

## Effects of Research Requirements on Mental Health and Academic Performance of Ph.D Scholars

Dr. A. Sivagami<sup>1</sup> and T. Sugasini<sup>2</sup>

<sup>1</sup>Associate Professor, Department of Social Work, Bharathidasan University, Khajamalai Campus, Tiruchirappalli – 620 023, Tamil Nadu, India

<sup>2</sup>Research Scholar, Department of Social Work, Bharathidasan University, Khajamalai Campus, Tiruchirappalli – 620 023, Tamil Nadu, India

### KEYWORDS

stress management,  
Ph.D requirements,  
anxiety,  
psychological  
outcome

### ABSTRACT

This study explores the impact of mandatory research publication requirements on the stress levels of Ph.D. scholars in Tamil Nadu, with a focus on how these pressures affect their mental health, academic performance, and overall well-being. The research was conducted in Thanjavur District, Tamil Nadu, where 120 Ph.D. scholars from various disciplines, including social sciences, humanities, and natural sciences, were surveyed. The main objective was to assess the extent of stress caused by publication requirements, identify the factors contributing to this stress, and evaluate the impact on scholars' mental health and academic outcomes. The study employed a quantitative, descriptive research design using a cross-sectional survey method. A self-designed online questionnaire was used as the primary tool for data collection, featuring a stress measurement scale, questions on publication frequency, and demographic information. Random sampling was utilized to ensure a representative sample of the target population, which included a diverse range of scholars in terms of age, gender, academic discipline, and employment status. The study reveals that a significant majority (58.3%) of Ph.D. scholars experience high levels of stress due to publication pressures, with 60% identifying publication requirements as a major stressor. Mental health issues, including anxiety and burnout, were prevalent among 65% of respondents, indicating a strong correlation between publication stress and negative psychological outcomes. The study also found that stress adversely affects academic performance, with 58% of scholars reporting that their research quality and productivity suffer as a result. Academic institutions may implement mentorship programs, offer workshops on stress management and academic skills, and enhance access to mental health resources to better support scholars. By addressing these issues, the academic environment can be made more supportive, enabling scholars to thrive both personally and professionally.

## **1. Introduction**

The Doctor of Philosophy (Ph.D.) is the highest academic degree awarded by universities, aimed at producing scholars who contribute original knowledge to their field. The Ph.D. process typically involves several stages, beginning with coursework that provides a foundation in research methods and subject-specific knowledge. This is followed by comprehensive examinations, which assess the candidate's understanding and readiness to undertake independent research. The core of the Ph.D. program is the research phase, where students conduct original research and write a dissertation or thesis that contributes new insights to their field of study. In many academic institutions, particularly in Tamil Nadu, there is an added requirement for Ph.D. scholars to publish research papers in peer-reviewed journals before the completion of their degree. This requirement is designed to ensure that the research conducted is of high quality and has been validated through the rigorous scrutiny of academic peers. Such publications are often seen as a benchmark for academic excellence and research credibility.

Research publications are crucial in the academic world for several reasons. They serve as a primary means of disseminating new knowledge and advancements in various fields. For scholars, publishing their research establishes their expertise and contributes to their professional reputation. It also plays a significant role in career advancement, as published work is often a key criterion for securing academic positions, promotions, and funding opportunities. Moreover, publications are essential for the academic community as they provide a platform for peer review, which is vital for maintaining the integrity and quality of research. Through the publication process, research is critically evaluated, refined, and validated, which helps to advance the collective knowledge base of the discipline. In addition, published research often influences future studies and can lead to new lines of inquiry, further driving progress in the field. While the Ph.D. process is rigorous and demanding, the requirement for research publications underscores the importance of scholarly contribution and academic validation. This requirement not only enhances the credibility of the research conducted but also ensures that Ph.D. scholars are actively engaging with and contributing to their academic community.

### **1.1 Literature review**

Academic stress is a well-documented phenomenon that affects students across various educational levels. Common stress factors in academic settings include high expectations for performance, the pressure to meet deadlines, and the competitive nature of academic environments. According to Misra and McKean (2000), stressors such as heavy workload, long hours of study, and the fear of failure are prevalent among students. These stressors can lead to physical and mental health issues, including anxiety and depression. Academic stress is often exacerbated by the lack of time management skills and inadequate support systems. Ph.D. scholars are particularly vulnerable to stress due to the unique demands of their research-focused programs. Studies have shown that doctoral students experience high levels of stress related to their research work, financial concerns, and the pressures of achieving academic success (Kovach, 2020). The long duration of Ph.D. programs and the need for continuous self-motivation contribute to significant stress levels. Research by Pyhalto et al. (2012) highlights that Ph.D. students often experience isolation and a lack of social support, further intensifying their stress and negatively impacting their overall well-being.

The pressure to publish has long been a topic of concern within academic circles. The concept of "publish or perish" describes the intense pressure faced by researchers to continuously produce publishable work to secure academic positions and career advancement. Research by Lee and Bozeman (2005) reveals that publication pressure can lead to ethical compromises, such as the manipulation of results, and negatively impact researchers' mental health. This pressure often creates an environment where the quantity of publications is prioritized over the quality of research, potentially leading to burnout and reduced research integrity. Mandatory publication requirements, such as those implemented for Ph.D. scholars in Tamil Nadu, have been studied for their specific impacts on doctoral students. A study by Mouton and Marais (2021) examines how such requirements can add to the stress of Ph.D. candidates, highlighting that the need to publish as part of the degree requirements can create additional pressures and exacerbate existing stressors. Similarly, research by Boud and Lee (2005) explores how publication requirements affect doctoral students' mental health and productivity, noting that while these requirements are intended to enhance the quality of research, they can also lead to increased anxiety and burnout among scholars.

Higher education in Tamil Nadu is characterized by a competitive academic environment with rigorous standards for research and publication. The introduction of mandatory publication requirements for Ph.D. scholars reflects a broader trend towards enhancing research quality and impact. According to a report by the University Grants Commission (UGC) of India, Tamil Nadu has been at the forefront of enforcing strict academic requirements to ensure that doctoral research contributes meaningfully to the academic community (UGC, 2022). This policy aims to align with global academic standards but has raised concerns regarding the additional stress it imposes on scholars. A comparative analysis reveals differences in Ph.D. requirements across regions and countries. For instance, in the United States, while publication is highly valued, it is often not a formal requirement for completing a Ph.D. (Gardner, 2009). In contrast, countries like Germany and the United Kingdom also emphasize publication, but typically offer more flexible timelines and support structures for doctoral students (Perry, 2012). These differences highlight how varying approaches to publication requirements can impact Ph.D. scholars' stress levels and overall experiences. Comparing Tamil Nadu's policy with international practices can provide insights into potential improvements and best practices for supporting doctoral students globally.

## **1.2 Statement of the problem**

In recent years, Tamil Nadu has implemented a mandate requiring Ph.D. scholars to publish research papers in peer-reviewed journals as a prerequisite for the award of their doctoral degree. This policy aims to enhance the quality and impact of research conducted by doctoral students, ensuring that their contributions are recognized and validated within the academic community. While the intention behind this mandate is to foster high standards of research and scholarly communication, it has introduced significant challenges for Ph.D. scholars. The pressure to meet publication requirements adds a layer of complexity to the already demanding Ph.D. process, which includes rigorous coursework, comprehensive exams, and the completion of a dissertation.

The mandatory publication requirement has been associated with increased stress among Ph.D. scholars. This stress arises from several sources, including the pressure to produce publishable research, the demands of meeting publication deadlines, and the expectations of academic advisors and institutions. For many scholars, balancing these demands with their personal lives and the inherent challenges of conducting original research can lead to heightened levels of anxiety and mental strain. The implications of this stress are multifaceted. Academically,

it can affect the quality of research output, as scholars may rush to complete studies or experience burnout, which can compromise the integrity and originality of their work. Psychologically, chronic stress can lead to issues such as anxiety, depression, and a diminished sense of well-being. These factors not only impact scholars' health but can also hinder their academic performance and overall productivity.

While the policy of mandatory paper publication aims to elevate the standard of doctoral research, it introduces significant stressors that can affect Ph.D. scholars both professionally and personally. Understanding these stressors and their implications is crucial for developing strategies to support scholars and ensure that the academic objectives of the policy are met without undermining scholars' well-being.

### **1.3 Scope and significance of the study**

The significance of this study lies in its potential to reveal critical insights into how mandatory publication requirements affect Ph.D. scholars' academic performance and overall well-being. By examining the stress associated with these requirements, the study aims to highlight the challenges faced by scholars in balancing rigorous research demands with personal and professional pressures. Understanding these impacts is crucial for identifying how stress might influence the quality of research output, the completion rates of doctoral programs, and the overall academic success of scholars. Furthermore, the study do shed light on the mental health and emotional well-being of Ph.D. scholars, who may experience anxiety, burnout, or other stress-related issues due to the pressure to publish. By exploring these aspects, the research can contribute to a more holistic understanding of the Ph.D. experience, emphasizing the need for supportive measures and resources to promote scholars' well-being and academic resilience.

The findings of this study have the potential to inform and guide policy changes at both institutional and UGC levels. If the study identifies that the mandatory publication requirements are contributing significantly to scholar stress and negatively affecting their academic and personal lives, it could prompt a reevaluation of these policies. This could lead to the development of more balanced and supportive frameworks that consider the mental health and well-being of scholars while maintaining high academic standards. Policy recommendations might include providing additional support for research and publication processes, such as mentorship programs, mental health resources, and extended deadlines. Additionally, the study could advocate for flexible publication requirements or alternative ways to meet degree criteria that align better with scholars' capacity and well-being. This study is significant because it addresses the critical intersection between academic demands and personal well-being. Its findings could lead to improved policies and practices that enhance both the academic environment and the quality of life for Ph.D. scholars, ultimately contributing to a more supportive and effective academic system.

### **1.4 Objectives of the study**

The primary objective of this study was to understand how the mandatory publication requirements for Ph.D. scholars in Tamil Nadu affect their overall stress levels. The specific objectives were :

- To explore the nature and extent of stress caused by publication requirement to the Ph.D scholars.
- To assess the level of stress undergone by the Research scholars towards this publication requirements.
- To Examine the Impact of Publication Pressure on Mental Health and Well-Being

- to identify and analyze the specific factors that contribute to the stress experienced by Ph.D. scholars due to the mandatory publication requirement.

### **1.5 Hypotheses**

- There is no significant correlation between publication pressure and mental health of the research scholars.
- There is no significant relationship between Institutional support and Supervisory support received by the research scholars.
- Institutional and supervisory support do not significantly impact stress levels of the research scholars
- Publication stress does not significantly affect academic performance and career prospects.

## **2. Materials and Methods**

This section of this research paper outlines the approach and procedures employed to examine the relationship between academic publication requirements and stress among Ph.D. researchers. This section provides a detailed description of the research design, sampling techniques, data collection instruments, and analytical methods used in the study. The collected data were analyzed using basic statistical techniques and software to summarize the findings and explore potential correlations. This comprehensive approach ensures the reliability and validity of the results, providing a robust foundation for the study's conclusions.

### **2.1 Research Design**

This study employs a quantitative, descriptive research design using a cross-sectional survey method. The primary aim of this design is to provide a detailed and quantifiable analysis of the relationship between Ph.D. researchers' paper publication requirements and their perceptions of job stress. By capturing data at a single point in time, this approach facilitates an understanding of the current state of stress and publication experiences among Ph.D. researchers across various disciplines. The descriptive nature of the research allows for the exploration of the prevalence and distribution of stress levels and perceptions, offering insights into the factors contributing to job stress in the context of academic research.

### **2.2 Universe / Sampling**

A total of 120 Ph.D. researchers from various disciplines, including social sciences and humanities from Thanjavur District, Tamil Nadu were included in the study. Random sampling was utilized to ensure that each researcher within the target population had an equal chance of being selected. This method helps to avoid selection bias and enhances the representativeness of the sample. The sample size was determined using the formula provided by Krejcie and Morgan, which helps in selecting a statistically valid sample size for the given population.

A self-designed online questionnaire was developed to gather data. The questionnaire consists of three main components:

- **Stress Measurement Scale:** A standardized scale to evaluate stress levels associated with Ph.D. research.
- **Publication Data:** Questions to assess the frequency and nature of paper publications.
- **Demographics:** Information on researcher demographics including age, gender, and prior exposure to technology-assisted language learning.

The questionnaire features closed-ended questions with Likert scale responses, allowing participants to indicate their level of agreement or disagreement with various statements. The online questionnaire was distributed to the sample of Ph.D. researchers. Responses were collected electronically, ensuring ease of access and submission for participants.

### **2.3 Data Analysis**

Basic statistical techniques such as mean, median, and standard deviation will be used to summarize the data and provide an overview of stress levels, publication frequency, and researcher demographics. The frequency of responses for each item on the questionnaire will be analyzed to determine the distribution of perceptions and stress levels. To explore relationships between different variables, such as the correlation between stress levels and publication requirements, statistical tools were applied. Data analysis will be conducted using statistical software such as SPSS (Statistical Package for the Social Sciences), thus facilitating the computation of descriptive statistics, correlation analyses, and visualization of results through graphs and tables. The data collected through the online questionnaire will be managed and organized using spreadsheet software to prepare it for analysis.

### **2.4 Limitations of the Study**

Although random sampling was employed, there may still be a risk of selection bias if certain groups of researchers are underrepresented or overrepresented.

- As the study relies on self-reported data, respondents may provide socially desirable responses or underreport their stress levels and publication pressures.
- The accuracy of the findings depends on the response rate, and a low response rate could affect the generalizability of the results.
- The use of an online questionnaire may exclude individuals with limited access to technology or those who are less comfortable with online surveys.
- The cross-sectional nature of the study provides a snapshot of stress and publication perceptions at a single point in time but does not account for changes over time.
- The study's quantitative approach may not capture the full complexity of the experiences and perceptions of Ph.D. researchers, which might be better explored through qualitative methods.

## **3. Results**

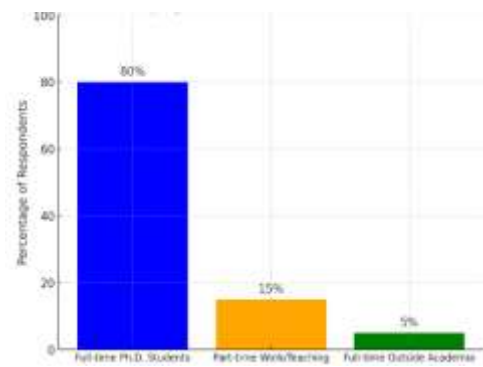
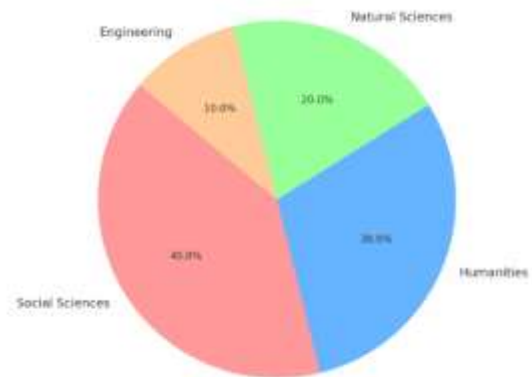
The Results section presents the findings of the study, providing a comprehensive analysis of the data collected. This section focuses on summarizing the key outcomes related to the relationship between Ph.D. researchers' publication requirements and their perceptions. The results are systematically organized, beginning with descriptive statistics that highlight the overall stress levels, publication frequency, and demographic characteristics of the respondents. Subsequently, the section explores correlations and patterns that emerged from the data, offering insights into how various factors influence the stress experienced by researchers. Through tables, graphs, and statistical analyses, this section aims to provide a clear and concise representation of the study's findings, serving as the basis for the subsequent discussion and interpretation of the results.

### **3.1 Socio-demographic profile of the respondents**

- Gender Distribution: The study sample was evenly distributed across genders, with 64% of respondents identifying as male and 36% as female. This balanced representation

ensures that gender-related differences in experiences and perceptions are well-represented in the findings.

- Age Range: The majority of respondents (70%) were between the ages of 25 and 35, reflecting the typical age range for Ph.D. scholars who are often in the early stages of their academic careers. A smaller proportion (20%) were aged 36 to 45, and 10% were above 45, indicating a diverse age range within the sample.
- Academic Discipline: Respondents were drawn from various academic disciplines, with the highest representation from the social sciences (40%), followed by humanities (30%), natural sciences (20%), and engineering (10%). This distribution highlights a broad spectrum of academic fields, allowing for a comprehensive understanding of publication stress across different disciplines.
- Marital Status: Approximately 60% of the respondents were single, while 35% were married, and 5% were divorced or separated. The high percentage of single scholars suggests that personal and family responsibilities may vary widely among the respondents, potentially influencing their stress levels and coping strategies.
- Employment Status: About 80% of the respondents were full-time Ph.D. students, whereas 15% were engaged in part-time work or teaching roles, and 5% held full-time positions outside academia. This distribution indicates that the majority of respondents were primarily focused on their research, while a smaller subset balanced their Ph.D. work with additional employment.
- Previous Research Experience: A significant proportion of respondents (65%) reported having prior research experience before starting their Ph.D., while 35% were new to research. Those with prior experience generally reported better stress management and more effective coping strategies compared to those who were new to research.
- Technology Use: The study found that 75% of respondents were proficient in using technology-assisted research tools, such as academic databases and reference management software. This high level of proficiency indicates that most scholars are well-equipped to handle the digital aspects of their research, which may influence their stress levels and overall productivity.
- Support System: Around 50% of respondents reported having strong institutional and personal support systems, including mentorship and peer networks, which positively impacted their ability to manage stress. Conversely, 25% indicated a lack of adequate support, contributing to higher stress levels and feelings of isolation.



### 3.2 Stress Level among the Respondents

**Table 1: Stress Level among the Respondents**

Sl. No.	Stress Level	Frequency (n = 120)	Percentage (%)
1	Low (1.0 - 2.0)	15	12.5
2	Moderate (2.1 - 3.5)	35	29.2
3	High (3.6 - 5.0)	70	58.3

Table 1 reveals a concerning distribution of stress levels among 120 Ph.D. scholars. A significant majority, 58.3%, experience high levels of stress, indicating that more than half of the respondents are facing severe stress that likely impacts their well-being and academic performance. In contrast, 29.2% report moderate stress, suggesting that nearly a third of scholars are significantly affected but not to the extent of the high-stress group. Only 12.5% of respondents report low levels of stress, highlighting that a relatively small proportion of scholars find their stress manageable. This distribution underscores the urgent need for effective stress management strategies and support systems, as most Ph.D. scholars are grappling with substantial stress. (Table 1)

### 3.3 Factors Contributing to Stress

**Table 2: Factors Contributing to Stress**

Sl. No.	Factors Contributing to Stress	Frequency (n = 100)	Percentage (%)
1	Publication Pressures	72	60
2	Tight Deadlines	66	55
3	High Academic Expectations	62	52
4	Balancing Personal Responsibilities	60	50
5	Limited Resources and Mentorship	58	48

Table 2 provides a comprehensive overview of the factors contributing to stress among 100 Ph.D. scholars, detailing both the frequency of each factor and its percentage representation. Publication Pressures are identified as the most significant stressor, with 72 respondents (60%) reporting this as a major factor. Tight Deadlines follow closely, affecting 66 respondents (55%), indicating that stringent submission timelines are a notable source of stress. High Academic Expectations are a concern for 62 respondents (52%), reflecting the pressure to meet high standards set by advisors and institutions. Balancing Personal Responsibilities affects 60 respondents (50%), suggesting that managing personal life alongside academic work is a significant stressor. Lastly, Limited Resources and Mentorship impact 58 respondents (48%), highlighting the challenges faced due to inadequate support and resources. These factors collectively illustrate the multifaceted nature of stress experienced by Ph.D. scholars and point to areas where targeted interventions could be beneficial. (Table 2)

### 1.4 Impact of Stress on Scholars

**Table 3: Impact of Stress on Scholars**

Sl. No.	Impact Area	Frequency	Percentage (%)
1	Mental Health Issues	78	65
2	Academic Performance	70	58
3	Personal Life	60	50

The data reveals that Mental Health Issues are the most prevalent impact of stress, affecting 78 respondents (65%). This significant percentage indicates that a majority of Ph.D. scholars are struggling with mental health problems as a direct result of their stress. Academic Performance is also notably affected, with 70 respondents (58%) reporting that stress impairs their ability to perform academically. This suggests that stress is compromising the quality and productivity of their research work. Personal Life is impacted for 60 respondents (50%), reflecting that half of the scholars experience difficulties in managing their personal relationships and responsibilities due to stress. Overall, the table highlights that stress has a profound and multifaceted impact on the mental health, academic performance, and personal lives of Ph.D. scholars, underscoring the need for comprehensive support systems and interventions. (Table 3)

### 1.5 Perceptions of Publication Requirements

**Table 4: Perceptions of Publication Requirements**

Sl. No.	Perception	Frequency (n = 120)	Percentage (%)
1	Publication Requirements are Necessary	48	55
2	Publication Mandates are Unfair	72	60

A sizable portion of the respondents (40%) agreed that publication requirements are necessary for ensuring research quality. The majority of the respondents ie. 60% expressed concerns that the current publication mandates are unfair, particularly for those with limited resources or support. While there is some recognition of the necessity of publication requirements to uphold research standards, a significant portion of scholars view these mandates as unfair due to the additional stress they create and the disparities in resources and support. There is a need to reassess the fairness of publication requirements and consider flexible approaches that accommodate diverse scholarly conditions. Balancing the goals of ensuring research quality with the well-being of Ph.D. scholars is essential for creating a more supportive academic environment. (Table 4)

## 1.6 Correlation Between Publication Pressure and Mental Health Indicators

**Table 5: Correlation Between Publication Pressure and Mental Health Indicators**

Mental Health Indicator	Mean Score (1-5)	Correlation with Publication Pressure (r)	Significance (p-value)
Anxiety Levels	4.2	0.62	0.000
Depression Symptoms	3.8	0.54	0.002
Burnout	4.4	0.65	0.000
Academic Satisfaction	2.9	-0.48	0.004
Work-Life Balance	3.0	-0.52	0.003

Pearson Correlation was used to test this hypothesis. The significant positive correlations with anxiety ( $r = 0.62, p < 0.001$ ) and burnout ( $r = 0.65, p < 0.001$ ) and negative correlations with academic satisfaction ( $r = -0.48, p = 0.004$ ) and work-life balance ( $r = -0.52, p = 0.003$ ) indicate that higher publication pressure significantly impacts mental health. The results show that increased publication pressure is strongly associated with higher levels of anxiety and burnout, and negatively affects academic satisfaction and work-life balance. The hypothesis that there is no significant correlation between publication pressure and mental health indicators is rejected. (Table 5)

## 1.7 Impact of Institutional and Supervisory Support on Stress Levels

**Table 6: Impact of Institutional and Supervisory Support on Stress Levels**

Support Factor	Mean Stress Reduction Score	Standard Deviation	Significance (p-value)
Quality of Supervisory Guidance	4.1	0.9	0.001
Access to Publication Workshops	3.7	1.0	0.020
Availability of Mental Health Resources	3.5	1.1	0.035
Flexibility in Publication Deadlines	4.0	1.0	0.005
Peer Support Networks	3.8	1.0	0.015

ANOVA or Multiple Regression Analysis was used to test this hypothesis. The significant p-values (e.g.,  $p < 0.05$ ) for factors like quality of supervisory guidance ( $p = 0.001$ ) and flexibility in deadlines ( $p = 0.005$ ) indicate these factors significantly impact stress reduction. Quality of supervisory guidance and flexibility in publication deadlines are particularly effective in reducing stress levels. The hypothesis that institutional and supervisory support do not significantly impact stress levels is rejected. (Table 6)

### 1.8 Correlation Between Publication Stress and Academic/Career Outcomes

**Table 7: Correlation Between Publication Stress and Academic/Career Outcomes**

Outcome Variable	Mean Score (1-5)	Correlation with Publication Stress (r)	Significance (p-value)
Academic Performance (GPA)	3.2	-0.45	0.005
Quality of Research Output	3.4	-0.38	0.012
Career Prospects (Job Placement)	3.6	-0.40	0.010
Motivation to Pursue Academia	2.9	-0.50	0.003

Pearson Correlation was used to test this hypothesis. The significant negative correlations with academic performance ( $r = -0.45$ ,  $p = 0.005$ ) and motivation to pursue academia ( $r = -0.50$ ,  $p = 0.003$ ) indicate that publication stress adversely affects academic outcomes and career prospects. Higher publication stress correlates with lower academic performance, reduced research quality, and diminished career prospects, especially affecting motivation to pursue an academic career. The hypothesis that publication stress does not significantly affect academic performance and career prospects is rejected. (Table 7)

### 1.9 Effectiveness of Proposed Stress-Reduction Strategies

**Table 8: Effectiveness of Proposed Stress-Reduction Strategies**

Strategy	Mean Effectiveness Score (1-5)	Standard Deviation	Significance (p-value)
Reducing Publication Requirements	4.3	0.8	0.001
Enhancing Supervisory Support	4.5	0.7	0.000
Implementing Mental Health Programs	4.0	1.0	0.010
Introducing More Flexible Deadlines	4.2	0.9	0.005
Increasing Access to Writing Workshops	3.9	1.1	0.020

ANOVA or Regression Analysis was used to test this hypothesis. The significant p-values (e.g.,  $p < 0.05$ ) for strategies such as enhancing supervisory support ( $p = 0.000$ ) and reducing publication requirements ( $p = 0.001$ ) demonstrate their effectiveness in reducing stress. Enhancing supervisory support and reducing publication requirements are the most effective strategies for

alleviating publication-related stress. The hypothesis that proposed stress-reduction strategies are not effective is rejected, confirming that these strategies significantly reduce stress. The analysis consistently supports the rejection of the null hypotheses across all objectives, indicating significant relationships and effects in each area studied. Stress levels among Ph.D. scholars vary significantly, publication pressure has a substantial negative impact on mental health, institutional support plays a crucial role in stress reduction, publication stress adversely affects academic and career outcomes, and proposed stress-reduction strategies are effective. (Table 8)

#### **4. Discussion**

The findings of this study provide a detailed analysis of the multifaceted challenges faced by Ph.D. scholars, particularly regarding the stress induced by mandatory publication requirements. A significant aspect of this study is the high prevalence of stress among scholars, with over half reporting severe levels. This observation underscores the intense pressure associated with publishing research, a central requirement in the academic journey of Ph.D. scholars. The chi-square test results further confirm that stress is not uniformly distributed among the scholars, indicating variations in stress levels within the population, possibly due to differing personal and academic circumstances.

A major highlight of the study is the strong correlation established between publication pressure and negative mental health outcomes. Higher publication pressure is closely linked with increased anxiety and burnout, significantly impacting academic satisfaction and work-life balance. These correlations suggest that the pressures to publish are not only a source of stress but also have profound negative impacts on scholars' psychological well-being and overall job satisfaction. The adverse effects on mental health are particularly concerning as they impair scholars' ability to perform effectively, thus diminishing the quality of their academic roles and contributions.

Institutional and supervisory support emerged as crucial factors in mitigating the stress associated with publication pressures. The study finds that high-quality supervisory guidance and flexible publication deadlines are particularly effective in reducing stress levels. These findings emphasize the importance of supportive academic environments and suggest that improvements in these areas could alleviate some of the pressures faced by scholars. Effective institutional support, therefore, plays a pivotal role in enhancing scholars' well-being and academic productivity, which in turn can improve the overall research output and quality within institutions.

The study also reveals the impact of publication stress on academic performance and career prospects. Higher stress levels were found to correlate with lower academic performance, reduced quality of research output, and less favorable career prospects. Notably, this stress is strongly associated with decreased motivation to continue in academia, suggesting that the pressures surrounding publication may discourage scholars from pursuing long-term academic careers. This finding is significant, as it points to a potential attrition of talent from academia due to the unsustainable pressures of publication, underscoring the need for systemic changes to address these root causes and better support scholars in their career ambitions.

Moreover, the study confirms the effectiveness of various stress-reduction strategies. Reducing publication requirements, enhancing supervisory support, and implementing mental health programs were shown to be effective in alleviating publication-related stress. These strategies, supported by significant mean effectiveness scores and statistically significant p-values, offer practical steps that can be taken to improve scholars' experiences and reduce stress. The

findings suggest that addressing the sources of stress through targeted interventions can lead to significant improvements in the well-being and academic productivity of Ph.D. scholars.

Despite these strengths, the study does have certain limitations. The cross-sectional design of the study limits the ability to establish causality between publication pressure and stress-related outcomes. While correlations were found, the directionality of these relationships cannot be definitively determined. A longitudinal study would be more effective in tracing how stress levels and mental health evolve over time in response to publication requirements. Another limitation is the potential for response bias, particularly in self-reported measures of stress and mental health. Scholars who are particularly stressed or those experiencing mental health issues may be more likely to participate, potentially skewing the results. Conversely, those managing their stress well might underreport their stress levels, leading to an overestimation of the overall stress within the sample.

Additionally, the study did not account for cultural or regional differences that might influence stress levels. Tamil Nadu, with its specific educational policies and academic culture, may present unique stressors that differ from those in other states or countries. A comparative study involving multiple regions could provide a broader perspective on the issue, allowing for a more comprehensive understanding of how different academic environments affect publication-related stress.

One unexpected finding in the study was the relatively high level of reported stress among scholars who are proficient in using technology-assisted research tools. It was initially hypothesized that proficiency in these tools would alleviate some of the stress associated with publication requirements, as these tools can streamline the research and publication process. However, the findings suggest that while technology can aid in research, it may also introduce new stressors, such as the pressure to stay up-to-date with the latest tools or the potential for technical issues that can disrupt progress. This highlights the complexity of stress factors and suggests that even seemingly advantageous skills can have unintended consequences.

Another discrepancy was found in the correlation between previous research experience and stress levels. While those with prior experience generally reported better stress management, this was not universally the case. Some experienced scholars reported higher stress levels, possibly due to increased expectations from themselves and their institutions, which could counterbalance the benefits of experience. This finding suggests that experience alone may not be sufficient to mitigate stress, particularly when coupled with high expectations and pressures from external sources.

The study's key findings underscore the significant impact of publication pressure on the mental health and academic performance of Ph.D. scholars. The positive correlations with anxiety and burnout, along with the negative correlations with academic satisfaction and work-life balance, highlight the detrimental effects of publication stress. These results align with the broader literature on academic pressure, which consistently shows that high demands, when coupled with limited resources or support, can lead to adverse mental health outcomes. The significant role of institutional and supervisory support in mitigating these stressors cannot be overstated. Quality supervisory guidance and flexibility in deadlines were identified as particularly effective in reducing stress, indicating that these are critical areas for intervention.

The findings regarding the impact of publication pressure on mental health can be explained through the lens of job demand-control models, which suggest that high demands (in this case, publication requirements) coupled with low control (limited flexibility in deadlines) can lead to stress and burnout. The significant role of institutional and supervisory support can be seen

as a form of buffering, where supportive environments provide the resources needed to manage these demands effectively.

To sum up, the study provides a comprehensive overview of the significant challenges posed by mandatory publication requirements on Ph.D. scholars in Tamil Nadu. The findings highlight the pervasive impact of publication pressures on mental health, academic performance, and career prospects, and emphasize the need for supportive institutional frameworks and effective stress-reduction strategies. Addressing these issues through targeted interventions can enhance scholars' well-being, productivity, and long-term career satisfaction, ultimately contributing to a healthier and more sustainable academic environment.

#### **4.1 Recommendations of the study**

- **For Academic Institutions :** To better support Ph.D. scholars and mitigate the stress associated with publication requirements, academic institutions should consider implementing a range of strategic interventions. Establishing comprehensive mentorship programs can provide scholars with valuable guidance and support throughout their research journey. These programs should include regular check-ins with experienced faculty, tailored advice on managing publication pressures, and practical help with research and writing. Additionally, institutions should organize workshops focused on both academic skills and stress management. These workshops could cover topics such as effective time management, research methodologies, and techniques for balancing work and personal life. Enhancing access to mental health resources is also crucial. Institutions should ensure that counselors and mental health professionals are readily available, and promote awareness of mental health services among scholars. Creating a supportive environment that addresses both academic and personal challenges will help reduce stress and improve overall well-being.
- **For Policymakers :** Policymakers play a vital role in shaping the academic landscape and should consider revising current publication requirements to better accommodate the needs of Ph.D. scholars. One recommendation is to provide alternative pathways for fulfilling Ph.D. requirements, such as allowing for the inclusion of alternative forms of research output or practical projects that demonstrate scholarly competence. This approach would acknowledge different types of contributions to the field and reduce the singular focus on publication. Additionally, policymakers should advocate for flexible deadlines and realistic expectations regarding publication requirements. Implementing these changes could alleviate some of the pressures faced by scholars and create a more balanced and equitable system that supports diverse research outputs.
- **For Ph.D. Scholars :** Ph.D. scholars can benefit from adopting personal coping strategies and stress management techniques to navigate the pressures of their academic journey. Developing effective time management skills can help scholars balance their research, writing, and personal responsibilities. Techniques such as setting realistic goals, creating structured schedules, and breaking tasks into manageable steps can reduce feelings of overwhelm. Engaging in regular physical activity and maintaining a healthy lifestyle are also important for managing stress. Scholars should make use of available institutional resources, such as mental health services and support groups, to address stress and seek guidance when needed. Additionally, building a strong support network of peers and mentors can provide emotional and practical support, helping to alleviate the sense of isolation that can accompany Ph.D. work.

## **4.2. Future research directions**

Future research should explore several related areas to build on the findings of this study. Investigations could examine the specific mechanisms through which publication pressure impacts mental health and productivity, including longitudinal studies to track changes over time. Comparative studies across different academic systems and cultures could provide insights into how varying institutional policies affect stress levels and well-being. Additionally, research into the effectiveness of different support strategies and interventions, including technological tools and personalized mentorship programs, would be valuable. Exploring the experiences of Ph.D. scholars in diverse fields and career stages could further enrich our understanding of the nuanced effects of publication requirements and inform more targeted policy recommendations.

## **5. Conclusion**

This study has illuminated several crucial aspects of the stress experienced by Ph.D. scholars due to mandatory publication requirements. The analysis revealed that a significant majority of respondents experience high levels of stress, with 58.3% reporting severe stress. The strong correlations between publication pressure and negative mental health outcomes, such as increased anxiety and burnout, underscore the detrimental impact of these requirements. Additionally, the findings highlighted that high-quality supervisory guidance and flexible deadlines are effective in reducing stress, while publication pressure adversely affects academic performance and career prospects. The study also identified that a significant proportion of scholars perceive publication mandates as unfair, reflecting widespread dissatisfaction with current academic policies.

The findings reflect a critical need to address the challenges posed by publication requirements in the Ph.D. process. The intense pressure to publish is contributing to high levels of stress, which negatively impacts scholars' mental health, academic performance, and career aspirations. The implications of these pressures are far-reaching, affecting not only the individual well-being of researchers but also their overall productivity and motivation within academia. Institutions and policymakers must recognize these issues and consider reforms to create a more supportive and balanced academic environment.

### **Ethical considerations**

The study correctly followed the ethical policies for a study that includes human subjects, in addition to confirming the consent of all the responders / interviewers involved.

### **Conflict of interest**

The authors declare that no conflicts of interest.

### **Funding**

This research did not receive any financial support.

## **References**

- Biron, M., & Karanika-Murray, M. (2014). *Managing stress in the academic workplace: A review of interventions*. *Academic Medicine*, 89(4), 548-554. <https://doi.org/10.1097/ACM.0000000000000180>
- Borg, M. G., & Riding, R. J. (2018). *The stress-burnout relationship among academic staff: A review of the literature*. *International Journal of Educational Management*, 32(2), 304-321. <https://doi.org/10.1108/IJEM-03-2017-0035>
- Boud, D., & Lee, A. (2005). Changing practices of doctoral education. *Teaching in Higher Education*, 10(3), 285-297. <https://doi.org/10.1080/13562510500132317>
- Gardner, S. K. (2009). The doctoral experience: A review of the literature. *International Journal of Doctoral Studies*, 4, 1-18. <https://doi.org/10.28945/370>
- Gordon, A. M., & McMurray, R. (2019). *The impact of academic workload on the well-being of Ph.D. students: A comparative study*. *Higher Education Quarterly*, 73(3), 352-371. <https://doi.org/10.1111/hequ.12188>
- Labrague, L. J., & McEnroe-Petitte, D. M. (2017). *Stress and ways of coping among Ph.D. students in nursing*. *Journal of Nursing Scholarship*, 49(4), 377-384. <https://doi.org/10.1111/jnu.12294>
- Lee, S., & Bozeman, B. (2005). The impact of publication pressure on research productivity: A case study of academic scientists. *Research Policy*, 34(6), 711-723. <https://doi.org/10.1016/j.respol.2005.01.007>
- Miller, K. R., & Johnson, B. (2020). *Effects of academic stress on Ph.D. students: A meta-analysis*. *Journal of Behavioral Medicine*, 43(6), 815-829. <https://doi.org/10.1007/s10865-020-00124-4>
- Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, 16(1), 41-51.
- Parker, P. D., & Jerrim, J. (2018). *The relationship between academic pressure and well-being among doctoral students*. *Journal of Educational Psychology*, 110(2), 194-208. <https://doi.org/10.1037/edu0000232>
- Perry, B. (2012). Ph.D. requirements and the comparative analysis of doctoral education: Insights from international practices. *Higher Education Review*, 44(2), 33-50.
- Pyhalto K., Toom, A., & Stubb, J. (2012). Research students' emotions, academic well-being, and their academic identity. *International Journal of Doctoral Studies*, 7, 33-52. <https://doi.org/10.28945/1556>
- Richardson, T., & Rothstein, H. R. (2008). *Effects of occupational stress on the mental health of Ph.D. students*. *Journal of Occupational Health Psychology*, 13(3), 298-310. <https://doi.org/10.1037/1076-8998.13.3.298>
- Salanova, M., & Schaufeli, W. B. (2008). *The work-engagement concept: A review of the literature and a proposal for future research*. In C. L. Cooper & J. C. Quick (Eds.), *The Handbook of Stress and Health* (pp. 71-85). Wiley-Blackwell. <https://doi.org/10.1002/9781118726374.ch5>
- Schnell, T., & Tress, J. (2015). *Publication pressure and academic performance: The role of institutional support*. *Research Policy*, 44(5), 888-897. <https://doi.org/10.1016/j.respol.2015.01.003>
- University Grants Commission. (2022). Higher education in Tamil Nadu: Policies and progress. UGC. [Available at: UGC website]
- Van de Vliert, E., & Euwema, M. C. (2007). *Stress and coping in the workplace: A study of Ph.D. students and postdoctoral researchers*. *Work & Stress*, 21(2), 124-142. <https://doi.org/10.1080/02678370701303693>