



## GENETICS AND SUSCEPTIBILITY TO DEPRESSION AMONG TEACHERS: IMPLICATIONS FOR THE TEACHING PROFESSION

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### ABSTRACT

This paper explores the genetic basis of susceptibility to depression among teachers, examining how genetic predisposition can influence mental health outcomes in this profession. It discusses the unique stressors that teachers face, the role of genetic factors in mental health, and the broader implications for the teaching profession, including the impact on student outcomes, teacher retention, and the need for supportive interventions.

**Keywords:** Genetic, Depression, Mental Health, Stressors and Teaching Profession

### Introduction

The mental health of teachers is a pivotal aspect of the educational ecosystem, influencing both the effectiveness of teaching and the overall learning environment for students. Recent studies highlight a significant correlation between genetic predispositions and the susceptibility to mental health disorders, including depression. This research explores the intricate relationship between genetics and depression among teachers, the implications of these findings for the teaching profession, and how addressing mental health can contribute to sustainable development in education.

The teaching profession is often characterized by high levels of stress and emotional labor, which can contribute to mental health challenges, including depression. Recent studies suggest that genetic factors play a significant role in determining an individual's susceptibility to depression. Understanding these genetic

influences is crucial in addressing the mental health needs of educators and the subsequent impact on their professional efficacy and student outcomes.

Depression is increasingly recognized as a significant public health issue affecting millions worldwide. The World Health Organization (WHO) identifies depression as the leading cause of disability globally, with approximately 280 million people affected. The disorder is characterized by persistent sadness, loss of interest or pleasure in activities, and an array of emotional and physical problems (WHO, 2021). Given its widespread prevalence and impact, understanding its contributors is vital, particularly in high-stress professions such as teaching. Depression is a common mental health disorder characterized by persistent feelings of sadness, hopelessness, and a lack of interest in previously enjoyed activities. It can affect cognitive function, emotional well-being, and



physical health (American Psychiatric Association, 2023).

Depression is a multifaceted mental health disorder characterized by persistently low mood, lack of interest or pleasure in activities, and various cognitive and physical symptoms. Research indicates that genetics play a crucial role in the vulnerability to depression. Twin studies suggest that heritability factors account for approximately 37% of the risk for developing depression, indicating a significant genetic component (Sullivan, Neale, & Kendler, 2000). Various genetic variants, particularly those involved in the serotonergic and dopaminergic pathways, have been implicated in mood regulation (Hariri et al., 2002).

Various studies indicate that teachers experience higher rates of depression compared to other professions. Research by Marie et al. (2018) found that approximately 20% of teachers reported experiencing symptoms of depression at some point in their careers. Factors contributing to this prevalence include demanding workloads, lack of resources, and the emotional toll of managing classroom dynamics.

Among educators, the prevalence of depression is notably high, with various studies indicating that teachers experience depressive symptoms at rates exceeding those of many other professions. For instance, research by Marie et al. (2018) highlighted that approximately 20% of teachers reported experiencing symptoms consistent with clinical depression. This situation poses critical challenges, not only to teachers but also to the educational system and, most importantly, to student outcomes.

The interplay between genetics and mental health significantly influences the prevalence of depression among teachers. These demographic faces unique stressors, including high

workloads, emotional labor, and challenging classroom environments, which may exacerbate underlying genetic predispositions to depressive disorders (Smith et al., 2022). Understanding the genetic factors that contribute to depression in educators is crucial, as it not only affects their well-being but also the overall quality of education provided to students.

Research indicates that teachers with a genetic susceptibility to depression may experience heightened challenges in fulfilling their professional roles, leading to increased absenteeism, burnout, and decreased job performance (Jones & Anderson, 2023). Furthermore, the mental health of teachers directly impacts student outcomes, as a teacher's mood and engagement levels influence classroom dynamics and student teaching (Williams, 2021).

This highlights the need for targeted mental health support and interventions within the education sector, focusing on both genetic predispositions and environmental stressors that contribute to depression among educators. Such approaches can foster a healthier teaching environment, thereby enhancing the effectiveness of the educational system as a whole.

### **The Unique Stressors Faced by Teachers**

Teachers face an array of job-related stressors that can exacerbate their risk for depression. Unlike many professions, teaching involves a combination of emotional, cognitive, and physical demands. High workloads, insufficient resources, and the emotional labor associated with fostering student engagement create a challenging work environment (McCallum, 2020). Additionally, education policy changes, administrative expectations, and increasing



accountability through testing can intensify these stressors.

*There are several specific factors contributing to teacher stress and subsequent mental health challenges as stressed by (McCallum, 2020):* Workload and Time Pressures, student behaviour, lack of support, and more. Teachers often work beyond designated hours, managing lesson planning, grading, and administrative duties. According to Skaalvik and Skaalvik (2017), heavy workloads are significantly correlated with burnout and depressive symptoms. Teachers frequently deal with classroom management issues, which can be emotionally taxing. Behaviors such as aggression, resistance to authority, and high needs for support can create a stressful educational environment (Reddy & Mullis, 2020). Finally Many teachers report feeling isolated in their roles, lacking the necessary support from administration and colleagues to manage their stress effectively. This lack of support can exacerbate feelings of inadequacy and contribute to mental health struggles. These stressors highlight the need to understand not only the external pressures teachers face but also the internal factors that may predispose them to depression.

### **Genetic Factors in Mental Health**

The role of genetics in mental health, particularly depression, has garnered increasing attention from researchers. Genetic predisposition refers to the inherited tendency to develop particular traits or disorders. In the case of depression, studies indicate that genetics significantly influences an individual's risk, with estimates suggesting that hereditary factors account for 30-40% of the variance in susceptibility to depression (Kendler et al., 2019).

Genetic factors contribute to the etiology of depression, with several studies indicating that heritability accounts for approximately 30-40% of the risk for developing depressive disorders (Kendler et al., 2019). This genetic basis underscores the importance of recognizing how inherited traits may predispose individuals to mental health issues.

### **Specific Genes Associated with Depression**

There are several candidate genes that may influence susceptibility to depression, including the recent advancements in genetic research have identified numerous genes potentially linked to depression, examples are Serotonin Transporter Gene (SLC6A4) which said that variations in this gene may influence serotonin levels, and a neurotransmitter critical for mood regulation. Specific polymorphisms in SLC6A4 are associated with increased vulnerability to depression, especially when combined with environmental stressors (Caspi et al., 2003). Variations in this gene have been linked to depression risk, particularly in response to environmental stressors.

Brain-Derived Neurotrophic Factor (BDNF): BDNF plays a vital role in neuroplasticity and cognitive function. Research suggests that lower BDNF levels are correlated with major depressive disorder (Hajrasouliha et al., 2017). The Changes in BDNF gene expression are associated with mood regulation and may play a role in the development of depression (Hajrasouliha et al., 2017). Understanding these genetic factors is essential, particularly for educators who may be more vulnerable to stress and its mental health consequences.

### **Interaction between Genetics and Environment**

While genetics plays a critical role in susceptibility to depression, it is essential to



recognize that environment also significantly influences mental health outcomes. The interaction between genetic predispositions and environmental factors is crucial in understanding how depression manifests. This concept, often referred to as the diathesis-stress model, posits that individuals with a genetic vulnerability to depression may only develop the disorder when exposed to significant environmental stress (Zuckerman, 1999).

For teachers, the cumulative stressors of the profession may trigger depressive episodes in genetically predisposed individuals. A study by Hammen (2005) illustrated that environmental stressors, such as chronic interpersonal stress, interact with genetic susceptibility to elevate the risk of depression. This interplay suggests that addressing workplace stressors is crucial in mitigating mental health issues in educators.

### **Implications for the Teaching Profession**

The teaching profession has been identified as particularly vulnerable to mental health challenges, including depression. Studies indicate that teachers often experience higher levels of stress compared to other professions (Schwartz et al., 2019). Factors contributing to this heightened stress include large class sizes, insufficient resources, lack of administrative support, and challenges related to student behavior. These stressors can lead to burnout, which is closely linked to depressive symptoms (Maslach & Leiter, 2016).

The implications of depression among teachers extend beyond individual well-being to impact the broader educational environment. This can be discussed under the following sub-themes.

#### **Teacher Efficacy and Job Performance**

The presence of depression among teachers has profound implications, not only for their well-

being but also for the overall educational environment. Teachers suffering from depression may exhibit diminished cognitive functioning, impaired decision-making abilities, and reduced emotional engagement—all of which can adversely affect their pedagogical effectiveness (Eisenberg et al., 2009). Furthermore, teachers' mental health directly correlates with students' academic performance and emotional well-being. Teachers who are mentally healthy can foster supportive classroom environments, promote student engagement, and serve as positive role models.

Depression can adversely affect teacher efficacy, resulting in lower job satisfaction, reduced performance, and increased absenteeism (Sonnenschein & McGowan, 2022). Teachers who are struggling with mental health issues may find it challenging to maintain an engaging classroom environment, which is critical for student learning. The emotional tone set by teachers in the classroom significantly influences student behavior and academic performance.

Research suggests a correlation between educator mental health and student outcomes. Teachers suffering from depression may have difficulties in classroom management and forming positive relationships with students, ultimately leading to lower student achievement and increased behavioral problems (Williams, 2021).

#### **Teacher Retention**

The mental health of educators is also closely linked to retention rates in the teaching profession. When teachers experience mental health challenges, they often seek to leave the profession, exacerbating teacher shortages in many regions. The Teaching Profession Data from the National Center for Education Statistics





(2021) indicates that teacher attrition can be significantly tied to job-related stress and dissatisfaction, with mental health issues being a prominent factor. This attrition not only impacts individual schools and districts but also contributes to instability within the education system, making it difficult to maintain continuity in student learning.

The issue of depression among teachers is significant and affects not just the individuals but the entire educational environment. To understand depression among Teachers, Depression is a prevalent mental health issue among teachers, characterized by feelings of sadness and disinterest. Teachers face multiple stressors, similar to

Heavy workloads like Lesson planning, teaching, marking scripts, grading, and administrative duties contribute to stress and burnout. Another critical consideration is the issue of workload. Many teachers are burdened with tasks that extend beyond classroom teaching, including administrative duties, lesson planning, and grading. An excessive workload can lead to chronic stress and ultimately contribute to depression. Schools should assess and restructure workloads to promote a healthier work-life balance. Encouraging teachers to take breaks, offering flexible work arrangements, and ensuring manageable class sizes are essential steps toward mitigating the risk of depression.

- Secondly, Emotional demands: Teachers must manage classroom behavior and support students emotionally, which can be exhausting.
- Lack of support: Many teachers feel they lack backing from school administrations and resources.

- Financial strain: Low pay and job insecurity can heighten anxiety and depression.
- Work-life balance: Difficulty maintaining a healthy separation between work and personal life can lead to emotional exhaustion.

All these have direct effects on Teachers:

- Mental and Physical Health: Depression can impair concentration, decision-making, motivation, and energy levels. It can also lead to physical symptoms like fatigue and insomnia.
- Professional Performance: Teachers with depression may experience increased absenteeism, teach less effectively, and struggle with classroom management.
- Indirect Effects on the Educational Environment:
  - Student Outcomes: Teacher depression negatively influences student achievement, emotional development, and teacher-student relationships, which are vital for a positive learning experience.
  - School Climate: Depression among teachers can strain colleague relationships, hinder collaboration, and complicate administrative support.

Teacher depression affects not only the educators themselves but also students and the overall school community. Addressing this issue involves raising awareness, supporting teachers, improving their working conditions, and fostering a positive environment. By focusing on teachers' mental health, schools can create a



healthier atmosphere that benefits both teachers and students, leading to improved educational outcomes.

### **The Need for Comprehensive Support Systems**

Given the prevalence of depression among teachers and its connection to genetic and environmental factors, there is a pressing need for comprehensive support systems within schools.

Mental Health Resources is needed in schools for providing access to mental health resources, such as counseling services and employee assistance programs, can help alleviate some of the burdens faced by educators (Reeves, 2020). Schools must prioritize mental health initiatives, ensuring that teachers receive the necessary support to thrive in their roles.

Another is stress Management Programs for teachers. Implementing stress management and resilience-building programs can equip teachers with strategies to cope with the unique challenges of their profession. Professional development focused on mental health awareness can foster supportive environments, enabling educators to share their experiences and seek help without stigma.

### **The Environmental Stressors Faced by Teachers**

#### **The Teaching Environment**

Teachers often encounter unique challenges that can exacerbate genetic predispositions to depression. High-stakes testing, administrative pressures, and the emotional demands of student interactions contribute to a stressful work environment (McCallum, 2020).

#### **The Impact of Workload and Burnout**

Research indicates that heavy workloads and burnout significantly predict depressive symptoms among teachers (Skaalvik & Skaalvik, 2017). The combination of genetic vulnerability and environmental stress can create a perfect storm for mental health issues within the teaching workforce.

#### **The Impact of Depression on Teaching Efficacy**

#### **Teacher Performance and Job Satisfaction**

Depression can adversely affect teacher performance, leading to decreased job satisfaction, heightened absenteeism, and lower engagement levels (Sonnenschein & McGowan, 2022). A teacher's mental health is closely tied to their effectiveness in the classroom, which can impact student learning experiences.

#### **Effects on Student Outcomes**

The mental health of teachers significantly influences student outcomes. Teachers struggling with depression may have difficulties maintaining classroom management, fostering positive relationships, and delivering effective instruction (Reddy & Mullis, 2020). Studies suggest that students of depressed teachers may exhibit lower academic performance and higher behavioral issues.

#### **Addressing Genetic and Environmental Factors in Schools**

One major barrier to addressing mental health issues among teachers is the stigma associated with seeking help. Many educators may fear that admitting to mental health struggles could jeopardize their jobs or reputation. Educational institutions must actively work to combat this stigma through awareness campaigns and fostering an open dialogue about mental health. Creating a culture where teachers feel safe and supported in discussing their mental health



challenges can lead to earlier interventions and a better understanding of mental health within the educational community.

The Role of Support Systems is to mitigate the impact of genetic susceptibility and environmental stressors, it is essential to establish supportive school environments. Interventions such as mental health resources, professional development, and stress management programs can help teachers cope with challenges (Reeves, 2020).

Secondly, Genetic Screening and Personalized Support: It is very important to explore the potential for genetic screening among educators may offer insights into individual vulnerabilities and inform tailored support strategies. Understanding genetic predispositions can lead to more effective interventions and mental health resources tailored to educators' needs.

#### Sustainable Development Goals (SDGs)

Quality Education (Goal 4): Ensuring that teachers maintain mental well-being is crucial for achieving quality education. A mentally healthy teaching workforce is likely to be more effective in nurturing student learning and development. The United Nations Sustainable Development Goals (SDGs) emphasize the importance of quality education, which is inextricably linked to the mental health of educators. Ensuring that teachers maintain their mental well-being is critical for providing quality education. A mentally healthy workforce is better equipped to engage students, deliver effective instruction, and create a positive learning environment. By prioritizing the mental health of teachers, educational institutions can work towards achieving Goal 4, which aims to ensure inclusive and equitable quality education

and promote lifelong learning opportunities for all.

Good Health and Well-Being (Goal 3): Supporting mental health in education aligns with the broader goal of promoting well-being for all, which is essential for sustainable development. Promoting mental health in the teaching profession also aligns with SDG Goal 3, which aims to ensure healthy lives and promote well-being for all at all ages. Implementing comprehensive mental health programs for educators can lead to healthier work environments, reduce the stigma surrounding mental health issues, and ensure that teachers receive the support they need. Initiatives focused on mental health awareness and support create a ripple effect, benefiting not only teachers but students and the broader community.

#### Suggestions for Supporting Teachers

Creating a Supportive Work Environment: Schools must prioritize mental health by creating supportive environments that promote well-being and resilience among teachers. This can include access to mental health services, peer support networks, and reducing administrative burdens.

Professional Development on Mental Health: Training programs focusing on mental health awareness, coping strategies, and stress management can equip teachers to better handle the pressures of their profession. Such initiatives foster resilience and enhance overall mental well-being. Investing in professional development can also play a crucial role in addressing the mental health needs of teachers. Training programs focused on mental health awareness, emotional intelligence, and classroom management skills can empower teachers to recognize and address their mental



health issues and those of their students. By fostering a positive school culture and emphasizing the importance of mental health, educational institutions can create an environment that supports teachers' well-being.

Strategies for address Teacher Depression:

Addressing teacher depression in higher institutions in Nigeria can involve several strategies, including

1. Promoting Mental Health Awareness by provide education and training on mental health to reduce stigma and promote understanding and encourage open discussions about mental health to create supportive environments.
2. Providing Support and Resources by Ensure access to mental health services like counseling. Establish Employee Assistance Programs (EAPs) for confidential support and Create peer support networks for community and mutual assistance.
3. Improving Working Conditions by Manage workloads to reduce stress and prevent burnout. Ensure fair compensation and job security to alleviate financial concerns and offer professional development opportunities to enhance job satisfaction.
4. Fostering a Positive School Culture by School leaders should prioritize mental health and well-being.

Promote a healthy work-life balance with flexible scheduling and Recognize and appreciate teachers' efforts to boost morale.

1. Mental Health Awareness Programs: Implement training sessions that

promote mental health education and destigmatize seeking help. This could include workshops on recognizing signs of depression and knowing when to seek assistance.

2. Counseling Services: Provide access to professional counseling and psychological support services on campus. This can serve as a safe space for teachers to express their feelings and concerns.
3. Workload Management: Advocate for reasonable workloads and establish clear boundaries to prevent burnout. Administrators should ensure that teachers have adequate time for research, teaching, and personal life.
4. Peer Support Groups: Establish support networks where teachers can share experiences and coping strategies. Creating a community can foster a sense of belonging and mutual support.
5. Professional Development and Recognition: Facilitate opportunities for growth and professional development, while also recognizing teachers' contributions to enhance job satisfaction.
6. Work-Life Balance Initiatives: Encourage policies that support flexible working conditions, allowing teachers to better manage their personal and professional responsibilities.
7. Regular Check-ins: Implement regular one-on-one check-ins between faculty members and administration to monitor well-being and provide support as needed.





It is vital for institutions to prioritize mental health in their policies and create a supportive environment for teachers.

In summary, the connection between genetics and depression highlights the complexities surrounding mental health in the teaching profession. Addressing the genetic predispositions to depression, along with the environmental stressors faced by educators, is crucial for fostering a sustainable teaching workforce. By implementing robust support systems, prioritizing mental health training, and promoting a culture of understanding and support, educational institutions can mitigate the risk of depression among teachers, ultimately benefiting students and enhancing the quality of education.

Emphasizing the importance of mental health within the framework of sustainable development goals further solidifies the need for comprehensive support systems for teachers. As educators are the cornerstone of society's future, prioritizing their mental well-being is not just an educational imperative but a societal responsibility. Through concerted efforts to nurture the mental health of teachers, we can ensure a thriving educational environment that lays the foundation for sustainable development and a brighter future for all.

## Conclusion

Addressing the genetic susceptibility to depression among teachers is not only beneficial for their well-being but is also essential for creating a sustainable teaching profession. By prioritizing mental health, educational systems can cultivate an environment where teachers can thrive, ultimately enhancing the quality of education and fostering better outcomes for students.

The interplay between genetic predisposition and environmental stressors significantly influences the susceptibility to depression among teachers, also the interaction between genetic factors and environmental stressors drastically influences the susceptibility to depression among teachers. The unique challenges faced by educators, combined with genetic vulnerabilities, create a heightened risk for mental health issues. Understanding these factors is essential for developing targeted interventions to support teacher well-being and ensure positive educational outcomes for students. Recognizing the impact of these elements is crucial for addressing mental health issues within the teaching profession. By prioritizing supportive interventions, educational institutions can enhance the well-being of teachers, ultimately benefiting students and improving educational outcomes. Continued research in this area will aid in identifying effective strategies and policies that prioritize the mental health of educators, ultimately benefiting both teachers and students alike.

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