Integrating Self-Determination Theory with the Diathesis-Stress Model: New Theoretical Perspectives on Anxiety and Depression

Sun Zheng Hui, Wong Siew Ping, and Xiao Huai Xuan

Astract – **This study explores the integration of Self-Determination Theory (SDT) and the Diathesis-Stress Model (DSM) to address the complex mechanisms underlying anxiety and depression among college students. By analysing representative studies published over the past five years, this research examines the strengths and limitations of SDT and DSM, focusing on their cultural, socioeconomic, and health-related applications. Findings reveal that while SDT emphasizes the satisfaction of psychological needs—autonomy, competence, and relatedness—as critical for mental well-being, DSM highlights the interaction between individual vulnerabilities and external stressors. The integration of these theories provides a comprehensive framework for understanding how unmet psychological needs amplify stress sensitivity, thereby contributing to mental health challenges. This study further underscores the role of cultural norms and socioeconomic status (SES) in shaping the applicability of these theories, with autonomy and stress responses varying significantly across individualistic and collectivist contexts. Practical implications include the design of culturally sensitive and personalized interventions, leveraging both intrinsic motivational processes and external stress management strategies. By advancing a unified theoretical framework, this research offers valuable insights for enhancing mental health outcomes and informing policy and practice in diverse educational and cultural settings.**

Keywords – **Self-Determination Theory, Diathesis-Stress Model, Anxiety, Depression, College Students, Psychological Needs**

I. INTRODUCTION

In recent years, the mental health of college students has emerged as a critical global public health concern. A growing body of research highlights the prevalence of psychological distress among university students, with anxiety and depression being among the most frequently reported issues. According to data from the World Health Organization (2022), approximately 30% of college students worldwide experience some form of anxiety, while 20% suffer from depression (Li et al., 2022). These issues transcend geographical and cultural boundaries, underscoring the need for a comprehensive and context-sensitive approach to understanding and addressing student mental health challenges.

In China, a national survey conducted by the Ministry of Education in 2021 revealed that 23.6% of college students exhibited moderate to severe symptoms of anxiety, while 18.5% experienced depressive symptoms (Huang & Liu, 2023; Qin et al., 2023). The widespread nature of these conditions necessitate a deeper investigation into their underlying causes, as well as the development of targeted interventions to promote student well-being. Mental health difficulties not only affect academic performance but also have profound implications for students' social interactions, extracurricular engagement, and overall quality of life (Doré et al., 2017; Joseph, 2023). For instance, students suffering from anxiety may withdraw from social activities, leading to isolation and loneliness, while those with depression often experience disrupted sleep patterns, chronic fatigue, and diminished motivation, further hindering their daily functioning (Shah & Pol, 2020).

Beyond the immediate academic and social consequences, untreated anxiety and depression can have long-term effects. Research suggests that students who experience persistent mental health difficulties during their university years are more likely to encounter challenges in transitioning to the workforce, face prolonged psychological distress, and report lower overall life satisfaction in adulthood (Jenkins et al., 2020). These concerns also place additional strain on university counselling services, contributing to institutional challenges such as increased dropout rates and diminished student engagement. Given these pressing concerns, early identification and intervention strategies are essential to mitigate the impact of anxiety and depression among college students.

To provide a comprehensive theoretical foundation for understanding these mental health challenges, this study integrates Self-Determination Theory (SDT) and the Diathesis-Stress Model (DSM). These frameworks offer complementary perspectives on the interplay between psychological mechanisms and environmental influences, shedding light on both the internal and external factors that contribute to students' mental health outcomes.

Self-Determination Theory (SDT) is particularly relevant in exploring the motivational and psychological determinants of well-being (Deci & Ryan, 2008). It posits that human flourishing is contingent upon the satisfaction of three fundamental psychological needs: autonomy, competence, and relatedness. When these needs are fulfilled, individuals experience greater psychological resilience and well-being. Conversely, when these needs are thwarted, individuals are more susceptible to negative mental health outcomes, including anxiety and depression (Ryan & Deci, 2000). For example, students who perceive a lack of autonomy in their academic choices or feel incapable of meeting academic expectations may experience heightened stress, ultimately leading to psychological distress. SDT, therefore, provides a valuable lens for examining the role of intrinsic motivation and psychological need satisfaction in students' mental health.

The Diathesis-Stress Model (DSM) complements SDT by focusing on the interaction between individual

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vulnerabilities and external stressors (Hastings & Nuselovici, 2006). This model suggests that individuals have varying levels of predisposition to stress-related disorders, influenced by factors such as genetic susceptibility, personality traits, and past experiences (Hartman & Belsky, 2016). When external stressors, such as academic pressure, financial difficulties, or social conflicts, surpass an individual's coping capacity, the likelihood of developing anxiety and depression increases (Meeks et al., 2021). By incorporating DSM, this study acknowledges the critical role of environmental stressors in shaping mental health outcomes and highlights the necessity of interventions that reduce exposure to stress while strengthening students' coping resources.

The integration of SDT and DSM offers a novel approach to understanding student mental health by bridging the gap between intrinsic psychological mechanisms and external environmental influences. SDT elucidates the motivational and psychological underpinnings of well-being, while DSM explains how stressors interact with individual predispositions to shape mental health outcomes. Together, these frameworks provide a holistic perspective that captures both the underlying psychological needs and the contextual stressors contributing to anxiety and depression. This dual-theoretical approach not only deepens our understanding of the factors influencing student mental health but also informs the development of targeted interventions that address both psychological needs and environmental stressors.

By adopting this integrative framework, this study aims to uncover the mechanisms through which anxiety and depression develop and persist among college students. The findings will contribute to the broader academic discourse on student mental health and provide actionable insights for educational institutions and policymakers seeking to implement effective mental health interventions.

II. PROBLEM STATEMENT

While the mental health challenges faced by college students, particularly anxiety and depression, have been extensively studied, significant gaps persist in understanding their underlying causes and effective interventions (Wainwright & Brueilly, 2020; Worsley et al., 2022). Existing research often adopts singular theoretical frameworks, such as Self-Determination Theory (SDT) or the Diathesis-Stress Model (DSM) (Nielsen et al., 2020; Ryan & Deci, 2020). However, these approaches alone fail to capture the complex interactions between intrinsic psychological needs, external stressors, and individual vulnerabilities. This oversimplification limits their applicability in addressing the multifaceted nature of mental health disorders.

Moreover, most studies are conducted in Western individualistic cultures, focusing on autonomy, competence, and relatedness as universally expressed psychological needs (Martela et al., 2023). This perspective overlooks how these needs manifest differently in collectivist societies, where autonomy may reflect familial or societal alignment rather than individual independence (Nalipay et al., 2019). Additionally, the influence of socioeconomic status (SES) and health conditions on psychological well-being remains underexplored, despite evidence that they significantly shape an individual's ability to cope with stress (Reiss et al., 2019).

A further limitation lies in the static nature of existing models, which often neglect the dynamic and evolving nature of mental health challenges. Factors such as psychological resilience, gender, and transitional life stages are rarely integrated, yet they play a critical role in moderating the effects of vulnerabilities and stressors (Chen et al., 2021; Conley et al., 2020; Nurius et al., 2023).

This study addresses these gaps by integrating SDT and DSM into a unified framework that accounts for both individual psychological mechanisms and broader environmental influences. By exploring how intrinsic needs interact with cultural, socioeconomic, and health-related factors, this research aims to uncover the root causes of anxiety and depression among college students. The findings will not only advance theoretical understanding but also inform the development of culturally sensitive and context-specific interventions, ultimately contributing to the well-being and resilience of young adults globally.

III. LITERATURE REVIEW

Self-Determination Theory (SDT)

Self-Determination Theory (SDT), developed by Edward L. Deci and Richard M. Ryan, emerged in the late 20th century as a response to behaviourist models of motivation, which primarily emphasized external reinforcement mechanisms (Ryan & Deci, 2015). Deci and Ryan posited that human motivation is not solely governed by rewards and punishments but is fundamentally rooted in intrinsic psychological needs that drive personal growth and well-being. Their early research focused on intrinsic motivation—actions undertaken for their inherent satisfaction—and demonstrated how extrinsic factors, such as tangible rewards or controlling feedback, could undermine intrinsic interest.

Since its inception, SDT has evolved into a comprehensive framework for understanding human motivation, personality development, and well-being across diverse contexts. Its theoretical principles have been extensively applied in education, healthcare, workplace management, and sports. For instance, SDT has guided research on how autonomy-supportive teaching practices enhance student engagement and how supportive workplace environments foster employee satisfaction and productivity (Reeve & Cheon, 2021; Shobe, 2018). Over the years, empirical studies have consistently validated SDT's core principles, solidifying its status as a robust framework for studying motivation and well-being.

A distinguishing feature of SDT is its explicit identification of three fundamental psychological needs—autonomy, competence, and relatedness—which serve as universal drivers of human behaviour. Unlike Maslow's hierarchy of needs or Bandura's social cognitive theory, SDT posits that these needs are essential for psychological well-being regardless of cultural or situational variations (Nalipay et al., 2019). Autonomy refers to the need to experience volition and self-direction in one's actions. It does not equate to independence but rather the ability to make choices

aligned with personal values and interests. In educational settings, students who have the freedom to select their courses, participate in decision-making processes, or express their opinions in class exhibit higher levels of intrinsic motivation and psychological well-being (Bailey & Phillips, 2016). Conversely, environments that suppress autonomy—through rigid regulations, excessive control, or authoritarian teaching styles—have been linked to increased anxiety and burnout (Jentsch et al., 2022).

Competence reflects an individual's perception of their ability to effectively interact with their environment and achieve desired outcomes. When students believe they can master academic challenges, they experience a sense of accomplishment and growth. However, repeated failures, unrealistic expectations, or a lack of academic support can lead to frustration, low self-esteem, and symptoms of depression (Hsieh et al., 2007). For example, students struggling with excessive academic demands may develop heightened stress levels, negatively affecting their overall mental health.

Relatedness involves the need to establish meaningful social connections, characterized by feelings of belonging, trust, and emotional support. Social relationships play a crucial role in buffering stress and fostering resilience (Birmingham & Holt-Lunstad, 2018). Within a university context, students who maintain close relationships with peers, faculty, or family members report better emotional adjustment and reduced symptoms of anxiety and depression (Li et al., 2014; Pittman & Richmond, 2008; Swenson et al., 2008). In contrast, social isolation and a lack of community integration are significant risk factors for psychological distress (Alun & Murphy, 2019).

Empirical research affirms that satisfaction of these psychological needs directly correlates with positive mental health outcomes. When students experience autonomy, competence, and relatedness, they are more likely to exhibit self-regulation, intrinsic motivation, and resilience, thereby mitigating risks of anxiety and depression (Niemiec & Ryan, 2009). SDT's applications extend beyond education to healthcare and organizational psychology, offering valuable insights into motivation and well-being mechanisms. In healthcare, SDT-based interventions promoting autonomy and intrinsic motivation have been shown to improve adherence to healthy behaviours such as exercise and smoking cessation (Hagger & Protogerou, 2020). For university students, SDT provides a framework to understand how unmet psychological needs contribute to anxiety and depression. Environments that frustrate autonomy, competence, and relatedness can heighten vulnerability to mental health issues (Kirsh et al., 2015). Universities can integrate SDT principles by implementing peer mentorship programs, flexible course options, and inclusive extracurricular activities, fostering supportive environments that enhance student well-being.

In the healthcare sector, SDT has informed interventions aimed at promoting healthy behaviours such as exercise, smoking cessation, and medication adherence. Programs designed to satisfy psychological needs have shown higher success rates compared to those relying solely on extrinsic rewards (Hagger & Protogerou, 2020). These findings underscore SDT's relevance in designing interventions to address mental health challenges, particularly among vulnerable populations like college students.

For university students, SDT provides a framework for understanding how unmet psychological needs contribute to anxiety and depression. Autonomy-frustrating environments, perceived academic incompetence, and social disconnection all heighten vulnerability to mental health issues (Kirsh et al., 2015). To foster supportive environments, universities can implement strategies such as peer mentorship programs, flexible course options, and inclusive extracurricular activities.

The Diathesis-Stress Model

The Diathesis-Stress Model, originally conceptualized in the mid-20th century, has become a cornerstone in understanding the etiology of psychological disorders (Monroe & Cummins, 2015). The model posits that mental health issues arise from the interaction between pre-existing vulnerabilities (diatheses) and environmental stressors. These vulnerabilities may stem from genetic predispositions, neurobiological differences, early-life adversities, or personality traits, while stressors often include significant life events, interpersonal conflicts, or chronic environmental pressures (Merikangas & Pine, 2002).

Initially applied to schizophrenia and mood disorders, the Diathesis-Stress Model has since been adapted to a wide range of psychological conditions, including anxiety, depression, and post-traumatic stress disorder (PTSD). Its utility extends beyond clinical psychology to education, occupational health, and public policy. For instance, researchers have used the model to examine how workplace stress interacts with personality traits to influence burnout or how genetic predispositions, combined with environmental factors, contribute to stress-related illnesses.

For college students, DSM provides a robust framework for understanding the interplay between personal vulnerabilities and the unique stressors encountered during this critical developmental stage. Vulnerabilities in college students often include biological and genetic predispositions, psychological factors (e.g., perfectionism or neuroticism), and environmental disadvantages such as financial insecurity or limited access to mental health resources (Businelle et al., 2014; Milne et al., 2009). Stressors may include academic pressure, social challenges, and transitional life changes, all of which contribute to heightened anxiety and depression (Krieg, 2013; Broadbridge & Swanson, 2005).

The model illustrates how these vulnerabilities and stressors interact. For example, a student with a perfectionistic personality may perceive academic failure as catastrophic, triggering intense feelings of inadequacy. Similarly, a low-income student facing financial stress may struggle to cope with academic demands, leading to heightened mental health challenges.

DSM provides actionable insights for designing interventions that mitigate vulnerabilities and manage stress among college students. Effective strategies include psychological counseling (e.g., cognitive-behavioural therapy), resilience-building programs, early screening for at-risk students, and institutional policies aimed at reducing stressors (e.g., flexible deadlines, mentorship programs, financial aid). However, while DSM offers valuable insights,

it has limitations. The model predominantly focuses on individual-level vulnerabilities and stressors, often overlooking systemic or cultural influences on mental health (Vargas & Mittal, 2022). Additionally, its binary classification of "vulnerability" and "stress" may oversimplify their complex interactions.

Future research can address these limitations by integrating cultural contexts, leveraging technology for real-time mental health monitoring, and adopting dynamic models that capture the evolving nature of vulnerabilities and stressors over time. By refining DSM in these ways, it can continue to serve as a vital tool for understanding and addressing mental health challenges among college students.

IV. METHODOLOGY

This study adopts a theoretical review and re-analysis approach to explore the application and integration potential of Self-Determination Theory (SDT) and the Diathesis-Stress Model (DSM) in addressing anxiety and depression among college students. A systematic literature search was conducted using academic databases, including PubMed, Web of Science, Scopus, and Google Scholar. The selection criteria focused on peer-reviewed English-language articles published between 2018 and 2023, ensuring that the most recent and relevant studies were included. The search process involved key terms such as "Self-Determination Theory," "Diathesis-Stress Model," "anxiety," "depression," "college students," "psychological needs," "vulnerability," and "stressors."

The identification and selection of literature followed a two-stage process. First, titles and abstracts were screened to identify studies aligning with the research focus. Second, full-text reviews were conducted to assess the relevance and theoretical contributions of each article. Only studies that provided significant insights into SDT, DSM, and their implications for student mental health were retained for in-depth analysis.

The analytical methodology employed a combination of thematic extraction, theoretical comparison, and framework integration. The analysis was structured around three core dimensions: (1) the application of SDT in mental health research, particularly in relation to psychological needs satisfaction and motivation; (2) DSM's exploration of stress-vulnerability interactions in the development of anxiety and depression; and (3) the potential integration of these two frameworks to propose a more comprehensive understanding of psychological well-being among college students. By synthesizing findings from selected studies, this study aimed to construct an integrated theoretical framework to explain the dynamic mechanisms linking psychological needs and stress interactions.

Several methodological limitations should be acknowledged. First, the study relies exclusively on literature-based analysis, which, while valuable for theoretical synthesis, lacks empirical validation. Future research should consider experimental or longitudinal studies to test the proposed framework. Second, the review is limited to articles published within a five-year window, potentially excluding older foundational studies that may still hold relevance. Lastly, the selected literature may predominantly reflect specific cultural contexts, which could limit the generalizability of the integrated framework. Expanding the scope of literature, incorporating cross-cultural perspectives, and conducting empirical investigations are recommended for future studies to enhance the robustness of the theoretical integration proposed in this research.

V. CRITIQUES

Cultural Influences on Self-Determination Theory

Cultural perspectives significantly shape the interpretation and prioritization of Self-Determination Theory's (SDT) three basic psychological needs: autonomy, competence, and relatedness. In Western individualistic cultures, autonomy is primarily associated with personal independence and self-expression, aligning with values such as freedom of choice and self-determination. Individuals are encouraged to make decisions based on personal preferences and aspirations. In contrast, Eastern collectivist cultures often conceptualize autonomy as relational interdependence, emphasizing alignment with societal or familial expectations (Kokkoris et al., 2013). Studies in China and Japan, for instance, suggest that autonomy is perceived not as an expression of individual choice but as the 62ulfilment of social roles and responsibilities to maintain group harmony (Zhu et al., 2023).

Similarly, the perception of competence varies across cultural contexts. In competitive, achievement-oriented societies, competence is frequently linked to individual success and social recognition, particularly in academic and professional domains. Conversely, in more cooperative cultures, competence is often associated with contributing to collective goals and community well-being (Torelli et al., 2020). For example, in African communities, competence is demonstrated through acts of service and support, highlighting the interconnected nature of individual and group success (Owoo & Lambon-Quayefio, 2021).

The need for relatedness also manifests differently across cultures. In collectivist societies, relatedness is typically centered on familial and community bonds, emphasizing loyalty, respect, and group cohesion. In individualistic cultures, however, personal friendships and partnerships are often prioritized, with emotional intimacy and self-disclosure viewed as primary pathways to connectedness. A comparative study by Kaur and Noman (2020) found that Western students valued friendships for emotional support, while students from collectivist cultures placed greater emphasis on familial relationships as sources of strength and belonging. These cultural variations indicate that while SDT's psychological needs are universal, their expression and 62ulfilment are profoundly influenced by cultural norms and values. This suggests the necessity for culturally sensitive adaptations when applying SDT across diverse contexts.

Socioeconomic Status and Psychological Need Satisfaction

Socioeconomic status (SES) plays a pivotal role in shaping an individual's capacity to satisfy the psychological needs outlined by SDT (Guo, 2024). Individuals from higher

SES backgrounds generally have greater access to resources such as quality education, healthcare, and extracurricular opportunities, all of which contribute to the development of autonomy, competence, and relatedness. For instance, students from affluent families often experience greater freedom in selecting their educational and career paths, thereby enhancing their sense of autonomy. They are also more likely to receive academic support and mentorship, which strengthens their sense of competence (Chiang, 2021).

Conversely, lower SES is frequently associated with restricted access to these resources, potentially limiting psychological need satisfaction. Financial insecurity often necessitates prioritizing basic survival over self-determination, thereby undermining autonomy. For example, students from low-income backgrounds may have limited academic choices due to financial constraints, reducing their perceived autonomy and competence (Castleman & Meyer, 2019). Furthermore, social exclusion resulting from SES disparities can impede relatedness by limiting opportunities for meaningful social interactions and community engagement.

Health conditions further complicate psychological need fulfillment, particularly when intersecting with SES-related disadvantages (Freese & Baer-Bositis, 2019). Chronic illnesses or disabilities can diminish an individual's sense of competence by restricting their ability to engage in daily activities or achieve personal goals. Additionally, health-related limitations may hinder social interactions, thereby affecting relatedness. These challenges are particularly pronounced in marginalized communities, where limited healthcare access exacerbates both physical and psychological vulnerabilities.

Expanding SDT: Integrating Contextual Factors

To address the limitations of Self-Determination Theory (SDT) in capturing the influence of socioeconomic status (SES) and health conditions, several theoretical and practical adaptations can be proposed. One potential enhancement involves integrating SDT with Bronfenbrenner's Ecological Systems Theory, which emphasizes the interaction between individuals and their broader social environments. This approach would allow for a more dynamic understanding of how contextual factors, such as SES, cultural values, and governmental policies, shape psychological need satisfaction. For example, macro-level influences, such as economic inequality and educational accessibility, can significantly impact an individual's autonomy, competence, and relatedness.

Additionally, a dynamic interaction framework could be developed to illustrate the interplay between individual and systemic factors in shaping psychological outcomes. Modeling SES as a mediator or moderator in the relationship between psychological needs and mental health outcomes could enhance SDT's explanatory power. This approach would account for how external constraints, such as financial limitations or social inequalities, influence intrinsic motivation and well-being.

Furthermore, culturally sensitive interventions should be incorporated into SDT-based applications. In low-income settings, initiatives such as financial aid programs, mentorship opportunities, and accessible mental health services could support autonomy and competence. In collectivist cultures, interventions that emphasize community engagement and group cohesion may be more effective in fostering relatedness. Recognizing the diverse sociocultural and economic contexts in which individuals operate can help tailor SDT-based interventions to better address disparities in psychological need fulfillment.

By expanding its scope to include SES and health conditions, SDT can provide a more comprehensive framework for understanding the diverse challenges individuals face in satisfying their psychological needs. Such an expansion would not only enhance the theory's applicability but also inform policies and interventions aimed at promoting psychological well-being across different social and economic contexts.

Rethinking the Diathesis-Stress Model: Complexity and Personalization

The Diathesis-Stress Model provides a foundational framework for understanding the interaction between inherent vulnerabilities and external stressors (Smith, 2020). However, its traditional emphasis on genetic predispositions and environmental challenges tends to oversimplify the complexity of mental health disorders. Factors such as psychological resilience, gender roles, socioeconomic background, and educational experiences interact dynamically with vulnerabilities and stressors, shaping individual mental health outcomes in diverse ways.

Psychological resilience, defined as an individual's capacity to adapt and recover from adversity, plays a crucial role in moderating stress-related impacts on mental health. Individuals with similar vulnerabilities may exhibit markedly different responses to identical stressors depending on their resilience levels. Research by Kalisch and Kampa (2021) suggests that interventions aimed at enhancing resilience, such as mindfulness training or cognitive-behavioural therapy, can significantly buffer individuals against the negative effects of stress.

Gender also influences stress experiences and coping mechanisms. Studies indicate that women are more likely to internalize stress, leading to conditions such as anxiety and depression, whereas men often externalize stress through behaviours such as aggression or substance use (Graves et al., 2021). These distinctions underscore the necessity of incorporating gender-sensitive approaches when applying the Diathesis-Stress Model in both research and clinical practice.

Socioeconomic status (SES) further complicates the model, as it affects both vulnerability and stress exposure (Grzywacz et al., 2004). Financial insecurity exacerbates external stressors—such as housing instability and restricted access to healthcare—while simultaneously heightening internal vulnerabilities, such as feelings of inadequacy or helplessness. Additionally, educational experiences shape coping mechanisms; students from underfunded schools may lack essential problem-solving skills and emotional regulation strategies that could otherwise mitigate stress. Recognizing these multifactorial interactions allows for a more nuanced application of the Diathesis-Stress Model, emphasizing the need for a dynamic and individualized approach to understanding mental health.

Personalizing the Diathesis-Stress Model

Historically, the Diathesis-Stress Model has focused on generalized pathways to psychological disorders, often overlooking the unique contexts and coping mechanisms that shape individual responses to stress (Wood & Bhatnagar, 2014). A shift toward personalized interventions can address this limitation by tailoring strategies to individuals' specific vulnerabilities and stressors.

For instance, a student with a genetic predisposition to anxiety but limited social support may benefit from a combination of pharmacological treatment and group therapy to strengthen both biological and social resilience. Conversely, a student whose stress stems primarily from financial hardship may require socioeconomic interventions, such as access to affordable housing or financial counselling, in conjunction with mental health support.

Cultural and contextual factors also play a significant role in shaping stress experiences. In collectivist cultures, interventions might focus on strengthening family and community ties to enhance social support, whereas in individualistic cultures, fostering personal growth and autonomy may be more effective. Culturally sensitive approaches ensure that interventions align with individuals' values and lived experiences, thereby enhancing their effectiveness (Martinez & Mahoney, 2022).

Technological advancements further expand opportunities for personalized stress management (Villani et al., 2021). Mobile applications and wearable devices can track stress levels in real time, offering individuals immediate feedback and tailored coping strategies. For example, an application could prompt mindfulness exercises or relaxation techniques upon detecting elevated stress markers, enabling proactive stress management before vulnerabilities escalate.

By integrating personalized, context-sensitive approaches, the Diathesis-Stress Model can evolve into a more adaptable framework, better suited to addressing the diverse and dynamic nature of mental health challenges.

Expanding the Diathesis-Stress Model: Integrating Contextual Factors

To enhance its practical applicability, the Diathesis-Stress Model must incorporate a more comprehensive understanding of individual and environmental interactions. This involves integrating systemic perspectives, leveraging advancements in research methodologies, and refining intervention strategies.

One approach is to integrate Bronfenbrenner's Ecological Systems Theory, which provides a broader framework for understanding how macrosystem factors—such as cultural norms, economic policies, and public health initiatives—shape stress and vulnerability (Lomas, 2015). Policies that promote social equity, education accessibility, and mental health services can reduce systemic stressors and foster protective environments.

Moreover, traditional static models often fail to capture the evolving nature of vulnerabilities and stress over time. Dynamic modeling techniques, such as longitudinal studies and machine learning approaches, can identify patterns in stress exposure and predict how stressors may differentially impact individuals across various life stages or contexts (Meyer et al., 2001; Nelson et al., 2017). For instance, predictive analytics could help identify students at high risk of mental health deterioration during transitional periods, such as the start of college or examination seasons, enabling early intervention.

Expanding research methodologies to include qualitative approaches—such as narrative interviews and ethnographic studies—can further enhance the model's applicability (Hurst et al., 2012; Mazzola et al., 2011). These methods provide deeper insights into how individuals perceive and navigate stress, capturing complex interactions between personal and environmental factors that quantitative research alone may overlook.

Finally, interventions based on the Diathesis-Stress Model should address both individual vulnerabilities and systemic stressors. For example, a university mental health program could integrate resilience training with structural adjustments, such as reducing academic workload during high-stress periods or providing on-campus childcare for students with family responsibilities (Goodman, 2017). These multifaceted interventions acknowledge the interplay between personal agency and external conditions, ensuring a more holistic approach to mental health.

By incorporating these advancements, the Diathesis-Stress Model can evolve into a more versatile and inclusive framework, capable of guiding research and interventions that reflect the complexities of real-world mental health challenges.

VI. DISCUSSION

Integrating Extensions and Improvements to SDT

To extend and refine Self-Determination Theory (SDT), incorporating additional considerations such as socioeconomic status (SES) and health conditions is essential. A more holistic understanding of psychological need satisfaction moves beyond SDT's traditional focus on autonomy, competence, and relatedness, addressing critiques that the theory lacks contextual sensitivity (Huyghebaert-Zouaghi et al., 2020). This expansion allows SDT to better capture the lived experiences of individuals navigating systemic and health-related constraints.

SES and health conditions significantly influence the 64ulfilment of psychological needs within SDT (Martela et al., 2022). Individuals from lower SES backgrounds often prioritize survival-related concerns—such as financial stability and basic needs—over autonomy or competence. This reprioritization is not a deficit in motivation but an adaptive response to constrained resources. Similarly, chronic illnesses can hinder an individual's capacity to pursue goals that require sustained physical or cognitive effort, thereby diminishing their sense of competence and, in some cases, relatedness due to social stigma and exclusion. For example, a university student managing a chronic condition may struggle with academic performance and social integration, impacting both their competence and relatedness.

Cross-cultural research is also critical in refining SDT's applicability, addressing critiques that the theory is overly Western-centric. Autonomy, for instance, is often framed

differently across cultures. In Western contexts, it is closely linked to individual choice and self-expression, while in collectivist societies, autonomy is often exercised within the boundaries of fulfilling group responsibilities (Kâğıtçıbaşı, 2013; Soenens et al., 2018). Understanding these cultural variations allows for a more nuanced application of SDT and its motivational principles. Studies have shown that autonomy-supportive parenting in the U.S. fosters intrinsic motivation, whereas in Japan and Korea, autonomy is embedded in social harmony and collective obligations (Gonzalez-DeHass, 2019).

Empirical studies exploring SES, health conditions, and cultural contexts provide deeper insights into the ways individuals navigate their environments to satisfy psychological needs (González et al., 2016). Addressing previous critiques, these investigations help ensure that SDT accounts for diverse life circumstances rather than applying a one-size-fits-all framework.

To translate these theoretical expansions into practice, interventions must be context-specific. In low-resource environments, initiatives that provide financial assistance or education access can enhance autonomy and competence. For example, microloan programs in Kenya have been shown to not only improve economic independence but also strengthen competence and relatedness through community collaboration (Goodman et al., 2022). Similarly, in high-pressure academic settings, autonomy-supportive teaching methods—such as allowing students to co-design assignments—can foster motivation and control. Additionally, peer mentorship programs can promote relatedness, particularly for first-generation college students who often experience academic isolation.

By incorporating contextual factors into SDT, researchers and practitioners can design more targeted interventions that respect the diverse realities of individuals. This approach not only enhances psychological need 65ulfilment but also addresses prior critiques that SDT fails to sufficiently account for external constraints such as systemic inequalities and health limitations (Yardley et al., 2015). Moreover, expanding cross-cultural research ensures that SDT remains relevant in diverse sociocultural settings, further validating its universal applicability (Nalipay et al., 2019).

Improvements to the Diathesis-Stress Model

Addressing critiques of the Diathesis-Stress Model, particularly its traditional focus on genetic predispositions and environmental stressors, requires integrating a broader range of psychological and sociological factors. A major limitation of the original model is its tendency to view individuals as passive recipients of stress rather than active agents who can develop resilience and adaptive strategies (Fried & Robinaugh, 2020). Expanding the model to incorporate resilience, SES, education, gender, and cultural background provides a more comprehensive understanding of psychological disorders and mental health outcomes.

The interaction between biological vulnerabilities, psychological traits, and social environments is evident in studies that examine anxiety and economic stress. Creswell & Waite (2015) found that individuals with a genetic predisposition to anxiety were significantly more likely to experience heightened symptoms when exposed to financial instability. This highlights how environmental factors can exacerbate pre-existing vulnerabilities, reinforcing the need for a multidimensional approach. Similarly, McGillivray & Pidgeon (2015) demonstrated that students with high levels of resilience—characterized by emotional regulation and adaptive problem-solving—were less likely to develop depressive symptoms despite academic pressures. These findings challenge the deterministic view of the Diathesis-Stress Model, instead advocating for an approach that considers protective factors alongside risk factors.

By incorporating interdisciplinary research, including qualitative methodologies and advanced statistical techniques, the Diathesis-Stress Model can better account for the complex, evolving nature of stress responses. Traditional static models fail to capture how stressors interact dynamically over time. Longitudinal studies and machine learning analyses can reveal patterns in stress exposure and resilience development, offering more predictive insights into mental health risks (Renzi et al., 2018).

Personalized interventions grounded in the expanded Diathesis-Stress Model acknowledge individual variability in vulnerability and coping mechanisms. For example, a university student with a genetic predisposition to depression may benefit from a combination of cognitive-behavioural therapy (CBT) and pharmacological treatment, addressing both psychological and biological factors. In collectivist societies, family-centered interventions that integrate relatives into the treatment process have shown greater efficacy than Western-style individual therapy (Gearing et al., 2013). Recognizing these cultural distinctions ensures that mental health interventions are both relevant and effective.

Preventive strategies must also address systemic risk factors. Socioeconomic disparities, for example, contribute significantly to chronic stress and mental health disorders. Public policies that promote economic equity—such as affordable healthcare, education access, and employment support—can mitigate stress-related vulnerabilities. Community awareness campaigns also play a crucial role in reducing mental health stigma. In India, a multimedia campaign aimed at normalizing mental health discussions led to increased engagement with counseling services, highlighting the power of public education in shifting social perceptions (Maulik et al., 2017).

Expanding research perspectives allows scholars to explore the multifaceted nature of mental health disorders through interdisciplinary frameworks. The integration of ecological and cultural dimensions enables a richer understanding of stress responses, moving beyond traditional biomedical models. Additionally, advocacy for policy reforms that address social determinants of mental health aligns with the broader goal of developing a holistic, context-sensitive approach to psychological well-being (Macintyre et al., 2018; Occhipinti et al., 2024).

By addressing these critiques, the Diathesis-Stress Model can evolve into a more flexible and inclusive framework. Integrating resilience, cultural context, and systemic influences allows for more precise predictions and interventions, ensuring that mental health support is both comprehensive and adaptable to diverse populations.

VII. CONCLUSION

This study integrates an expanded Self-Determination Theory (SDT) with an improved Diathesis-Stress Model to provide a more comprehensive understanding of psychological well-being and mental health. By addressing critiques and broadening SDT to include socioeconomic status, health conditions, and cultural influences, this research highlights the contextual complexities of psychological need fulfillment. Similarly, refining the Diathesis-Stress Model through the inclusion of resilience, systemic factors, and sociocultural dimensions enhances its explanatory power. This synthesis not only advances theoretical discourse but also informs practical applications, offering policymakers strategies to mitigate systemic stressors and providing practitioners with frameworks for personalized mental health interventions. Future research should empirically validate this integrated model using advanced methodologies such as longitudinal studies and machine learning to further explore the interplay of motivational and stress-vulnerability factors. Ultimately, this theoretical advancement strengthens the foundation for inclusive, context-sensitive mental health strategies that promote resilience and well-being across diverse populations.

ACKNOWLEDGEMENT

I am deeply grateful to my supervisor, Dr. Wong Siew Ping, for their guidance and encouragement throughout this research. I also thank my classmate, Xiao Huai Xuan, for her valuable discussions, and my family and friends for their unwavering support.

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