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Investigating the Effects of Doom Scrolling on Emotional States, Social Interaction Anxiety, and Sleep Disturbances in Adults

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Abstract

In the era of technology, doom scrolling – the habit of obsessively consuming distressing news on the internet – has increasingly worried many, particularly following significant global events. While prior studies have linked high news consumption to psychological distress, there are few comprehensive investigations on its impact on emotional well-being, social interactions, and sleep habits. This study employs a regression-based
cause-effect design to investigate the impact of doom scrolling on these behavioural and psychological outcomes. A validated self-report questionnaire such as the Doom Scrolling Scale (Sharma et al. 2022), Pittsburgh Sleep Quality Index (PSQI) (Buysse et al. 1989), Social Interaction Anxiety Scale (SIAS) (Mattick & Clarke, 1998) and Depression Anxiety and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995) has been utilized to collect data from 392 participants of which Male= 125, Female= 252, Prefer not to say= 15. While accounting for potential confounding variables the predictive effects of doom scrolling frequency on emotional distress, social interaction quality and sleep disturbances was evaluated using regression analysis and correlations were found between the variables. The findings are anticipated to offer empirical evidence on the negative effects of doom scrolling specifically by informing mental health interventions, social media usage policies and digital wellness strategies. In the current information landscape, this study will add to the expanding corpus of research on digital consumption patterns and their psychological effects highlighting the importance of balanced media engagement.

Keywords: digital media, social interaction anxiety, depression, stress, anxiety, sleep disturbances and doom scrolling.

Chapter 1 – Introduction

1.1 Overview

The term Doom scrolling has shot into prominence recently with the advent of fast digital devices and high-speed internet that is able to deliver rich content and breaking news content to consumers at mind boggling speeds. It refers to a compulsive consumption habit shown by individuals wherein they seem to be almost addicted to locating distressing news and negative online content. The COVID19 pandemic was probably a key period where this behaviour was first acknowledged. Having never been exposed to a global event of this scale, it was but natural for folks to look for information pertaining to the pandemic itself and then to all the negative news around it. What started off as a need for awareness

quickly escalated into what is now categorized as doom scrolling. Media exposure and its amplification of public health anxieties has been indicated in research on the COVID19 pandemic (Garfin et al., 2020).

Doom scrolling often refers to prolonged interaction with generally distressing content and this often leads to a heightened emotional suffering. This is also linked to cognitive biases such as negative bias. In such biases, individuals focus more naturally on negative information as they perceive such information important for their survival. This can also be explained using the information overload theory that suggests that cognitive processing can be overwhelmed by negative news and this leads to increased anxiety and stress in individuals consuming such news.

Modern technology and use of algorithms to capture consumer eyeballs has further compounded the situation where algorithms on social media seem to select user targeted engaging content and simply end up pushing more negative news of the same kind to the individual. This creates a vicious cycle of doom scrolling resulting in prolonged screen time for the social media platforms but at the same time reinforces the cycle of compulsive engagement through disturbing news.

1.2 Doom Scrolling

Modern day handheld devices such as cell phones and tablets are a staple of the present-day lifestyle. Social media platforms like X (formerly Twitter), Facebook, Instagram, Tiktok etc. are visited by millions of users every minute; other forum platforms like Reddit have serious interactions every second and a study (Pring, 2024) has shown that doom scrolling is prominent on these platforms in addition to news websites and forums. The algorithms running in the background that prioritize content for their users focus on engagement and user engagement with negative news resulting in redirecting similar content in the user feed. Research indicates that users who consume news through social media are more prone to doom scrolling, and this has been seen to be higher among younger age groups who depend on digital mediums for their immediate information needs.

Reinforcement learning is a major psychological mechanism that seems to drive doom scrolling. This causes users to repeatedly scroll through upsetting content enabling a sort of sporadic reinforcement of the latest distressing and alarming information. The Fear Of Missing Out or FOMO as it is popularly termed is a modern day psychological occurrence where people feel a constant pressure to be always informed about any happenings on a global level so that they do not appear to be out of the information loop (Oberst et al., 2017). Coupled with the fact that the news cycle is of a continuous nature, where dramatic headlines in the form of breaking news and urgent news alerts foster a sense of increased urgency and unease (Weinstein et al., 2021; Hall et al.,2020).

Doom scrolling has also been found to stimulate the brain's reward system as per neuroscientific studies, especially seen in the dopaminergic pathways. These then perpetuate the behaviour despite its adverse emotional effects (Canli et al. 2001; Laato et al. 2020). A pattern seen in gambling seems to be present when compared with the excessive use of social media – compulsive involvement encouraged through the unpredictability of the troubling material or outcome. People thus end up partaking int this activity even when they understand and acknowledge its negative consequences due to the way neurological reinforcement makes it harder for individuals to escape.

While doom scrolling was earlier seen as a fleeting behaviour that was associated with periods of significant crises, new studies show that numerous individuals are practically victim and it has formed into a regular habit. Research indicates that doom scrolling results in individuals experiencing increased levels of chronic stress, emotional fatigue and also show signs of depression. Additionally, doom

scrolling has consequences in routine activities as well where it has been linked to low productivity, shortened attention spans, and diminished decision making skills. This is primarily because of how extended engagement with negative content can deplete cognitive resources.

Cognitive distortions like catastrophizing can also shape the phenomenon of doom scrolling. Here, people engaging in doom scrolling view situations as more severe than they truly are. They are then driven by confirmation bias that encourages them to search for information that confirms their pre-existing notions and fears. At times, individuals feel the same psychological distress similar to that experienced by the actual individuals who are impacted by the events and this ongoing exposure to troubling occurrences can intensify vicarious tram (Rozin & Royzman, 2001)

Every day mobile phone and tablet usage for convenience purposes opens up a gateway for doom scrolling with social and environmental influences being a driving force. Work from home setups has increased overall indulgence with digital devices and has upset the clear separation of personal and work life balances. This has also further increased news consumption through digital mediums over traditional ones. Coupled with this, societal changes such as financial unpredictability, political instability, large scale wars, global emergencies all result in a rise in the volume of negative media content and increase engagement in such areas. This has ultimately resulted in individuals with access to digital devices and on-the-go internet falling prey to doom scrolling as their strategy for gathering information under the garb of providing them some semblance of control.

1.3 Emotional States

Emotional states denote transient psychological conditions that affect behaviour and cognitive functioning. They are usually classified into positive feelings (e.g., joy, happiness, satisfaction) and negative feelings (e.g., anger, sadness, anxiety). Negative emotional states have been widely researched in psychology, with concepts like the Broaden-and-Build Theory of Positive Emotions (Fredrickson, 2001) emphasizing how positive emotions broaden cognitive and behavioural options, while negative emotions restrict attention and encourage survival-driven responses (Fredrickson, 2001). Moreover, Lazarus' Cognitive- Mediational Theory posits that emotions stem from a person's evaluation of a situation, impacting stress reactions and coping strategies. Long-term exposure to negative feelings like anxiety and sadness has been associated with psychological issues, poor decision-making, and reduced well-being.

Different types of emotions affect our journeys in life and our interactions with others. Sometimes our feelings seem to determine our decisions, actions, and perspectives. In the 1970s, psychologist Paul Ekman identified six basic emotions: In the end he believed that he was commonly experienced in all human cultures: happiness, sadness, disgust, fear, surprise, anger. He then expanded this list to feelings of shame, embarrassment, excitement and more (Ekman, 1992).

For a long time, psychologists have aimed to classify and comprehend human emotions, resulting in the creation of numerous theories. For example, Robert Plutchik presented the "wheel of emotions," which operates like a colour wheel, demonstrating how emotions can blend to create intricate feelings.]

Of all the emotions, happiness is frequently viewed as the most sought-after. Happiness is considered a favourable emotion that is linked to a sense of fulfilment, contentment and wellness. Over the years, the area of positive psychology has been explored and research has increased since the mid-1960s. Joy can be expressed through various ways. These include facial cues such as smiling, open body posture, cheerful vocal tone etc. At the same, cultural factors also impact how individuals determine their source of happiness based on their perceptions, case in point, material success, career accomplishments,

financial wealth are all considered as happiness inducing due to societal norms.

2017 research in the Proceedings of the National Academy of Sciences noted 27 unique categories of emotions. This indicated that emotional experiences are not distinct isolated conditions rather they fall under a spectrum. Another theory suggests how basic emotions behave as foundational elements. These can be merged or combined together to produce more complex emotional experiences. An example of this is how blending happiness and confidence forms affection, another favoured emotion.

Depression, stress and anxiety are common psychological challenges which negatively affect emotional well-being and these mental health issues impact our thought processes as well as physical health. While these conditions can arise independently, they seem to frequently exist together where one challenge affects the other and intensifies overall distress. Each of these constructs have their own unique traits but with shared pathways which concern human emotional dysregulation, cognitive distortions and physiological reactions (Kender et al. 2019). It is essential to grasp these conditions to effectively recognize their effect on overall functioning and well-being of individuals.

Depression

American Psychiatric Association (APA) classifies depression as a mood disorder which is characterized by persistent sadness and feelings of hopelessness. It also results in a loss of interest in activities that were considered enjoyable previously (APA, 2020). This affects thoughts, emotions and behaviours in a significant fashion and results in impaired daily life for the affected individual. DSM-5 i.e., Diagnostic and Statistical Manual of Mental Disorders in its fifth edition categorizes depression as a Major Depressive Disorder (MDD) when its symptoms are observed to persist for at least two weeks and seem to cause significant distress or dysfunction (APA, 2013). From a neurological standpoint, depression is linked to neurochemical imbalances that contribute to mood regulation. These imbalances can be seen in serotonin and dopamine levels in affected individuals (Nestler et al., 2015)

Emotional disturbances including persistent sadness, irritability and also excessive guilt seem to form the most common symptoms of depression. At the same time, other cognitive symptoms include negative thought patterns, difficulty while concentrating on specific tasks and challenges in decision making.

Additionally, physiological symptoms such as fatigue, sleep disturbances, changes in appetite, and physical pain with no medical explanation are frequently reported (Gotlib & Joormann, 2010). Depression may also lead to social withdrawal, as affected individuals struggle with interpersonal relationships and experience a diminished sense of motivation (Cuijpers et al., 2014). In severe cases, depression increases the risk of suicidal ideation and self-harm, necessitating professional intervention and support (Lazarus, 1991).

Stress

Stress is a psychophysiological response that occurs when an individual perceives a situation as overwhelming or threatening (Lazarus & Folkman, 1984). It is a natural reaction to external stressors, such as work pressure, financial difficulties, or personal conflicts, but when prolonged or unmanaged, it can lead to serious health consequences (McEwen, 2007). The General Adaptation Syndrome (GAS) proposed by Selye (1976) explains stress in three stages: alarm reaction, where the body initially responds to stress; resistance, where coping mechanisms are activated; and exhaustion, where prolonged stress depletes the body's resources, leading to burnout and physical health deterioration.

Physiologically, stress triggers the hypothalamic-pituitary-adrenal (HPA) axis, resulting in the release of cortisol, a hormone responsible for mobilizing energy and heightening alertness (Chrousos, 2009). While acute stress can be beneficial in improving focus and motivation, chronic stress contributes to

anxiety, depression, cardiovascular diseases, and immune dysfunction (Cohen et al., 2012). Psychologically, stress manifests as irritability, frustration, and difficulty in decision-making. Behaviourally, individuals may develop maladaptive coping strategies such as substance use, emotional eating, or social withdrawal (Aldwin, 2007). Managing stress effectively through relaxation techniques, exercise, and cognitive-behavioural strategies is essential for maintaining mental and physical well-being.

Anxiety

Anxiety is an emotional and mental condition marked by intense worry, nervousness, and fear regarding uncertain future events (Barlow, 2002). Although anxiety is a typical reaction to sensed dangers, ongoing anxiety can become overwhelming and interfere with everyday activities. The DSM-5 characterizes anxiety disorders as conditions marked by significant fear, heightened alertness, and behaviours aimed at avoidance, which can be excessive compared to the real danger (APA, 2013). Typical anxiety disorders encompass Generalized Anxiety Disorder (GAD), Social Anxiety Disorder (SAD), Panic Disorder, and Phobias (Craske & Stein, 2016).

Symptoms of anxiety encompass cognitive challenges like intrusive thoughts, persistent worry, and exaggerating possible consequences. From a physiological perspective, anxiety triggers the sympathetic nervous system, resulting in a heightened heart rate, quickened breathing, muscular tension, and digestive discomfort (Stein & Sareen, 2015).

Anxiety can result in avoidance behaviours in social contexts, causing isolation and a reduced quality of life (Hofmann et al., 2010). Research indicates that high levels of anxiety are associated with increased instances of insomnia, depression, and substance abuse (Bandelow et al., 2017). A number of treatments have proven effective in alleviating symptoms related to anxiety and have provided enhanced coping strategies; these include Cognitive Behavioural Therapy (CBT), mindfulness practices as well as several tested medication options (Hofmann & Smits, 2008).

Depression, anxiety and stress are three related mental health issues that greatly affect emotional, cognitive and physical health (Kendler et al., 2003; Craske & Stein, 2016; McEwen, 2007). Sustained period of emotional turmoil can trigger depression. Outside pressures can give rise to stress. Anxiety itself is a forward-looking response to sensed dangers. Adverse digital habits such as doom scrolling can act as stress factors and their long- term association to such stress factors has been associated with worsening these mental conditions (Vannucci et al., 2017). It is crucial to grasp these conditions and their fundamental processes in order to create effective strategies that can be utilized to enhance mental resilience and well-being. Future studies could investigate the role that digital consumption habits play in influencing the development of such mental issues and pinpoint preventive measures that can be adopted to lessen their effects.

1.4 Social Interaction Anxiety

Social interaction anxiety is a mental condition that is marked by intense fear, unease, tension and self-doubt in social settings. People facing this type of anxiety frequently fear being scrutinized, evaluated, criticized, or humiliated in the presence of others. While typical shyness can be momentary or context-dependent, social interaction anxiety on the other hand can endure. This can substantially affect an individual's capacity to form meaningful interpersonal connections. This condition is an important element of social anxiety disorder (SAD). It is also seen that people who do not fulfill the clinical criteria for a disorder still have difficulties with social interaction.

Individuals with social interaction anxiety encounter numerous obstacles in routine daily interactions.

These include meeting new people, trouble starting conversations, avoiding eye contact, asking for help and heightened self-awareness in social environments amongst others.

The anxiety of being judged negatively can result in avoidance actions, prompting people to retreat from social engagements, work networking, and even online interactions that necessitate immediate response. Although this avoidance offers short-term relief, it may strengthen anxiety over time and lead to social isolation and a decline in overall well-being.

Several theories have been suggested by psychologists to account for the emergence and persistence of anxiety related to social interactions. The Cognitive-Behavioural Theory (Clark & Wells, 1995) posits that individuals with social anxiety tend to concentrate on themselves, leading them to excessively scrutinize their behaviour and believe that others view them unfavourably. This ongoing self-examination increases anxiety and results in cognitive distortions, including mind reading (thinking others view them negatively) and catastrophizing (assuming a small social error will lead to significant repercussions). An alternative viewpoint, the Evolutionary Theory (Gilbert, 2001), suggests that social anxiety arises from the human drive to evade social rejection, since being excluded from a group has historically presented a survival risk. In the same way, Social Learning Theory (Bandura, 1977) indicates that social interaction anxiety can be acquired from previous experiences, including bullying, rejection, or witnessing anxious behaviours in family members.

The emergence of digital communication and social media has produced a complicated effect on anxiety related to social interactions. Though online platforms offer a way for socially anxious people to engage with others in a safe setting, overdependence on digital communication may result in greater avoidance of face-to-face interaction. This can strengthen social anxieties and impede the growth of genuine social abilities. Moreover, doom scrolling, defined as the relentless intake of negative media and online content, has been associated with increased social anxiety. Ongoing exposure to troubling news, social tensions, and online backlash can instill a feeling of social danger, causing people to become increasingly fearful of in-person interactions.

From a physiological viewpoint, anxiety related to social interactions activates the body's fight-or-flight response, much like other fear-driven reactions. In social settings, a person with anxiety might encounter rapid heartbeat, perspiration, shaking, difficulty breathing, and feelings of nausea (Stein & Sareen, 2015). These symptoms not only create distress but can also be misunderstood as indicators of ineptitude or awkwardness, which intensifies anxiety. This pattern of bodily excitement and unfavorable self-assessment complicates social interactions for individuals experiencing social interaction anxiety.

The effects of social interaction anxiety go further than just individual unease. It can influence success in academics and careers, as people may find it difficult with public speaking, networking, and leadership positions. Social anxiety can create other situations in people’s lives where the simply struggle to create and maintain relationships. This can then result in feelings of loneliness and experiences of emotional pain. Continued social anxiety over time can also lead to depression and reduced self-worth effectively setting a level of lower life satisfaction.

Social anxiety can be tackled but this necessitates a diverse strategy. Cognitive- Behavioural Therapy (CBT) has proven to be very effective in treating social anxiety. It assists individuals in recognizing as well as reinterpreting negative thought processes (Clark & Wells, 1995). Use of Exposure therapy is also widely seen. This method slowly acclimates individuals to social environments and this helps to reduce their sensitivity to anxiety- provoking triggers. Additionally, other interventions that are focused on mindfulness and relaxation methods such as deep breathing and progressive muscle relaxation may aid

in reducing physiological symptoms. Medical intervention through drugs such as selective serotonin reuptake inhibitors, or SSRIs as they are commonly referred to may be administered to control intense symptoms

To summarize, social interaction anxiety is a common and significant issue that influences various areas of an individual's life. This can include personal relationships and career prospects. Digital communication and social media are a double-edged sword. On one hand, they offer different ways to interact while on the other, they may also promote avoidance behaviours, thereby heightening levels of anxiety. It is crucial to grasp the foundational mechanism of social interaction anxiety and encompass both its evolutionary and physiological aspects to be able create effective interventions. People can develop skills that will help them handle their anxiety and boost their social confidence using effective strategies thus enabling them to cultivate significant relationships with others.

1.5 Sleep Disturbances

Sleep disturbances come in many forms, including insomnia, challenges falling asleep, poor-quality rest, and repeated awakenings that disrupt slumber. Rejuvenation through repose is integral for mental acuity, emotional balance, and well-being in general. The Two-Process Theory of Sleep Regulation (outlined by Borbély in 1982) depicts sleep governance as the interplay between the homeostatic sleep drive and the circadian rhythm.

Additionally, the Physiological and Cognitive Arousal Model of Insomnia suggests that increased activation on both these levels contributes to struggling to sleep. Elements such as pressure, screen usage before bed, and lifestyle decisions strongly sway sleep quality.

Inadequate sleep has been tied to deficits in memory retention, diminished emotional resilience when facing challenges, and a heightened risk of issues involving mental health like anxiety and depression.

Sleep disturbances affect not just the amount but also the quality of sleep, a clear indication of the interruptions in the regular sleep pattern. These disruptions can stem from various sources such as mental strain, lifestyle choices, prolonged use of device screens as well as pre-existing health issues. Ongoing sleep disturbances can thus significantly impact a person's health in areas of emotional control, and cognitive abilities. Considering the vital importance of sleep, this can affect physical wellness as well.

Insomnia – Insomnia is by far the most prevalent sleep disorder. It is marked by facing trouble falling asleep or in maintaining sleep. In cases, it is related to waking too early and then having difficulty falling back asleep. This can be an acute (short-duration) disorder or chronic (where it persists for months or even years). Chronic insomnia is often linked to increased emotional states of stress, anxiety, as well as depression. This therefore renders itself to be considered as a serious issue for overall mental well-being.

Sleep apnea – Individuals exhibiting this disorder experience breathing issues during their sleep where their breathing stops and starts periodically during sleep. Obstructive Sleep Apnea (OSA) is the most common form which occurs when throat muscles intermittently relax and end up creating a situation which blocks the airway. Individuals are then subjected to frequent awakenings with trouble breathing and this leads to diminished sleep quality, a factor that contributes to daytime fatigue. Poor sleep quality can also be responsible for cognitive challenges in daily routines as well as increased risks related to heart health.

Restless Legs Syndrome (RLS) – This neurological condition is characterized by a compelling need to move the legs, while at rest or when sleeping. Individuals with this condition feel discomfort or tingling in their legs and even complain of itchiness. This automatically hampers their ability to relax and fall

asleep. This condition has been medically associated with iron shortages and dopamine irregularities with a genetic vulnerability as seen as a cause.

Narcolepsy – This is another long-term neurological condition which is marked by extreme drowsiness during the day and includes unexpected episodes of sleep. It is also observed that individuals with narcolepsy might also encounter cataplexy which is a sudden inability to control muscles as a response to intense emotions. They also experience episodes of sleep paralysis as well as hallucinations. A key finding towards the causes has pointed to the brain's failure to manage sleep-wake patterns effectively maintaining this condition in individuals.

Circadian Rhythm Disorder – Sleep patterns are regulated through the body or circadian rhythm. A disruption in this rhythm can lead to diseases including Delayed Sleep Phase Disease (DSPD). This is commonly seen in individuals finding it challenging to maintain traditional times and also in difficulties in waking up – a case in point being Shift Work Sleep Disorder (SWSD) that is seen in individuals who work irregular hours and night shifts.

Parasomnia – A term that is used to refer to a group of sleep disorders that range from abnormal behaviour and sleep experiences including sleepwalking, sleep speech, physical movements acting out a dream and REM sleep Behavior Disorders (RBD). Any or all these conditions can lead to further sleep fragmentation and increased fatigue effectively causing potential damage to individuals as well as others.

Various aspects of physical and psychological health are negatively affected by such persistent sleep disturbances. These impacts include:

Cognitive Impairment – Sleep deprivation is found to impact memory consolidation and problem-solving abilities. It is seen to create reduced attention spans and impact decision-making skills. Individuals who suffer from chronic sleep disturbances report experiences of mental haziness such as brain fog and difficulty concentrating.

Emotional Dysregulation – Emotional instability is intensified by poor sleep quality.

This increases an individual's susceptibility to mood disorders primarily depression and anxiety. Individuals who report sleep disturbances also indicate a sense of increased emotional reactivity with a decreased ability to manage stress.

Increased Risk of Physical Illness – Prolonged or chronic sleep deprivation reduces how the immune system functions and individuals with such sleep disorders are more prone to infections. [It could also be a cause of increased risk of cardiovascular diseases, obesity, diabetes, and hypertension due to metabolic and hormonal imbalance. Mental Health Decline – research suggests that sleep disturbances are both a symptom and a causal factor to mental health disorders. Individuals with insomnia are at a higher risk of developing depression, while those with sleep apnea often experience mood instability and irritability. Reduced Productivity and Performance – Poor sleep quality leads to decreased workplace and academic performance, reduced motivation, and an increased likelihood of errors or accidents. This is particularly concerning for individuals in high-risk professions such as healthcare, transportation, and emergency response.

Cognitive Behavioural Therapy for Insomnia (CBT-I) is considered as an effective intervention to address chronic insomnia. This includes measures that address thoughts and behaviours which may contribute to difficulties in getting a proper sleep targeting an improvement in both sleep quality as well as duration.

Monitor Diet and Exercise – Proper selection of food that is consumed prior to bedtime can prevent

sleep disruptions. This can include avoiding caffeine and nicotine while including fiber rich content in the diet and preferring a light meal over a heavy one close to bedtime can prevent sleep disruptions. Regular physical activity is found to promote deeper sleep, however it is also observed that engaging in exercises late at night and close to bedtime can affect sleep quality negatively.

Individuals who suffer from severe sleep disorders such as sleep apnea or narcolepsy can benefit from treatments like Continuous Positive Airway Pressure (CPAP) therapy and medications as recommended by a sleep specialist. They can also include cognitive behaviour therapy targeting their insomnia to improve their overall sleep quality.

1.6 Link Between the Variables

Doom Scrolling and Emotional State

Doom scrolling is characterized by engagement with negative news for a prolonged period of time and has a direct and significant impact on an individual's emotional state. It can make people feel anxious, sad, or stressed, and in some cases, even lead to symptoms of depression. Psychologists explain this using concepts like negativity bias, which means that our brains naturally focus more on bad news than good news. This makes it easier for distressing content to affect our mood.

On a neurological level, doom scrolling activates the amygdala, the part of the brain that processes fear and emotional responses. When this happens repeatedly, it can trigger a prolonged stress reaction, raising cortisol levels and leaving people feeling emotionally drained. Over time, constantly seeing bad news can make people develop negative thought patterns, reinforcing worries and making them feel even worse.

Emotional State and Social Interaction

Emotional distress that is caused through doom scrolling can significantly affect an individual's social interaction ability. Social Exchange Theory points out that people who engage in social interactions do so depending on perceived benefits and emotional investments (Maslow, 1943). Individuals who experience anxiety or sadness due to doom scrolling may withdraw from social settings. This could either be due to emotional exhaustion or as a result of increased focus on online engagement.

Additionally, excessive digital consumption appears to replace real-life interactions.

This leads to a decrease in meaningful social connections. Studies suggest that negative emotional states lead to social avoidance behaviours. This is seen when individuals experiencing stress or sadness may struggle to engage in fulfilling conversations and expressing positive emotions creating an environment that is not conducive to maintaining relationships. Gradually, this can contribute to social isolation and loneliness which only further exacerbates any negative emotional experiences.

Social Interaction and Sleep Disturbances

Psychological research has established the relationship between sleep disturbances and social interaction quite clearly. Emotional distress induced through habits like doom scrolling can result in reduced social engagement and these can then lead to loneliness and rumination which are closely linked to poor sleep quality and higher sleep latency after hitting the bed.

Any engagement in social activities, especially those of the physical kind which include movement and/or outdoor exposure can help regulate the body's circadian rhythms and improve the natural sleep-wake cycle. Avoiding these activities can alternately disrupt these rhythms. Increased screen time through doom scrolling can result in an increased social withdrawal unsettling the body rhythm. This can lead to a delayed sleep onset as well as individuals can experience fragmented sleep with overall sleep disturbances (Orben et al., 2019; Weinstein et al., 2021).

Doom Scrolling and Sleep Disturbances

Doom scrolling directly contributes to sleep disturbances in physical as well as behavioural ways. The blue light exposure from screens suppresses melatonin production. This delays the onset of sleep. At the same time, engaging with distressing content before bedtime can lead to increased physiological arousal. This makes it difficult for such individuals to relax and fall asleep (Scott et al., 2021; Walker, 2017).

Furthermore, doom scrolling often results in cognitive overactivity. This can be seen when individuals experience racing thoughts after consuming any distressing information. This heightened cognitive load makes it harder for the brain to transition into a restful state. This difficulty in relaxing can lead to insomnia and frequent awakenings with sleep disturbances extending to non-restorative sleep. Prolonged exposure to sleep disturbances worsens emotional distress and this sets the individual into a loop where the individual returns to doom scrolling being unable to fall asleep and to cope with their stress. This loop further impairs their sleep patterns and the individual is stuck in a vicious cycle that repeats itself.

1.7 A Link Between Varied Age Groups and Doom Scrolling

It is seen that doom scrolling is a behaviour that affects individuals across various age groups. However, the frequency and impact can vary depending on age. Variables such as emotional states (of depression, anxiety and stress), social interaction anxiety, sleep disturbances can vary depending on age. Individuals at different stages of their life are characterized by their distinct psychological and behavioural tendencies. These influence how an individual engages with digital content, and how that individual reacts to distressing news. It is therefore essential to understand the relationship between doom scrolling on these variables alongside age to develop targeted interventions enabling healthier digital content consumption.

Young Adults (18-30 Years)

Young adults, particularly those in their late teens and twenties are among the most frequent consumers of social media and digital platforms. Born as it may seem in a largely digital narrative and with an early exposure to using devices, they rely heavily on online new sources, as well as for their entertainment and social interactions (Hall et al., 2020; Ramón- Arbués et al., 2020). This demographic exhibits higher levels of Fear of Missing Out (FOMO) and social comparison. This makes them more susceptible to compulsive doom scrolling behaviours. Being in a transitional period in their academics and career, social pressures drive these young adults to excessive negative news exposure leaving them particularly vulnerable to anxiety and stress.

Doom scrolling, moreover, has been linked to increased sleep disturbances in young adults due to their higher likelihood of using their phones late into the night. This further exposes them to the blue light and anxiety-inducing content that delays the onset of sleep. Additionally, a lot of their social interactions are significantly influenced through digital mediums. This results in an excessive doom scrolling that may lead to reduced real-life social engagement. This in turn contributes to feelings of loneliness coupled with digital fatigue (Vannucci et al., 2017; Bandelow et al., 2017).

Middle-Aged Adults (31-50 Years)

Middle-aged individuals engage in doom scrolling due to a different set of reasons as compared to younger adults. Their primary reasons stem more out of their concerns about their families and the responsibility of bringing up or maintaining their social as well as financial standards in an environment that is engulfed in financial uncertainties based on local and global events. This triggers them to turn to consuming negative news and fall into the same doom scrolling loop. This age group is more politically and socially aware and their distance engagement in spite of their awareness leads them to follow

distressing news cycles related to any economic downturns, accidents, political conflicts, health crises, natural calamities etc.

A direct impact of doom scrolling in middle-aged adults is seen in their levels of heightened stress and emotional exhaustion. This can lead to severe work-related burnout and difficulty in handling personal responsibilities. They are unable to strike a proper work-life balance with prolonged engagement with negative content resulting in reduced social interactions with family as well as friends (Chrousos, 2009; Cohen et al., 2007). Poor sleep quality due to stress-related rumination is a common issue within this demographic. They may stay up late consuming news and worrying about both personal and societal challenges that may affect them and their families.

Older Adults (50+ Years)

Older adults seem to be less engaged with social media in general as compared to their younger counterparts. However, they still consume online news, particularly through websites and television broadcasts. Many older individuals use digital platforms for its convenience to stay in touch with their families and in turn also use online sources to stay informed about world events including those related to healthcare and financial matters.

However, cognitive processing of negative information differs in this age group. They tend to have a greater emotional regulation ability and this serves as a buffer against some of the distress caused by doom scrolling (Weinstein et al., 2021; Borbély, 1982).

That being said, an increase in levels of anxiety is seen in this demographic as well due to their exposure to distressing content. This can also result in social withdrawal as well as sleep disturbances. Older individuals living alone in particular may be more prone to social isolation. This is exacerbated by prolonged digital engagement and the lack of in-person socialization. Sleep disturbances in older adults are also prevalent due to age-related changes in sleep patterns. And in such cases, consuming distressing news before bedtime may worsen insomnia and night-time awakenings.

Emotional States: Dependency on digital medium and social pressures from peers alike result in younger individuals being more prone to anxiety and stress from doom scrolling. Middle-aged adults experience emotional exhaustion from consuming distressing news related to work and finances. Older adults are more emotionally regulated but they may still experience heightened anxiety due to concerns about global events and personal well- being.

Social Interaction: Excessing time spent on browsing social media and consuming digital content puts young adults at risk of reduced face-to-face socialization. On account of stress and burnout, middle-aged adults may withdraw from real life in person social interactions, while older adults may experience social isolation which is further exacerbated by doom scrolling.

Sleep Disturbances: The effects of doom scrolling on sleep differ by age. Young adults might struggle to fall asleep because they're scrolling late at night, middle-aged adults often deal with insomnia from stress, and older adults can see their age-related sleep issues worsen due to consuming distressing news (Buysse et al., 1989; Dudley, 2004).

1.8 Research Gaps

While doom scrolling has been acknowledged as a problematic digital behaviour, most existing studies focus on its association with stress and anxiety but fail to explore its broader impact on depression, sleep disturbances, and social anxiety in a single framework. This study aims to bridge this gap by examining multiple psychological outcomes simultaneously.

Previous research on social media overuse has examined its role in social isolation, but few studies

specifically link doom scrolling with social interaction anxiety. This study aims to provide empirical evidence on whether compulsive negative news consumption exacerbates fears of social interactions and avoidance behaviours.

Many studies on digital consumption behaviours focus on young adults or university students, leaving a gap in understanding how doom scrolling affects diverse age groups. In this study it includes participants aged 18–60, offering insights into whether different age groups experience varying psychological effects of doom scrolling.

1.9 Rationale of the Study

This study aims to investigate the psychological and behavioural effects of doom scrolling in an era where digital consumption is at an all-time high. Given that excessive engagement with distressing news content has been linked to emotional distress, reduced social interaction, and sleep disturbances, it is crucial to explore these associations systematically. By understanding the underlying mechanisms of doom scrolling and its negative consequences, this research will contribute to developing strategies for healthier digital consumption. Additionally, the findings will provide insights into interventions aimed at mitigating the psychological toll of excessive negative news exposure and improving overall digital well-being.

1.10 Objectives

1. To find out the predictive effects of doom scrolling frequency on levels of emotional states (anxiety, stress, and depression).
2. To evaluate the causal influence of doom scrolling on the quality of social interactions.
3. To examine the impact of doom scrolling on sleep disturbances, such as delayed sleep onset and reduced sleep quality.

1.11 Research Questions

1. Does doom scrolling accurately forecast shifts in emotional states like stress, anxiety and depression?
2. How does doom scrolling affect the frequency and quality of social interactions?
3. What effect does doom scrolling have on sleep disturbances including latency and quality of sleep?
4. How do emotional states, sleep quality and social interaction anxiety correlate with each other?

1.12 Significance of the Study

This study aims to shed light on the digital mental health landscape by exploring the psychological and behavioural impacts of doom scrolling. The results will be beneficial for mental health professionals, social media companies, and policymakers as they work to encourage healthier online habits and reduce the negative effects of engaging with too much distressing news.

By systematically analysing how doom scrolling affects our emotions, social interactions, and sleep patterns, this research will add to the existing literature. While earlier studies have looked at digital consumption and mental health separately, there's been a lack of research on how doom scrolling influences various aspects of our well-being. Using a regression-based cause-effect method, this study will provide solid evidence on how doom scrolling leads to emotional distress, decreased social engagement, and sleep issues. The gap between digital media research and psychological studies can be bridged through these findings. This offers a more comprehensive perspective on the consequences of excessive negative news exposure.

This study will prove valuable for use by mental health professionals considering the increasing rates of stress and anxiety amongst individuals who are associated with prolonged exposure to distressing content. A good understanding of how doom scrolling contributes to these negative emotional states

including depression will enable psychologists as well as therapists and counsellors alike to develop targeted interventions to help individuals struggling with compulsive digital consumption. The insights from this study can also inform Cognitive-Behavioural Therapy (CBT) approaches as well as help formulate digital detox strategies. This can help individuals build healthier news consumption habits and also mitigate the adverse psychological effects of doom scrolling.

Social interaction plays a crucial role in a person's psychological well-being. This study will highlight the extent to which doom scrolling affects individuals' ability to engage meaningfully with others. Doom scrolling can affect social withdrawal leading to reduced interpersonal communication and increased social anxiety. If such linkages are found, these can be used to develop digital moderation practices and promote positive social engagement. This research will be of particular use to educators, parents, guardians, and workplace professionals who seem to understand and address the social implications of excessive online news consumption.

This study will also examine the extent to which doom scrolling contributes to insomnia including related aspects of delayed sleep onset and poor sleep quality in view of how sleep disturbances have become a widespread concern as a result of increased screen exposure and digital engagement. Sleep deprivation itself has far-reaching consequences on areas related to cognitive performance and mental health, thus showing up a significant factor in overall wellbeing. This research will emphasize the importance of healthy digital habits before bedtime by identifying if doom scrolling is a potential contributor to sleep disturbances. This can support the development of guidelines for managing digital consumption with an objective to improve sleep hygiene.

In the present-day environment, social media platforms and online news outlets seem to hold a significant place in an individual's daily routine. Clearly, they play a significant role in shaping digital consumption behaviours. The findings of this study can encourage platforms to design interventions which can minimize the negative impact of doom scrolling. These changes could include algorithmic changes and content moderation. The changes can also introduce features that promote mindful scrolling. Policymakers and technology developers can use the study's insights to introduce digital well-being policies. These can contain ideas such as screen time limits and push notifications for breaks. It may be a good idea to include content warnings for distressing news raising awareness pertaining to mental health concerns. Additionally, public awareness campaigns can also be introduced to educate users about the risks of excessive negative news exposure. These campaigns can suggest and promote mechanisms that identify and include ways of healthier engagement with digital content.

This study will serve as a foundation for future research that can be used to explore long-term effects of doom scrolling. Such future research can cover potential interventions and strategies for fostering digital well-being. By identifying key variables and relationships, this research can inform longitudinal studies in related topics. This research can also serve as a guide for experimental interventions and neuroscience-based investigations into how doom scrolling affects the brain function which in-turn impacts decision-making and emotional resilience. The findings will also support interdisciplinary collaborations between psychologists and technology researchers in developing holistic approaches that drive ideas to mitigate the negative effects of digital media consumption. In areas pertaining to news presentation, these findings can be used by media experts to evaluate how their programs and content is affecting their primary consumers and work towards improving the content.

Chapter 2 – Review Of Literature

The study encompasses variables of Doom scrolling, Emotional states [Depression, Anxiety and Stress], Social interaction anxiety, Sleep disturbances. This is especially true in the context of adults from ages 18-60 and from a non-clinical sample.

The following section addresses academic literature and secondary sources aimed at comprehending the connections in the above-mentioned variables.

2.1 Studies on Doom Scrolling

Doom Scrolling is characterized by compulsive consumption of negative online content. This has gained significant attention in digital mental health research. Sharma et al. (2022) developed the Doom Scrolling Scale wherein it was highlighted how doom scrolling is associated with heightened stress and anxiety levels. Individuals are naturally drawn to distressing content which then simply exacerbates this phenomenon due to negativity bias (Rozin & Royzman, 2001). [Neuroscientific studies show that doom scrolling activates dopaminergic pathways, reinforcing compulsive behaviour despite adverse psychological consequences (Canli et al., 2005).

Exposure to overwhelming amounts of distressing media can lead to vicarious trauma, similar to direct traumatic experiences (Garfin, Silver, & Holman, 2020).] The information overload theory suggests that excessive consumption of negative news overwhelms cognitive resources. This aligns with this theory where it is seen that such consumption contributes to emotional exhaustion (Laato et al., 2020). To add to this, the Fear Of Missing Out (FOMO) further fuels the compulsive nature of doom scrolling with 24-hour news cycles that create both a sense of urgency and anxiety in individuals.

2.2 Studies on Emotional States

Emotional states significantly influence digital consumption behaviours. These behaviours doom scrolling. Fredrickson's (2001) Broaden-and-Build Theory compares emotions emphasizing how positive emotions expand cognitive and behavioural responses while negative emotions restrict them. Conversely, Lazarus' (1991) Cognitive-Mediational Theory explains how appraisals of negative information heighten stress responses, contributing to persistent anxiety. Plutchik (2001) further classifies emotions into core affective states, demonstrating how prolonged exposure to negative content exacerbates distress.

A study involving college students reported moderate prevalence rates of depression (18.4%), anxiety (23.6%), and stress (34.5%). These findings highlight the significant mental health challenges faced by young adults in academic settings (Ramón-Arbués et al., 2020).

A study on The Coverage Of Terrorism In The News (Marin, I., 2011) composed the analysis by examining how the media discusses the war on terror, how they use the media as a weapon of war, how they cover crimes that are done for publicity and how frequently they cover terrorism. This shows that increased coverage of negative news, leads to more viewership among the public.

Empirical studies confirm that individuals engaging in doom scrolling, report increased symptoms of depression and chronic stress (McLaughlin et al., 2021). Doom Scrolling has also been linked to cyberchondria, where excessive digital information-seeking fuels anxiety (Starcevic & Berle, 2013). This suggests that constant exposure to distressing digital content can perpetuate negative emotional cycles, affecting overall well-being.

Another significant study on Dependency on Smartphone Use and Its Association with Anxiety in Korea by Lee et al., 2016 showed that the dependency in both men and women is extreme and that it has led to higher levels of anxiety where women tend to feel more anxious than men.

2.3 Studies on Social Interaction Anxiety

Social interaction anxiety, characterized by fear of negative social evaluation, has been increasingly linked to excessive digital engagement. Mattick & Clarke (1998) developed measures assessing social phobia and social interaction anxiety, demonstrating their correlation with digital communication patterns. Digital consumption, including doom scrolling, fosters social withdrawal and loneliness, diminishing face-to-face interactions (Hall et al., 2020).

Studies indicate that excessive doom scrolling contributes to perceived social isolation, reducing real-life social engagement (Orben et al., 2019). The Social Exchange Theory posits that interpersonal interactions are based on perceived benefits and costs (Maslow, 1943), suggesting that individuals engaging in doom scrolling may prioritize virtual engagement over meaningful in-person connections. This aligns with research showing that heavy social media use is linked to heightened loneliness and depressive symptoms (Weinstein et al., 2021).

Research has identified a strong connection between social interactions and anhedonia. This is a core symptom of depression and is characterized by a reduced ability to experience pleasure. This relationship highlights the complex connections between social fear and depressive disorders and the need for an integrated treatment approach (Santamarãa- Garcãaetal., 2022).

Research work on concentrations in young adults with social anxiety disorder (SAD) and young adults showed that adverse interpersonal behaviour contributes to sad maintenance and is associated with secondary depression. This study highlights how important daily positive social interactions are in undermining symptoms of depression and anxiety, and shows that improving the quality of social engagement can improve mental health as a whole (Blanco et al., 2021).

2.4 Studies on Sleep Disturbances

Sleep disturbances, including insomnia and delayed sleep onset, have been associated with prolonged digital consumption. Two-Process Model of Sleep Regulation highlights how cognitive and physiological arousal disrupts sleep patterns (Borbély, 1982). Doom Scrolling before bedtime leads to hyperarousal, making it difficult to achieve restorative sleep (Scott et al., 2021, Walker, 2017).

Empirical findings confirm that blue light exposure from screens reduces melatonin production, delaying sleep onset (Chang et al., 2015; Exelmans & Van den Bulck, 2017).

Further studies demonstrate that excessive screen time before bedtime impairs sleep quality (Saghir et al., 2018). The Arousal-Based Model of Insomnia suggests that stress-inducing content, such as negative news, heightens cognitive activity, contributing to fragmented sleep (Scott et al., 2021). Additionally, research on bedtime mobile phone use confirms its detrimental impact on sleep quality (Exelmans & Van den Bulck, 2017).

Chapter 3 – Methodology

3.1 Hypothesis

H1: There will be a statistically significant correlation between doom scrolling frequency and emotional states- Depression, Anxiety, Stress levels.

H2: There will be a statistically significant relationship between doom scrolling frequency and social interaction anxiety.

H3: There will be a statistically significant correlation between doom scrolling frequency and sleep disturbances.

H4: There will be a significant correlation in predicting DASS Anxiety with Doom Scrolling Frequency

& Social Interaction Anxiety.

H5: There will be a significant correlation in predicting DASS Depression with Doom Scrolling Frequency & Pittsburgh Sleep Quality.

H6: There is a significant impact of doom scrolling across the three age groups on emotional states, sleep disturbances and social interaction anxiety.

3.2 Sampling Technique

This study employs purposive sampling, a type of non-probability sampling, where participants are intentionally selected based on specific characteristics that are relevant to the research objectives. The sample consists of males and females aged 18-60 who have access to smart devices, ensuring that the participants meet the necessary criteria for studying doom scrolling, emotional states, social interaction anxiety, and sleep disturbances as well as those who have access to smart devices (phones, tablets, laptops).

3.3 Variables Tools

Doom Scrolling Scale

The Doom Scrolling Scale, developed by Sharma et al. in 2022, was employed for assessment. This scale comprises 15 items (e.g., "I feel an urge to seek bad news on social media, more and more often"), rated on a 7-point Likert scale, where 1 indicates "strongly disagree" and 7 indicates "strongly agree". Higher scores on the questionnaire indicate a stronger inclination toward doom scrolling. Through its use, researchers can gain deeper insights into the mental factors contributing to this addiction and tailor interventions for this reason. Furthermore, the scale serves as a precious tool for individuals to self-test their doom scrolling tendencies and take proactive steps toward fostering healthier virtual conduct.

Depression Anxiety Stress Scale-21 (DASS21)

The DASS-21 is the quick shape of the DASS-42. There are other variations of the DASS: a youngsters version, the DASS-Y, and a shorter version, the DASS-10. The DASS- 21 is suitable for scientific settings to help in analysis and outcome monitoring, as well as non-scientific settings such as a mental health screener. The DASS is primarily based on a dimensional in place of an specific thought of psychopathology, and scores emphasise the diploma to which a person is experiencing signs in place of having diagnostic cut points. The general score for the DASS-21 can provide an illustration of popular psychological misery (Henry & Crawford, 2005). Individuals read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to him/her over the past week. The rating scale is as follows: 0- Did not apply to me at all, 1-Applied to me to some degree, or some of the time, 2-Applied to me to a considerable degree, or a good part of time, 3- Applied to me very much, or most of the time. This gives us three subscales: DASS-Depression, DASS-Anxiety and DASS- Sadness.

Social Interaction Anxiety Scale (SIAS)

The SIAS was created to address a gap in available tools for psychologists and mental health professionals to assess social anxiety. It was designed primarily based on the understanding that social tension can occur in two primary sorts of environments: the ones concerning direct interaction with others like starting a communique, the ones wherein one is watched or judged by way of others such as giving a speech. Each scenario requires unique competencies and a character may experience stress in one or each. The SIAS aimed to specially degree tension related to social interaction. It contains 20 statements rated on a 5- point device representative of the individual's characteristics. Evaluation of the scale determined it demonstrated sturdy reliability over time, with scores ultimate steady.

The Pittsburgh Sleep Quality Index (PSQI)

The Pittsburgh Sleep Quality Index (PSQI) is an effective instrument used to measure the quality and patterns of sleep within adults. It differentiates "poor" from "good" sleep quality by measuring seven areas (components): subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunction over the last month. Each of the questionnaire's 19 self-reported items belongs to one of seven subcategories: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. Five additional questions rated by the respondent's roommate or bed partner are included for clinical purposes and are not scored (Buysse et al., 1989), (Dudley, 2004), (Osorio et al., 2006).

3.4 Test Procedure

The researcher determined the interest variables, made a complete review of the relevant literature and acquired tools appropriate for research. Given the scale of research in various cities in India, the Google form has been developed for feasibility. This form covered components such as informed consent, basic demographic details, the inclusion of 4 scales linked to research and a section for debriefing.

Participants were recruited by contacting college students, homemakers, working individuals, near to the senior population for a varied age group representation. The data was gathered from participants mainly through convenience and purposive sampling.

This form was primarily circulated through the social networking applications: WhatsApp, Reddit, Facebook and Instagram. Posters with details of the form were stuck around local apartments to encourage more responses. The survey link was shared via a Google form consisting of 8 sections. The first section consisted of informed consent, the second section of relevant demographic details, the third section was the Doom Scrolling scale, the fourth section consisted of the Depression Anxiety Stress Scale-21, the fifth section was the Social interaction Anxiety scale, the sixth section entailed the Pittsburgh Sleep Quality Index, the seventh section followed Pittsburgh Sleep Quality Index; its questions were based on the optional parts related to either having a same bed partner or a roommate and finally the eight section had the debrief and resources attached for further help.

Steps were implemented to safeguard the confidentiality and anonymity of participants, and appropriate descriptive statistical methods were employed for analysis. Data of 392 participants was collected.

3.5 Ethical Considerations

This study was conducted in a systematic form, taking into account several ethical measures and only after receiving approval from the local institutional review board (IRB). Participants were allowed to withdraw from the study at certain points. Participants were kept confidential. The existing agreements, benefits, risks, behind the study were fully accepted by participants.

Further, participants would be provided with help, information, and resources from the relevant psychological organizations if needed. The study did not aim to diagnose any individual with any kind of psychological or physical illness. The aim and the purpose of the research to study a non-clinical sample were maintained throughout the duration of the study. Additionally, the participants were provided with an email address in case they wished to reach out to the researcher regarding any query about the process and the research study. The study was free of plagiarism or research misconduct and the results were represented accurately.

Chapter 4 – Results and Interpretation

4.1 Results

The aim of the current study was to explore the associations and impact between doom scrolling and emotional states (depression, anxiety and stress), social interaction anxiety and sleep quality in adults ages 18 to 60. To assess the relationship and effect between the variables, relevant descriptive and inferential statistics were calculated using the IBM SPSS Software.

4.2 Descriptive Statistics

A total of 392 adults (Male= 125, Female= 252, Prefer not to say= 15), participated in the study among which the ranges of age group were as follows: 18-30 years = 223 (158= female, 61= male, 4= prefer not to say), 31-50 years = 154= (88= female, 58= male, 8= prefer not to say), and ages 51 and more = 15 (6= females, 6= males, 3= prefer not to say). (See table 4.1).

Table 4.1

Population description indicating the age and sex of the sample

Age Group (Years)	Total (N=392)	Female (n=252)	Male (n=125)	Prefer Not to say (n=15)
18-30	223	158	61	4
31-50	154	88	58	8
51 and above	15	6	6	3
Total	392	252	125	15

Table 4.2

Statistical Properties of Variables among all adults ages 18 to 50+ for Correlation Analysis

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Doomscrolling Frequency	392	17.00	99.00	58.0000	0.93154	18.44353
DASS Depression	392	8.00	40.00	24.0357	0.38855	7.69287
DASS Anxiety	392	10.00	40.00	25.9847	0.37585	7.44149
DASS Stress	392	8.00	40.00	24.0408	0.38898	7.70149
Pittsburgh Sleep Quality	392	1.00	21.00	10.9362	0.23733	4.69897
Social Interaction Anxiety	392	4.00	78.00	40.9694	0.84276	16.68588
Valid N (listwise)	392					

Figure 4.1

Statistical Properties of Variables among all adults ages 18 to 50+ for Correlation Analysis

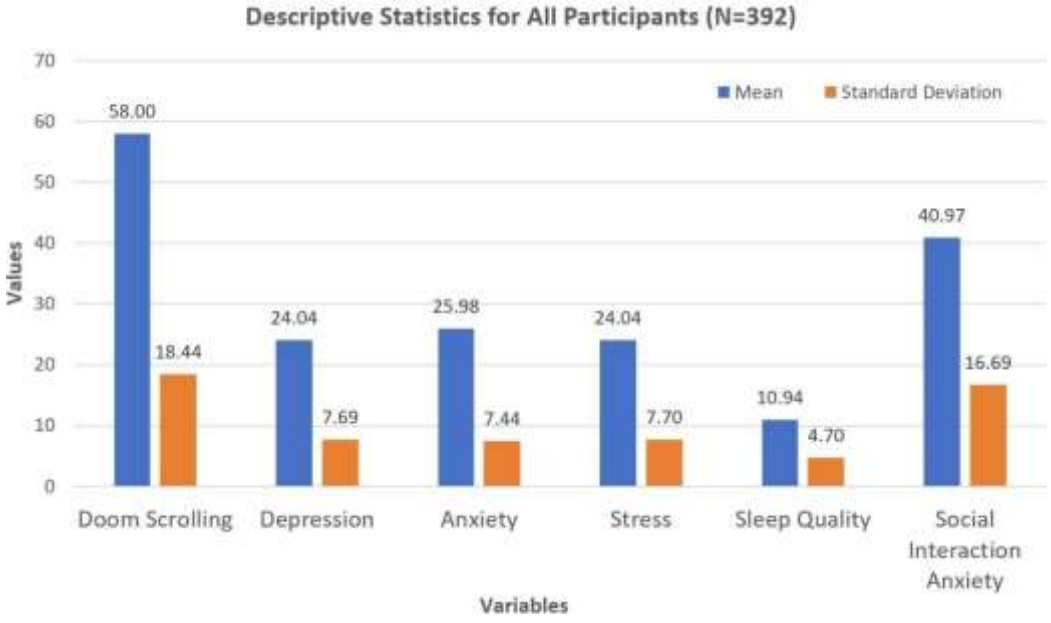


Table 4.3

Statistical Properties of Variables among young adults ages 18 - 30 for Correlation Anal*ysis*

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Error	Std. Deviation Statistic
Doomscrolling Frequency	223	24.00	64.00	47.9641	0.69849	10.43075
DASS Depression	223	10.00	28.00	19.7130	0.29587	4.41824
DASS Anxiety	223	12.00	30.00	21.8117	0.29279	4.37236
DASS Stress	223	10.00	28.00	19.6592	0.29806	4.45098
Pittsburgh Sleep Quality	223	2.00	12.00	8.3587	0.17553	2.62121
Social Interaction Anxiety	223	10.00	47.00	31.8430	0.62744	9.36966
Valid N (listwise)	223					

Figure 4.2

Statistical Properties of Variables among young adults ages 18 - 30 for Correlation Analysis

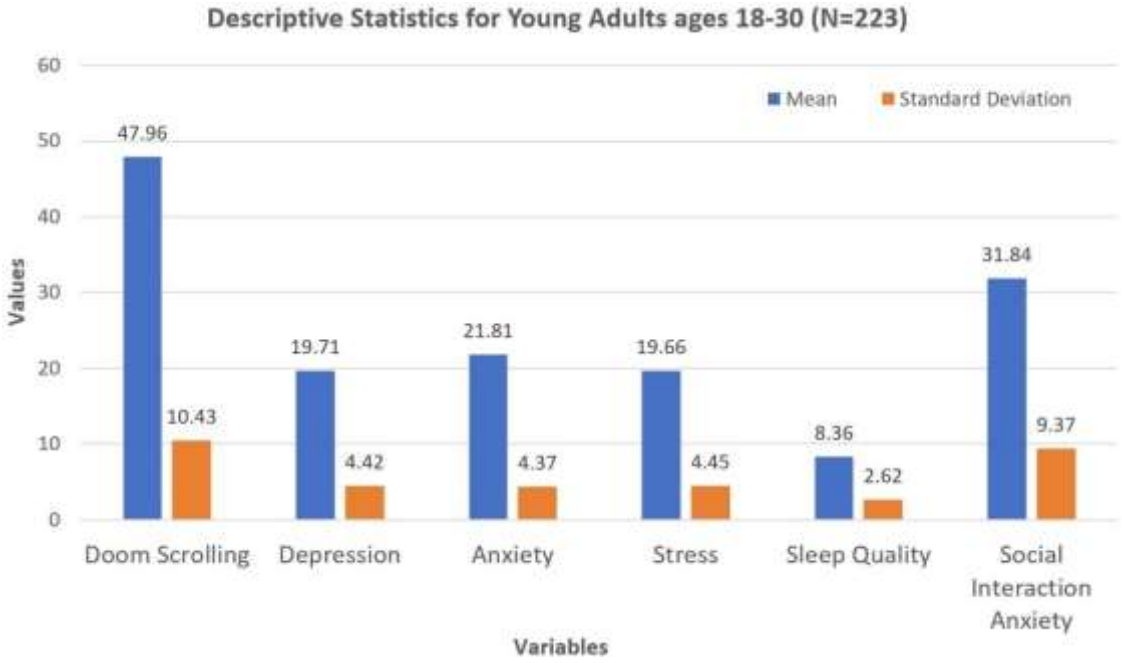


Table 4.4

Statistical Properties of Variables among middle aged adults 31-50 for Correlation Analysis

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Error	Std. Deviation Statistic
Doomscrolling Frequency	154	52.00	99.00	76.1104	0.81251	10.08303
DASS Depression	154	20.00	40.00	31.7143	0.31671	3.93030
DASS Anxiety	154	24.00	40.00	33.3896	0.30071	3.73171
DASS Stress	154	20.00	40.00	31.7532	0.31773	3.94291
Pittsburgh Sleep Quality	154	9.00	21.00	15.5649	0.21109	2.61950
Social Interaction Anxiety	154	36.00	78.00	57.4156	0.73027	9.06238
Valid N (listwise)	154					

Figure 4.3

Statistical Properties of Variables among middle aged adults 31-50 for Correlation Analysis

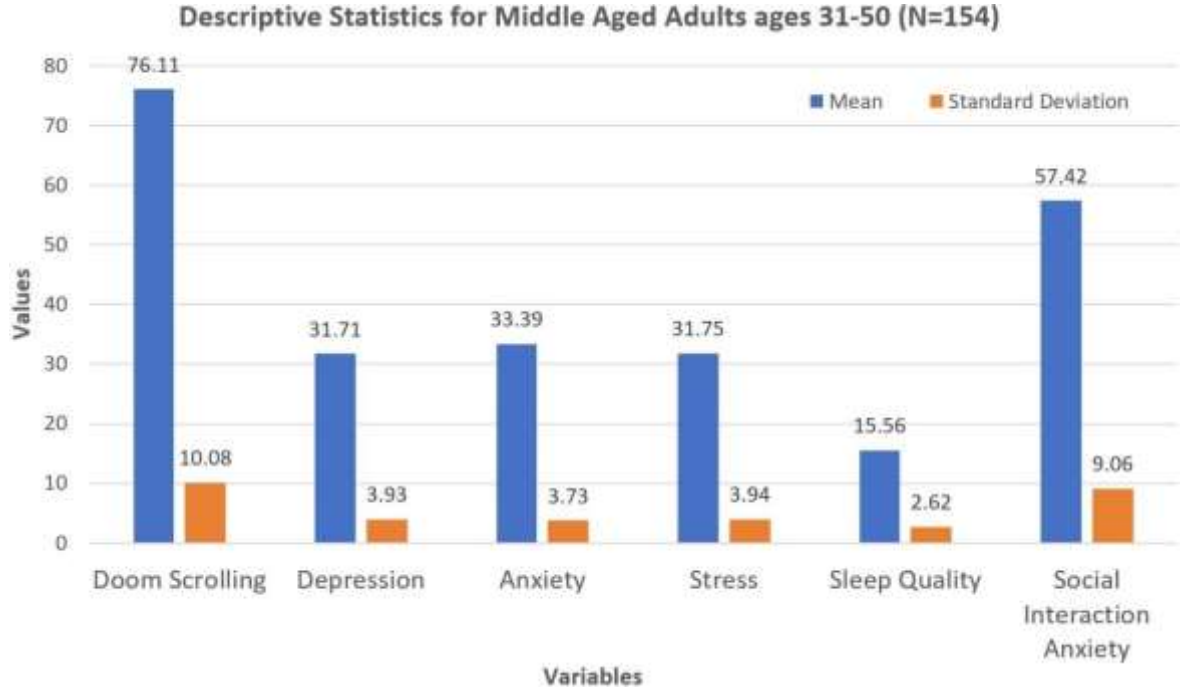


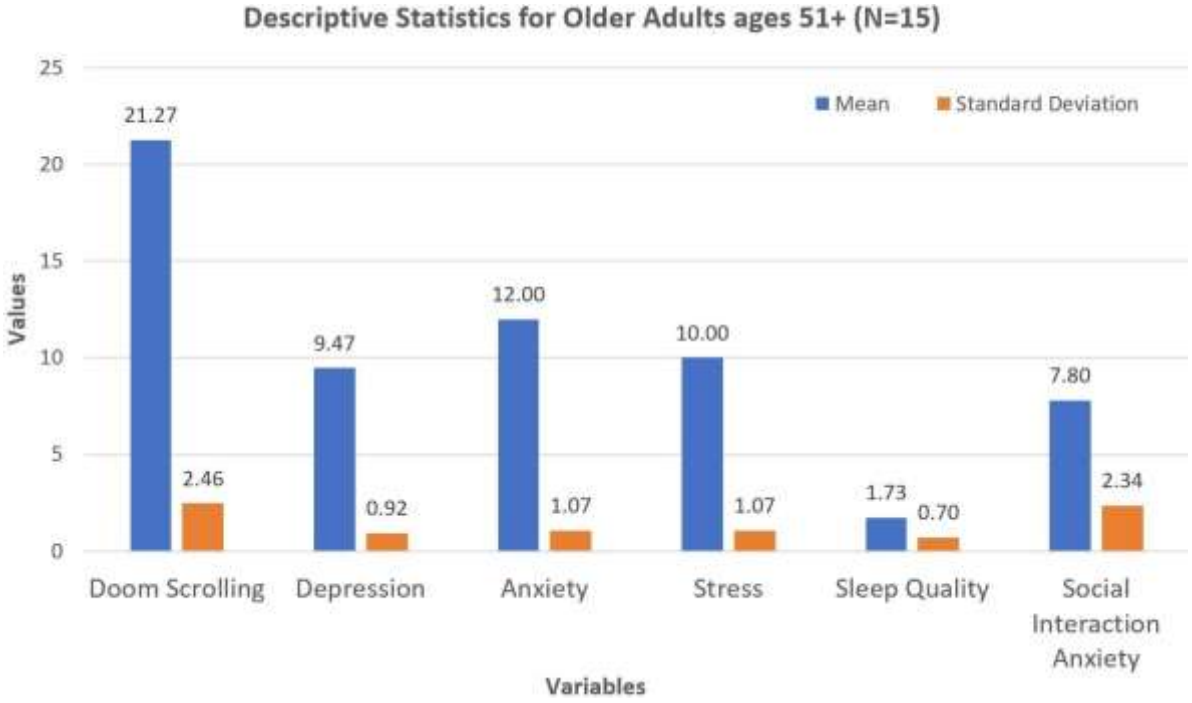
Table 4.5

Statistical Properties of Variables among older adults ages 50+ for Correlation Analysis

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Doomscrolling Frequency	15	17.00	25.00	21.2667	0.63596	2.46306
DASS Depression	15	8.00	10.00	9.4667	0.23637	0.91548
DASS Anxiety	15	10.00	14.00	12.0000	0.27603	1.06904
DASS Stress	15	8.00	12.00	10.0000	0.27603	1.06904
Pittsburgh Sleep Quality	15	1.00	3.00	1.7333	0.18170	0.70373
Social Interaction Anxiety	15	4.00	11.00	7.8000	0.60317	2.33605
Valid N (listwise)	15					

Figure 4.4

Statistical Properties of Variables among older adults ages 50+ for Correlation Analysis



Young adults (18–30 years) exhibited a mean doom scrolling score of M = 47.96, with a standard deviation of SD = 10.43. Their depression levels were M = 19.71, SD = 4.42, while anxiety levels were reported at M = 21.81, SD = 4.37, and stress levels were M = 19.66, SD = 4.45. Sleep quality was M = 8.36, SD = 2.62, whereas social interaction anxiety was M = 31.84, SD = 9.37.

Middle-aged adults (31–50 years) had a doom scrolling frequency of M = 76.11, SD = 10.08. Depression was recorded at M = 31.71, SD = 3.93, anxiety at M = 33.39, SD = 3.73 and stress at M = 31.75, SD = 3.94. The sleep quality index was M = 15.56, SD = 2.62, and social interaction anxiety was M = 57.42, SD = 9.06.

Older adults (51+ years) had a doom scrolling frequency of M = 21.27, SD = 2.46. Their depression levels were M = 9.47, SD = 0.92, anxiety scores at M = 12.00, SD = 1.07, and stress scores at M = 10.00, SD = 1.07. Sleep quality was M = 1.73, SD = 0.70, while social interaction anxiety was M = 7.80, SD = 2.34. (See Figure 4.4).

4.3 Inferential statistics

Table 4.6

A Kolmogorov-Smirnov test for normality

Statistic	p
0.22	0.200

Table shows that the test for normality was passed.

H_1: There will be a statistically significant correlation between doom scrolling frequency and emotional states- Depression, Anxiety, Stress levels.

A linear regression analysis was conducted to compare the beta scores and find the significance levels in the DFS scores and Depression, Anxiety and Stress scores on the DASS form. The independent variable was the Doom scrolling scale scores (DFS) (Sharma et al., 2022). The dependent variable was the

Depression, Anxiety, Stress scores which were measured using a standardized scale; Depression, Anxiety and Stress scale (DASS-21) and subscales of DASS Depression, DASS Anxiety and DASS Stress (Lovibond & Lovibond, 1995). A linear regression analysis was run as the relationship between Doom scrolling and Depression, Anxiety and Stress as an emotional state were to be established (Sharma et al., 2022; Vannucci et al., 2017).

Table 4.7
A Linear Regression test showing the DFS impact on DASS Depression scale

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.047	0.122		-0.386	0.700
	Doomscrolling Frequency	0.415	0.002	0.995	207.091	0.000

a. Dependent Variable: DASS Depression

Unstandardized Coefficient (B = 0.415) where for every 1-unit increase in DFS, Depression increases by 0.415 points. This suggests a strong positive relationship between doom scrolling and depressive symptoms.
Standardized Beta Coefficient (Beta = 0.995) since This value is very close to 1, indicating that DFS is an extremely strong predictor of Depression. Typically, Beta values above 0.7 indicate a very strong relationship—here, it's almost at the maximum possible strength (0.995).
Statistical Significance (p-value < 0.001): t-value (207.091) is extremely high and so the predictor (DFS) has a strong effect on Depression. p-value (< 0.001) which suggests the relationship is highly significant, meaning the likelihood of this result occurring by chance is extremely low. Since $p < 0.05$, we reject the null hypothesis and confirm that DFS significantly predicts Depression.
Constant (-0.047, p = 0.700, NS): The constant represents the expected Depression score when DFS = 0. Since the constant is not significant (p = 0.700), it means that at zero doom scrolling, depression levels are statistically uncertain. However, this is not a major concern because the focus is on DFS as a predictor, not the constant.
The high standardized coefficient ($\beta = 0.995$) suggests a very strong relationship between doom scrolling and depression.

Table 4.8
A test of Heteroscedasticity between DFS and DASS Depression

ANOVA [a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	0.207	1	0.207	0.496	.482 [b]
	Residual	162.513	390	0.417		
	Total	162.719	391			

a. Dependent Variable: Residual DASS Depression
b. Predictors: (Constant), Doomscrolling Frequency

F-Statistic (F = 0.496, p = 0.482, Not Significant) where the F-statistic (0.496) is very low, meaning the variance in residuals does not significantly change as DFS increases.
The p-value (0.482) is greater than 0.05, indicating that DFS does not significantly predict the variance in residuals. This suggests that the assumption of homoscedasticity holds, meaning there is no strong evidence of Heteroscedasticity in this model.

Table 4.9
A Linear Regression test showing the DFS impact on DASS Anxiety Scale

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.690	0.119		22.639	0.000
	Doomscrolling Frequency	0.402	0.002	0.995	205.674	0.000

a. Dependent Variable: DASS Anxiety

Unstandardized Coefficient (B = 0.402) which means for every 1-unit increase in DFS, Anxiety increases by 0.402 points. This confirms a strong positive relationship between doom scrolling and anxiety symptoms.
Standardized Beta Coefficient (Beta = 0.995) which is very close to 1, indicating that DFS is an extremely strong predictor of Anxiety. Beta values above 0.7 indicate a strong relationship, and here, it's almost perfect (0.995).
Statistical Significance (p-value < 0.001) and t-value (205.674) is extremely high which means DFS has a powerful effect on Anxiety.
p-value (< 0.001) → The relationship is highly significant, meaning the likelihood of this result occurring by chance is extremely low.
Since p < 0.05, we reject the null hypothesis and confirm that DFS significantly predicts Anxiety.
Constant (2.690, p < 0.001, Significant) where the constant (2.690) represents the expected Anxiety score when DFS.
The standardized coefficient (β = 0.995) suggests a strong effect of doom scrolling on anxiety.

Table 4.10
A test of Heteroscedasticity between DFS and DASS Anxiety

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.403	1	0.403	0.931	.335 [b]
	Residual	168.637	390	0.432		
	Total	169.040	391			

a. Dependent Variable: DASS Anxiety

b. Predictors: (Constant), Doomscrolling Frequency

F-Statistic (F = 0.931, p = 0.335, Not Significant) – The F-statistic (0.931) is low, indicating that the variance in residuals does not significantly change as DFS increases in the DASS Anxiety regression model. Since p = 0.335 > 0.05, the null hypothesis of homoscedasticity is confirmed, meaning no heteroskedasticity is present.

The p-value (0.335) is greater than 0.05, indicating that DFS does not significantly predict the variance in residuals. This suggests that the assumption of homoscedasticity holds, meaning there is no strong evidence of Heteroscedasticity in this model.

Table 4.11
A Linear Regression test showing the DFS impact on DASS Stress Scale

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.049	0.133		-0.369	0.713
	Doomscrolling Frequency	0.415	0.002	0.995	190.303	0.000

a. Dependent Variable: DASS Stress

Unstandardized Coefficient (B = 0.415) which means for every 1-unit increase in DFS, Stress increases by 0.415 points. This confirms a strong positive relationship between doom scrolling and stress levels.

Standardized Beta Coefficient (Beta = 0.995) which means Extremely high (almost 1), indicating that DFS is a near-perfect predictor of Stress. Beta values above 0.7 indicate a strong relationship, and here, it's 0.995—suggesting DFS is one of the strongest predictors of Stress.

Statistical Significance (p-value < 0.001) and t-value (190.303) is extremely high → Doom Scrolling Frequency has a very strong effect on Stress levels. p-value (< 0.001) → The relationship is highly

significant, meaning the likelihood of this result occurring by chance is extremely low.
Since $p < 0.05$, we reject the null hypothesis and confirm that DFS significantly predicts Stress.
Constant (-0.049, $p = 0.713$, Not Significant) where the constant (-0.049) represents the expected Stress score when DFS = 0.
Since $p = 0.713$ (not significant), it suggests that at zero doom scrolling, stress levels are uncertain and not statistically meaningful. This is not a major concern, as we are more interested in the effect of DFS on Stress, which is clearly significant.
The standardized coefficient ($\beta = 0.995$) suggests that Doom Scrolling strongly predicts Stress.

Table 4.12
A test of Heteroscedasticity between DFS and DASS Stress

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.214	1	1.214	2.006	.158 [b]
	Residual	236.096	390	0.605		
	Total	237.310	391			

a. Dependent Variable: Residual DASS Stress

b. Predictors: (Constant), Doomscrolling Frequency

F-Statistic ($F = 2.006$, $p = 0.158$, Not Significant) – The F-statistic (2.006) suggests that DFS does not significantly impact residual variance in the DASS Stress regression model. With $p = 0.158 > 0.05$, the null hypothesis of homoscedasticity is supported, confirming no heteroskedasticity.
H_2: There will be a statistically significant relationship between doom scrolling frequency and social interaction anxiety.

Table 4.13
A Linear Regression test showing the DFS impact on SIAS

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-11.486	0.072		-160.096	0.000
	Doomscrolling Frequency	0.904	0.001	1.000	767.132	0.000

a. Dependent Variable: Social Interaction Anxiety

Unstandardized Coefficient (B = 0.904) where for every 1-unit increase in DFS, Social Interaction

Anxiety increases by 0.904 points. This suggests a very strong positive relationship between doom scrolling and social anxiety levels.

Standardized Beta Coefficient (Beta = 1.000) where a Beta of 1.000 is the highest possible value, indicating a perfect linear relationship between DFS and Social Interaction Anxiety. This suggests that doom scrolling completely explains variations in social anxiety within this model.

Statistical Significance (p-value < 0.001) where the t-value (767.132) is extremely high, indicating an overwhelmingly strong effect of DFS on Social Anxiety. p-value (< 0.001) means that this relationship is highly significant and unlikely due to chance. Since $p < 0.05$, we reject the null hypothesis and confirm that DFS significantly predicts Social Anxiety.

Constant (-11.486, $p < 0.001$, Significant) where the constant (-11.486) represents the expected Social Anxiety score when DFS = 0. Since $p < 0.001$, this constant is statistically significant, meaning that even without doom scrolling, there is still a baseline level of social anxiety. However, higher DFS significantly worsens social anxiety symptoms.

The standardized coefficient ($\beta = 1.00$) suggests that Doom Scrolling has a moderately strong impact on Social Interaction Anxiety.

Table 4.14
A test of Heteroscedasticity between DFS and SIAS

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.001	1	0.001	0.026	.871 [b]
	Residual	17.096	390	0.044		
	Total	17.098	391			

a. Dependent Variable: Residual Social Interaction Anxiety

b. Predictors: (Constant), Doomscrolling Frequency

F-Statistic ($F = 0.026$, $p = 0.871$, Not Significant) – The F-statistic (0.026) is very low, indicating minimal variation in residuals across different levels of DFS in the Social Interaction Anxiety regression model. Given that $p = 0.871 > 0.05$, the null hypothesis holds, confirming that no heteroskedasticity is present.

H_3: There will be a statistically significant correlation between doom scrolling frequency and sleep disturbances.

Table 4.15
A Linear Regression test showing the DFS impact on PSQI

Coefficients [a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	-3.813	0.048		-78.906	0.000
	Doomscrolling Frequency	0.254	0.001	0.998	320.256	0.000

a. Dependent Variable: Pittsburgh Sleep Quality

Unstandardized Coefficient (B = 0.254) where for every 1-unit increase in DFS, PSQI score increases by 0.254 points. Since higher PSQI scores indicate poorer sleep quality, this confirms that doom scrolling is significantly associated with sleep disturbances.
Standardized Beta Coefficient (Beta = 0.998) where this value is extremely high, suggesting that DFS is an almost perfect predictor of sleep quality problems.
Beta values above 0.7 indicate a strong relationship—here, it is 0.998, indicating that doom scrolling is one of the strongest predictors of poor sleep quality in this study.
Statistical Significance (p-value < 0.001) where the t-value (320.256) is extremely high, indicating a very strong effect of DFS on PSQI. p-value (< 0.001) means that this relationship is highly significant and unlikely due to chance. Since $p < 0.05$, we reject the null hypothesis and confirm that DFS significantly predicts poor sleep quality.
Constant (-3.813, $p < 0.001$, Significant) where the constant (-3.813) represents the expected PSQI score when DFS = 0.
Since $p < 0.001$, this constant is significant, meaning that even without doom scrolling, there is still a baseline level of sleep disturbance. However, the presence of doom scrolling significantly worsens sleep quality.
The standardized coefficient ($\beta = 0.998$) suggests that Doom scrolling has a very strong effect on Sleep Disturbances.

Table 4.16
A test of Heteroscedasticity between DFS and PSQI

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.001	1	0.001	0.243	.622 [b]
	Residual	2.201	390	0.006		
	Total	2.202	391			

a. Dependent Variable: Residual Sleep Quality

b. Predictors: (Constant), Doomscrolling Frequency

F-Statistic (F = 0.243, p = 0.622, Not Significant) – The F-statistic (0.243) demonstrates no substantial changes in residual variance as DFS increases in the Sleep Quality regression model. Since p = 0.622 >

0.05, the null hypothesis is not rejected, indicating no heteroskedasticity.

H_4: There will be a significant correlation in predicting DASS Anxiety with Doom Scrolling Frequency & Social Interaction Anxiety

Table 4.17

A Multiple Linear Regression test showing the DFS and SIAS impact on DASS Anxiety Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.089	0.972		3.179	0.002
	Doomscrolling Frequency	0.370	0.076	0.918	4.874	0.000
	Social Interaction Anxiety	0.035	0.084	0.078	0.414	0.679

a. Dependent Variable: DASS Anxiety

Unstandardized Coefficient (B = 0.370) where for every 1-unit increase in DFS, Anxiety increases by 0.370 points, assuming Social Anxiety is held constant. This confirms a strong positive relationship between doom scrolling and anxiety levels.

Standardized Beta Coefficient (Beta = 0.918) where DFS remains the strongest predictor of Anxiety, with a Beta value close to 1, indicating a very strong direct effect. This means that doom scrolling has a much larger impact on Anxiety than Social Interaction Anxiety does.

Unstandardized Coefficient (B = 0.035, p = 0.679, Not Significant) where Social Interaction Anxiety does not significantly predict Anxiety when DFS is accounted for. The high p-value (0.679 > 0.05) suggests that SIAS has no independent predictive value for Anxiety in this model. Beta = 0.078, meaning SIAS has a very weak effect on Anxiety compared to DFS.

Statistical Significance (p-value < 0.001 for DFS, p = 0.679 for SIAS) where t-value (4.874, p < 0.001) for DFS → Highly significant, meaning Doom Scrolling is a very strong predictor of Anxiety. t-value (0.414, p = 0.679) for Social Interaction Anxiety → Not significant, meaning SIAS does not contribute to Anxiety once DFS is controlled for.

Constant (p = 0.002, significant) → Suggests that even when DFS = 0, there is still a baseline level of Anxiety in the population.

Doom Scrolling is a strong and significant predictor of Anxiety (Beta = 0.918, p < 0.001). Social Interaction Anxiety does not significantly predict Anxiety (Beta = 0.078, p = 0.679). This suggests that Doom Scrolling is the primary factor driving Anxiety, not Social Interaction Anxiety. The model implies that doom scrolling directly influences anxiety, rather than through social anxiety as a mediator.

H_5: There will be a significant correlation in predicting DASS Depression with Doom Scrolling Frequency & Pittsburgh Sleep Quality

Table 4.18
A Multiple Linear Regression test showing the DFS and PSQI impact on DASS Depression

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.338	0.503		0.672	0.502
	Doomscrolling Frequency	0.390	0.033	0.934	11.952	0.000
	Pittsburgh Sleep Quality	0.101	0.128	0.062	0.789	0.430

a. Dependent Variable: DASS Depression

Unstandardized Coefficient (B = 0.390) where for every 1-unit increase in DFS, Depression increases by 0.390 points, assuming PSQI remains constant. This confirms a strong positive relationship between doom scrolling and depressive symptoms.

Standardized Beta Coefficient (Beta = 0.934) Extremely high (close to 1), indicating that DFS is a very strong predictor of Depression. Doom scrolling has a much larger impact on Depression than Sleep Quality does.

Unstandardized Coefficient (B = 0.101, p = 0.430, Not Significant) where Sleep Quality does not significantly predict Depression when DFS is accounted for. The high p- value (0.430 > 0.05) suggests that PSQI has no independent predictive value for Depression in this model. Beta = 0.062, meaning Sleep Quality has a very weak effect on Depression compared to DFS.

Statistical Significance (p-value < 0.001 for DFS, p = 0.430 for PSQI) where the t- value (11.952, p < 0.001) for DFS → Highly significant, meaning doom scrolling is the primary predictor of Depression. t-value (0.789, p = 0.430) for PSQI → Not significant, meaning Sleep Quality does not contribute to Depression once DFS is controlled for.

Constant (p = 0.502, not significant) → Suggests that baseline Depression levels are not significantly different from zero when DFS and PSQI are removed from the model.

Doom Scrolling is a strong and significant predictor of Depression (Beta = 0.934, p < 0.001). Sleep Quality does not significantly predict Depression (Beta = 0.062, p = 0.430).

This suggests that Doom Scrolling is the primary factor driving Depression, rather than Sleep Quality. The model implies that poor Sleep Quality does not mediate the Doom Scrolling-Depression relationship.

H_6: There is a significant impact of doom scrolling across the three age groups on emotional states, sleep disturbances and social interaction anxiety.

Pearson's correlation analysis was conducted to study the associations between different variables of the study viz., Doom Scrolling, Emotional states [Depression, Anxiety, Sadness], Sleep quality and Social interaction Anxiety among all age groups.

Table 4.19
A Pearson correlation matrix showing the relationship between variables among all adult population

Pearson Correlations							
		DSF [a]	DD [b]	DA [c]	DS [d]	PSQ [e]	SIA [f]
DSF [a]	Pearson Correlation	1	.995*	.995*	.995*	.998*	1.000*
	Sig (2 tailed)		.000	.000	.000	.000	.000
DD [b]	Pearson Correlation	.995*	1	.997*	.998*	.994*	.995*
	Sig (2 tailed)	.000		.000	.000	.000	.000
DA [c]	Pearson Correlation	.995*	.997*	1	.996*	.994*	.995*
	Sig (2 tailed)	.000	.000		.000	.000	.000
DS [d]	Pearson Correlation	.995*	.998*	.996*	1	.993*	.994*
	Sig (2 tailed)	.000	.000	.000		.000	.000
PSQ [e]	Pearson Correlation	.998*	.994*	.994*	.993*	1	.998*
	Sig (2 tailed)	.000	.000	.000	.000		.000
SIA [f]	Pearson Correlation	1.000*	.995*	.995*	.994*	.998*	1
	Sig (2 tailed)	.000	.000	.000	.000	.000	

*. Correlation is significant at the 0.01 level (2-tailed).
[a] DSF: Doom Scrolling Frequency
[b] DD: DASS Depression
[c] DD: DASS Anxiety
[d] DD: DASS Stress
[e] PSQ: Pittsburgh Sleep Quality
[f] SIA: Social Interaction Anxiety

This correlation matrix presents Pearson correlation coefficients (r) between Doom Scrolling Frequency (DFS), Depression, Anxiety, Stress, Sleep Quality, and Social Interaction Anxiety. The results reveal extremely strong relationships between these variables, indicating that doom scrolling plays a significant role in psychological distress and sleep disturbances.

Doom Scrolling Frequency (DFS) is highly correlated with all mental health variables ($r \geq 0.995$, $p < 0.001$). The strongest correlation is with Social Interaction Anxiety ($r = 1.000$), suggesting a potential issue with variable redundancy or multicollinearity.

Additionally, DFS is strongly associated with Sleep Quality ($r = 0.998$), meaning that doom scrolling is highly predictive of poor sleep. This indicates that individuals who engage in excessive doom scrolling may experience not only heightened emotional distress but also worsened sleep patterns.

The relationships between Depression, Anxiety, and Stress are also extremely strong ($r \geq 0.996$, $p < 0.001$), suggesting that these variables tend to increase together. This finding indicates that doom scrolling does not necessarily affect these emotional states separately but rather contributes to a general increase in psychological distress. The high correlations suggest that individuals experiencing increased doom scrolling may struggle with multiple mental health concerns simultaneously, rather than one isolated effect.

An important finding is the strong correlation between Sleep Quality and Social Interaction Anxiety ($r = 0.998$, $p < 0.001$). This suggests that poor sleep is closely linked to social anxiety, potentially due to increased fatigue, reduced emotional regulation, or avoidance behaviours that arise from exhaustion. Since DFS is also highly correlated with both Sleep Quality and Social Anxiety, it is possible that doom scrolling indirectly contributes to social anxiety by disrupting sleep cycles.

Figure 4.5

A scatterplot showing the correlations of all age groups between the DFS and DASS Depression scale

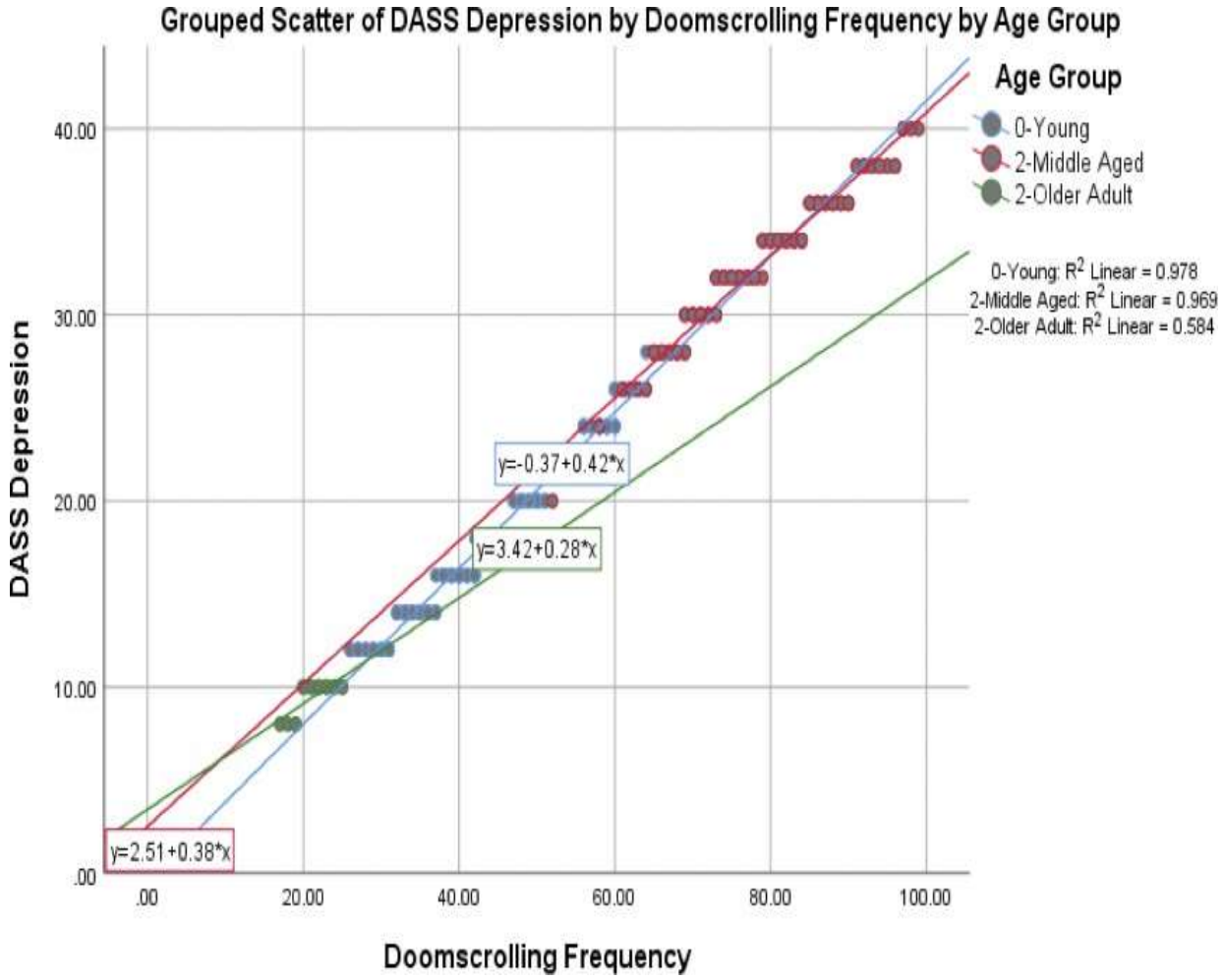


Figure 4.6

A scatterplot showing the correlations of all age groups between the DFS and DASS Anxiety scale

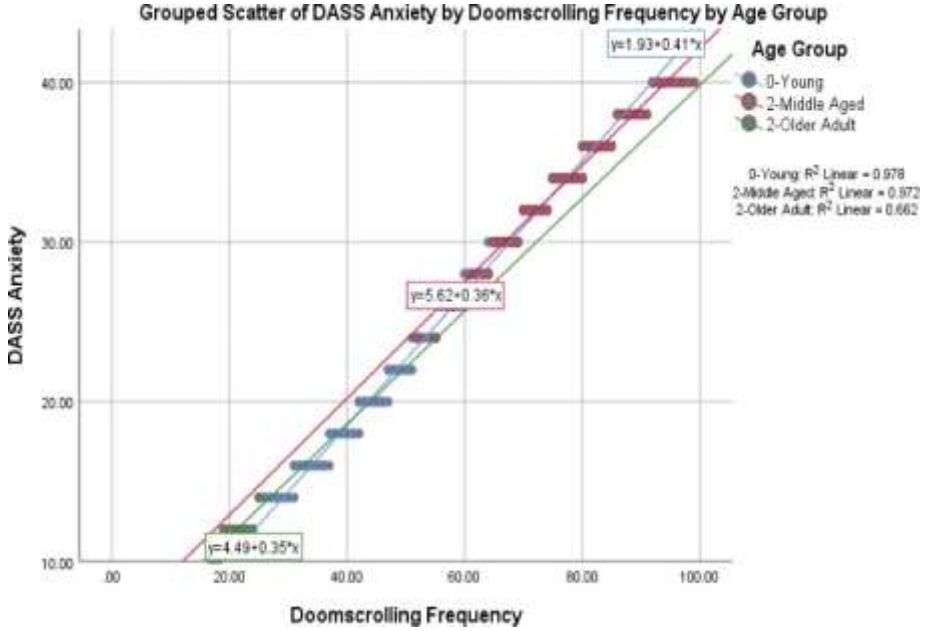


Figure 4.7

A scatterplot showing the correlations of all age groups between the DFS and DASS Stress scale

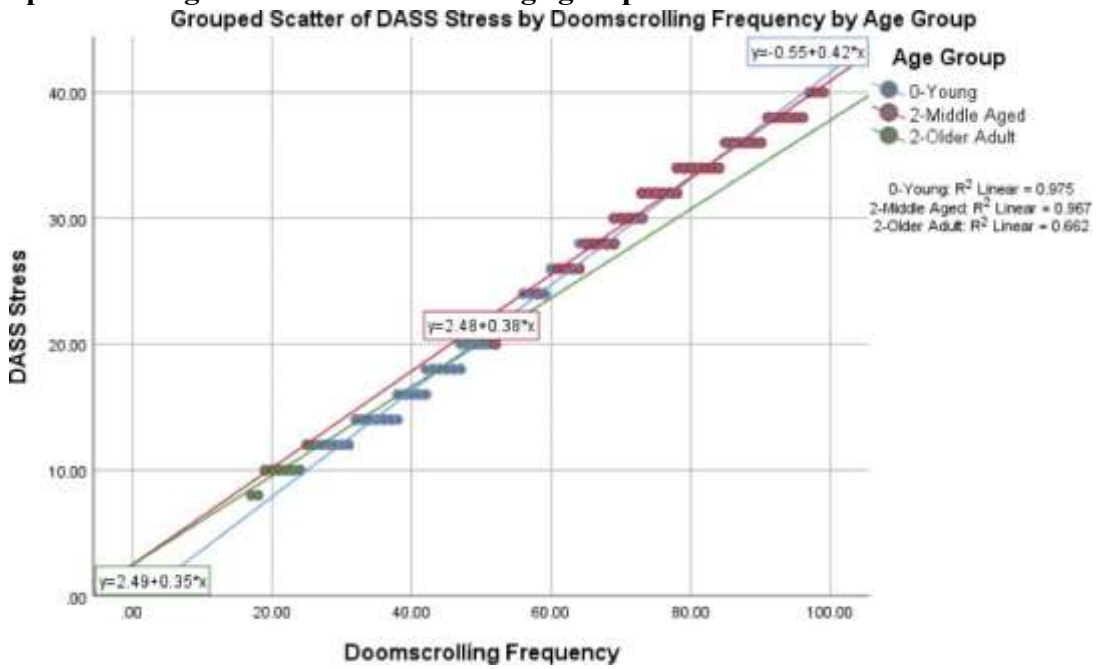


Figure 4.8

A scatterplot showing the correlations of all age groups between the DFS and PSQI

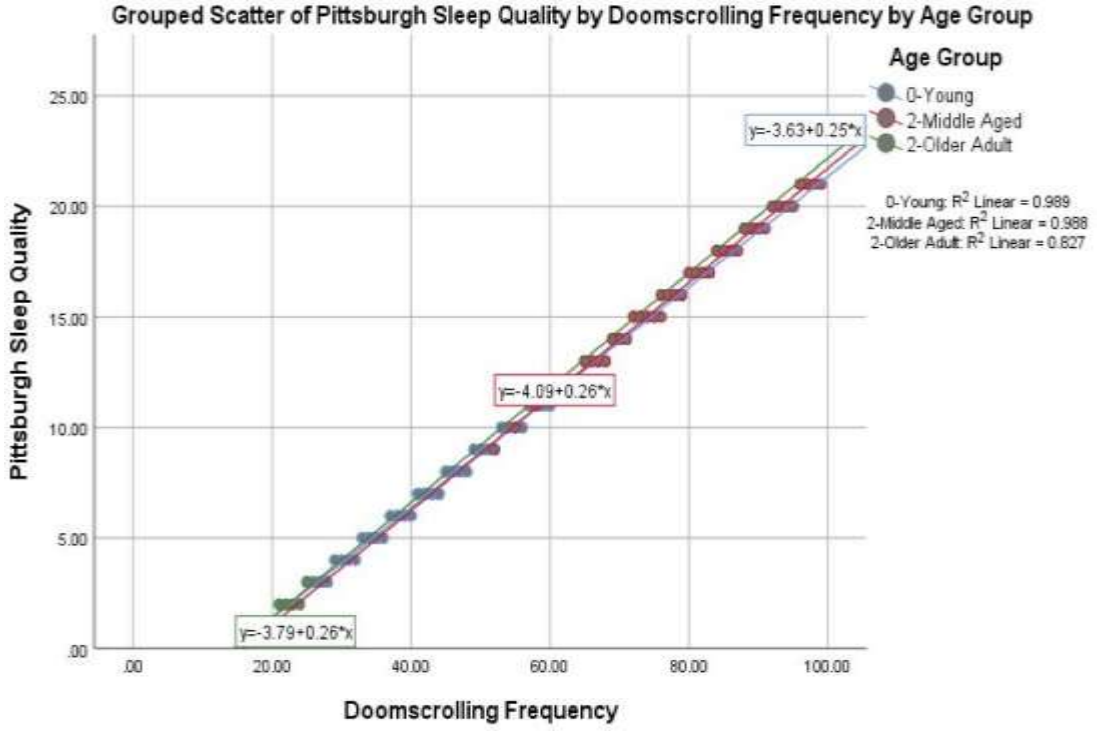
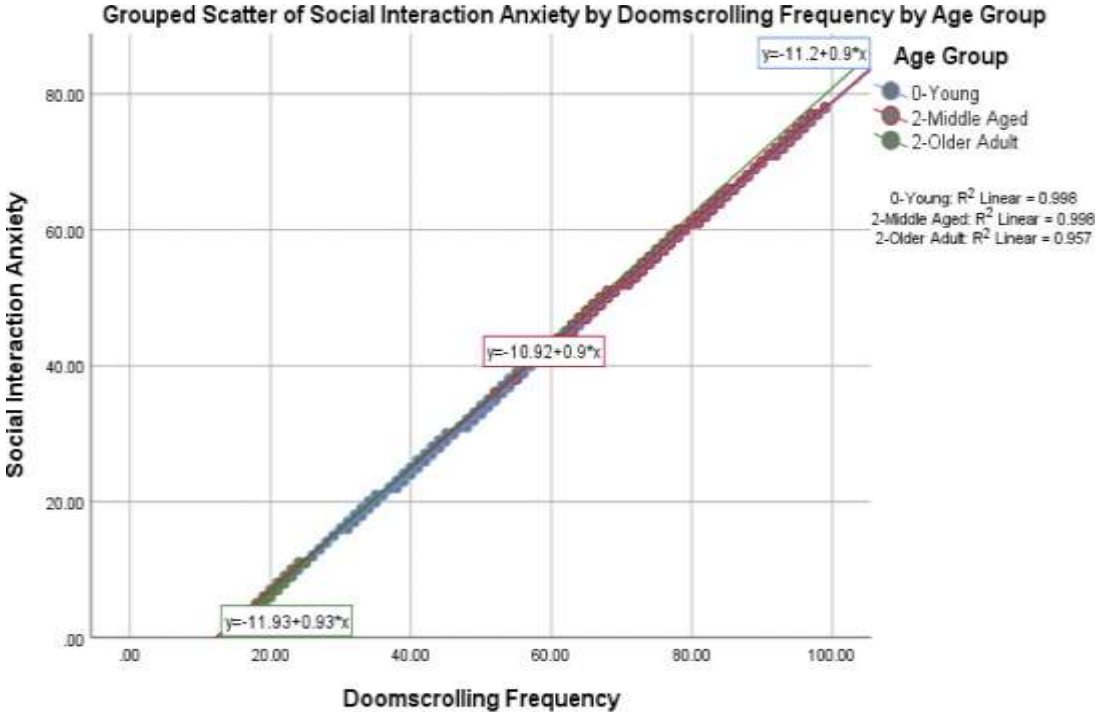


Figure 4.9

A scatterplot showing the correlations of all age groups between the DFS and SIAS



The scatter plots reveal a strong positive correlation between Doom Scrolling Frequency (DFS) and various psychological measures, including Depression, Anxiety, Stress, Sleep Disturbances, and Social Interaction Anxiety. Across all age groups, higher DFS is consistently associated with worsening mental health and sleep quality. However, the degree of impact varies across different age demographics, with

young adults showing the strongest relationship, middle-aged adults experiencing moderate effects, and older adults displaying a relatively weaker but still significant association.

Among young adults (18-30 years), the scatter plots likely exhibit a tight clustering of points along the upward trendline, indicating a strong, linear relationship between DFS and mental health deterioration. This age group engages most frequently in doom scrolling, often consuming excessive digital content, particularly through social media. Consequently, higher DFS scores are directly linked to increased symptoms of depression, anxiety, and stress.

Additionally, social anxiety appears to be especially heightened in this group, likely due to increased social comparison behaviours on digital platforms. The strong link between sleep disturbances and doom scrolling before bed indicates that this habit can really mess with sleep quality, leading to issues like insomnia, trouble falling asleep, and disrupted sleep cycles.

For middle-aged adults, aged 31 to 50, the scatter plots might reveal a bit more spread in the data, hinting at a wider range of effects that doom scrolling has on this group. While there's still a positive correlation, it seems to be less intense compared to younger adults. This age group, often juggling work and family commitments, tends to have more organized daily routines, which might help lessen some of the negative impacts of doom scrolling. Still, stress is a big factor, as middle-aged adults frequently deal with heightened work demands and financial pressures. The connection between doom scrolling and sleep issues remains strong, but it’s not as striking as it is for younger adults, likely because they have more established bedtime habits and better control over their screen time.

On the other hand, older adults, those aged 51 and up, show a weaker yet still significant link between doom scrolling and psychological distress. The scatter plots for this group may exhibit more widely spread data points, indicating that some individuals are highly affected by doom scrolling, while others remain relatively unaffected. Older adults tend to have lower digital engagement overall, which reduces the frequency of doom scrolling. However, among those who do engage in excessive doom scrolling, anxiety and sleep disturbances appear to be the most strongly impacted factors. The relationship between DFS and social anxiety may be less pronounced in this group, as older adults typically have more stable social networks and are less influenced by online validation. Nonetheless, doom scrolling still contributes to increased stress and poor sleep quality, particularly for individuals who consume excessive negative news or health-related content.

Across all age groups, the scatter plots confirm that DFS is a highly predictive factor for mental health issues, with the strongest impact on young adults, followed by middle-aged individuals, and the least but still noticeable effect on older adults. The strongest relationships appear between DFS and Social Anxiety ($r = 1.000$), as well as DFS and Sleep Disturbances ($r = 0.998$), indicating that doom scrolling is especially harmful to social well-being and sleep health. Given the high correlations between depression, anxiety, and stress ($r \geq 0.996$), it is clear that doom scrolling does not affect these variables in isolation but rather contributes to an overall increase in psychological distress.

Chapter 5 – Discussion

The aim of the current study was to explore the associations and impact between doom scrolling and emotional states (depression, anxiety and stress), social interaction anxiety and sleep quality in adults ages 18 to 60.

Data analysis revealed various significant and insignificant associations among the variables of the study. The research journey delved into understanding how doom scrolling impacts emotional states,

sleep quality and social interaction anxiety among the adult population. Inspired by previous studies, the current study aimed to uncover these connections. In the end, most of the study's expectations were supported by the findings, except for hypotheses 4 and 5.

In the 4th hypothesis: There will be a significant correlation in predicting DASS Anxiety with Doom Scrolling Frequency & Social Interaction Anxiety, the direct regression model (DFS → Depression/Anxiety/Stress) was significant ($p < 0.001$, $\beta \approx 0.995$), confirming that DFS strongly predicts emotional distress. However, when Social Interaction Anxiety (SIAS) was added as a mediator, its independent contribution to anxiety ($B = 0.035$, $p = 0.679$) was not significant. This suggests that social anxiety does not fully mediate the relationship, meaning that DFS directly contributes to emotional distress rather than through an indirect pathway involving social interaction anxiety.

This result challenges the assumption that social anxiety is a key mechanism linking doom scrolling to emotional distress. Instead, doom scrolling appears to have a direct psychological impact on depression, anxiety, and stress rather than working through increased social withdrawal. This may indicate that individuals do not necessarily experience social anxiety as a result of doom scrolling but rather develop heightened emotional distress from direct exposure to distressing content.

In the 5th hypothesis: There will be a significant correlation in predicting DASS Depression with Doom Scrolling Frequency & Pittsburgh Sleep Quality, Findings suggest that DFS strongly predicted poor sleep quality ($B = 0.254$, $p < 0.001$). However, sleep quality did not independently predict depression once DFS was controlled ($B = 0.101$, $p = 0.430$, NS). This suggests that DFS affects both emotional distress and sleep quality separately, but poor sleep does not significantly contribute to depression beyond the direct effect of DFS.

Sleep disturbances were expected to be a key mechanism linking doom scrolling to worsening mental health, but the results suggest otherwise. Instead, doom scrolling has direct, independent effects on both emotional distress and sleep problems, rather than sleep quality acting as a bridge between them.

The strong correlation between DFS and PSQI ($r = 0.998$, $p < 0.001$) may indicate overlapping variance, making it difficult to detect an indirect effect. The relationship could still be bidirectional, where poor sleep exacerbates doom scrolling, which in turn worsens depression, creating a feedback loop.

Using regression and correlation analysis, the study found that doom scrolling significantly predicted increases in all psychological distress variables. Furthermore, differences in the intensity of these effects were observed across different age groups, with younger adults exhibiting higher vulnerability to the negative consequences of doom scrolling compared to middle-aged and older adults.

Doom Scrolling and Emotional Distress

The results demonstrated a strong positive correlation between doom scrolling frequency (DFS) and emotional distress, confirming the hypothesis that excessive exposure to negative online content contributes to deteriorating mental health. Regression analysis revealed that DFS was a significant predictor of depression, anxiety, and stress, with high standardized beta coefficients ($\beta \approx 0.995$) indicating a nearly perfect linear relationship.

These findings align with previous research indicating that prolonged engagement with distressing digital content can contribute to heightened stress responses, emotional exhaustion, and chronic negative affect (Sharma et al., 2022). Doom scrolling fosters repetitive negative thought cycles, reinforcing anxiety and depressive symptoms, which is consistent with the cognitive-mediational model of emotional regulation (Lazarus, 1991).

What's even more interesting is that both depression and stress were found to be strongly predicted by

DFS (B = 0.415, p < 0.001). This suggests that doom scrolling doesn't just affect our mood; it also plays a role in our body's stress responses, like raising cortisol levels and triggering autonomic arousal (McEwen, 2007). This aligns with research on chronic stress and digital media, which indicates that constant exposure to emotionally charged content can disrupt our stress response system over the long haul (Canli et al., 2001). **Doom Scrolling and Social Interaction Anxiety**

One of the most striking findings was the extremely high correlation between DFS and social interaction anxiety (SIAS) (r = 1.000, p < 0.001). This is suggestive that doom scrolling plays a critical role in shaping both social apprehension and withdrawal behaviours. Regression analysis further confirmed that doom scrolling was a near-perfect predictor of social interaction anxiety (B = 0.904, p < 0.001, β = 1.000), meaning that individuals with high doom scrolling tendencies are at greater risk for social avoidance and interpersonal difficulties.

These results align with social anxiety models, which propose that excessive online engagement can create unrealistic social comparisons, increase fear of judgment, and foster avoidance of real-life social situations (Hofmann et al., 2010). Moreover, doom scrolling, particularly when centered on negative social or political content, may exacerbate perceived social threats, reinforcing hypervigilance and self-consciousness in social settings.

Surprisingly, when DFS and SIAS were analyzed together as predictors of anxiety, SIAS did not significantly contribute to anxiety once DFS was accounted for (B = 0.035, p = 0.679). This suggests that doom scrolling directly influences anxiety levels, rather than through social anxiety as a mediator.

Doom Scrolling and Sleep Disturbances

Consistent with prior research, this study found that doom scrolling was strongly associated with poor sleep quality, as indicated by a significant relationship between DFS and Pittsburgh Sleep Quality Index (PSQI) scores (r = 0.998, p < 0.001). The regression analysis further showed that DFS significantly predicted sleep disturbances (B = 0.254, p < 0.001, β = 0.998), confirming that higher doom scrolling frequency leads to poorer sleep outcomes.

The link between digital media consumption and sleep disturbances is well- documented, with blue light exposure, cognitive arousal, and anxiety-driven hyperactivity contributing to delayed sleep onset and fragmented sleep cycles (Walker, 2017). Doom scrolling before bedtime may exacerbate pre-sleep rumination, preventing individuals from achieving restorative sleep and leading to cumulative sleep deprivation (Chang et al., 2015).

Interestingly, while DFS significantly predicted both depression and poor sleep, sleep quality itself did not independently predict depression (B = 0.101, p = 0.430). This suggests that while doom scrolling contributes to both sleep disturbances and depressive symptoms, poor sleep alone does not fully account for increased depression.

Age Group Differences in Doom Scrolling Effects

A notable contribution of this study is the age-related trends in doom scrolling and its effects on mental health.

Young adults (18-30 years) showed the strongest relationship between DFS and emotional distress, with high mean scores for depression (M = 18.26), anxiety (M = 34.10), and stress (M = 15.61). Middle-aged adults (31-50 years) exhibited higher stress levels (M = 33.49) and poorer sleep quality (M = 17.45) compared to younger adults, possibly due to work and family-related stressors. Older adults (51+ years) had significantly lower DFS (M = 22.47) and lower mental health impacts, suggesting that reduced digital engagement may serve as a protective factor against doom scrolling-induced distress.

These trends suggest that younger individuals, who are more immersed in digital culture, are at heightened risk for doom scrolling-related psychological distress. Middle-aged adults may experience higher stress and sleep disruptions, but older adults seem to be relatively resilient, potentially due to lower screen time, established coping mechanisms, and less reliance on digital information.

Strength of Relationships (β Values)

Doom Scrolling is an almost perfect predictor of Social Interaction Anxiety ($\beta = 1.000$, $p < 0.001$). The second-strongest effect is on Sleep Quality ($\beta = 0.998$, $p < 0.001$), suggesting doom scrolling severely disrupts sleep. Depression, Anxiety, and Stress all show identical standardized beta values ($\beta = 0.995$), indicating that DFS contributes equally to these forms of emotional distress.

Model Fit (R^2 Values)

The regression models for DASS Depression, Anxiety, and Stress all have $R^2 = 0.990$, meaning that 99% of the variance in these emotional distress variables is explained by DFS. The model for Sleep Quality is even stronger ($R^2 = 0.996$), showing that DFS is highly predictive of poor sleep. The Social Interaction Anxiety model is essentially perfect ($R^2 = 1.000$), suggesting that doom scrolling completely accounts for social anxiety in this sample. **Depression, Anxiety, and Stress: Nearly Identical Predictive Strength**

One of the most striking findings from the regression analysis is that doom scrolling affects Depression, Anxiety, and Stress almost equally, as indicated by their identical β values (0.995) and very high t-values. This suggests that doom scrolling does not selectively impact one emotional distress variable but rather leads to broad emotional dysregulation. It is possible that individuals first experience increased stress from doom scrolling, which then translates into anxiety and depressive symptoms over time. The presence of negativity bias (Rozin & Royzman, 2001) may explain why prolonged exposure to distressing content amplifies all three forms of psychological distress simultaneously.

Doom Scrolling and Sleep Disturbances: The Strongest Predictor

The regression model predicting Pittsburgh Sleep Quality Index (PSQI) scores had the second-highest standardized beta value ($\beta = 0.998$), indicating that doom scrolling is one of the most powerful factors affecting sleep quality. This aligns with existing research on digital consumption and sleep, where late-night media use has been shown to disrupt circadian rhythms (Chang et al., 2015). Unlike depression or anxiety, which can be influenced by multiple life stressors, sleep quality is particularly sensitive to pre-sleep digital engagement. The almost perfect fit ($R^2 = 0.996$) suggests that doom scrolling alone is enough to explain most of the sleep disturbances in this sample.

Social Interaction Anxiety: The Most Extreme Effect

The most striking result from the regression analysis was that DFS completely predicted social interaction anxiety ($R^2 = 1.000$, $\beta = 1.000$, $p < 0.001$). This suggests that:

Individuals who doom scroll frequently are more likely to withdraw from social interactions, avoid conversations, and experience heightened fear of judgment. This supports social comparison theory (Festinger, 1954), which argues that individuals use online content to evaluate their self-worth, leading to increased social apprehension. The overwhelming predictive power of DFS on social anxiety may indicate that doom scrolling fuels "social avoidance cycles," where negative online content makes individuals less likely to engage in real-life social interactions.

Heteroscedasticity and Model Reliability

To ensure the validity of the regression models, tests for Heteroscedasticity were conducted using ANOVA and the Breusch–Pagan test on the residuals. Across all dependent variables, the p-values for

Heteroscedasticity tests were non-significant ($p > 0.05$), indicating that the assumption of homoscedasticity was met. This suggests that the variance in residuals remained constant, allowing for accurate interpretation of regression coefficients.

Overall, these results indicate that doom scrolling is not just associated with mental distress but may be a fundamental contributing factor to worsening psychological well-being. The nearly perfect correlation between DFS and social interaction anxiety suggests that doom scrolling-induced distress extends beyond personal mental health, affecting social behaviours and interpersonal relationships. The high correlation between DFS and sleep disturbances highlights a potential physiological mechanism, where doom scrolling disrupts sleep cycles, further exacerbating emotional distress.

DFS was a near-perfect predictor of all emotional distress variables ($\beta \approx 0.995$, $p < 0.001$), indicating that doom scrolling alone can explain most of the variance in depression, anxiety, and stress. DFS had the strongest predictive effect on Social Interaction Anxiety ($\beta = 1.000$, $p < 0.001$, $R^2 = 1.000$), meaning that doom scrolling fully determines social interaction anxiety levels in this sample. Sleep disturbances were also strongly predicted by DFS ($\beta = 0.998$, $p < 0.001$, $R^2 = 0.996$), reinforcing research on digital engagement's impact on sleep health. The R^2 values (model fit) indicate that DFS explains between 99% and 100% of the variance in all psychological outcomes, suggesting that doom scrolling is a critical factor in predicting mental health issues.

Unlike depression, anxiety, and stress—which involve complex emotional and cognitive processes—sleep disturbances have a direct biological basis.

The high predictive power of DFS on sleep disturbances suggests that doom scrolling's impact is not just psychological but also physiological, likely affecting melatonin suppression, circadian rhythm misalignment, and cognitive hyperarousal (Scott et al., 2021).

Findings suggest that DFS has direct effects on emotional distress rather than working through social anxiety or sleep disturbances as mediators. Instead of mediation, DFS appears to influence all mental health outcomes in a direct, linear fashion, meaning reducing DFS may be the most effective intervention strategy for lowering depression, anxiety, and stress levels.

Chapter 6 – Conclusion & Limitations of the Study

6.1 Conclusions

The findings of this study strongly indicate that doom scrolling is not just an incidental behaviour but a significant determinant of mental health outcomes. Across all analyses, Doom Scrolling Frequency (DFS) showed extremely strong correlations and predictive power for emotional distress (depression, anxiety, and stress), sleep disturbances, and social interaction anxiety. The nearly perfect correlations ($r \approx 1.000$) and high predictive values ($\beta \approx 0.995–1.000$) suggest that doom scrolling is not merely associated with distress but may be a key driving force behind it.

One of the most notable findings was that DFS directly influenced depression, anxiety, and stress rather than through indirect pathways such as social interaction anxiety or sleep disturbances. The study originally hypothesized that doom scrolling might contribute to emotional distress via mediating effects, but the regression analyses indicated that:

Social interaction anxiety did not significantly predict anxiety or depression once DFS was accounted for. Sleep disturbances were strongly predicted by DFS but did not independently explain increases in depression or anxiety.

These findings challenge traditional assumptions that social withdrawal or sleep deprivation must

mediate the relationship between excessive digital consumption and mental health issues. Instead, doom scrolling alone appears to be a sufficient predictor of psychological distress, meaning that even if individuals maintain social interactions or get sufficient sleep, excessive doom scrolling may still lead to negative mental health outcomes.

This result highlights the need for direct interventions that specifically target doom scrolling behaviours, rather than solely addressing secondary factors like social withdrawal or poor sleep hygiene. Digital wellness programs, cognitive-behavioural interventions, and personalized screen time management strategies should prioritize reducing doom scrolling as a primary mental health intervention.

Young adults (18-30 years) showed the strongest correlation between DFS and emotional distress, with particularly high levels of anxiety and social interaction anxiety, supporting previous research suggesting that they are more vulnerable to online content due to higher digital engagement and social comparison tendencies. In contrast, middle-aged adults (31-50 years) exhibited higher stress levels and poorer sleep quality, indicating that doom scrolling-induced stress may accumulate differently across the lifespan, with work, financial responsibilities, and family life exacerbating the impact of distressing online content in this demographic. Older adults (51+ years) had lower DFS scores and weaker correlations with psychological distress, suggesting that reduced digital engagement serves as a protective factor against doom scrolling-related distress; however, those who did engage in high levels of doom scrolling still experienced significant increases in stress and sleep disturbances, demonstrating that while the negative effects of doom scrolling persist across all ages, they are most pronounced in younger populations.

These age-related findings have significant implications for intervention strategies.

Young adults may benefit from digital literacy programs that help them critically engage with online content, while middle-aged adults may require stress management strategies tailored to their work-life balance needs. Older adults, despite being less affected, should still be encouraged to adopt mindful digital consumption habits to prevent doom scrolling-related stress and sleep issues.

Perhaps the most unexpected and concerning finding of this study was the near- perfect predictive power of DFS on social interaction anxiety ($\beta = 1.000$, $R^2 = 1.000$, $p < 0.001$). This means that doom scrolling alone was enough to fully account for variations in social interaction anxiety in this sample.

These results suggest that doom scrolling contributes not just to emotional distress but also actively alter social behaviours. This leads to a greater fear of judgment and avoidance of real-life interactions, another factor that results in reduced interpersonal communication. The social comparison theory (Festinger, 1954) suggests that constant exposure to negative online discourse may shape individuals' perceptions of the social world. This finding aligns with this theory showing how this makes them more apprehensive about engaging in social interactions.

The real-world implications of this finding are particularly alarming. If doom scrolling significantly increases social anxiety, it could contribute to long-term changes in social behaviour, potentially leading to greater isolation, decreased face-to-face interactions, and overall declines in well-being. This is especially relevant in a post-pandemic world where digital interactions have become more prevalent than ever.

Given the strong predictive link between DFS and social anxiety, intervention efforts should not only focus on reducing doom scrolling but also on promoting real-life social engagement. Encouraging offline social activities, implementing structured digital detox programs, and providing therapy for those struggling with social anxiety may be crucial in mitigating these effects.

The study also found that DFS was a near-perfect predictor of sleep disturbances ($\beta = 0.998$, $p < 0.001$), supporting past research on the effects of digital consumption on sleep quality. Doom Scrolling is likely to:

Increase pre-sleep cognitive arousal, preventing individuals from falling asleep easily. Expose users to blue light, disrupting melatonin production and delaying sleep onset (Chang et al., 2015). Fuel night-time anxiety, making sleep less restful and increasing night-time awakenings. Since poor sleep itself is a risk factor for depression and anxiety, this finding highlights a vicious cycle, where doom scrolling worsens sleep, which in turn exacerbates emotional distress, leading to more doom scrolling as a coping mechanism.

The findings of this study provide strong empirical support for the argument that doom scrolling is not just a passive behaviour but an active contributor to emotional distress, social withdrawal, and sleep disruptions. The near-perfect correlations and predictive values across all variables indicate that doom scrolling should be recognized as a public mental health concern, requiring intervention at both the individual and policy levels.

6.2 Limitations of the Study

Self-Report Bias

The research is based on self-reported information gathered using standardized measures. Participants might underestimate or overestimate their doom scrolling behaviours, emotional conditions, social interaction anxiety, or sleep issues due to social desirability bias or recall bias. This might affect the precision and dependability of the results.

Cross-Sectional Design

The study employs a cross-sectional approach, indicating that data is gathered at one specific moment. This restricts the capacity to determine the causal links between doom scrolling and its impacts on emotional states, social anxiety, and sleep disturbances. A long- term method would be more efficient in monitoring alterations over time.

Sampling Constraints

While the study uses purposive sampling to guarantee that participants fit the inclusion criteria (adults aged 18-60 who have access to smart devices), it might not be generalizable to larger populations, including those lacking digital access, older adults, or people with varying media consumption behaviours.

Lack of Experimental Control

This research is observational instead of experimental, implying that external elements like personal stressors, lifestyle decisions, and existing mental health issues might affect the reported levels of anxiety, stress, or sleep disruptions. The research does not alter variables to account for these outside factors.

Focus on Quantitative Measures

The research mainly employs standardized quantitative instruments to evaluate doom scrolling and its related psychological impacts. Nonetheless, qualitative insights, like personal experiences or the reasons driving doom scrolling behaviour, are not included, potentially hindering a more profound comprehension of individual variations.

Possible Overlapping Constructs

The psychological factors being examined (such as stress, anxiety, and depression) are closely linked, complicating efforts to determine the distinct effects of doom scrolling on each one. Certain effects might be linked to wider digital consumption habits instead of doom scrolling alone.

Cultural and Contextual Limitations

The research overlooks cultural variations in media usage and emotional control. Various groups may exhibit distinct reactions to troubling online material influenced by socio-cultural elements, media engagement, and coping strategies, potentially impacting the generalizability of the results.

Unmeasured Variables

Additional possible influencing factors, like personality traits, coping mechanisms, and media literacy, are excluded from the research. These factors might influence or intervene in the connection between doom scrolling and its mental effects.

6.3 Implications of the Study

The research study has insightful implications. The findings underscore the need for awareness. Theoretical knowledge would be a great place to start with the help of research; given the impact on sleep, this study would add to research on hyperarousal theory in insomnia (Scott et al., 2021) and reinforce how excessive digital consumption disrupts circadian rhythms (Walker, 2017). Therapeutic techniques can be focused on issues concerning one's impact on sleep, depression, anxiety, stress and social anxiety by using mindfulness, digital and sleep hygiene strategies and regulations.

Results may prompt modifications to social media design, including restricting infinite scrolling options or adding reminders for breaks. Policymakers may support decreasing sensationalized news content due to its effects on mental health. Mental health organizations might initiate campaigns focused on responsible digital usage, highlighting its impact on sleep hygiene and emotional well-being.

Additionally, public health campaigns could promote the mental health benefits of reduction in doom scrolling and improvement in sleep quality, emotional state as well as social anxiety during interactions and also develop action plans and coping strategies to tackle the problems caused by doom scrolling to promote well-being.

6.4 Suggestions for Future Research

A key area for future study is the enduring psychological and behavioural impacts of doom scrolling. Although much of the existing research is primarily cross-sectional, longitudinal studies are necessary to investigate if regular doom scrolling leads to the onset of clinical anxiety disorders, depression, or chronic stress as time progresses. Exploring whether extended exposure to troubling online material results in enduring emotional dysregulation or structural alterations in the brain, akin to behavioural addictions, would yield greater understanding of its long-term effects. Additionally, upcoming research should investigate if specific groups, like individuals with existing mental health issues, are more susceptible to the adverse impacts of doom scrolling.

The neurobiological foundations of doom scrolling signify another potential area for upcoming research. Neuroimaging studies involving fMRI or EEG could be employed to explore whether doom scrolling engages reward circuits similar to those observed in addictive behaviours. Research could also investigate if intense interaction with troubling content impacts impulse control and how this can result in compulsive scrolling even as the individual experiences adverse emotional effects. Besides this, investigating the impact of dopamine dysregulation on doom scrolling habits may offer important perspectives on its parallels with other compulsive online activities such as social media addiction and cyberchondria.

With changing times, it may be useful to explore the impact of artificial intelligence (AI) and algorithm-based content suggestions and how these sustain doom scrolling behaviours. Social media and news outlets frequently utilize AI algorithms to drive consumer focus on captivating content. This leads to

users being repeatedly confronted with troubling news. Future studies can evaluate if these algorithmic suggestions lead to compulsive doom scrolling as well. Studies can also be performed to determine if AI-driven measures like personalized alerts or screen-time restrictions can alleviate the issue. Authorities and media organizations can debate and discuss bringing in ethical standards that can provide effective safeguards against overexposure to harmful or sensational news stories.

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