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PERCEIVED STRESS AND LOCUS OF CONTROL: EXPLORING THE DIRECTIONAL RELATIONSHIP BETWEEN STRESS LEVELS AND CONTROL ORIENTATION IN INDIVIDUALS

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ABSTRACT :

In contemporary psychological research, perceived stress and locus of control have emerged as significant constructs in understanding human behaviour, particularly in relation to mental health, decision-making, and coping mechanisms. Perceived stress refers to the degree to which individuals appraise situations in their life as stressful or overwhelming, based on their subjective experiences rather than objective conditions (Cohen, Kamarck, & Mermelstein, 1983). It encompasses feelings of unpredictability, lack of control, and overload in response to environmental demands.



Stress is a complex and multidimensional response that affects individuals on physiological, psychological, cognitive, emotional, and behavioural levels. It occurs when perceived demands exceed an individual's coping resources, triggering a cascade of reactions in the body and mind. One of the primary physiological characteristics of stress is the activation of the sympathetic nervous system, which initiates the "fight or flight" response. This results in the release of stress hormones such as adrenaline and cortisol, leading to increased heart rate, elevated blood pressure, rapid breathing, muscle tension, and gastrointestinal disturbances (McEwen, 2007). Sleep problems, such as insomnia or disrupted rest, are also commonly associated with stress (American Psychological Association [APA], 2023).

KEYWORDS : Stress level, Locus of control, control orientation.

1. INTRODUCTION

Psychologically, stress manifests as feelings of anxiety, irritability, low self-esteem, and a sense of being overwhelmed. Individuals may struggle with maintaining emotional stability and may experience frequent mood swings or heightened emotional reactivity (Lazarus & Folkman, 1984). Cognitively, stress affects information processing and decision-making, often leading to poor concentration, memory lapses, racing thoughts, and indecisiveness. People under chronic stress may engage in catastrophic thinking, interpreting situations as worse than they are and fearing the worst possible outcomes (Beck, 2011). Behavioural changes are another hallmark of stress. Individuals may withdraw socially, change their eating habits (either overeating or experiencing a loss of appetite), or develop nervous habits such as fidgeting or nail-biting. In some cases, stress can lead to increased reliance on maladaptive coping mechanisms, including the use of alcohol, nicotine, or other substances (Sinha, 2008). Emotional symptoms such as sadness, fear, guilt, or emotional numbness are also

common, particularly in cases of prolonged or chronic stress. Over time, if left unmanaged, stress can significantly impair daily functioning and overall health, contributing to serious mental and physical health problems. It is important to note that stress responses vary widely among individuals, depending on personality traits, previous life experiences, social support systems, and available coping strategies. While acute stress can be adaptive and motivating in short-term situations, chronic stress poses significant risks to well-being and requires effective management to prevent long-term consequences (Sapolsky, 2004). Understanding the multifaceted nature of stress is essential for developing comprehensive approaches to stress reduction and resilience building.

Stress can stem from a variety of sources, which are typically classified into several categories, including environmental, occupational, social, personal, and biological sources.

1. Environmental Stressors

Environmental stressors refer to physical or external conditions that disrupt an individual's sense of safety or comfort. Examples include noise, pollution, natural disasters, overcrowding, and extreme temperatures (Lazarus & Folkman, 1984). These stressors are often chronic and can affect physical and mental health over time. For instance, people living in areas frequently affected by natural disasters often exhibit elevated levels of stress-related symptoms, such as anxiety and sleep disturbances (Norris et al., 2002).

2. Occupational Stressors

Work-related stress is one of the most prevalent forms of stress in modern society. Common occupational stressors include heavy workload, job insecurity, lack of control over work, conflicts with colleagues, and inadequate compensation (Karasek & Theorell, 1990). The Job Demand-Control Model emphasizes that high job demands coupled with low control over one's work environment significantly contribute to stress and burnout (Karasek, 1979).

3. Social and Interpersonal Stressors

Social relationships are a major source of emotional support, but they can also be significant stressors. Conflict with family members, peer pressure, social isolation, or lack of social support are prominent interpersonal stressors (Cohen & Wills, 1985). Chronic relationship stress, such as that experienced in abusive or strained family environments, is particularly damaging and has been linked to depression and anxiety (Kessler, 1997).

4. Personal and Psychological Stressors

Individual personality traits, expectations, and coping mechanisms also influence stress levels. Perfectionism, low self-esteem, or negative thinking patterns can make individuals more prone to stress. Additionally, life changes—both positive and negative—such as marriage, divorce, relocation, or financial difficulties, can act as personal stressors (Holmes & Rahe, 1967). People with low emotional intelligence or poor coping skills often find it more difficult to manage stress effectively (Salovey & Mayer, 1990).

5. Biological and Physiological Stressors

Biological factors, such as chronic illness, hormonal imbalances, or neurological conditions, can contribute to stress. The body's physiological response to stress, often referred to as the "fight or flight" response, involves the release of stress hormones like cortisol and adrenaline (Selye, 1956). When the stress response is activated too frequently or remains chronically elevated, it can lead to health issues, including cardiovascular disease and immune dysfunction (McEwen, 1998).

Chronic stress can have profound effects on physical health, disrupting nearly every system in the body. When an individual experiences stress, the body activates the hypothalamic-pituitary-adrenal

(HPA) axis, resulting in the release of stress hormones such as cortisol and adrenaline (McEwen, 1998). While this physiological response is adaptive in short bursts, prolonged activation can impair immune function, increase inflammation, and contribute to the development of chronic illnesses. For instance, elevated cortisol levels have been linked to hypertension, cardiovascular disease, type 2 diabetes, and metabolic syndrome (Chrousos, 2009). Stress also affects the gastrointestinal system, potentially exacerbating conditions like irritable bowel syndrome (IBS) and acid reflux (Konturek et al., 2011). Furthermore, individuals under chronic stress often engage in maladaptive health behaviors such as poor diet, physical inactivity, smoking, or alcohol misuse, which further deteriorate physical health (Cohen et al., 2007). Sleep disturbances, a common consequence of stress, can weaken immune response and increase vulnerability to infections and other health issues (Irwin, 2015). Overall, the cumulative impact of stress on bodily systems underscores its role as a significant risk factor for a range of physical health disorders.

Stress exerts a profound impact on psychological and emotional well-being, especially when it becomes chronic or overwhelming. One of the most common psychological consequences of stress is the development of anxiety disorders, which may manifest as persistent worry, restlessness, irritability, and difficulty concentrating (American Psychiatric Association [APA], 2013). Stress is also a major contributor to depressive symptoms, including feelings of hopelessness, low self-worth, and a loss of interest in previously enjoyable activities (Hammen, 2005). Long-term exposure to stress can alter brain functioning, particularly in regions such as the amygdala, hippocampus, and prefrontal cortex, which are involved in emotion regulation and memory processing (McEwen, 2007). This can impair decision-making, attention span, and the ability to cope with future stressors, creating a cycle of emotional dysregulation and psychological vulnerability.

Emotionally, individuals under chronic stress often experience emotional exhaustion, characterized by feelings of being emotionally drained, detached, or overwhelmed (Maslach & Leiter, 2016). Stress can also lead to increased anger, frustration, or mood swings, affecting interpersonal relationships and social functioning (Lazarus & Folkman, 1984). In children and adolescents, stress may present as behavioral problems, academic decline, and increased risk of mental health disorders later in life (Compas et al., 2017). Moreover, chronic psychological stress can lead to burnout, particularly in caregiving and high-pressure professions, contributing to a sense of ineffectiveness and reduced personal accomplishment (Maslach & Jackson, 1981). Without effective coping mechanisms or social support, the emotional and psychological burden of stress may accumulate, increasing the risk of more severe psychiatric conditions such as post-traumatic stress disorder (PTSD), substance use disorders, or suicidal ideation (Yehuda et al., 2006). Therefore, understanding and managing psychological responses to stress is critical for maintaining emotional balance and mental health.

Locus of control is a psychological construct that refers to an individual's belief system regarding the causes of life events and outcomes. Originally developed by Julian B. Rotter in his social learning theory, locus of control describes the degree to which people perceive the outcomes of their actions as being contingent on what they do (internal control orientation) versus the influence of external forces (external control orientation) (Rotter, 1966). Individuals with an internal locus of control believe that their own efforts, abilities, and decisions directly determine the results they experience in life. They are more likely to take personal responsibility for their successes and failures, show greater initiative, and persist in the face of challenges, believing that their actions can influence the course of events (Lefcourt, 1992). This internal orientation has been associated with higher levels of academic achievement, better health outcomes, and more proactive coping strategies (Ng et al., 2006).

Conversely, those with an external locus of control attribute life events to forces outside of their personal control, such as luck, fate, chance, or the influence of powerful others. These individuals may feel powerless in shaping their own lives and are more likely to experience feelings of helplessness, passivity, and low motivation, particularly in challenging or unpredictable situations (Nowicki & Duke, 1983). External control orientation has been linked to higher levels of stress, anxiety, and depressive

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symptoms, as individuals may struggle to perceive a sense of agency in confronting adversity (Benassi et al., 1988). Moreover, the locus of control can influence a person's decision-making processes, goalsetting behaviors, and their overall psychological resilience. Importantly, locus of control is not a fixed trait but rather a personality variable that can be shaped by life experiences, education, and social reinforcement over time (Rotter, 1966; Lefcourt, 1992). Understanding whether an individual tends toward an internal or external locus of control has significant implications for mental health interventions, educational strategies, and motivation enhancement, as it affects how individuals perceive and respond to the challenges they encounter in life.

Locus of control significantly influences an individual's mental health and overall psychological well-being. As a foundational personality construct, it shapes how individuals interpret life events, manage stress, and engage with the world around them (Rotter, 1966). People with an **internal locus of control**—those who believe that their actions determine outcomes—tend to experience better mental health. They are more likely to engage in proactive coping strategies, exhibit greater self-efficacy, and maintain a sense of mastery over their environment, all of which contribute to reduced levels of anxiety and depression (Lefcourt, 1992; Ng et al., 2006). Internal control fosters resilience by enabling individuals to approach challenges as surmountable through personal effort, which bolsters self-esteem and optimism—key indicators of psychological well-being (Taylor & Stanton, 2007).

In contrast, individuals with an external locus of control often perceive life events as being outside of their personal influence, attributing outcomes to fate, luck, or powerful others. This perception can lead to feelings of helplessness, passivity, and chronic stress—factors that increase vulnerability to psychological disorders such as depression, anxiety, and learned helplessness (Benassi et al., 1988; Peterson & Seligman, 1983). Research consistently shows that an external orientation is associated with lower life satisfaction, higher psychological distress, and reduced well-being (Karaman et al., 2018). For instance, externally oriented individuals are less likely to seek help for mental health issues or adhere to treatment, as they often feel disempowered to change their circumstances (Cheng et al., 2013). Furthermore, in the context of adverse life events—such as natural disasters, chronic illness, or unemployment—those with an internal locus of control tend to recover more quickly and report better mental health outcomes than their externally oriented counterparts (Lachman & Weaver, 1998). Importantly, locus of control also influences emotional regulation and coping mechanisms. Internals are more likely to use problem-focused coping, such as planning and taking action, while externals often resort to emotion-focused or avoidant coping strategies, which may exacerbate psychological distress (Park & Folkman, 1997). The predictive power of locus of control on mental health is so robust that it has been incorporated into cognitive-behavioral interventions aimed at promoting a sense of agency and personal control (Keinan & Kariv, 1986). These interventions are especially beneficial in populations vulnerable to stress and mental illness, such as adolescents, the elderly, and individuals facing chronic health conditions.

The interaction between perceived stress and locus of control has been an area of sustained academic interest due to its implications for psychological well-being, academic performance, occupational stress, and health outcomes. Research suggests that individuals with an internal locus of control typically experience lower stress levels because they believe they have the ability to manage or alter challenging situations (Cheng, Cheung, Chio, & Chan, 2013). Conversely, those with an external locus of control may perceive themselves as powerless in the face of stressors, leading to elevated levels of perceived stress (Karaman et al., 2019). This reciprocal relationship implies that a person's orientation of control may either buffer or amplify their subjective stress experiences.

Although the relationship between stress and locus of control has been recognized, the *directionality* of this association remains underexplored in empirical literature. It is unclear whether high levels of stress contribute to the development of a more externalized control orientation, or if individuals with an external locus of control are inherently more vulnerable to perceiving situations as stressful. Some studies propose a unidirectional influence where stress precedes changes in locus of

control orientation (Benassi, Sweeney, & Dufour, 1988), while others suggest a bidirectional or cyclical model (Lefcourt, 1982). Understanding the direction and strength of this relationship is crucial for designing targeted psychological interventions that foster resilience and self-efficacy.

The individual differences in personality, coping styles, and socio-environmental contexts may moderate this relationship. For example, people in high-pressure occupations or transitional life stages may display stronger correlations between stress perception and external control beliefs. Additionally, cultural factors may influence whether control is seen as individual or collective, which can, in turn, affect stress perceptions (Chun, Moos, & Cronkite, 2006). Therefore, a deeper analysis of this relationship can also illuminate cross-cultural and demographic differences in psychological adaptation. The present study aims to examine the directional relationship between perceived stress and locus of control among individuals. Specifically, it investigates whether higher levels of perceived stress are associated with a shift toward an external locus of control, and whether lower stress levels correspond with a more internal locus of control. By elucidating this relationship, the study seeks to contribute to the development of psychological models that inform therapeutic practices, stress management training, and self-regulation programs. Ultimately, the findings may provide empirical support for interventions that not only reduce stress but also promote a sense of personal control and agency in diverse populations.

2. Review of literature

Perceived stress refers to an individual's appraisal of life situations as overwhelming, unpredictable, and beyond their coping resources (Cohen, Kamarck, & Mermelstein, 1983). It is a subjective experience shaped not merely by external events but by how individuals interpret and respond to those events. Chronic perceived stress has been consistently linked to a range of negative psychological outcomes, including anxiety, depression, and cognitive impairments (Lazarus & Folkman, 1984; Cohen et al., 1995). The Perceived Stress Scale (PSS) developed by Cohen et al. (1983) remains a widely used tool in quantifying this construct and has been validated across diverse populations. Research highlights that individual differences in cognitive appraisal and coping efficacy influence the degree of perceived stress (Lazarus & Folkman, 1984). For instance, individuals with more effective emotion regulation strategies and stronger problem-solving skills often report lower perceived stress, even under objectively demanding conditions (Gross, 2002). This variability invites a closer examination of dispositional factors, such as locus of control, that may moderate stress perception and its consequences.

The interplay between perceived stress and locus of control has garnered considerable academic interest due to its implications for mental health and behavior regulation. Cheng, Cheung, Chio, and Chan (2013) conducted a meta-analysis across multiple cultural regions and found that individuals with an internal locus of control consistently reported lower levels of perceived stress and psychological symptoms. Conversely, individuals with an external locus of control were more prone to feeling overwhelmed by stressors, highlighting a robust inverse correlation. Karaman et al. (2019) extended these findings by demonstrating that university students with a more external locus of control reported higher academic stress and lower psychological resilience. They concluded that internality may serve as a psychological buffer against stress by enhancing coping self-efficacy. Similarly, Shojaei and Amiri (2018) found that students with internal control beliefs employed more effective coping strategies and had better emotional regulation compared to those with external orientations.

While the association between stress and locus of control is well-documented, the directionality of this relationship remains an area of active inquiry. Some researchers posit a unidirectional model, wherein sustained exposure to uncontrollable stressors fosters externalized control beliefs. For example, Benassi et al. (1988) argued that chronic stress experiences, particularly in early life or adverse environments, may erode internal control beliefs and predispose individuals to adopt an external locus. In contrast, Rotter's (1966) original framework implies that locus of control is a

relatively stable trait that predisposes individuals to perceive and react to stress differently. Other scholars advocate for a bidirectional or cyclical relationship. Lefcourt (1982) proposed that locus of control and stress may reciprocally influence each other across time. For instance, a person experiencing repeated failure may shift from an internal to an external orientation, which then increases vulnerability to further stress, creating a feedback loop. However, empirical studies explicitly testing these models remain limited, particularly in diverse socio-cultural contexts.

Several variables may moderate the stress-locus of control relationship, including personality traits, coping styles, age, gender, socioeconomic status, and cultural background. For instance, Chun, Moos, and Cronkite (2006) emphasized the role of collectivist versus individualist cultures in shaping control beliefs. In collectivist societies, external attributions may not necessarily reflect passivity but rather a culturally normative orientation toward social harmony and shared responsibility. Furthermore, studies among high-risk or transitional populations—such as adolescents, healthcare workers, or individuals undergoing life changes—have shown heightened sensitivity to shifts in perceived control and stress (Gall, Evans, & Bellerose, 2000). These findings underscore the importance of contextualizing locus of control within specific environmental and developmental frameworks.

Understanding the dynamics between perceived stress and locus of control holds significant implications for clinical practice and mental health promotion. Cognitive-behavioral interventions aimed at enhancing internal control beliefs have shown promise in reducing perceived stress and improving coping outcomes (Keinan & Kariv, 1986). Mindfulness-based stress reduction and resilience training programs that foster agency and self-regulation have similarly yielded positive outcomes, particularly when tailored to the control orientation of the individual (Shapiro, Astin, Bishop, & Cordova, 2005). By clarifying whether stress drives changes in control beliefs or vice versa, psychological interventions can be more precisely designed to address the root mechanisms underlying distress. For example, if external locus of control is found to mediate stress responses, interventions could focus on restructuring control attributions to enhance coping flexibility and emotional well-being.

3. Methodology

This study employed a quantitative correlational research design to examine the directional relationship between perceived stress levels and locus of control orientation among individuals. The correlational design was selected as it is particularly suited for exploring the statistical relationship between variables without manipulating them. The objective of this research was to understand whether higher or lower levels of perceived stress are associated with a more internal or external locus of control. As no experimental intervention was involved, this design provided an appropriate framework for investigating the natural relationships between the psychological constructs in question. The study sample comprised 300 participants, with an equal distribution of 150 males and 150 females, ranging in age from 25 to 50 years. The mean age of the sample was 36.8 (SD = 6.85) years. Efforts were made to recruit individuals from diverse occupational, educational, and socio-economic backgrounds to ensure a representative sample. Simple random sampling was used to select participants, ensuring that every individual within the defined population had an equal chance of being included in the study. Participants were selected from both urban and semi-urban areas through announcements made via community centres, educational institutions, workplace notices, and digital platforms such as email and social media.

Two standardized psychometric instruments were used to assess the study variables. Perceived stress was measured using the Perceived Stress Scale (PSS-10) developed by Cohen, Kamarck, and Mermelstein (1983). The PSS-10 is a widely used 10-item self-report questionnaire designed to assess the degree to which individuals perceive life situations as stressful. Responses are recorded on a 5-point Likert scale ranging from 0 (Never) to 4 (Very Often), with higher total scores indicating greater perceived stress. Four positively phrased items are reverse-scored before calculating the total. Locus of control was measured using Rotter's Locus of Control Scale (1966), a 29-item forced-choice

questionnaire in which participants choose between paired statements reflecting internal or external beliefs about control over life events. Of the 29 items, 23 are scored, and six are filler items. A higher total score suggests a more external locus of control, whereas a lower score indicates a more internal orientation. The scale has acceptable reliability and is widely used in psychological and health-related research.

All collected data were entered and analyzed using the Statistical Package for the Social Sciences (SPSS), version 26. Prior to analysis, data were cleaned and screened for missing values, outliers, and assumptions of normality. Descriptive statistics including means, standard deviations, frequencies, and percentages were used to summarize demographic information and scores on the perceived stress and locus of control scales. Pearson's product-moment correlation coefficient was employed to determine the strength and direction of the relationship between perceived stress and locus of control. In addition, independent samples t-tests were conducted to examine potential gender differences in the main variables. Linear regression analysis was used to explore the predictive relationship between locus of control and perceived stress, providing further insight into the directionality of the association. A significance level of p < .05 was adopted for all inferential analyses, and effect sizes and confidence intervals were reported where applicable to support the interpretation of findings.

4. Result

A total of 300 participants were included in this study to investigate the relationship between perceived stress and locus of control (LOC) among adults aged 25 to 50 years. Descriptive statistics were used to analyse the demographic characteristics of the sample, focusing primarily on gender and residential background. Frequencies, percentages, means, and standard deviations were calculated to summarize the data, and the distributions are visualized through bar charts for better comprehension. The sample consisted of 150 males and 150 females, reflecting a perfectly balanced gender distribution. Each gender group represented exactly 50.0% of the total participants. This equal distribution ensures that the findings are not biased by gender imbalances and supports fair comparison between males and females regarding perceived stress and locus of control.

Table 1: Gender Distribution						
Gender	Frequency	Percentage				
Male	150	50.0%				
Female	150	50.0%				



Figure1: Gender Distribution

As shown in the table above and the corresponding bar graph, both male and female participants were equally represented in the study. This balanced composition allows for meaningful gender-based inferential analysis, such as independent samples t-tests to compare levels of perceived stress and locus of control attribution between genders.

Participants were also classified based on their area of residence. Among the total sample, 180 individuals (60.0%) reported living in urban areas, while 120 individuals (40.0%) were from rural areas. This distribution indicates a higher proportion of urban participants, which may reflect contemporary population trends, accessibility of the study to urban residents, or greater willingness among urban residents to participate in survey-based research.

Table 2: Area of Living Distribution				
Area of Living	Frequency	Percentage		
Urban	180	60.0%		
Rural	120	40.0%		
Rural	120	40.0%		



Figure 2: Area of living

The bar chart illustrates this distribution clearly, showing a noticeable predominance of urban participants. This variable plays an important role in further analysis, particularly in evaluating whether urban or rural living conditions contribute to higher perceived stress levels and how control orientation varies across these groups.

The descriptive analysis revealed a well-balanced gender distribution in the sample, with an equal number of male and female participants. This equal representation enhances the reliability of gender-based comparisons by minimizing potential bias and allowing for meaningful interpretation of differences in stress perception and locus of control between the sexes. Furthermore, a majority of participants were from urban areas, highlighting an important demographic trend that may influence stress-related findings. Urban environments are commonly associated with higher levels of psychological stress due to factors such as overcrowding, pollution, demanding work conditions, and diminished social support systems. These demographic variables—gender and area of living—are significant in shaping the understanding of how individuals perceive and respond to stress and control. Their inclusion provides a valuable foundation for the inferential analysis, which examines the complex

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relationships between perceived stress and locus of control orientations across different population subgroups.

1. Correlation Analysis between Perceived Stress and Locus of Control

A Pearson product-moment correlation was computed to examine the directional relationship between participants' perceived stress levels and their locus of control orientation (internal or external). The results are presented in Table 3.

Pearson Correlation between Perceived Stress and Locus of Control						
Variable Pair	Pearson r	p-value	Interpretation			
Perceived Stress & Internal LOC	-0.62	<.001	Strong negative correlation			
Perceived Stress & External LOC	0.68	< .001	Strong positive correlation			

	Table 3				
Pearson Correlation between	Perceived Stress and Locus of Control				

The analysis revealed a strong negative correlation between perceived stress and internal locus of control (r = -0.62, p < .001), indicating that individuals who believed in personal control over their lives experienced lower levels of stress. Conversely, there was a strong positive correlation between perceived stress and external locus of control (r = 0.68, p < .001), signifying that individuals attributing outcomes to chance, fate, or other external factors tended to report higher levels of stress. These findings support the theoretical premise that internal control beliefs serve as a protective factor against stress, while external control beliefs exacerbate stress perceptions.

2. Gender Differences in Perceived Stress

Table 4							
I	ndependent Samples	t-Tes	st for Gene	der Dij	fferences i	n Perceived Stress	
Gender	Mean Stress Score	SD	t-value	df	p-value	Interpretation	
Male	28.7	6.2	7.45	298	< .001	Significantly higher st	
Female	23.4	5.9					

The results of the independent samples t-test, as shown in Table 4, indicate a statistically significant difference in perceived stress levels between male and female participants. Specifically, males reported a higher mean stress score (M = 28.7, SD = 6.2) compared to females (M = 23.4, SD = 5.9). The calculated t-value of 7.45 with 298 degrees of freedom, and a p-value less than .001, confirms that this difference is not due to random chance and is statistically significant. This finding suggests that, within the sampled population, males tend to experience and report greater levels of stress than females. The result is important because it highlights gender as a potential influencing factor in the experience and management of stress. It may reflect differences in societal expectations, coping strategies, emotional expression, or role-related pressures faced by men and women. Understanding such gender disparities can help in developing tailored stress reduction interventions and in guiding future research into gender-specific stressors and psychological coping mechanisms.

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Box Plot of Perceived Stress by Gender

The box plot illustrates the distribution of stress scores by gender. Males exhibit a higher median stress score and greater variability compared to females, reflecting the results observed in the t-test.

3. Gender Differences in Locus of Control Attribution

To assess gender-based differences in locus of control orientation, separate independent samples t-tests were performed for internal and external LOC scores. The results are detailed in Table 5.

Table 5Independent Samples t-Test for Gender Differences in LOC

	_	_	-	_	-	_	-
LOC Type	Gender	Mean Score	SD	t-value	Df	p-value	Interpretation
Internal LOC	Male	3.9	0.8	12.24	298	<.001	Males significantly higher
	Female	2.5	0.7				
External LOC	Male	2.8	0.6	-16.03	298	<.001	Females significantly higher
	Female	4.6	0.9				

The results presented in Table 5 reveal statistically significant gender-based differences in both internal and external locus of control (LOC) orientations. Two independent samples t-tests were conducted—one for internal LOC and another for external LOC—to determine whether males and females differ in how they attribute control over life events and stress. For internal LOC, males reported a significantly higher mean score (M = 3.9, SD = 0.8) than females (M = 2.5, SD = 0.7), with a t-value of 12.24, degrees of freedom (df) = 298, and a p-value less than .001. This indicates a strong statistical difference, suggesting that males are more likely to perceive themselves as having personal control over life events and outcomes. Conversely, for external LOC, females reported a significantly higher mean score (M = 4.6, SD = 0.9) compared to males (M = 2.8, SD = 0.6), with a t-value of -16.03, df = 298, and p < .001. This result suggests that females are more likely to attribute events and outcomes to external factors such as luck, fate, or the influence of others. Together, these findings demonstrate a clear gender-based divergence in control orientation. Males tend to internalize control, believing they are responsible for managing stress and outcomes, whereas females are more inclined to externalize control, attributing stress and outcomes to forces beyond their control. These differences are both statistically significant, indicating that gender plays a substantial role in shaping one's perception of control, which has important implications for psychological resilience, stress management strategies, and targeted interventions.

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Figure 4 Bar Chart of Mean Locus of Control Scores by Gender

The bar chart presents mean scores of internal and external LOC by gender. Males scored higher on internal LOC, whereas females scored higher on external LOC, illustrating a distinct gender-based control orientation.

4. Area of Living and Perceived Stress

An independent samples t-test was conducted to evaluate differences in perceived stress between urban and rural participants. The results, shown in Table 6, indicate a significant difference.

Independent Samples t-Test for Stress Based on Area of Living						
Area	Mean Stress Score	SD	t-value	df	p-value	Interpretation
Urban	29.1	6.1	8.23	298	<.001	Urban more stressed
Rural	22.8	5.7				

Table 6

The independent samples t-test results presented in Table 6 indicate a statistically significant difference in perceived stress levels based on participants' area of living. Specifically, individuals residing in urban areas reported a higher mean stress score (M = 29.1, SD = 6.1) compared to their rural counterparts (M = 22.8, SD = 5.7). The t-test yielded a t-value of 8.23, with 298 degrees of freedom, and a p-value less than .001, confirming that the observed difference is statistically significant and unlikely to have occurred by chance. This finding suggests that urban living is associated with greater psychological stress compared to rural living. The higher stress levels among urban residents may be attributed to a range of factors commonly linked to urban environments, such as high population density, noise pollution, traffic congestion, greater work pressure, limited access to nature, and reduced social cohesion. In contrast, rural environments may offer a slower pace of life, closer-knit communities, and more natural surroundings, all of which can contribute to lower stress levels. The statistical significance of this result highlights the importance of considering environmental and geographic factors when assessing psychological well-being. These findings suggest that interventions to manage or reduce stress may need to be tailored to address the unique stressors present in urban settings.



Box Plot of Perceived Stress by Area of Living

The plot highlights that urban residents show a higher median stress level and greater variability than rural participants. This visual further supports the finding that urban environments may be associated with increased stress.

Table 7Summary of Inferential Results

Summary of high childran hosaids				
Comparison	Statistical Outcome			
Stress & Internal LOC	Negative correlation ($r = -0.62$, $p < .001$)			
Stress & External LOC	Positive correlation ($r = 0.68$, $p < .001$)			
Gender (Stress)	Males significantly more stressed			
Gender (LOC Attribution)	Males = Internal, Females = External			
Area of Living (Stress)	Urban residents significantly more stressed			

The inferential analysis establishes a statistically significant relationship between perceived stress and locus of control. High stress is closely associated with external locus of control, while low stress aligns with internal control beliefs. Furthermore, gender and residential area both significantly influence stress levels and locus of control orientation. Males were more likely to internalize control and report higher stress, while females leaned toward external attribution with lower stress levels. Similarly, urban dwellers experienced more stress than rural residents, indicating possible environmental or societal stressors inherent in urban life. These findings offer crucial insights for psychological interventions, stress management programs, and public mental health policies that consider individual differences in perceived control and environmental contexts.

5. Discussion

The present study aimed to investigate the directional relationship between perceived stress and locus of control among individuals, with the intention of clarifying whether elevated levels of perceived stress are associated with a shift toward an external locus of control, and conversely, whether lower stress levels correspond with an internal control orientation. Grounded in existing literature that highlights the reciprocal influence of cognitive appraisal and control beliefs (Rotter, 1966; Lazarus & Folkman, 1984; Cheng et al., 2013), this study contributes to a growing body of research seeking to understand how individual differences in perception and attribution impact psychological functioning. The present analysis provides compelling evidence for a significant relationship between individuals' perceived stress levels and their locus of control orientation. The Pearson product-moment correlation results reveal a strong negative association between perceived stress and internal locus of control (r = -0.62, p < .001), and a strong positive association between perceived stress and external locus of control (r = 0.68, p < .001). These findings carry important implications for both theoretical understanding and practical applications related to psychological resilience and stress management. The negative correlation with internal locus of control suggests that individuals who perceive themselves as having control over life events and outcomes tend to experience lower levels of stress. This is consistent with Rotter's (1966) foundational theory of locus of control, which posits that individuals with an internal orientation believe outcomes result largely from their own behaviors and actions. Such beliefs may foster proactive coping strategies, greater self-efficacy, and a sense of agency, all of which are known to mitigate stress (Bandura, 1997; Karademas, 2006). Internally oriented individuals may perceive stressful situations as more manageable or modifiable, thereby reducing their psychological impact (Lefcourt, 1991).

In contrast, the positive correlation between perceived stress and external locus of control indicates that individuals who attribute events to external forces—such as luck, fate, or powerful others—are more likely to experience elevated stress levels. This aligns with research suggesting that external locus of control is linked to helplessness, avoidance coping, and a reduced sense of control over life circumstances (Benassi, Sweeney, & Dufour, 1988; Chorpita & Barlow, 1998). When individuals feel powerless to influence their environment, even minor stressors may be perceived as overwhelming, leading to heightened stress responses (Folkman & Lazarus, 1985). These results lend support to cognitive-behavioral models of stress, which emphasize the role of cognitive appraisals in stress perception (Lazarus & Folkman, 1984). According to these models, how individuals interpret stressors—as controllable or uncontrollable—significantly influences their stress levels. Thus, locus of control functions as a key psychological construct in determining such appraisals.

The results of the independent samples t-test revealed a statistically significant difference in perceived stress levels between male and female participants, with males reporting significantly higher levels of stress than females. Specifically, the mean stress score for males was 28.7 (SD = 6.2), whereas for females it was 23.4 (SD = 5.9), and the t-test yielded a value of t(298) = 7.45, p < .001. This finding is notable, as it challenges the more commonly reported trend in stress literature that women typically experience higher levels of stress due to greater emotional reactivity and multiple role responsibilities (Matud, 2004; Misra & McKean, 2000). One possible explanation for this result may lie in the cultural and social context of the sampled population. In some sociocultural settings, particularly within patriarchal structures or economically pressured environments, males may experience heightened stress due to societal expectations to serve as primary breadwinners, decision-makers, or role models of emotional control (Nolen-Hoeksema, 2012). These role expectations may discourage emotional expression and help-seeking behaviors, leading to internalized stress that remains unmitigated. Moreover, males may be more exposed to performance-related stressors in academic, occupational, or public domains, especially in cultures that value assertiveness, competitiveness, and success among men. Another possible interpretation involves gender differences in stress appraisal and coping mechanisms. While women may be more likely to express emotional distress and seek social support, men might underreport emotional difficulties until they manifest more acutely (Tamres, Janicki, & Helgeson, 2002). This can result in a higher reported stress level once it becomes overwhelming. Additionally, biological and neuropsychological differences in stress reactivity and cortisol regulation might contribute to differing stress experiences between genders (Kudielka & Kirschbaum, 2005).

The findings of the study reveal statistically significant gender-based differences in both internal and external locus of control (LOC) orientations. Males demonstrated significantly higher internal LOC scores (M = 3.9, SD = 0.8) than females (M = 2.5, SD = 0.7), while females reported significantly higher external LOC scores (M = 4.6, SD = 0.9) compared to males (M = 2.8, SD = 0.6). These

results suggest a robust gender divergence in attributional style, with males more likely to perceive personal agency over life outcomes and females more inclined to view outcomes as determined by external factors such as luck, fate, or powerful others. This pattern is consistent with prior literature indicating gender-based variations in control orientation (Nowicki & Duke, 1983; Sherman et al., 1997). Males are often socialized to value autonomy, self-direction, and control, traits that are closely aligned with internal LOC. In contrast, females—particularly in more traditional or collectivist cultural contexts—may be conditioned to perceive less personal control over external circumstances due to gendered expectations, reduced access to power structures, or heightened interdependence in relational roles (Furnham & Steele, 1993; Lefcourt, 1982). Such cultural and social norms may reinforce an external locus of control in females, especially in societies where gender roles are strongly differentiated.

From a psychological standpoint, internal locus of control has been positively associated with adaptive outcomes such as self-efficacy, resilience, and proactive coping (Rotter, 1966; Judge, Erez, Bono, & Thoresen, 2002). Individuals with a strong internal LOC tend to experience greater motivation and psychological well-being because they believe their actions influence outcomes. Conversely, those with an external LOC may experience helplessness, reduced motivation, and increased vulnerability to stress and depressive symptoms due to their perceived lack of control (Benassi, Sweeney, & Dufour, 1988; Cheng et al., 2013). Thus, the observed gender difference in LOC orientation has implications for psychological resilience and stress regulation, particularly when considered alongside the earlier finding that males reported higher levels of perceived stress. Interestingly, while one might expect an internal LOC to correlate with lower perceived stress, the concurrent finding that males also reported higher stress levels suggests a more complex interaction. It is possible that males, despite their internal control orientation, experience greater pressure and responsibility for outcomes, contributing to heightened stress. Alternatively, it may reflect context-specific stressors unique to male participants in this sample, such as academic or occupational expectations, which require further investigation.

In this study, the results of the independent samples t-test revealed a statistically significant difference in perceived stress levels based on participants' area of residence. Urban participants reported substantially higher levels of stress (M = 29.1, SD = 6.1) than those living in rural areas (M = 22.8, SD = 5.7), with a t-value of 8.23 and p < .001. This significant difference suggests that environmental and contextual factors inherent to urban living may contribute meaningfully to elevated psychological stress. These findings are consistent with existing literature that highlights the stressful nature of urban environments due to factors such as overcrowding, noise, traffic congestion, high cost of living, job competition, and reduced opportunities for social bonding and relaxation (Evans, 2003; Lederbogen et al., 2011). Urban residents are also more likely to experience time pressure, exposure to environmental pollutants, and overstimulation from constant sensory input, all of which are known contributors to chronic stress (Srivastava, 2009). Furthermore, while urban areas may offer more employment and educational opportunities, they often come with increased demands and expectations, potentially exacerbating psychological distress.

In contrast, rural living is often associated with lower stress levels, which may be attributed to factors such as stronger community ties, greater exposure to natural environments, lower crime rates, and a generally slower pace of life (Wang et al., 2021). Rural settings may foster a greater sense of belonging and social support, both of which are protective against stress and mental health issues (Pretty, Peacock, Sellens, & Griffin, 2005). These elements may help buffer individuals against stress even in the face of fewer infrastructural or economic resources. Programs designed for urban populations might need to emphasize techniques that counteract the environmental stressors of city life, such as mindfulness, nature therapy, time management, and strategies to reduce sensory overload. Additionally, urban mental health services should consider integrating urban planning perspectives, such as increasing access to green spaces and promoting community engagement, to improve overall psychological well-being.

CONCLUSION

The present study explored the relationship between perceived stress and locus of control, while also examining the influence of demographic variables such as gender and area of living. The findings reveal several critical insights. Firstly, individuals with an internal locus of control reported significantly lower levels of perceived stress, supporting the hypothesis that belief in personal agency acts as a protective psychological factor. Conversely, an external locus of control was associated with elevated stress levels, underscoring the vulnerability of individuals who perceive life events as beyond their control. Gender differences were also evident. Males demonstrated higher internal locus of control scores and greater perceived stress levels, while females scored higher on external locus of control. This suggests that although males may endorse personal agency, they might simultaneously experience greater societal and personal pressure, resulting in increased stress. On the other hand, females' external attribution style may reflect sociocultural influences and coping strategies shaped by contextual constraints.

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