

# **Seasonal Weather Variations and Workload: Exploring Their Combined Impact on Teachers' Mental Health, Job Satisfaction, and Performance in the USA**

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## **Abstract**

This study investigates the combined impact of seasonal weather variations and workload on teachers' mental health, job satisfaction, and performance in the USA. While existing research has explored the individual effects of extreme weather and workload on educational outcomes, the interaction between these factors remains underexplored. This research aims to fill this gap by examining how different weather conditions (e.g., extreme heat, cold, humidity) and varying workload periods (e.g., exam seasons) affect teachers' well-being and job performance. Seasonal changes, notably the transition from fall to Winter, are marked by reduced daylight and colder temperatures, which can also contribute to the onset of seasonal Affective Disorder through symptoms such as depression, fatigue, and decreased motivation, which can significantly impair an individual's work performance and overall well-being. In parallel, workload dynamics are crucial in determining job satisfaction and employee performance. High workloads can lead to stress, burnout, and diminished job satisfaction, while insufficient workloads can result in boredom and a lack of engagement. The study also underscores the importance of implementing effective coping mechanisms and school support strategies that mitigate weather and workload stressors. These insights provide valuable implications for policy changes and interventions to enhance teacher well-being and performance. By understanding the nuanced interactions between weather and workload, this research contributes to developing more resilient and supportive educational environments. Seasonal weather variations profoundly influence human life's daily routines and overall well-being. These changes can particularly impact teachers as their workload and responsibilities are. The academic calendar and seasonal shifts are closely intertwined. Understanding the combined impact of seasonal weather variations and workload on teachers' mental health, job satisfaction, and performance is crucial for fostering a supportive and productive educational environment. Research indicates that teachers experience heightened stress levels during specific periods of the academic year, such as the school term onset or standardized testing seasons. These stressors, compounded by seasonal factors such as shorter daylight hours in winter or extreme temperatures, can significantly affect their mental health. Additionally, job satisfaction and performance are critical metrics that influence the quality of education delivered to students. This study aims to explore the complex interplay between seasonal weather variations, workload, and teachers' mental health, job satisfaction, and performance in the United States. By identifying the key factors and their relationships, the findings of this research could inform policies and interventions designed to support teachers, enhance job satisfaction, and improve educational outcomes.

## **Keywords**

Seasonal weather variation, teacher workload, mental health, job satisfaction, teacher performance, seasonal affective disorder

## **1. Introduction**

This dynamic interplay between seasonal weather variations and workload is an area of growing interest within occupational health and organizational psychology. In the United States, seasonal changes, notably the transition from fall to winter, reduced daylight hours and temperatures. This study explores the combined effects of seasonal weather

variations and workload on mental health, job satisfaction, and performance among teachers working in the United States (Figure 1).



Figure 1. seasonal weather variations and workload

1. **Seasonal weather variation:** This refers to changes in weather patterns throughout the year. These can include temperature variations, humidity, precipitation, and daylight hours. The USA experiences significant temperature variations across seasons. For example, winters are generally cold in the northern states, while summers can be hot in the southern states. Spring and fall serve the transitional periods with moderate temperatures. The eastern and central parts of the United States receive more rainfall during spring and summer. At the same time, the western regions are drier and experience most of their precipitation in the winter months. Each zone experiences a unique seasonal weather pattern. The study of seasonal weather variations in this context focuses on understanding how these changes impact teachers' daily routines and overall well-being.
2. **Teacher workload:** This represents the amount and complexity of tasks teachers must manage during the school year. This includes lesson planning, grading, extracurricular activities, administrative duties, and professional development. Understanding the workload is essential to assessing its effects on teacher's mental health and job satisfaction.
3. **Mental Health** Refers to individuals' psychological and emotional well-being. For teachers, mental health can be influenced by factors such as stress, anxiety, depression, and burnout. This keyword examines how seasonal weather variations and workload affect teachers' mental health.
4. **Job satisfaction:** Measures how content teachers are with their jobs. It includes working conditions, relationships with colleagues and students, compensation, and career development opportunities. High job satisfaction is linked to better performance and overall well-being.
5. **Teacher Performance** refers to the effectiveness and efficiency of teachers' duties. Performance metrics include student achievement, classroom management, instructional quality, and professional conduct. The study looks at how seasonal weather variations and workload impact teacher performance.

6. Seasonal affective disorder: A type of depression that occurs at certain times of the year. Usually, in the winter months, SAD can significantly affect teachers' mental health and job performance, making it a relevant aspect to consider in the study of seasonal weather variations.
7. Stress management: Techniques and strategies for managing and reducing stress. Effective stress management is crucial to a teacher's mental health and job satisfaction. This keyword explores how teachers cope with the pressures of their workload and seasonal weather variations.

### **1.1 Objectives**

The primary objective of this study is to examine the impact of seasonal weather variations and workload on mental health. Job satisfaction and performance among the teachers working in the USA

## **2. Literature review**

A systematic review by Overland et al. (2020) examined the relationship between seasonality and symptoms of depression. The review found that while there is some support for seasonal variations in clinical depression, the results are heterogeneous, with some studies suggesting more depression in winter and other findings with no seasonal pattern. Another survey by Mukhtar Waja and M. Fitchett (2024) explored the professional relationship between weather, climate, and mental health from the perspective of healthcare practitioners. The findings indicated that practitioners were aware of the link between the weather and mental health, mainly through their understanding of SAD. Participants perceived sunlight and temperature to have significant influences on mental health, with sunlight having a positive effect and higher temperatures potentially exacerbating mental health symptoms. Studies have also shown that reduced sunlight can lead to disruptions in circadian rhythms, affecting serotonin and melatonin levels and impacting mood and energy levels.

In addition to these, studies have shown that extreme weather events such as heatwaves can also impact mental health. Higher ambient temperatures have been associated with increased hospital admissions for mental disorders and worse community mental health outcomes.

## **3. Method**

A sample of 30 expat teachers, male and female, working in the United States was collected. The climate change worry scale and the workplace stress scale were applied for this research.

## **4. Results**

The results show that climate change or variation with seasonal change shows that 75.5% of individuals worry about climate change, and 48% surf the internet about the weather report. Seasonal variations impact 70% of individuals who feel negatively and, more than 40% are stressed out at the workplace and unable to express their feelings, 30% have mental health conditions (Figure 2).

## 5. Graphical results

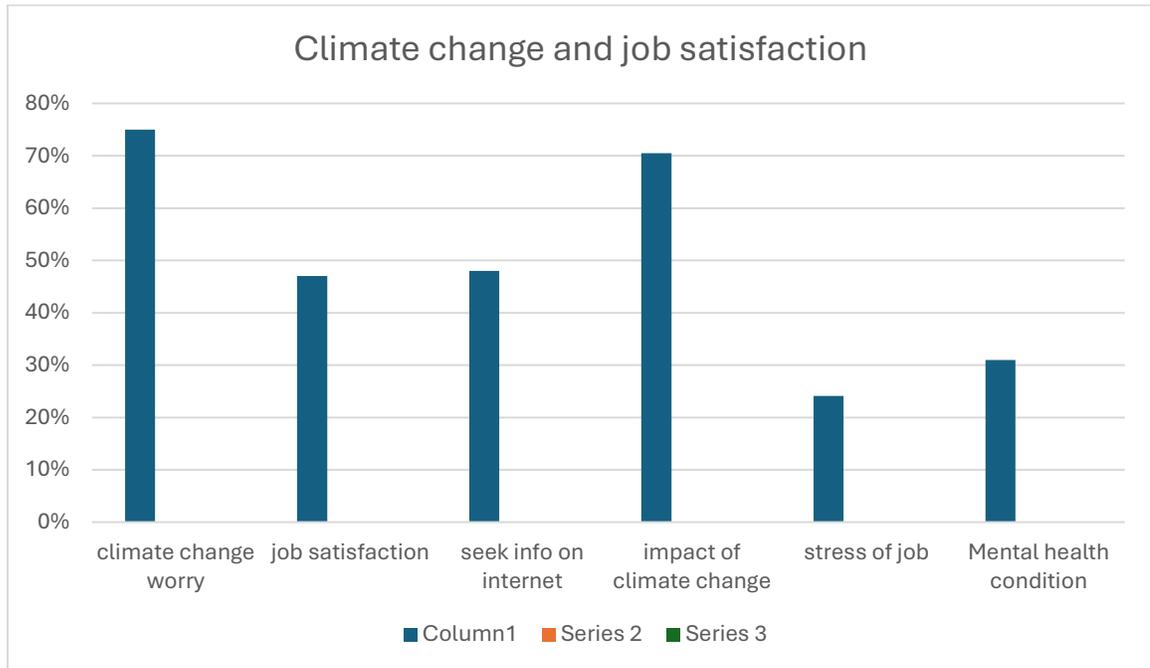


Figure 2. Graphical results

## 6. Discussion

The results underscore the critical interplay between seasonal weather variations and workload on teachers' mental health, job satisfaction, and performance. The presence of Seasonal Affective Disorder among teachers during the winter highlights the need for targeted mental health support. Similarly, the peaks in workload stress suggest that administrative support and workload management are pivotal in sustaining teachers' job satisfaction and performance.

Future studies could explore the impact of specific interventions to mitigate the effects of seasonal weather variations and workload on teachers. For example, they could investigate the effectiveness of light therapy for SAD or the implementation of technology to reduce administrative burdens during peak times. Additionally, longitudinal studies could provide deeper insights into the long-term effects of these stressors and the sustainability of coping strategies.

The high workload and seasonal weather variations significantly affected teacher performance. Teachers reported feeling less effective during high-stress periods in their instructional roles, leading to lower student engagement and achievement. Furthermore, mental health issues during winter months exacerbated these performance declines, suggesting a compounded effect of seasonal weather and workload stressors.

## 7. Conclusion

The combined impact of seasonal weather variations and workload on teachers is significant and multifaceted. Addressing these issues through comprehensive support systems and policy changes is crucial for improving teachers' mental health, job satisfaction, and performance, ultimately benefiting the broader educational environment (Figure 3)

## Coping skills

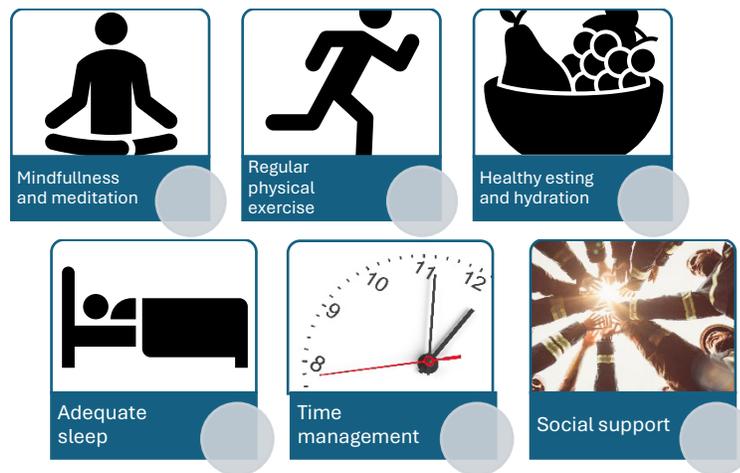


Figure 3. Coping skills

- 8.1 Mindfulness and meditation
- Mindfulness and meditation can help teachers stay grounded and reduce stress. Deep breathing, progressive muscle relaxation, and guided imagery can be beneficial.
- Regular physical activity:
- Regular exercise such as walking, yoga, or team sports can help improve mood and reduce anxiety. Even short bursts of physical activity during breaks can be beneficial.
- Healthy eating and hydration:
- Maintaining a balanced diet and staying hydrated can help improve energy levels and overall well-being; eating nutrient-dense foods and avoiding excessive caffeine and sugar can make a big difference.
- 8.2 Adequate sleep:
- Prioritizing sleep is crucial for mental and physical health. Establishing a consistent sleep schedule and creating a restful environment can help teachers feel refreshed and ready to face their day.
- 8.3 Time management:
- Effective time management techniques, such as creating to-do lists, prioritizing tasks, and breaking larger projects into smaller, manageable steps, can help reduce overwhelming feelings.
- 8.4 Social support:
- Building a supportive network of colleagues, friends, and family can provide emotional and practical support. Regularly connecting with others and sharing experiences can help teachers feel less isolated.
- Professional development:
- Continuing to learn and grow professionally can enhance job satisfaction and confidence. Participating in workshops, courses, and collaborative projects can provide new perspectives and skills.
- 8.5 Setting borders:
- Teachers must set clear boundaries between work and personal life. Avoiding taking work home when possible and ensuring time for hobbies and relaxation can help maintain a healthy balance.
- 8.6 Creative outlets:
- Engaging in creative activities such as painting, writing, or playing an instrument can help one express emotion and reduce stress.

- 8.7 Seeking professional help:
- If stress becomes overwhelming, seeking support from a mental health professional can be very beneficial. Therapists can offer strategies and resources to help manage stress and improve mental health.

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## **Biography**

**Nuzhath Begum** is a self-directed, passionate, enthusiastic rehabilitation professional special educator/ school counselor Ph.D. scholar with over 8 years of experience working in the United States of America. Nuzhath is sincere and loves to spread her knowledge and time in teaching special needs children/ slow learners and verbal/ non-verbal students and nurturing their potential. I firmly believe that every student can learn in a different way or style. Conducted workshops on handwriting and career counseling sessions. Nuzhath has a successful track record as a psychology faculty member at the Central Board of Secondary Education, with three Centum in psychology. Nuzhath is also recognized as an author who published the handbook on special education, 'The Analysis Phase of Learning Difficulties'. She also presented a research paper on selfie syndrome and published it in the University of Grant Commission journal. Her academic journey has been very successful and accomplished. Nuzhath holds a master's degree in psychology and a bachelor of special education in learning difficulties, with first division with a Rehabilitation Council of India and a license. As a proud wife who was always motivated and encouraged by her life partner to be a successful professional woman who embodies the spirit of learning and teaching, every day is a learning day. Who believes in teamwork to achieve successful outcomes.