depressive symptomatology was also found to be positively associated with impulsivity.

Depression is not the only adverse effect related to impulsivity. In a study conducted by Zhuo et al. (2021), the researchers investigated the mediating role of impulsiveness and maladjustment in how they affected the relationship between psychological resilience and drug addiction. They used a cross-sectional design and included a sample of 140 male drug addict in compulsory isolation centers. The data was collected using a survey method with questionnaires and scales to measure the level of drug addiction, psychological resilience, social support, impulsiveness, maladjustment, and loneliness. Moreover, they conducted semi-structured interviews. The results showed that psychological resilience inversely predicted drug addiction. Meanwhile, maladjustment was found to be fully mediating the relationship between psychological resilience and drug addiction as well as between impulsiveness and drug addiction. Moreover, it was seen that impulsiveness and maladjustment could jointly mediate the

relationship between psychological resilience and drug addiction indicating the potential of impulsiveness and maladjustment to bring about adverse effects.

Furthermore, in a paper evaluating previously published studies on impulsivity in the elderly, Kulacaoğlu and Köse (2017), studied the relationship between impulsivity and borderline personality disorder (BPD) with attention-deficit/hyperactivity disorder (ADHD), impulsivity with anxiety and mood disorders, and the psychopharmacological approaches to impulsivity. The results indicated that impulsivity increased with age leading to precautions that impulsivity should be considered as a risk factor for older patients as it may lead to severe problems e.g., suicide, etc. The review also highlighted a study which further signifies the link between impulsivity and psychological distress. This study indicated that higher levels of impulsivity were noted in patients who had bipolar disorder even when patients were in between episodes of mania or depression (Swann et al., 2001). The same systematic review also stated that anxiety was positively associated with impulsivity. Additionally, because anxiety and impulsivity are also the two main risk factors of suicidality (Pierò, 2010), they have negative outcomes for patients with bipolar disorder. Lastly, the review concluded that impulsive symptoms display comorbidity with patients who have several psychiatric disorders. Therefore, it makes sense that impulsivity is a risk for suicidality. It also influences etiology, course, and clinical severity of many mental disorders.

Impulsivity causes adverse effects to a person's mental health and is closely related to psychological disorders and distress. Likewise, instant gratification is on a similar spectrum as it affects a person's personality and thought process which leads to psychological issues. The results from a research study done on delay of gratification by Poon et al. (2019) showed that delay of gratification causes an increase in life satisfaction and a decrease in depressive symptoms. This was further demonstrated by a

recent study which stated that there are positive associations between self-control and well-being longitudinally (Buyukcan-Tetik et al., 2018). Therefore, as suggested by these findings, it is imperative to develop gratification delay among high-risk youth, such as university students with mental health issues, because it results in an increase of well-being which is a crucial factor for continuous positive development in youth (Proctor et al., 2009).

Whether people are used to delaying gratification or not also has an impact on a person's cognitions. Individuals who have the habit of delaying gratification tend to have better mental functions and cognitions. A study investigated the extent to which the development of Executive Function (EF) might differ among children from diverse cultural backgrounds living in a multicultural Asian society. The results from this study exhibited that children who were taught to be habitual in delaying gratification at an earlier age outperformed other children in working memory and achievement tests of mathematics and reading which were used to measure executive function. Furthermore, the study also suggests that delaying gratification has positive effects on a person's brain function (Chen & Yeung, 2023). Therefore, it is safe to say that instant gratification may have the opposite effect especially since executive function is also responsible for the inhibitory control a person displays.

The stress felt during the pandemic has been linked to a rise in impulsivity, prompting individuals to make more spontaneous decisions, especially in activities involving choices over time. These challenges have been further heightened by the COVID-19 crisis, which has induced shifts in conduct, including a surge in impulsiveness and a preference for immediate satisfaction. The stress encountered during the pandemic has been correlated with an increase in impulsivity, prompting individuals to partake in more spontaneous decisions, especially in tasks involving intertemporal

choices (Agrawal et al., 2022). This impulsiveness has also been correlated with reduced levels of patience and a decline in adherence to social distancing measures.

The pandemic has led to increased levels of anxiety and loneliness, culminating in impulsive buying behaviors as noted by Dursun et al. (2023). This spontaneous purchase often elicits adverse emotions such as remorse, regret, and embarrassment, consequently further impacting an individual's mental well-being. Individuals demonstrating elevated levels of impulsivity and compulsivity may encounter an augmented vulnerability to developing addictive inclinations in high-stress circumstances, such as the COVID-19 lockdown, as proposed by Pautrat et al. (2022). Therefore, it is imperative to consider impulsivity in the treatment and control of addiction.

The pandemic has contributed to a rise in problematic internet usage (PIU), notably among students, and has been associated with heightened levels of impulsivity, anxiety, and depressive symptoms as emphasized by Gečaitė-Stončienė et al. (2021). Understanding impulsivity is crucial in examining the impact of PIU on mental distress during the pandemic.

While the pandemic has brought about elevated infection rates and mortality figures, it has also sparked a surge in mental health challenges such as depression, stress, sleep disturbances, and suicidal tendencies. These issues are particularly acute in Asian nations where economic difficulties and limited access to healthcare services compound the situation, as highlighted by Lathabhavan & Sudevan (2022).

The study of psychological distress holds significant importance in the realm of education. For example, a study revealed that college students exhibited moderate to severe levels of depression (27%), anxiety (47%), and stress symptoms (27%). This

distress correlates with increased alcohol consumption and severity, with impulsivity playing a role in both alcohol misuse and psychological distress, according to Maccombs-Hunter & Bhat (2022). Additionally, research indicates that students who have their cell phones during lectures tend to perform poorly and have weaker memory retention (Skowronek et al., 2023). Impulsivity is also associated with suicidal behaviors and thoughts, contributing to heightened psychological distress. Individuals demonstrating higher impulsivity levels consistently exhibit increased rates of suicidal behaviors and ideation (Abdullah et al., 2023). On the contrary, mindfulness has been shown to have a negative correlation with smartphone addiction and psychological distress, whereas impulsivity has a positive association with these factors (Kim et al., 2023). Furthermore, psychological distress has been revealed to detrimentally impact life satisfaction and well-being, irrespective of gender and location, during both normal and crisis periods, affecting individuals and their satisfaction with life (Lathabhavan & Sudevan, 2022).

Smartphone addiction, an increasing issue, has a significant impact on one's psychological health, including well-being, productivity, and health. According to the literature, persons who abuse their smartphones have severe emotional regulation issues, as well as personality problems like shyness, impulsiveness, alexithymia, boredom proneness, and loneliness. This is more prevalent among young adults and teenagers. This addiction may induce unpleasant withdrawal symptoms when users are unable to access their phones, as well as feelings of guilt at the inability to pick up calls or respond to messages instantly (Ratislavová et al., 2023). Furthermore, people frequently use the internet as a getaway or to cope with negative situations like despair, anxiety, and stress. A cross-sectional research of college students discovered that people with high levels of

depression were more likely to use electronic devices, such as cell phones, to escape unpleasant events in their lives (Chen et al., 2022).

### **Rationale**

The speed with which psychological distress seems to be spreading in our world, especially amongst the student population, is shocking. More and more students are reporting mental health issues or struggling to keep up with the pace of life. According to a large-scale, longitudinal study conducted in United States from 2013 to 2021, there was a 50% prevalence increase in mental health problems. Moreover, similar findings were observed from students of different ethnic backgrounds so it can safely be said that this is a culturally diverse phenomenon (Lipson et al., 2022).

Despite there being a relatively low number of credible studies done in Pakistan to measure the impact of mental health issues, systematic review revealed similar results where 42.66% students were found to display depressive symptoms (Khan et al., 2021). There are multiple factors which contribute to or exacerbate the existence of psychological distress in individuals. These factors can be both individual and environmental. To give our research an edge, we decided to work on both individual and environmental levels. On an individual level we have impulsiveness and instant gratification while on an environmental level we have smartphone distraction.

This will help to contribute to the existing international literature on these variables (Lei et al., 2020; Liu, 2023; Meikle et al., 2020). However, while there is literature on all variables, the literature studying the combined relationship of all four variables is limited. Therefore, our study can contribute to this gap in existing literature.

Moreover, while there has been some indigenous research on impulsiveness in link to personality traits and impulsive buying behavior (Farid & Ali, 2018; Rauf et al.,

2019) or impulsiveness and adverse childhood experiences (Bokhari et al., 2015), there is not much work on impulsiveness and its relationship with psychological distress, specifically in university students. While for instant gratification the indigenous research was very limited, especially in connection with impulsiveness and smartphone distraction. Hence, there is a need for additional research and studies on psychological distress and its exacerbating and predictive factors in Pakistan, especially in the student population. That is the reason that our research sample is university students because youth is the future of any nation, especially a developing one like Pakistan. Additionally, studies catering to these issues from low-income countries like Pakistan are scarce and this is another gap that we hope our research will be useful in filling.

### **Theoretical Framework**

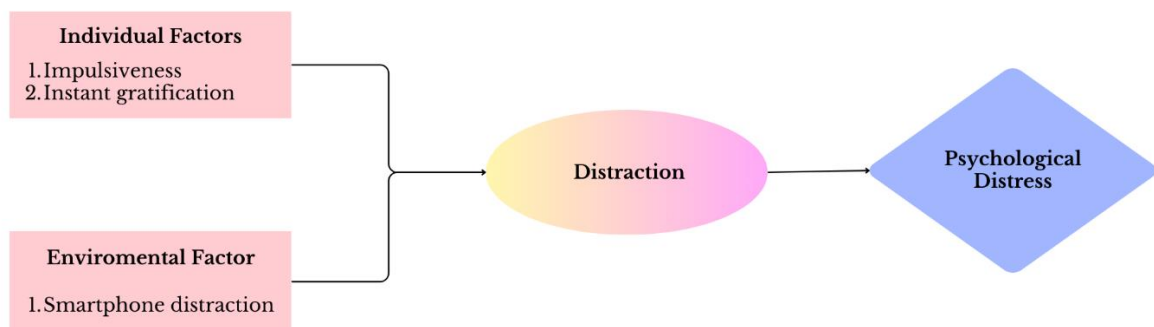
The Distraction-Conflict theory suggests that when a person is performing a task, even the awareness of the presence of people or other environmental factors creates a conflict between concentrating on the new stimuli or concentrating on the task at hand. This form of internal conflict is called an attentional conflict, and it refers to the situation when the individual feels the desire to give attention to both activities at the same time (Baron as cited in Chu et al., 2021). This can increase an individual's cognitive load. This increase in cognitive load can lead to impairments in peoples' attention ability, work precision and effectiveness and working memory. Hence, this distraction-conflict model has three steps which are (a) different factors cause distraction, (b) distraction causes attentional conflict, and (c) attentional conflict leads to cognitive overload and increased stress levels (Nicholson et al., 2005).

Our research focuses on distraction causing factors on two levels, individual and environmental. For individual distraction, this research focuses on impulsiveness and instant gratification. Meanwhile, for environmental distraction, this research considers



smartphone distraction. Impulsiveness, instant gratification, and smartphone distraction will all be considered as independent variables for the current research. Thus, this study will show the impact of all the IVs on the dependent variable, which is psychological distress. In other words, this study shows how individual and environmental distractions could result in psychological distress for university students.

### Conceptual Framework



**Figure 1.** *Distraction-Conflict Model of This Study*

**CHAPTER - II****Research Design**

The present research was cross-sectional, correlational design which was conducted into two phases:

**Phase – I: Pilot Study**

The pilot study consisted of reviews for selected scales and data collection analysis for the pilot study to determine the suitability, validity, and reliability of the scales. Three experts, related to field of Psychology and holding PhD and MS degrees, were contacted for review of the scales' language and response options suitability. Changes were made as suggested by the reviewers and then the next step of data collection was carried out. Lastly, we ran reliability analysis on the collected data.

**Phase – II: Main Study**

In the main study, our objective was hypothesis testing and in order to do that ample data was collected from multiple universities and after the subsequent data cleaning, the appropriate analyses were run. Lastly, results were interpreted and reported.

**CHAPTER - III****Pilot Study**

Upon completion of the study's trial phase, multiple questionnaires were produced and readied for data gathering in the pilot study which aimed to achieve the specified objectives. The main objective of this initial examination was to evaluate the effectiveness of research methodologies, procedures, and instruments on a smaller scale before the full-scale investigation. Moreover, the aim included identifying and resolving various possible challenges and evaluating the viability of the primary study.

**Objectives**

Following were the objectives of the pilot study:

1. To investigate the linguistic and procedural suitability of the scales for targeted sample
2. To determine the psychometric properties of the instruments.

**Instruments*****Kessler Psychological Distress Scale (K-10)***

The Kessler Psychological Distress Scale (K10) is a self-report measure of psychological distress developed by Kessler in 1992. The scale involves ten questions about emotional states each with a five-point Likert response scale. Each item is scored from 1 (none of the time) to 5 (all of the time). Questions three and six do not need to be asked if the response to the preceding question was 'none of the time.' In such cases questions three and six should receive an automatic score of one. Scores of the ten items are then summed, yielding a minimum score of 10 and a maximum score of 50. Low scores indicate low levels of psychological distress, and high scores indicate elevated

levels of psychological distress (Kessler, 2003). Cronbach's alpha (0.88) indicated a high level of internal consistency of the K-10 scale (Sampasa-Kanyinga et al., 2018).

### ***Barratt Impulsiveness Scale (BIS-11)***

The Barratt Impulsiveness Scale, Version 11 (BIS-11; Patton et al., 1995) is a 30 item self-report questionnaire designed initially by Barratt, and later revised by Patton and Stanford, to assess general impulsiveness in a multifactorial way. The instrument has three subscales, attentional impulsiveness, motor impulsiveness, and nonplanning impulsiveness. The items are scored on a four-point Likert scale which is 1 (Rarely/Never), 2 (Occasionally), 3 (Often), and 4 (Almost Always/Always). Cronbach's alpha (0.88) indicated a high level of internal consistency of the BIS-11 scale (Martínez-Loredo et al., 2015).

### ***Delaying Gratification Inventory***

Delaying Gratification Inventory was developed by Hoerger et al. in 2011. This is a self-report questionnaire composed of 35 items that evaluate delayed gratification in using 5 different subscales including food gratification (1, 6, 11, 16, 21, 26, 31), physical pleasure (2, 7, 12, 17, 22, 27, 32), achievements gratification (5, 10, 15, 20, 25, 30, 35), social interactions (3, 8, 13, 18, 23, 28, 33) and, monetary gratification (4, 9, 14, 19, 24, 29, 34). A higher score on this scale indicates a greater ability to delay gratification. It uses a 5-point Likert scale which is 1 (Strongly Disagree), 2 (Somewhat Disagree), 3 (Neutral), 4 (Somewhat Agree) and, 5 (Strongly Agree). It has 17 items that are reverse scored which are 3, 6, 9, 11, 12, 15, 19, 21, 22, 23, 24, 25, 27, 32, 33, 34, and 35. Cronbach's alpha (0.87) indicated a high level of internal consistency of the DGI scale (Hoerger et al., 2011).

### ***Smartphone Distraction Scale (SDS)***

Smartphone Distraction Scale (SDS) was developed by Throuvala in 2021. It is a 16-item scale with 4 subscales including, attention impulsiveness, online vigilance, emotion regulation, and multitasking. All the subscales are comprised of 4 items each. It is rated on a five-point Likert scale ranging from 1 (Almost Never) to 5 (Almost Always). Cronbach's alpha (0.88) indicated a high level of internal consistency of the SDS scale (Throuvala et al., 2021).

### **Sample**

Students of Bahria University, from different departments were made part of the study through convenience sampling ( $n = 28$ ). The age range of the student sample was between 18-30 and they were enrolled in either undergraduate or postgraduate programs. Several departments of Bahria University were included including the Computer Science department ( $n = 15$ ), Information Technology ( $n = 3$ ), Professional Psychology ( $n = 5$ ), Artificial Intelligence ( $n = 1$ ), Business Studies ( $n = 2$ ), and International Relations ( $n = 2$ ). The sample included both male ( $n = 14$ ) and female ( $n = 14$ ) students. Most of the participants were living in nuclear family systems ( $n = 23$ ) and the rest were living in joint family systems ( $n = 5$ ). Only a few participants were self-employed ( $n = 3$ ), majority being unemployed ( $n = 22$ ), and few in the category of "others" ( $n = 3$ ), which stated other sources of income besides the ones mentioned.

### ***Inclusion Criteria***

1. University students are currently enrolled in undergraduate or postgraduate programs.
2. Day-scholars and students living in a hostel for the duration of their degree.
3. Students ranging from 18-28 years old.

### ***Exclusion Criteria***

1. Alumni were excluded.
2. Students aged less than 18 years old.
3. Students aged more than 28 years old.
4. Students living at their relatives' house instead of hostels.
5. Students who are renting private apartments instead of living in hostels.

### **Procedure and Ethical Considerations**

Three experts in the field of psychology with PhDs and MS degrees were requested to review the items on our chosen scales to ensure their suitability for our selected sample. All of them have years of experience in their respective fields as well as teaching. Therefore, based on their feedback, we refined the items, including adding meanings and synonyms in brackets for words that the participants might struggle to understand. Next, 28 questionnaires were printed and were handed to students from different departments in Bahria University followed by a brief introduction about the purpose of the study and their verbal and written consent to participate in the study. Those who wished to withdraw due to their personal concerns were allowed to do so. The students' questions regarding the questionnaire and the study were answered without revealing essential information about the study. Participants were given ample time to fill out the questionnaires and any questions they had regarding the questionnaire were answered. The questionnaires were collected after the participants were done filling them in. They were thanked for their corporation.

In order to ensure that ethical considerations were met, first, consent was obtained from the participants individually. Second, confidentiality was assured for all the data collected as participants were allowed to stay anonymous in their responses to protect their identities. Lastly, data integrity was maintained by making sure that only

one participant filled in one questionnaire and by rechecking if there were any missing items. If missing items were found, participants were asked to fill them in.

## Results

The analyses of the pilot study were carried out to determine the validity and reliability of the scales so it can provide accurate results in the main study. The scales include Smartphone Distraction Scale (SDS; Throuvala, 2021), Barratt Impulsiveness Scale (BIS-11; Patton et al., 1995), Delaying Gratification Inventory, (DGI; Hoerger et al., 2011), and Kessler Psychological Distress Scale (K-10; Kessler, 2003). Recoding for BIS and DGI was done due to the presence of reverse coded items; moreover, reliability analysis was carried out for all the scales individually.

### *Descriptive Statistics*

Reliability was determined using the Cronbach's Alpha coefficient.

**Table 1**

*Descriptive Statistics and Reliability Analysis of Impulsivity, Instant Gratification, Smartphone Distraction, and Psychological Distress and Their Subscales (N = 28).*

Variables	$\alpha$	$k$	$M$	$SD$	Skewness	Kurtosis	Range	
							Potential	Actual
<b>Impulsivity</b>	.76	30	73.00	10.61	.84	4.55	30-120	47-107
Attentional Impulsiveness	.48	8	19.32	3.70	1.03	2.65	8-32	12-31
Motor Impulsiveness	.37	11	24.69	4.11	.22	2.07	11-44	14-35
Nonplanning Impulsiveness	.64	11	29.15	5.15	-.03	.33	11-44	19-41
<b>Instant Gratification</b>	.69	35	109.92	13.46	.61	1.32	35-175	80-142
Food Gratification	.53	7	20.10	4.84	-.69	.26	7-35	10-29
Physical Gratification	.39	7	21.96	3.19	.61	-.37	7-35	17-29
Social Gratification	.58	7	23.77	4.81	.15	-1.39	7-35	17-32
Monetary Gratification	.48	7	22.25	4.51	-.28	3.46	7-35	9-34
Achievements Gratification	.44	7	21.77	4.44	-.25	-.61	7-35	13-29
<b>Smartphone Distraction</b>	.87	16	46.89	11.41	.67	.92	16-80	28-78

Attention Impulsiveness	.89	4	11.85	4.40	.21	-1.06	4-20	4-19
Emotion Regulation	.75	4	12.82	3.80	.08	-.38	4-20	5-20
Online Vigilance	.61	4	11.07	3.19	.37	1.38	4-20	4-20
Multitasking	.74	4	11.14	3.47	.43	.71	4-20	4-20
<b>Psychological Distress</b>	<b>.86</b>	<b>10</b>	<b>29.14</b>	<b>8.45</b>	<b>-.07</b>	<b>-.74</b>	<b>10-50</b>	<b>12-44</b>

*Note.*  $k$ = no. of items,  $M$ = Mean,  $SD$ = Standard Deviation,  $\alpha$ = Cronbach alpha reliability

The study of 28 individuals assessed impulsivity, instant pleasure, smartphone distraction, and psychological distress. Impulsivity has a reliability coefficient of .76, which is acceptable. Subcategories of impulsivity—attentional, motor, and nonplanning—had reliability coefficients of .48, .37, and .64, respectively, indicating lower reliability for attentional and motor impulsiveness. Instant gratification has a reliability of .69, which is suitable. Smartphone distraction had a high reliability of .87. Psychological distress also had a high reliability of .86. These findings highlight the psychological characteristics of the study sample, as well as the reliability of the measurement tools.

## **Discussion**

The study of 28 individuals found that impulsivity, instant pleasure, smartphone distraction, and psychological distress have acceptable reliability coefficients. However, attentional and motor impulsiveness had lower reliability. The study's findings highlight the psychological characteristics of the sample and measurement tools' reliability. Following experts' feedback, specific changes were made to several items because some of the sentences had an extensive vocabulary. The Barratt Impulsiveness Scale's item 4: happy-go-lucky was synonymized as (cheerful, easy-going), item 6: "racing" as (fast, repetitive, rushed), item 8: self-controlled as (calm, disciplined, composed), item 11: "squirm" as (fidget, be restless), item 17: "on impulse" as (hurriedly, without careful



thought), item 19: spur of the moment as (unplanned, unprepared), item 20: steady as (careful, calm), item 22: impulse (without careful thought/planning), and item 25: charge as (price for something) were updated with synonyms and explanations. On the Delaying Gratification Scale, item 2: physical desires as (need for physical closeness/touch/affection/intimacy), item 3: turns (do something in turns), item 22: physical side as (physical intimacy, touch, closeness), item 27: physically demanding (physically tiring or difficult), and item 30: pay off (be successful, give good results) were updated. Furthermore, hostel (university and private) were divided into two categories for the pilot study, dormitory and cubicle, but for the main study, it was simplified to hostel (skip if you live at home: university and private) because people were confused by the previous extended statements. The experts advised us to shorten the survey pages by moving the optional statements horizontally rather than vertically. Some of the items used the word "school" in them, which was not relevant to the population used, so they were changed to "university" such as item 5: I worked hard in university to improve myself as a person and item 10: I have tried to work hard in university so that I could have a better future.

**CHAPTER – IV****Main Study**

Main study was conducted to carry out hypothesis testing using the appropriate analyses for our sample and collected data. Furthermore, results were interpreted and reported along with their required tables.

**Objectives**

The objectives of this study are as follows:

1. To examine the relationship between impulsiveness (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness), instant gratification (food, physical, social, monetary and achievement gratification), smartphone distraction (attention impulsivity, emotional regulation, online vigilance, multitasking), and psychological distress among university students.
2. To investigate the predictive role of impulsiveness, instant gratification, and smartphone distraction in psychological distress among university students.
3. To explore the role of demographic variables (age, gender, phone usage, distraction frequency, mental health issues) and its relation to study variables.

**Hypothesis**

1. There will be a positive relationship between impulsiveness (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness), smartphone distraction (attention impulsivity, emotional regulation, online vigilance, multitasking), and psychological distress.

2. There will be a negative relationship between instant gratification and psychological distress among university students (as instant gratification is scored as low scores on Delaying Gratification Inventory).
3. Smartphone distraction (attention impulsivity, emotional regulation, online vigilance, multitasking) will positively predict psychological distress among university students.
4. Impulsivity (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness) will positively predict psychological distress among university students.
5. Instant gratification (food, physical, social, monetary and achievement gratification) will negatively predict psychological distress among university students (as instant gratification is scored as low scores on Delaying Gratification Inventory).
6. Female students will have higher levels of psychological distress compared to male university students.
7. Students who have pre-existing mental health issues will have higher levels of psychological distress among university students.
8. Students more affected by distraction will show higher levels psychological distress than students who are less affected by distraction among university students.

### **Sample**

The minimum sample size of 264 was calculated using GPower (Faul et al., 2009). But the sample collected was of 375 participants who are university students for comparison including both males ( $n=139$ ) and females ( $n=236$ ). This data was obtained using convenience sampling method.

***Inclusion Criteria***

1. Day scholars and students living in a hostel for the duration of their degree.
2. University students are currently enrolled in undergraduate or postgraduate programs.
3. Students ranging from 18-28 years old.

***Exclusion Criteria***

1. Alumni were excluded.
2. Students aged less than 18 years old.
3. Students aged more than 28 years old.
4. Students living at their relatives' house instead of hostels.
5. Students who are renting private apartments instead of living in hostels.

**Procedure and Ethical Considerations**

380 questionnaires were printed in preparation for the data collection phase of our research. Next, we went to 4 different universities and after receiving their official permission for data collection we proceeded with it. At the end of our data collection phase, we collected data from our university as well. For this, questionnaires were handed to students from different departments in Bahria University. All the participants were given a brief introduction about the purpose of the study and their verbal and written consent to participate in the study was obtained. Those who wished to withdraw from the study due to their personal concerns were allowed to do so. Data from willing participants was collected in their stead. The students' questions regarding the questionnaire and the study were answered without revealing essential information about the study. Participants were given ample time to fill out the questionnaires and any questions they had regarding the questionnaire were answered. The questionnaires were

collected after the participants were done filling them in. They were thanked for their corporation.

In order to ensure that ethical considerations were met, first, consent was obtained from the participants individually. Second, confidentiality was assured for all the data collected as participants were allowed to stay anonymous in their responses to protect their identities. Lastly, data integrity was maintained by making sure that only one participant filled in one questionnaire and by rechecking if there were any missing items. If missing items were found, participants were asked to fill them in.

## **Operational Definitions**

### ***Psychological Distress (PD)***

Psychological distress is broadly defined as a state of emotional suffering characterized by symptoms of depression (e.g., loss of interest; unhappiness; desperateness) and anxiety (e.g., restlessness; feeling tense) (Horwitz, 2007). In the current study, psychological distress is operationalized as scores on Kessler's Psychological Distress Scale (Kessler et al., 2003), where higher scores indicate higher levels of psychological distress and vice versa.

### ***Impulsiveness***

Impulsiveness is characterized by unplanned risky behaviors, and making up one's mind quickly (Eysenck, 1993). It can be further defined on three different dimensions which are motor (action without thinking), cognitive (quick cognitive decision-making), and non-planning (decrease in orientation towards future) (Barratt, 1994). In the current study, impulsiveness is operationalized as scores on Barratt Impulsiveness Scale (BIS-11) where higher scores represent higher impulsiveness, and vice versa.

**Attentional impulsiveness.** It refers to the inability to focus on the task at hand (“I don’t pay attention”). In the current study, it is operationalized as scores on the subscale of attentional impulsiveness in Barratt Impulsiveness Scale (BIS-11) (Patton, 1995), where higher scores represent higher attentional impulsiveness, and vice versa.

**Motor impulsiveness.** It refers to acting without thinking (“I act on the spur of the moment”). In the current study, it is operationalized as scores on the subscale of motor impulsiveness in Barratt Impulsiveness Scale (BIS-11) (Patton, 1995), where higher scores represent higher motor impulsiveness, and vice versa.

**Nonplanning impulsiveness.** It refers to a lack of future orientation through a reverse coded item (“I plan for job security”). In the current study, it is operationalized as scores on the subscale of nonplanning impulsiveness in Barratt Impulsiveness Scale (BIS-11) (Patton, 1995), where higher scores represent higher nonplanning impulsiveness, and vice versa.

### ***Instant Gratification (IG)***

Instant gratification involves the inclination to choose a less rewarding but more immediate benefit over a future one (Dymek & Jurek, 2023). It has been distributed into five categories including, food gratification, physical pleasures, achievements gratification, social interactions, and monetary gratification. In the current study, instant gratification is operationalized as scores on Delaying Gratification Scale (Hoerger et al., 2011), where higher scores represent delayed gratification, and lower scores represent instant gratification.

**Food gratification.** The need for immediate consumption of food for the sake of achieving a greater, long-term health or dietary goal. It involves resisting the temptation of immediate indulgence for a more significant health-related outcome. In the current

study, it is operationalized as scores on the subscale of food gratification in Delaying Gratification Scale (Hoerger et al., 2011), where higher scores represent lower food gratification, and lower scores represent higher food gratification.

**Physical pleasures.** The capacity to delay immediate physical pleasure or enjoyment in activities such as entertainment, leisure, or sensory experiences. In the current study, it is operationalized as scores on the subscale of physical gratification in Delaying Gratification Scale (Hoerger et al., 2011), where higher scores represent lower physical pleasure, and lower scores represent higher physical pleasure.

**Achievements gratification.** The ability to delay immediate rewards associated with personal achievements or accomplishments for the sake of achieving more significant, long-term goals. In the current study, it is operationalized as scores on the subscale of achievements gratification in Delaying Gratification Scale (Hoerger et al., 2011), where higher scores represent lower achievement gratification, and lower scores represent higher achievement gratification.

**Social interactions.** The skill to delay immediate social interactions or engagements for the sake of achieving long-term interpersonal goals or relationships. In the current study, it is operationalized as scores on the subscale of social gratification in Delaying Gratification Scale (Hoerger et al., 2011), where higher scores represent lower social interaction, and lower scores represent higher social interaction.

**Monetary gratification.** The capacity to delay immediate financial rewards or expenditures for the purpose of achieving greater financial stability or long-term financial goals. In the current study, it is operationalized as scores on the subscale of monetary gratification in Delaying Gratification Scale (Hoerger et al., 2011), where

higher scores represent lower monetary gratification, and lower scores represent higher monetary gratification.

### ***Smartphone Distraction (SD)***

Smartphone distraction (SD) is distraction that is caused by external triggers including, notifications, intrusive thoughts, or cognitive salience of smartphone-related content to avoid or regulate emotions (Wilmer et al., 2017). It has been classified into four main categories which are attention impulsiveness, emotion regulation, online vigilance, and multitasking. In the current study, smartphone distraction is operationalized as scores on Smartphone Distraction Scale (Throuvala et al., 2021), where higher scores represent higher smartphone distraction, and vice versa.

**Attention impulsiveness.** It refers to behaviors related to impulsiveness in attention due to notifications or even the mere presence of a smartphone. In the current study, it is operationalized as scores on the subscale of attentional impulsiveness in Smartphone Distraction Scale (Throuvala et al., 2021), where higher scores represent higher attention impulsiveness, and vice versa.

**Emotion regulation.** It refers to the use of a smartphone to regulate stress and problematic emotions. In the current study, it is operationalized as scores on the subscale of emotional regulation in Smartphone Distraction Scale (Throuvala et al., 2021), where higher scores represent higher emotional regulation, and vice versa.

**Online vigilance.** It refers to preoccupation of online content, frequently checking it because of fear of missing out as well as fear of being without a mobile phone—also known as nomophobia. In the current study, it is operationalized as scores on the subscale of online vigilance in Smartphone Distraction Scale (Throuvala et al., 2021), where higher scores represent higher online vigilance, and vice versa.



**Multitasking.** It is the ability to coordinate the completion of two or more tasks at the same time or within a specific time frame. It entails dividing attention among various tasks, with each task receiving a portion of attentional capacity (MacPherson, 2022). Refers to multitasking which leads to interference in daily activities and face-to-face interactions. In the current study, it is operationalized as scores on the subscale of multitasking in Smartphone Distraction Scale (Throuvala et al., 2021), where higher scores represent higher multitasking, and vice versa.

### **Instruments**

All scales used in pilot study (Kessler Psychological Distress Scale, Barratt Impulsiveness Scale, Delaying Gratification Inventory, Smartphone Distraction Scale) were also used in main study.

**CHAPTER - V****Results**

The aim of the current research was to investigate the relationship between impulsiveness, instant gratification, smartphone distraction, and psychological distress among university students. In step I descriptive statistics were calculated for demographic variables. In step II Pearson product moment correlation was carried out to examine the relationship between demographic variables (gender, phone usage, distraction frequency, mental health issues), impulsiveness (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness), instant gratification (food, physical, social, monetary and achievement gratification), smartphone distraction (attention impulsivity, emotional regulation, online vigilance, multitasking), and psychological distress. In step III regression analysis was run to check if the study variables predicted a significant amount of change in psychological distress. In step IV t-tests were carried out as an additional analysis to compare the differences in gender, distraction, mental health issues, and living situation in terms of performance anxiety.

**Table 2***Descriptive Statistics of Demographic Characteristics of the Sample (N=375)*

<b>Variables</b>	<b><i>n</i></b>	<b><i>%</i></b>
<b>Age (years)</b>		
M = 20.80; SD = 1.89		
<b>Gender</b>		
Male	139	37.1
Females	236	62.9
<b>Phone Usage</b>		
2-4 hours	51	13.6
4-6 hours	114	30.4
6-8 hours	117	31.2
8 or more hours	84	22.4
Others	9	2.4
<b>Living</b>		
Day-scholars	250	66.7
Hostelites	125	33.3
<b>Hostel</b>		
Living at Home	250	66.7
University	39	10.4
Private	86	22.9
<b>Distraction Frequency</b>		
Rarely	116	30.9
Quite Often	136	36.3
Most of the Time	106	28.3
All of the time	17	4.5
<b>Mental Health Issue</b>		
No	227	60.5
Yes	147	39.2

*Note.* *n*= Numbers, %= Percentage, *M*= Mean, *SD*= Standard Deviation

The study involved 375 participants, with an average age of 20.80 years and a standard deviation of 1.890. with majority being females (62.9%). Phone usage varied, with 13.6% using phones for 2-4 hours. Living arrangements varied, with 66.7% being day scholars and 33.3% being hostel residents. Distraction frequency varied, with 30.9% experiencing occasional distractions and 4.5% experiencing all-time distractions. 7.2% reported mental health concerns.

**Table 3**

*Descriptive Statistics and Reliability Analysis of Impulsivity, Instant Gratification, Smartphone Distraction, Psychological Distress, and Their Subscales (N = 375).*

Variables	$\alpha$	$k$	$M$	$SD$	Range			
					Skewness	Kurtosis	Potential	Actual
<b>Impulsivity</b>	.66	30	70.00	9.26	-.08	-.15	30-120	46-98
Attentional Impulsiveness	.50	8	18.91	3.70	.18	-.09	8-32	9-30
Motor Impulsiveness	.50	11	24.14	4.57	.24	-.19	11-44	13-38
Nonplanning Impulsiveness	.52	11	26.94	4.70	-.41	-.25	11-44	15-37
<b>Instant Gratification</b>	.80	35	116.81	15.30	.43	-.17	35-175	77-163
Food Gratification	.51	7	21.36	4.36	-.13	.32	7-35	7-33
Physical Gratification	.56	7	22.90	3.34	.06	.21	7-35	13-33
Social Gratification	.71	7	25.55	4.92	-.26	-.62	7-35	12-35
Monetary Gratification	.57	7	23.14	4.66	.07	.21	7-35	9-35
Achievements Gratification	.61	7	23.83	4.57	.02	-.33	7-35	11-35
<b>Smartphone Distraction</b>	.88	16	49.15	12.43	.30	-.14	16-80	20-80
Attention Impulsiveness	.85	4	13.45	4.22	-.12	-.80	4-20	4-20
Emotion Regulation	.71	4	12.33	3.67	.09	-.18	4-20	4-20
Online Vigilance	.78	4	11.22	4.13	.34	-.55	4-20	4-20
Multitasking	.72	4	12.14	3.70	.13	-.32	4-20	4-20
<b>Psychological Distress</b>	.85	10	25.99	7.92	.33	-.02	10-50	10-50

*Note.*  $k$ = no. of items,  $M$ = mean,  $SD$ = standard deviation,  $\alpha$ = Cronbach alpha reliability

The study of 375 individuals examined various psychological constructs and their subscales, revealing different psychometric properties. The Barrett Impulsivity Scale showed a reliability coefficient of .66, which is on the lower end of acceptability. Subscales such as attentional, motor, and nonplanning impulsiveness had reliability coefficients of .50, indicating low reliability. The Delayed Gratification Inventory

demonstrated a strong reliability of .80, with subscales for food, physical, social, monetary, and achievements gratification having reliability coefficients ranging from .51 to .71. The Smartphone Distraction Scale exhibited high reliability at .88, with its subscale's attention impulsiveness, emotion regulation, online vigilance, and multitasking showing reliability coefficients between .71 and .85, indicating good reliability. The Psychological Distress Scale had a reliability of .85, also indicating good reliability.

**Table 4***Bivariate Correlation Showing Relationship Among Demographic Variables and Study Variables Among University Students (N=375).*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>1. Gender</b>	-	.09	.04	.22**	.19**	.02	.06	-.04	.03	.13*	-.06	.17**	.19**	.04	.11*	.05	.09	.05	.04	-.04
<b>2. Phone Usage</b>		-	.20**	.07	.20**	.20**	.13*	.09	.20**	-.25**	-.19**	-.19**	-.17**	-.13**	-.21**	.20**	.12*	.19**	.16**	.16**
<b>3. Distraction Frequency</b>			-	.08	.19**	.19**	.14**	.04	.21**	-.15**	-.13**	-.12*	-.06	-.13*	-.10*	.18**	.12*	.16**	.20**	.08
<b>4. Mental Health Issue</b>				-	.31**	.25**	.28**	.11*	.16**	-.14**	-.15**	-.12*	.01	-.13**	-.12*	.20**	.18**	.18**	.16**	.13**
<b>5. Psychological Distress</b>					-	.37**	.47**	.18**	.19**	-.28**	-.27**	-.18**	-.10*	-.22**	-.21**	.36**	.24**	.29**	.35**	.23**
<b>6. Impulsiveness</b>						-	.69**	.72**	.71**	-.55**	-.42**	-.37**	-.25**	-.52**	-.39**	.39**	.30**	.24**	.39**	.29**
7. Attentional Impulsiveness							-	.31**	.27**	-.29**	-.32**	-.21**	.02	-.25**	-.23**	.42**	.38**	.32**	.32**	.29**
8. Motor Impulsiveness								-	.20**	-.45**	-.29**	-.33**	-.26**	-.44**	-.26**	.28**	.18**	.08	.35**	.24**
9. Nonplanning Impulsiveness									-	-.42**	-.29**	-.24**	-.22**	-.39**	-.33**	.17**	.12*	.13**	.18**	.09
<b>10. Instant Gratification</b>										-	.60**	.66**	.73**	.73**	.74**	-.20**	-.06	-.12*	-.31**	-.14**
11. Food											-	.26**	.21**	.38**	.25**	-.18**	-.07	-.15**	-.23**	-.13**
12. Physical												-	.38**	.37**	.43**	-.22**	-.18**	-.13**	-.24**	-.12*
13. Social													-	.37**	.51**	.05	.15**	.08	-.11*	.04
14. Money														-	.38**	-.18**	-.07	-.10	-.27**	-.14**
15. Achievement															-	-.21**	-.11*	-.16**	-.25**	-.14**
<b>16. Smartphone Distraction</b>																-	.80**	.76**	.80**	.77**
17. Attention Impulsivity																	-	.49**	.52**	.49**
18. Emotional Regulation																		-	.46**	.48**
19. Online Vigilance																			-	.51**
20. Multitasking																				-
<b>Mean</b>	1.63	2.70	2.06	.40	25.99	70.00	18.91	24.14	26.94	116.81	21.36	22.90	25.55	23.14	23.83	49.15	13.45	12.33	11.22	12.14
<b>Standard Deviation</b>	.48	1.03	.87	.49	7.92	9.26	3.70	4.57	4.70	15.30	4.36	3.34	4.92	4.66	4.57	12.43	4.22	3.67	4.13	3.70

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

The results of Pearson product moment correlation analysis showed that gender was significantly positively correlated with mental health issues, psychological distress, instant gratification and all its subscales except food and monetary gratification. However, instant gratification is operationalized as scores on the delaying gratification scale where lower scores indicate higher instant gratification. Therefore, the inverse relation between the two variables shows that with the increase in instant gratification, psychological distress will increase.

Mental health issues were found to be significantly positively correlated with psychological distress, impulsiveness, and all its subscales. Phone usage and distraction frequency followed the same trend in correlation except both were not related with motor impulsiveness. They were also found to be significantly positively correlated with smartphone distraction and all its subscales, except distraction frequency and multitasking. Meanwhile, they were found to be significantly negatively correlated with instant gratification and all its subscales, except distraction frequency, mental health issues and social gratification.

Psychological distress was significantly positively correlated with impulsiveness and its subscales of attentional impulsiveness, motor impulsiveness and nonplanning impulsiveness. Psychological distress was significantly negatively correlated with instant gratification and its subscales of food gratification, physical gratification, social gratification, monetary gratification, and achievement gratification. Psychological distress was also found to be significantly positively correlated with smartphone distraction and its subscales for attention impulsivity, emotional regulation, online vigilance, and multitasking.

Impulsiveness and all its subscales were significantly negatively correlated with instant gratification and all its subscales except the correlation between attentional impulsiveness and social gratification. Impulsiveness was also found to be significantly positively correlated with smartphone distraction and all its subscales except the correlation between motor impulsiveness and emotional regulation. Neither was nonplanning impulsiveness found to be correlated with multitasking.

Instant gratification and all its subscales were found to be significantly negatively correlated with smartphone distraction and all its subscales, except that instant gratification was not correlated with the subscale of attention impulsivity. Moreover, food gratification was not correlated with attention impulsivity. The scale of smartphone distraction and its subscales of emotional regulation and multitasking were not correlated with the subscale of social gratification. However, the subscales of attention impulsivity and online vigilance were found to be significantly negatively correlated with the subscale of social gratification.



**Table 5**

*Multiple Linear Regression Predicting Psychological Distress Through Demographic and Study Variables Among University Students (N=375).*

Variables	B	SE	$\beta$	95% CI		R <sup>2</sup>	$\Delta R^2$
				LL	UL		
Model 1						.176	
Constant	24.74	4.51		15.85	33.62		
Gender	1.73	.81	.10*	.14	3.33		
Phone Usage	.99	.37	.13**	.26	1.73		
Distraction Frequency	1.01	.46	.11*	.10	1.93		
Mental Health Issues	4.20	.78	.26***	2.66	5.74		
Model 2						.347	.171***
Constant	16.10	7.25		1.84	30.37		
Gender	2.24	.77	.13**	.72	3.76		
Phone Usage	.43	.35	.05	-.26	1.13		
Distraction Frequency	.46	.43	.05	-.39	1.31		
Mental Health Issues	2.22	.74	.13**	.74	3.69		
Attentional Impulsiveness	.69	.11	.32***	.47	.91		
Motor Impulsiveness	-.07	.09	-.04	-.25	.10		
Nonplanning Impulsiveness	-.05	.08	-.03	-.22	.10		
Food Gratification	-.08	.09	-.04	-.26	.09		
Physical Gratification	-.06	.12	-.02	-.31	.17		
Social Gratification	-.10	.09	-.06	-.28	.07		
Monetary Gratification	-.04	.09	-.02	-.23	.13		
Achievement Gratification	-.04	.09	-.02	-.23	.14		
Attention Impulsivity	-.09	.11	-.04	-.30	.12		
Emotional Regulation	.13	.11	.06	-.10	.36		
Online Vigilance	.32	.11	.17**	.10	.54		
Multitasking	.03	.11	.01	-.20	.26		

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

The results of the multiple linear regression showed that in model of the analysis the demographic variables predicted a variance of 17.6% in the dependent variable The results showed that gender, phone usage, distraction frequency and mental health issues

were significantly positively predicted psychological distress. In model 2 of the analysis the independent variables predicted a variance of 34.7% in the dependent variable. The results showed that gender, mental health issues, attentional impulsiveness, and online vigilance significantly positively predicted psychological distress.

**Table 6**

*Mean Differences of Gender on Study Variables (N = 375).*

Variables	Males (n = 139)		Females (n = 236)		t(373)	p	Cohen's d
	M	SD	M	SD			
<b>Impulsivity</b>	69.74	9.96	70.16	8.84	-.42	.67	.04
Attentional Impulsiveness	18.61	3.77	19.09	3.65	-1.22	.22	.13
Motor Impulsiveness	24.40	4.72	23.99	4.48	.84	.40	.09
Nonplanning Impulsiveness	26.72	5.04	27.07	4.48	-.68	.49	.07
<b>Instant Gratification</b>	114.20	14.95	118.35	15.33	-2.55	.01	.27
Food	21.74	4.32	21.13	4.38	1.31	.19	.14
Physical	22.14	3.06	23.36	3.43	-3.44	.00	.36
Social	24.28	5.21	26.30	4.59	-3.92	.00	.41
Money	22.88	4.47	23.30	4.77	-.84	.40	.09
Achievements	23.15	4.71	24.24	4.46	-2.23	.02	.23
<b>Smartphone Distraction</b>	48.34	12.82	49.63	12.19	-.96	.33	.10
Attention Impulsiveness	12.94	4.51	13.75	4.02	-1.80	.07	.19
Emotion Regulation	12.05	3.50	12.49	3.76	-1.11	.26	.11
Online Vigilance	10.97	4.31	11.36	4.01	-.88	.37	.09
Multitasking	12.36	3.69	12.01	3.71	.89	.37	.09
<b>Psychological Distress</b>	24.03	7.60	27.14	7.90	-3.72	.00	.39

*Note.* M=mean, SD=Standard Deviation, p=significant value.

Table 6 reflects the analysis on differences between males and girls, substantial differences were found in psychological distress, instant gratification, physical pleasures gratification, achievement reward, and social satisfaction. Males and females did not differ significantly in terms of impulsivity, smartphone distraction, or associated subscales. Cohen's *d* values were high for substantial differences between males and females in psychological distress, instant gratification, physical pleasures gratification, achievement satisfaction, and social gratification. Other factors, such as impulsivity, smartphone distraction, and associated subscales, had tiny impact sizes, indicating that gender differences were minimal in these areas.

**Table 7**

*Mean Differences of Students Affected and Not Affected by Distraction on Study Variables (N = 375).*

Variables	Students Affected by Distraction ( <i>n</i> = 216)		Students Not Affected by Distraction ( <i>n</i> = 159)		<i>t</i> (373)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
<b>Impulsivity</b>	70.81	8.87	68.89	9.69	-1.99	.04	.20
Attentional Impulsiveness	19.43	3.49	18.20	3.86	-3.22	.00	.33
Motor Impulsiveness	24.17	4.59	24.10	4.55	-.13	.89	.01
Nonplanning Impulsiveness	27.20	4.49	26.58	4.95	-1.27	.20	.13
<b>Instant Gratification</b>	116.15	15.01	117.71	15.70	.97	.33	.10
Food	20.89	4.34	21.99	4.32	2.41	.01	.25
Physical	22.94	3.39	22.85	3.29	-.26	.78	.02
Social	25.52	4.93	25.60	4.94	.15	.87	.01
Money	23.07	4.71	23.24	4.59	.34	.73	.03
Achievements	23.70	4.23	24.01	5.01	.63	.52	.06
<b>Smartphone Distraction</b>	50.27	12.87	47.62	11.66	-2.04	.04	.21
Attention Impulsiveness	13.75	4.37	13.03	3.99	-1.63	.10	.17

Emotion Regulation	12.58	3.81	11.98	3.44	-1.56	.11	.16
Online Vigilance	11.55	4.20	10.77	3.99	-1.81	.07	.19
Multitasking	12.37	3.85	11.83	3.46	-1.41	.15	.14
<b>Psychological Distress</b>	27.26	7.41	24.25	8.29	-3.69	.00	.38

*Note.* *M*=mean, *SD*=Standard Deviation, *p*=significant value.

Table 7 reflects the analysis on differences between distracted students and those who were not distracted, substantial differences in psychological distress, impulsivity, and smartphone distraction revealed. Distracted students reported higher degrees of distress and impulsiveness, as well as increased smartphone distraction. However, there were no significant differences between the groups in total instant gratification or its subscales. Similarly, no significant changes were observed in the smartphone distraction subscales. The effect sizes for significant differences between distracted and non-distracted students were moderate, with Cohen's *d* values ranging from low to high, indicating a considerable effect size for psychological distress, impulsivity, and smartphone distraction.

### **Table 8**

*Mean Differences of Students With and Without a Mental Health Issue on Study*

*Variables (N=375).*

Variables	Students with a mental health issue ( <i>n</i> = 146)		Students with no mental health issue ( <i>n</i> = 227)		<i>t</i> (373)	<i>P</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
<b>Impulsivity</b>	72.73	8.30	68.18	9.39	-4.78	.00	.50
Attentional Impulsiveness	20.17	3.67	18.08	3.48	-5.52	.00	.58
Motor Impulsiveness	24.65	4.35	23.76	4.65	-1.85	.06	.19
Nonplanning Impulsiveness	27.91	4.05	26.33	4.98	-3.19	.00	.33
<b>Instant</b>	114.26	13.95	118.48	15.92	2.62	.00	.27

<b>Gratification</b>							
Food	20.52	4.66	21.88	4.08	2.97	.00	.31
Physical	22.47	3.37	23.21	3.27	2.08	.03	.22
Social	25.63	4.56	25.47	5.16	-.29	.76	.03
Money	22.43	4.74	23.64	4.54	2.46	.01	.26
Achievements	23.19	4.12	24.26	4.82	2.21	.02	.23
<b>Smartphone Distraction</b>	52.05	12.70	47.13	11.79	-3.81	.00	.40
Attention Impulsiveness	14.32	4.30	12.84	4.06	-3.35	.00	.35
Emotion Regulation	13.13	3.85	11.80	3.46	-3.47	.00	.36
Online Vigilance	11.93	4.16	10.71	4.01	-2.82	.00	.29
Multitasking	12.65	3.76	11.77	3.60	-2.27	.02	.24
<b>Psychological Distress</b>	29.14	7.46	23.98	7.59	-6.44	.00	-.68

*Note.* *M*=mean, *SD*=Standard Deviation, *p*=significant value.

Table 8 reflects the analysis on differences between students with and without health issues and significant differences are found in psychological distress, impulsivity, attentional impulsiveness, nonplanning impulsiveness, instant gratification, food gratification, physical pleasures gratification, achievement gratification, money gratification, smartphone distraction, attention impulsiveness, emotion regulation, online vigilance, and multitasking. These findings indicate that students with a health issue have considerably higher levels of psychological discomfort, impulsivity, quick gratification, and smartphone distraction than their peers without health difficulties. The study found that students affected by distraction showed higher effect sizes for psychological distress, attentional impulsiveness, food gratification, smartphone distraction, impulsivity, online vigilance, emotion regulation, multitasking, and nonplanning impulsiveness, while smaller effect sizes were observed for instant gratification.

**CHAPTER - VI****Discussion**

The purpose of this research was to investigate the individual and environmental predictors of psychological distress in university students. To proceed, the study was divided into two parts, pilot study and main study. In the pilot study, the data was collected from 28 participants and reliability analysis was run on the data. In the main study, the data was collected from 375 participants. The research aimed to investigate relationship between impulsiveness (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness), instant gratification (food, physical, social, monetary and achievement gratification), smartphone distraction (attention impulsivity, emotional regulation, online vigilance, multitasking), and psychological distress. The research also aimed to study the predictive role of impulsiveness, instant gratification, and smartphone distraction on psychological distress. And lastly, it also explored the relationship of demographic variables (age, gender, phone usage, distraction frequency, mental health issues) on study variables.

First, it was hypothesized that there will be a positive relationship between impulsiveness (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness), instant gratification (food, physical, social, monetary and achievement gratification), smartphone distraction (attention impulsivity, emotional regulation, online vigilance, multitasking), and psychological distress. The findings of the research suggested that impulsiveness was significantly positively related to psychological distress. These findings are consistent with a study conducted by Zhuo et al. (2021) where they found that impulsiveness heightens the likelihood of drug addicts having maladjustment issues and increases the possibility of drug use and thus, can be said that contributes to psychological issues and distress. Similarly, the findings from this research

were also consistent with findings from a study by Fields et al. (2021) which stated that individuals with major depressive disorder have higher levels of impulsivity.

The study also suggested that there will be a positive relationship between instant gratification and psychological distress. The results showed that instant gratification is significantly negatively related to psychological distress. However, instant gratification is operationalized as scores on the delaying gratification scale where lower scores indicate higher instant gratification. Therefore, the inverse relation between the two variables shows that with the increase in instant gratification, psychological distress will increase. The findings from a study by Poon et al. (2019) showed that delay of gratification causes an increase in life satisfaction and a decrease in depressive symptoms. The findings were also in line with a study done by Buyukcan-Tetik et al. (2018) which stated that individuals with higher levels of self-control are more likely to have a higher level of well-being. This might be because positive affect and increased wellbeing helps individuals to regulate their emotions and thoughts better.

Similarly, in the current study, smartphone distraction was found to be significantly positively related with psychological distress. These findings are consistent with Robinson's (2024) study, which found that excessive smartphone use not only causes stress, anxiety, depression, and loneliness, but can also exacerbate these feelings. This indicates that the link between smartphone use, and psychological distress is bidirectional. In addition, Rasool et al. (2022) discovered that the impact of smartphone distraction on mental health is influenced by problematic smartphone usage, resulting in feelings of anxiety, depression, and stress. This underscores the intricate interaction between the utilization of smartphones, diversion, and the consequences on mental well-being. A cross-sectional study conducted by Chen et al. (2022) among college students revealed a positive correlation between elevated levels of depression and increased

engagement with electronic devices, particularly smartphones, as a coping mechanism to evade stressful circumstances. This demonstrates the importance of avoidance coping strategies in exacerbating problematic smartphone use.

Second, it was hypothesized that smartphone distraction will positively predict psychological distress among university students and the results of the study showed that online vigilance, which is one of the subscales of smartphone distraction, significantly positively predicted psychological distress. Squires et al. (2020) discovered that students who experienced distress due to excessive or problematic smartphone use also reported higher levels of psychological distress and impulsivity. In addition to this body of research, a study by Qureshi et al. (2022) suggests a strong link between smartphone distraction and psychological distress among students. This suggests that not only does excessive smartphone use contribute to psychological distress, but smartphone distraction can also be a significant factor. Furthermore, people who abuse their smartphones have a severe addiction, which can cause unpleasant withdrawal symptoms when they are unable to access their phones, as well as feelings of guilt for being unable to pick up calls or respond to messages immediately (Ratislavová et al., 2023). According to research, online vigilance is positively associated with phubbing behavior, loneliness, moral disengagement, mind wandering, and decreased mindfulness, all of which can have a negative impact on psychological well-being (Maftei & Măirean, 2023; Throuvala et al., 2021). Furthermore, online vigilance is a component of the Smartphone Distraction Scale (SDS), which has been shown to predict problematic smartphone use and poor self-regulation, implying a potential role in psychological distress (Roux and Parry, 2020). Furthermore, it discovered in a study that phone-checking frequency, which is linked to online vigilance, predicted higher levels of depression, anxiety, and stress,



emphasizing the negative impact of certain smartphone behaviors on psychological distress (Niklas, 2020).

Third, it was hypothesized that impulsiveness (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness) will positively predict psychological distress among university students. The results showed that attentional impulsiveness positively predicted psychological distress. These findings were in agreement with the findings of a study by Coskunpinar et al. (2013) which showed that there is a positive relationship between impulsivity and alcohol dependence. And it is clear from the literature that alcohol dependence can lead to significant life stress and psychological disturbances in people. Moreover, people who consume alcohol are more likely to have other comorbid mental health disorders (Gavurova et al., 2022; Milani & Perrino, 2021). Similarly, high impulsivity is seen in people who have strong cravings (Meule et al., 2014) and thus, display addictive food consumption behaviors (Murphy et al., 2014). Literature has shown that impulsive eating habits and psychological distress have a bidirectional relationship since stress causes individuals to do emotional, compulsive eating and in return the uncontrolled eating behaviors cause individuals distress (Oh & Kim, 2023). Another study by Abdullah et al. (2023) stated that individuals who have higher levels of impulsivity have a higher chance of displaying suicidal ideation and attempting suicide. This shows that not only does impulsivity pose a threat when it comes to problematic behaviors such as alcohol dependence and compulsive, emotional eating but it can also be life threatening in a much more direct manner.

Fourth, it was hypothesized that female students will have more psychological distress than male university students and the findings of the research showed that females will have psychological distress than males. This finding is supported by the finding of Gulland (2016) which showed that one in five women had a common mental

health disorder compared to males who had the ratio of one in eight. It also stated that young women especially are at a greater risk. Similarly, a study by Otten et al. (2021) showed that women reported more distress resulting from depression, anxiety, post-traumatic stress disorder, sleep problems and suicidal ideation, etc., than men. However, men had higher risk of committing suicide.

Moreover, comparing psychological traits between males and females, significant differences were observed in psychological distress, instant gratification, physical pleasure gratification, achievement gratification, and social interaction gratification. The results are like those of the study by Schroeder et al. (2022), in which individuals who exhibit characteristics such as the fear of missing out, being female, experience depression, anxiety, or boredom are more susceptible to problematic smartphone use, indicating specific risk factors associated with problematic smartphone use.

Furthermore, when examining students affected by distractions versus those unaffected, significant differences emerged in psychological distress, impulsivity, and smartphone distractions. Distracted students reported higher levels of distress and impulsivity and greater smartphone distractions. This finding aligns with the results of a study conducted by Mozid (2020), which reported that students engaged in online learning experienced significant psychological distress. This distress was found to result in greater smartphone usage and distraction, suggesting a vicious cycle of stress and smartphone use. Further supporting this notion, Robinson (2024) posits that intense smartphone usage not only results in stress, anxiety, depression, and loneliness, but can also exacerbate these feelings. This suggests that the relationship between smartphone use, and psychological distress is bidirectional. Finally, Rasool et al. (2022) found that the effect of smartphone distraction on mental health is mediated by problematic smartphone use, leading to anxiety, depression, and stress.

Additionally, comparing students with mental health issues to those without, significant differences were found in psychological distress, impulsivity, attentional impulsiveness, non-planning impulsiveness, instant gratification, food gratification, physical pleasure gratification, achievement gratification, money gratification, smartphone distraction, impulsiveness, emotion regulation, online vigilance, and multitasking. These results suggested that students with mental health issues experience significantly increased levels of impulsivity, instant gratification, greater smartphone distractions and higher psychological distress compared to their counterparts without mental health issues. Maccombs-Hunter & Bhat (2022) conducted a study on distress and found it to be associated with greater alcohol use and severity. They identified impulsivity as a contributing factor to both alcohol abuse and psychological distress, suggesting a complex interplay between these elements.

This is further supported by the study of Abdullah et al. (2023), which observed higher rates of suicidal acts and ideation in individuals with greater levels of impulsivity. This indicates that impulsivity not only contributes to problematic behaviors such as alcohol abuse but also poses a significant risk for severe mental health outcomes. A cross-sectional study with college students by Chen et al. (2022) found that individuals with high depression levels were more likely to be immersed in electronic devices, such as smartphones, to avoid stressful events in their lives. This highlights the role of avoidance coping strategies in exacerbating problematic smartphone use. Jawed et al. (2020) concluded that emotional disturbances, including anxiety and depression, are highly prevalent among medical students, with hostelites being more susceptible to anxiety and depression than day scholars. This underscores the importance of addressing mental health issues in educational settings, particularly among students living away from home.

## **Conclusion**

There were significant relationships found between the subscales of impulsiveness (attentional impulsiveness, motor impulsiveness, nonplanning impulsiveness), instant gratification (food, physical, social, monetary and achievement gratification), smartphone distraction (attention impulsivity, emotional regulation, online vigilance, multitasking), and psychological distress. Online vigilance was found to significantly positively predict psychological distress. The results also showed that attentional impulsiveness positively predicted psychological distress. Additionally, the findings of the research showed that females have higher levels of psychological distress than males. In another finding, distracted students reported increased levels of impulsivity, greater smartphone distractions and higher psychological distress. Similarly, the results suggested that students with mental health issues experience significantly increased levels of impulsivity, instant gratification, greater smartphone distractions and higher psychological distress compared to their counterparts without mental health issues.

## **Limitations and Recommendations**

1. All the data was collected using self-reporting measures that rely heavily on individuals themselves, therefore, future researchers should consider using triangulation to collect the data.
2. Cross sectional research was conducted due to time constraint of the degree. So, future research could be conducted using a longitudinal research design to get a better picture of how psychological distress changes over time due to individual and environmental factors.

3. The data was collected only from university students using convenience sampling method, but future studies can attempt to study the relationship between these variables on different age groups as well as focus on other methods of sampling.
4. Since the relationship between these variables is not only limited to this specific population, future studies can also explore the same issues on other populations.

### **Implications**

1. This research signified the importance of understanding the increasing prevalence of psychological distress among university students. Considering how pervasive the increase in mental health issues has been worldwide, this research can be insightful in discerning how various factors like impulsiveness, instant gratification and smartphone distraction contribute to the increase in psychological distress.
2. Understanding the link between impulsiveness, instant gratification, smartphone distraction and psychological distress can provide an evidence base for the interventions that can be used to target psychological distress in university students.
3. Moreover, this study can contribute to the lack of indigenous research on the topic in Pakistan and help spread awareness about the increasing mental health issues in our youth.
4. It can also help clinicians in better understanding how the youth of today are being affected by factors like impulsiveness, instant gratification and smartphone distraction and how they can improve the clinical course of action taken to help these individuals.

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## **Annexures**

### **Annexure A**

#### **Consent Form**

This research is being conducted to study the individual and environmental factors which can cause distress among university students. We will be collecting data from university students who are day scholars and hostelites.

We are from Bahria University's school of Professional Psychology and this research will be conducted by Hala Qamar and Eisha-tur-Razia under the supervision of Dr Arooj Mujeeb.

In terms of confidentiality, we will make sure that no names or other identifying information will be used while reporting data. There is no cost for participating in this study. Moreover, the participation in this research is voluntary and you are allowed to withdraw your participation from the study at any point. Please check the option below to indicate your consent.

**I understand everything and voluntarily agree to participate in this research program:**

Yes                       No

#### **Contact Us:**

Hala Qamar – q.halah7@gmail.com

Eisha-tur-Razia – eisha.shaheen12@gmail.com

Dr Arooj Mujeeb – aroojmujeeb.buic@bahria.edu.pk

## Annexure B

### Demographic Information Sheet

1. **Gender:** \_\_\_\_\_

2. **Age:** \_\_\_\_\_

3. **Semester:** \_\_\_\_\_

4. **Department:** \_\_\_\_\_

5. **University sector:**

Private

Government

Semi- government

6. **Major/degree of study:** \_\_\_\_\_

7. **Family Type:**

Nuclear

Joint

8. **What is your source of income?**

Self-Employed

Unemployed

Other, specify

\_\_\_\_\_

9. **How many hours do you spend on your phone every day?**

2-4 hours

4-6 hours

6-8 hours

8 or more hours

Other, specify \_\_\_\_\_

10. **Hostel (Skip if you live at home):**

University

Private

11. **How many people do you share your room with?** \_\_\_\_\_

12. **Do you often feel distracted by your living environment?**

Yes

No

13. **How often do distractions affect your daily routine?**

Rarely

Quite Often

Most of the time

All the

time

**14. What is the main source of your distraction:** \_\_\_\_\_

**15. Have you ever faced mental health issues/disorder?**

Yes       No

**(Answer the questions below ONLY if your answer to question 15 was “YES”)**

**16. If yes, then what kind of issues have you faced?**

\_\_\_\_\_

**17. Have you received any treatment for them?**

Yes       No

**18. If yes, then what treatment have you received?** \_\_\_\_\_

**19. How long did you receive this treatment?** \_\_\_\_\_

## Annexure C

### Kessler Psychological Distress Scale (K-10)

#### Instructions

The following statements describe how you have felt in the past 4 weeks. Read each of the following and rate how well each statement describes you by checking the boxes below.

Statement	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1. In the past 4 weeks, about how often did you feel tired out for no good reason?					
2. In the past 4 weeks, about how often did you feel nervous?					
3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?					
4. In the past 4 weeks, about how often did you feel hopeless?					
5. In the past 4 weeks, about how often did you feel restless or fidgety?					
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?					
7. In the past 4 weeks, about how often did you feel depressed?					
8. In the past 4 weeks, about how often did you feel that everything was an effort?					
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?					
10. In the past 4 weeks, about how often did you feel worthless?					



### Barratt Impulsiveness Scale (BIS-11)

#### Instructions

The following statements describe how you generally perform on your tasks. Read each of the following and rate how well each statement describes you by checking the boxes below.

Statement	Rarely/Never	Occasionally	Often	Almost Always/Always
1. I plan tasks carefully.				
2. I do things without thinking.				
3. I make-up my mind quickly.				
4. I am happy-go-lucky (cheerful, easy-going).				
5. I don't "pay attention."				
6. I have "racing" (fast, repetitive, rushed) thoughts.				
7. I plan trips well ahead of time.				
8. I am self-controlled (calm, disciplined, composed).				
9. I concentrate easily.				
10. I save (money) regularly.				
11. I "squirm" (fidget, be restless) at plays or lectures.				
12. I am a careful thinker.				
13. I plan for job security.				
14. I say things without thinking.				
15. I like to think about complex problems.				
16. I change jobs.				
17. I act "on impulse" (hurriedly, without careful thought).				

18. I get easily bored when solving thought problems.				
19. I act on the spur of the moment (unplanned, unprepared).				
20. I am a steady (careful, calm) thinker.				
21. I change residences/I think that I will change residences frequently if I am given the opportunity.				
22. I buy things on impulse (without careful thought/planning).				
23. I can only think about one thing at a time.				
24. I change hobbies.				
25. I spend, or charge (price for something) more than I earn.				
26. I often have extraneous thoughts (outside and unrelated to topic) when thinking.				
27. I am more interested in the present than the future.				
28. I am restless at the theatre or lectures.				
29. I like puzzles.				
30. I am future oriented.				

## Delaying Gratification Inventory

### Instructions

The following statements describe how you generally keep your behavior in check. Read each of the following and rate how well each statement describes you by checking the boxes below.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I can resist junk food when I want to					
2. I am able to control my physical desires (need for physical closeness/touch/affection/intimacy)					
3. I hate having to take turns (do something in turns) with other people					
4. When I am able to, I try to save away a little money in case an emergency should arise					
5. I worked hard in university to improve myself as a person					
6. I would have a hard time sticking with a special, healthy diet					
7. I like to get to know someone before having an intimate relationship					
8. Usually I try to consider how my actions affect others					
9. It is hard for me to resist buying things I cannot afford					
10. I have tried to work hard in university so that I could have a better future					
11. If my favorite food were in front of me, I would have a difficult time waiting to eat it					
12. My habit of focusing on what "feels good" has cost me in the long run					
13. I think that helping each other benefits society					
14. I try to spend my money wisely					
15. In university, I tried to take the easy way out					
16. It is easy for me to resist candy and bowls of snack foods					

17. I have given up physical pleasure or comfort to reach my goals					
18. I try to consider how my actions will affect other people in the long-term					
19. I cannot be trusted with money					
20. I am capable of working hard to get ahead in life					
21. Sometimes I eat until I make myself sick					
22. I prefer to explore the physical side (physical intimacy, touch, closeness) of romantic involvements right away					
23. I do not consider how my behavior affects other people					
24. When someone gives me money, I prefer to spend it right away					
25. I cannot motivate myself to accomplish long-term goals					
26. I have always tried to eat healthy because it pays off in the long run					
27. When faced with a physically demanding (physically tiring or difficult) chore, I always tried to put off doing it					
28. I value the needs of other people around me					
29. I manage my money well					
30. I have always felt like my hard work would pay off (be successful, give good results) in the end					
31. Even if I am hungry, I can wait until it is mealtime before eating something					
32. I have lied or made excuses in order to go do something more pleasurable					
33. There is no point in considering how my decisions affect other people					
34. I enjoy spending money the moment I get it					
35. I would rather take the easy road in life than get ahead					

## Smartphone Distraction Scale (SDS)

### Instructions

The following statements describes the tendency of the individuals to get distracted by their phone. Read each of the following and rate how well each statement describes you by checking the boxes below.

Statement	Almost Never	Rarely	Sometimes	Often	Almost Always
1. I get distracted by my phone notifications.					
2. I get distracted by my phone apps.					
3. I get distracted by just having my phone next to me.					
4. I get distracted by my phone even when my full attention is required on other tasks					
5. I get anxious if I don't check messages immediately on my phone					
6. I think a lot about checking my phone when I can't access it.					
7. I get distracted with what I could post while doing other tasks.					
8. I get distracted thinking how many likes and comments I will get while doing other tasks.					
9. I use several applications on my phone while working.					
10. I can easily follow conversations while using my phone.					
11. I often walk and use my phone at the same time.					
12. I often talk to others while checking what's on my phone.					
13. Using my phone distracts me from negative and unpleasant things.					
14. Using my phone distracts me from doing unpleasant things.					
15. Using my phone distracts me from tasks that are tedious and difficult.					
16. Using my phone distracts me when I'm under pressure.					

**Annexure D****Permissions**

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**TO WHOM IT MAY CONCERN****REQUEST FOR DATA COLLECTION**

It is stated that **Ms. Hala Qamar** Enrollment No. 01-171202-027 is a student of BS Psychology (8<sup>th</sup> Semester) Bahria University Islamabad Campus conducting research on "**Individual and Environmental Predictors of Psychological Distress among University Students**" under supervision of undersigned. It is requested that kindly allow her to collect the data from your esteemed institution.

Regards,

**Dr. Arooj Mujeeb**  
Assistant Professor  
Bahria School of Professional Psychology (BSPP)  
Bahria University  
E-8 Islamabad

**Principal**  
Bahria School of Professional Psychology  
Bahria University  
E-8 Islamabad

Bahria School of Professional Psychology (BSPP) Shangrilla Road E-8 Islamabad  
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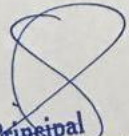
## TO WHOM IT MAY CONCERN

### REQUEST FOR DATA COLLECTION

It is stated that **Ms. Eisha-tur-Razia** Enrollment No. 01-171202-089 is a student of BS Psychology (8<sup>th</sup> Semester) Bahria University Islamabad Campus conducting research on **"Individual and Environmental Predictors of Psychological Distress among University Students"** under supervision of undersigned. It is requested that kindly allow her to collect the data from your esteemed institution.

Regards,

  
**Dr. Arooj Mujeeb**  
Assistant Professor  
Bahria School of Professional Psychology (BSPP)  
Bahria University  
E-8 Islamabad

  
**Principal**  
Bahria School of Professional Psychology  
Bahria University  
E-8 Islamabad

Bahria School of Professional Psychology (BSPP) Shangrilla Road E-8 Islamabad  
Tel: 051-9260002 Ext. No. 1406 Fax: 051-9260889

**Delaying Gratification Inventory (DGI-35 and DGI-10)**

The DGI measures individual differences in gratification delay, or the tendency to pursue immediate versus later, greater rewards. It can be administered as a long form (DGI-35) or short form (DGI-10). The measure's theoretical factor structure was derived from six decades of prior literature and covers delay behavior across five domains: food, physical pleasures, social interactions, money, and achievement. Prior measures of delay of gratification, as well as related constructs such as delay discounting, tend to require in-depth experimental procedures and/or use surveys with limitations related to reliability, validity, scope, or item wording. The DGI has been used with >10,000 participants worldwide and translated into many languages.

**Administration and Scoring**

- Instructions, items, and scoring (no frills) | [DOC](#)
- Handout for paper-and-pencil administration and scoring, with norms table | [DOC](#)
- SPSS Syntax | [SPS](#)

**Evidence of Reliability and Validity**

- The DGI has been used extensively and has well-documented reliability and validity. We have provided a detailed list of all published studies using the DGI | [DOC](#)

**Permission to Use**

- No permission is required to use our measures.
- Free! Our team has developed several survey measures over the years. Most of these measures were developed with the support of federal, state, intramural, and foundation funds, so they are available free of charge.
- Modifications? You are welcome to make modifications to "improve" our measures for your population and research question if under the guidance of a psychologist or other professional with expertise in psychometrics. Please note any changes in the methods section of resulting manuscripts.

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**Request for Accessing The Barratt Impulsiveness Scale (BIS-11)**

MS

Matt Stanford &lt;mstanford@hhci.org&gt;

To: You



 Wed 01/11/2023 22:56

Cc: aroojmujeeb.buic@bahria.edu.pk

Barratt et al., 1995.pdf  
868 KBBIS-11 English Version.pdf  
81 KBBIS-11 Scoring.pdf  
6 KB
 Show all 4 attachments (1 MB)
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Hala,

You certainly have my permission to use the BIS-11 in your research. I have attached several documents that should be helpful to you.

Best Regards,

Matthew S. Stanford, Ph.D.  
Chief Executive Officer





## Request for Access of Kessler Psychological Distress Scale (K10)



Germain, Kaileen F &lt;Germain@hcp.med.harvard.edu&gt;

To: You

Cc: aroojmujeeb.buic@bahria.edu.pk

Thu 02/11/2023 18:50

Dear Hala,

Thank you for contacting Dr. Kessler regarding the use of the K6 and K10.

Use of the K6/K10 is free and does not require any formal permission or approval. We do ask that you please cite the below article and include the copyright when using the K6/K10. In addition, we would appreciate it if you would send us the citations to all final publications that use the K6/K10.

Kessler, R.C., Barker, P.R., Colpe, L.J., Epstein, J.F., Gfroerer, J.C., Hiripi, E., Howes, M.J., Normand, S-L.T., Manderscheid, R.W., Walters, E.E., Zaslavsky, A.M. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry*. 60(2), 184-189.

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Should you have any additional questions regarding scoring rules or the use of the K6/K10, please feel free to follow-up with me or refer to [our website](#).

Kind regards,

Kaileen Germain

*She/they*

Administrative Assistant to Ronald C. Kessler, Ph.D.

Department of Health Care Policy

Harvard Medical School

[germain@hcp.med.harvard.edu](mailto:germain@hcp.med.harvard.edu)

## Annexure E

### Plagiarism Check

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