

Measuring the Perceived Research Stress among Ph.D. Scholars

Sweta¹, Dr. Jay Prakash Singh²

¹Ph.D. Research Scholar, Department of Education, School of Education, Central University of Gujarat, Kundhela, Vadodara, Gujarat.

²Assistant Professor, Department of Education, School of Education, Central University of Gujarat, Kundhela, Vadodara, Gujarat.

Abstract

Research scholars faces academic, professional and personal difficulties during their PhD tenure and it demands lots of patience, resilience and perseverance from research scholars. To address this issue, the present study sought to develop and validate a scale for measuring perceived research stress among research scholars. The study adopted a quantitative approach and Cross-sectional survey method to collect 198 samples from Research scholars. The dimensions of perceived research stress were Coursework, Time Management, Peer-group relationships and Publication Stress. The tool used for the study was a self-reported questionnaire. Respondents had to used 5-point Likert Summative scale used for filling the questionnaire. For Item Analysis t-test was used and value for Cronbach alpha was 0.83 which reflects the reliability of the final tool which had 45 Items. This standardized scale can be used in Academic to assess the Perceived Research Stress level among research scholars for their Psychological well-being and Counselling.

Keywords: Perceived Research Stress, Research Scholars, Tool Development, Reliability.

Introduction

Stress is a typical physical, mental, and emotional response to challenges, demands, pressures, or changes in daily life. Stress in daily life can result from a variety of routine situations, such as workload, family responsibilities, financial concerns, health issues, academic pressure, interpersonal conflicts, time management difficulties, or unanticipated events. It is the body's reaction to situations that require adjustment or maintenance. The first person in the health sciences to scientifically characterize and popularize stress was Canadian endocrinologist Hans Selye (1936). He released his popular book on stress in 1936. The concept was created by Hans Selye: Sheldon Cohen, together with his associates Tom Kamarck and Robin Mermelstein, created and popularized the term and concept of perceived stress (1983). Perceived stress is a person's subjective evaluation of how stressful, unexpected, uncontrollable, or overwhelming they think life situations are. The concept is based on Richard Lazarus's cognitive appraisal theory of stress (1966) which emphasized that stress is determined by an individual's perception and

¹ Sweta, Ph.D. Research Scholar, Department of Education, School of Education, Central University of Gujarat, Kundhela, Vadodara, Gujarat. Email : sweta220706001@cug.ac.in

² Dr. Jay Prakash Singh, Assistant Professor, Department of Education, School of Education, Central University of Gujarat, Kundhela, Vadodara, Gujarat. Email : jpsingh@cug.ac.in

interpretation of events rather than the events themselves. Thus, Sheldon Cohen(1983) is renowned for operationalizing and evaluating perceived stress using the PSS, even though Lazarus (1966) provided the theoretical foundations for the concept.

The psychological strain that research scholars endure as a result of challenges in managing coursework requirements, striking a balance between academic and personal obligations, upholding positive peer relationships, and managing pressure related to research publications and academic productivity is the operational definition of perceived research stress in this study.

Background of different dimensions of Perceived Research Stress

Existing literature suggested that research scholars encounter stress due to various academic, personal, and institutional factors. However, most studies have investigated general stress, academic stress, or psychological well-being rather than research-specific stress experienced during the doctoral journey. Perceived research stress is a multifaceted concept that arises from the diverse academic, social, and professional demands experienced by research scholars during their doctoral journey. The process of pursuing a PhD extends beyond conducting research; it involves fulfilling academic requirements, managing time effectively, publishing research findings, and maintaining healthy interpersonal relationships within the academic community. Based on an extensive review of literature on doctoral education, stress, and research experiences, four major dimensions—**Coursework Stress, Time Management Stress, Publication Stress, and Peer Group Relationship Stress**—were indicated as the core components of perceived research stress. Together, these dimensions thoroughly represent the major academic, professional, and interpersonal challenges faced during doctoral research. Thus, they provide a robust theoretical basis for measuring perceived research stress among PhD scholars. Furthermore, limited consideration has been given to developing a comprehensive and validated measuring tool that compute perceived research stress among PhD scholars. Existing tools do not sufficiently capture key dimensions such as coursework, time management, publication stress, and peer group relationships within a single framework. Therefore, there is a requirement to develop and validate a context-specific Perceived Research Stress Scale and examine its relevance among research scholars across different universities.

Coursework as a Stressor

According to University Grants Commission PhD regulations (2009) Coursework is considered as a mandatory for all the research scholars and the objective of this guideline is to help scholars to acquire deeper understanding and gain proper research skills. Coursework significant source of stress among PhD scholars, particularly during the initial stages of doctoral study Cornwell (2018). Research scholars are compulsorily to complete assignments, presentations, examinations, academic readings within limited time frames while simultaneously preparing for independent research work Mathur (2022), Cornwell et al (2018). The compulsion to achieve high academic performance, comprehend complex theoretical concepts, and required institutional expectations such as NAAC accreditation and securing good NIRF ranking, researchers has to participate in seminars, conferences, paper publication, taking classes specially JRF students often creates academic burden and work-life balance. Female research scholars juggling with multiple role such as family responsibilities, career aspirations and academic requirements Mboniyirivuze et al (2023), Li and Chakma (2024), Gazder, Ahmed and Danish (2014). Excessive coursework may also reduce the time available for research activities, thereby increasing feelings of stress, anxiety, and fatigue among scholars Inan et al (2025).

Time Management as a Stressor

Time management is another major stressor experienced by PhD scholars. Poor time management causes academic failure which leads to cognitive overload, exhaustion and stress among researchers Galaviz et al (2025). Procrastination tendencies and poor time management may also attributes to Perceived research stress Gross et al (2024). Research scholars often struggle to balance data collection, thesis writing, coursework, publication requirements, teaching responsibilities, family obligations, and personal life within strict deadlines Suminguit et al (2025). Ineffective management of time can lead to work overload, sleep disturbances, and emotional exhaustion Stojadinović, (2025). The constant pressure to complete research tasks within a specified duration may create feelings of inadequacy and perceived stress among doctoral scholars Feizi et al (2024).

Peer Group Relationship as a Stressor

Peer group dynamics and academic performance are directly associated with each other Adeyemi et al (2019). Peer- Group relationship play an important role in the academic and emotional well-being of PhD scholars Knoblach et al (2025). Positive relationships with peers can provide emotional support, motivation, collaboration, and intellectual exchange; however, unhealthy peer relationships may become a source of stress Juliyanti (2025). Competition, conflict with fellow scholars, lack of cooperation, comparison of academic achievements, communication gaps, social isolation, and feelings of inferiority within research groups may negatively affect scholars' confidence and mental health Mikulincer (2000), Newslands et al (2025). In some cases, scholars may experience loneliness and reduced social support, which can increase psychological distress and hinder research productivity Nisa and Lestari (2023).

Publication Stress as a Stressor

Publication stress refers to the pressure experienced by PhD scholars to publish research papers in journals as part of academic and career requirements and fear of rejections cause stress among research scholars Raksithaa (2025). The expectation to publish in reputed or indexed journals, fear of rejection, lengthy review processes, plagiarism concerns, and pressure to maintain research quality often create significant stress among scholars Johann et al (2024), Divyavarsini, Monika, Suganthan (2023), Raksithaa (2024). Researchers perceive publication as mandatory for degree completion, academic identification, and career prospects, which additionally intcreses anxiety and emotional pressure. Constant demand to give publishable work within time-restricted situation may lead to frustration, fatigue and disappointed research work among PhD scholars.

Objective of the study :

The present study aimed to develop and validate a standardized, reliable, and valid Perceived Research Stress Scale for measuring perceived research stress among Ph.D. research scholars.

Theoretical Framework

A systematic review administered by various databases such as PubMed, PubMed Central (PMC), Scopus and Google Scholar by Kumar, Singh, Kumar, and Giri (2025) on stress, the causes, coping mechanisms, and policy implications among research scientists. The results revealed that the prime stresses impacting scholars' wellbeing and innovativeness were work-life integration, financial challenges, supervisor-scholars conflicts, academic stress, and a absence of resources.

Parveen et al. (2025) explored PhD students' mental health in relation to institutional attributes, social support system and supervising approaches. The results revealed that students' well-being and research productivity were adversely determined by inadequate supervision, workload stress, limited resources, financial problem, and poor work-life equilibrium. The study highlighted the necessity of mental health services, institutional assistance, and helpful supervision for research academics.

A study on gender differences in perceived stress and coping among university students examined stress levels during the academic semester and before final examinations using the Perceived Stress Scale and Brief Cope inventory conducted by Graves et al (2021). The findings indicated significant gender differences in stress levels and coping strategies among students. The study highlighted that academic examinations and coursework contribute substantially to perceived stress in higher education settings.

A qualitative study was conducted by Gui et al. (2026) to examine academic emotional experiences and emotional regulation of doctoral students. The Interviews revealed that the doctoral programs, academic writing, supervisor assistance, and the academic environment were major sources influencing students' emotional experiences. The findings highlighted that both positive and negative emotions significantly shape the research journey and overall well-being of PhD scholars.

A study on the psychological and mental health problems experienced by Indian PhD students conducted by Francis and Devi (2020). The study found significant obstacles, including challenges with data collecting, inadequate research instruments, methodological concerns, issues with supervisors, and academic pressure. In order to enhance the wellbeing of research scholars, the results highlighted the necessity of institutional support, professional support, and mental health awareness.

A qualitative study conducted by Cornwall et al. (2018) on stressors faced by early-stage PhD students, time constraints, uncertainty about doctoral procedures, financial concerns, and a lack of community support were the main causes of stress among PhD scholars. The study also highlighted the detrimental effects of stress on students' wellbeing and research performance, underscoring the necessity of institutional support and encouraging learning settings.

Stojadinovic et al. (2025) examined an overview on the perception and handling of stress among PhD students. The results revealed that scholars' stress levels were significantly influenced by their personal problems, work responsibility and Institutional requirements. The study also depicted that older students strived to maintain a work-life balance and relieving during their research journey, while women scholars and employed PhD scholars had considerable stress levels.

Prasad and Vaidya (2017) examined an empirical study on the rational behind stress among doctoral students at Rashtrasant Tukadoji Maharaj Nagpur University. The findings showed that cognitive factors, job uncertainty, and work demand all had a crucial influence on scholars' stress levels. Additionally, the study explored that while physiological factors intensified stress among research academics and coping methods helped lower stress.

Bazrafkhan et al. (2016) examined a qualitative study on PhD students to know how they cope up stress and anxiety while formulating their theses. The findings showed that the prime factors influencing stress and anxiety among PhD scholars were thesis submission, interactions with mentors, financial issues, and coping mechanisms. The study also revealed that PhD scholars uses both effective and ineffective coping plans to manage with the stress and emotional problems associated with their research.

Gao et al. (2023) conducted a survey on burnout, anxiety, depression, and perceived stress among Chinese researchers. The results revealed that scholars had significant levels of anxiety and depression sign, and that perceived stress had a major influence on mental health. The survey also revealed that poor self-

realization led to higher levels of anxiety and loneliness, highlighted the significance of stress coping strategies and psychological support for researchers.

Methodology

Research design

A cross-sectional survey method was employed to formulate and assess a standardized scale for evaluating cognitive, behavioral, educational, or social aspects such as stress, anxiety, motivation, or mindsets is known as psychometric tool development design. The first step in tool development process was to find and describe the construct using conceptual frameworks, expert opinions, and a survey of the literature. The researcher constructed an tool that represents four domains of the concept. Subject specialist then evaluate these items to decide their content validity, and research academics participated in a pilot study to assess their relevance and clarity. The scale's internal consistency and construct validity are evaluated by statistical studies like item analysis, factor analysis, and reliability testing (such as Cronbach's alpha). Unsuitable items are changed or eliminated based on the results, creating a standardized psychometric tool. Ensuring that the tool assesses the target construct properly, consistently, and scientifically across many people and circumstances is the main goal of psychometric scale development design.

Sample Description

Using the convenience sample technique, 198 Ph.D. research researchers provided the data for this study. In order to ensure representation from a variety of higher education institutions, the participants were selected from Central, State, and Private Universities throughout India. Research scholars from a wide range of academic disciplines, including the arts and humanities, science, social sciences, and management, were included in the sample.

There were 100 (50.5%) female respondents and 98 (49.5%) male respondents overall, specifies a nearly equal gender distribution. Out of 198 respondents 143 (72.2%) research scholars were single, while 55 (27.8%) were married. The inclusion of respondents from a various colleges such as Central, State and Private Universities and genders, and marital statuses enhanced the sample's heterogeneity and increases the findings' generalizability.

Tool Development Process

Step 1 : Identification of Dimensions

The present scale's domains were decided by seeking advice from subject matter specialist and conducting a deeper analysis of relevant literature. For deciding the primary dimensions and attributes associated with perceived research stress, relevant theories, previous research studies, books, journals, and scales associated to the construct were in-depth studied. Understanding the recurrent themes, variables, and conceptual elements that researchers regularly reported was made easier by the literature review. Based on these findings, preliminary dimensions were identified and organized according to their theoretical relevance. Further, expert opinions from academicians, psychologists, research supervisors, and professionals in the concerned field were sought to evaluate the appropriateness, clarity, and comprehensiveness of the proposed dimensions. Their suggestions and feedback helped researcher in refining the dimensions and ensure that they adequately represented the construct under study. Thus, the combined use of literature review and expert opinion contributed to establishing a strong conceptual

foundation for the development of the scale. The final dimensions identified as Coursework, Time Management, Peer-Group Relationship and Publication Stress.

Step 2 : Item Generation

After identifying the dimensions of the construct through literature review and expert consultation, an initial pool of 70 items was generated for the Perceived Research Stress tool development . These items were carefully framed to represent different aspects of the identified dimensions like Coursework, Time Management, Peer- Group Relationship and Publication Stress to capture the experiences, perceptions, and responses related to the construct under study. The items were developed based on theoretical understanding, previous research findings, existing standardized scales, and expert suggestions to ensure comprehensive coverage of the construct. Care was taken to use clear, simple, and relevant language so that the respondents could easily understand and respond to the statements.

Step 3 : Expert Validation (Content Validity)

The initial pool of items was sent to subject matter experts for assessment and review in order to determine the scale's content validity. Academicians, psychologists, research supervisors, and experts in the development of psychometric scales and related fields were among the experts. They were asked to assess each item for representativeness of the identified qualities, appropriateness, relevance, clarity, and simplicity of language. In order to enhance the scale's general quality and comprehensiveness, the experts also offered recommendations for the addition, removal, rewording, and modification of specific items. The necessary changes were made based on their insightful comments and suggestions to guarantee that the items appropriately represented the concept being studied and were appropriate for the intended audience. Thus, the expert review process helped strengthen the content validity and scientific accuracy of the scale before conducting the pilot study.

Step 4 : Administration of tool

The constructed tool was administered on a sample of 198 research scholars belonging to Public Universities and various academic disciplines to examine the effectiveness of the developed Tool. The purpose of the pilot testing was to assess the clarity, comprehensibility, relevance, and appropriateness of the items included in the scale. The respondents were asked to provide their responses to the preliminary set of items, where 5-point Likert scale they can use, for every positive statements 5 points for Strongly Agree, 4 points for Agree, # points for Neutral and 2 points for Disagree and 1 point for Strongly Disagree and for every negative statements vice-versa. The feedback helped to identified ambiguous, repetitive, or difficult statements. In addition, the pilot study was carried out to evaluate the preliminary reliability and internal consistency of the scale before its final administration.

Step 5 : Item Analysis

The initial pool of 70 items has been generated under the four dimensions namely Coursework, Time Management, Peer-Group relationships and Publication Stress. The dimension Coursework initially had 20 items, Time Management had 15 items, Peer-Group Relationship had 15 items and Publication Stress had 20 items. Item analysis was carried out using t-test. A value of 2.57 was taken as critical value at 0.01 level of significance (99% confidence level). The items having t-value more or equal to 2.57 has been considered for final tool. The final tool has 45 items.

S.N.	Dimensions	Items	t-value
1.	Coursework	Course work is merely wastage of time, efforts and money.	2.60

2.		I am confident that I can understand research terminology.	5.02
3.		My work during PhD has great implications.	5.64
4.		Research itself create stress.	3.66
5.		Ethics that learned during coursework has no practical implications.	4.01
6.		Coursework increases productivity among Scholars.	2.93
7.		Female candidates facing problem in managing coursework along with kids.	3.36
8.		Assignments, projects and field work during course work brings extra burden on the scholars.	4.90
9.		I feel pursuing course work is flexible in my university.	4.36
10.		Course work helps research scholars to build a good relationship.	3.05
11.		Course work serves as warm-up for final work.	2.84
12.	Time Management	I spend time for each day planning my activities.	7.10
13.		I make to-do lists every day.	4.50
14.		I set goals for the entire semester.	4.77
15.		I make the schedule of activities I must do on weekday.	4.63
16.		I set deadlines for myself for completing work.	5.85
17.		I try to schedule my best hours for most demanding work.	5.83
18.		I keep my important dates (Exam dates, research paper due dates etc.) on a single calendar.	3.69
19.		I can't make minor decisions quickly.	2.70
20.		Frequently I engage myself in gossips, shopping and social media	2.87
21.	Peer-Group Relationship	I have a healthy relationship with my batchmates.	4.92
22.		I don't have good relationship with my peer group.	5.97
23.		I always feel lonely in my peer group.	3.77
24.		Achievements of my batchmates upsets me.	5.81

25.		I feel happy to share my academic materials with my batchmates.	4.83
26.		Sharing the academic materials with my batchmates gives the advantage over me.	6.44
27.		My Batchmates feels happy on my achievements.	3.44
28.		I usually go to my batchmates, when they are unhappy or crying.	3.93
29.		My batchmates usually helps me in learning and understanding new concept.	2.83
30.		My batchmates has huge impact on my achievement.	5.09
31.		We all peers helps each other in motivating.	4.48
32.		My peer has great impact in building self-confidence in my life.	4.62
33.		My batchmates continuously distract me and encourage me to involve in other activities like shopping, movies, social media.	5.71
34.	Publication Stress	I face difficulty in writing a research paper.	3.07
35.		I have skills and writing proficiencies.	3.13
36.		I have strong resilience, dedications and mentorship.	3.58
37.		I have no proper knowledge of descriptive and statistical analysis required for writing a paper.	5.12
38.		I have systematic approach in writing a research paper.	4.91
39.		Data collection for publishing a paper is very daunting task.	4.10
40.		I become tense when it comes to statistical analysis of research data for paper publications.	4.43
41.		Knowledge of Plagiarism is important element in publishing a paper.	2.90
42.		I feel supportive research environment helps in publishing a paper.	3.00
43.		Receiving reviewers' comments negatively impact my stress level.	3.36
44.		Balancing between home responsibilities and research work adds to the stress level among scholars.	2.62
45.		Frequent revisions required for publication submissions increases stress.	3.10

Table 1 : Final Tool of Perceived Research Stress

Scoring of Items

A five-point Likert summative scale was administered to rate the items on the Perceived Research Stress Scale, which is a self-reporting rating scale. On a scale from "Strongly Disagree" to "Strongly Agree," the participants were asked to designate how much they agreed with each statement.

The table 1 contains total 45 Items, out of which 30 Items are positive Items and highlighted 15 Items are negative Items. Scores for positive comments were as follows: 5 for "Strongly Agree," 4 for "Agree," 3 for "Neutral," 2 for "Disagree," and 1 for "Strongly Disagree." And for each negative Items reverse scoring procedure was adopted.

Sr. No.	Dimensions	Statements	Nature of Items	Scoring
1.	Coursework	Coursework increases productivity among Scholars.	Positive	5
2.	Coursework	Research itself create stress.	Negative	1
3.	Time Management	I set goals for the entire semester.	Positive	5
4.	Time Management	I can't make minor decisions quickly.	Negative	1
5.	Peer-Group Relationship	I feel happy to share my academic materials with my batchmates.	Positive	5
6.	Peer-Group Relationship	I don't have good relationship with my peer group.	Negative	1
7.	Peer-Group Relationship	My batchmates continuously distract me and encourage me to involve in other activities like shopping, movies, social media.	Negative	1
8.	Publication Stress	I have skills and writing proficiencies.	Positive	5
9.	Publication Stress	Receiving reviewers' comments negatively impact my stress level.	Negative	1

Table 2 : Scoring of Items

Results

Seventy items made up the preliminary draft of the Perceived Research Stress Scale, which was formulated based on a review of the literature, subject matter expert opinions, and domains of the construct. The Cronbach's alpha approach was employed to assess the scale's internal consistency and reliability. Items that did not significantly attributing to the scale's internal consistency were removed. Additionally 45 items were kept in the final version of the tool, while the remaining items were eliminated.

Applicability and Usefulness of Tool

A standardized Perceived Research Stress Scale for Research Scholars was constructed to measure perceived stress among research scholars are at different phases of their PhD Journey. This tool will be used by Universities, colleges, research institutes, supervisors, counsellors.

Research academics can administered the tool to determine the primary reason and levels of stress associated with their work. It makes it possible for academic administrators and supervisors to comprehend the difficulties that students faces and to create suitable interventions, counselling services, mentoring programs, and stress-reduction techniques. The tool's results can also help Universities, colleges to formulate policies that support research scholars' academic performance and mental health.

Additionally, the tool can be used in further investigation to study how factors like research productivity, academic performance, motivation, resilience, well-being, work fulfilment, and quality of life relate to perceived research stress.

Implications

The current study has significant outcomes for future researchers, supervisors, counselors, and academic institutions. This standardized tool will help in determining the degree and causes of stress that research scholars faces during their PhD journey. The scale can be used by university counselors to assess students' psychological and academic stress and generate suitable counseling interventions, stress management strategies, and mental health support services. Research supervisors can use tool to better understand the difficulties that scholars faces with regard to coursework, publication pressure, time management, and peer connections. The scale may also help university administrators and legislators in formulating scholarly regulations, enhancing research settings, lessening needless academic burdens.

Conclusion

The prime objective of current study was to effectively construct and standardized the Perceived Research Stress tool to measure research scholars' perceived levels of research stress. The tool was developed structurally through literature review, expert reviews, pilot testing, item analysis, and reliability testing. The final scale showed a high degree of reliability and good validity, recommending that it is a reliable scientific tool for assessing perceived research stress. The dimensions that have been identified was coursework stress, time management stress, publication stress, and peer group relationship stress. Additionally, by offering a valid and standardized tool measure for upcoming studies on academic stress, mental health, research productivity, and well-being among research academics, the tool adds to the body of existing literature.

References

1. Bazrafkan, L., Shokrpour, N., Yousefi, A., & Yamani, N. (2016). Management of stress and anxiety among PhD students during thesis writing: A qualitative study. *The health care manager*, 35(3), 231-240. DOI : 10.1097/HCM.0000000000000120
2. Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 385-396. URL: <https://tinyurl.com/4tctcm7e>
3. Cornwall, J., Mayland, E. C., van der Meer, J., Spronken-Smith, R. A., Tustin, C., & Blyth, P. (2019). Stressors in early-stage doctoral students. *Studies in Continuing Education*, 41(3), 363-380. DOI : <https://doi.org/10.1080/0158037X.2018.1534821>
4. Divyavarsini, V., Monika, M., & Suganthan, C. Paper Publications and Work Stress Among Ph.D. Research Scholars-A Cross-Sectional Survey. URL : <http://doi.org/10.1080/0158037X.2018.1534821>
5. Feizi, S., Knäuper, B., & Elgar, F. (2024). Perceived stress and well-being in doctoral students: Effects on program satisfaction and intention to quit. *Higher Education Research & Development*, 43(6), 125-

9-1276.DOI : <http://doi.org/10.1080/07294360.2024.2317276>

6. Galaviz, G. O., Zazueta, L. A., Campas, C. Q., Lirios, C. G., & Ruiz, G. B. (2025). Impact of time management on academic performance. *Journal of information systems engineering and management*, 10(21s), 46-65. DOI : 10.52783/jisem.v10i21s.3289.
7. Gao, L., Wang, L. L., Yang, R., Yang, X. J., & Zhou, S. J. (2023). Anxiety, depression, perceived stress, and burnout among Chinese researchers: a cross-sectional nationwide study. *Psychology Research and Behavior Management*, 4209-4220. DOI: doi.org/10.2147/PRBM.S431011
8. Gazder, D. P., Ahmad, F., & Danish, S. H. (2014). Stressors, coursework stress and coping strategies among medical students in a private medical school of Karachi, Pakistan. *Education in Medicine Journal*, 6(3), 20-29. DOI:10.5959/eimj.v6i3.269
9. Graves, B. S., Hall, M. E., Dias-Karch, C., Haischer, M. H., & Apter, C. (2021). Gender differences in perceived stress and coping among college students. *PloS one*, 16(8), e0255634. DOI : <https://doi.org/10.1371/journal.pone.0255634>
10. Gross, S., Schulze- Vorberg, L., & Hansen, M. (2024). The Procrastinating PhD student : A latent profile Analysis. *International Journal of Doctoral studies*. DOI: [10.28945/5302https://tinyurl.com/hm8su6vh](https://tinyurl.com/hm8su6vh)
11. Inan, F. A., Sosi, E. T., Unal, D., Marzban, F., & Alleyne Bayne, G. (2025). The Impact of Coursework Demand and Learning Engagement on Mental Fatigue in Online College Students. *International Journal of Environmental Research and Public Health*, 22(12), 1860. DOI: [10.3390/ijerph22121860](https://doi.org/10.3390/ijerph22121860)
12. Ji, Y., Gui, Q., Chen, G., Cui, Y., & Chen, S. (2026). In to the feeling: doctoral students' academic emotional experiences and regulation. *Frontiers in Psychology*, 17, 1724209. DOI : <https://doi.org/10.3389/fpsyg.2026.1724209>
13. Juliyanti, J. (2025). Relationship Between Peer Relationships and Mental Health Among High School Adolescents. *Open Access Health Scientific Journal*, 6(1), 48-53. DOI : <http://doi.org/10.55700/oahsj.v6i1.65>
14. Kumar, S., Singh, G., Kumar, A., & Giri, S. K. (2026). Stress among research scholars: causes, coping strategies and implications for policy reform. *Annals of Neurosciences*, 33(1), 123-130. DOI : <https://doi.org/10.1177/09727531251315236>
15. Lazarus, R. S., & Folkman, S. (1986). Cognitive theories of stress and the issue of circularity. *In Dynamics of stress: Physiological, psychological and social perspectives* (pp. 63-80). Boston, MA: Springer US. URL : <https://tinyurl.com/5n8e644x>
16. Li, B., & Chakma, U. (2024). Juggling multiple demands: Resilience of women in doctoral studies. *In Engaging with Australasia: Comparative research on ELT and English Teacher Education* (pp. 297-322). Singapore: Springer Nature Singapore. URL : <https://tinyurl.com/4zwaje6k>
17. Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140,1-55.
18. Mathur, A. (2022). A Study of Research Scholar's Perception Towards Course Work In Ph.D. Program. ISSN: 2249-6661 (UGC Care Journal) Vol-43, No.-3, July to September (2020). URL : <https://tinyurl.com/2s4f45f>
19. Mbonyiriyivuze, A., Dorimana, A., Nyirahabimana, P., & Nsabayeze, E. (2023). Challenges affecting women PhD candidates for completion of doctoral educations: A synthesis of the literature. *African Journal of Educational Studies in Mathematics and Sciences*, 19(1), 123-134. [10.4314/ajesms.v19i1.9](https://doi.org/10.4314/ajesms.v19i1.9)
20. Mikulincer, M., Birnbaum, G., Woddis, D., & Nachmias, O. (2000). Stress and accessibility of proximity-related thoughts: exploring the normative and intraindividual components of attachment

- theory. *Journal of personality and social psychology*, 78(3), 509. DOI : <https://doi.org/10.1037/0022-3514.78.3.509>
21. Newlands, F., Markan, T., Pomfret, I., Davey, E., King, T., Roach, A., ... & Bennett, S. (2025). "A PhD is just going to somehow break you": A qualitative study exploring the role of peer support for doctoral students. *Plos one*, 20(6), e0325726. DOI: <http://doi.org/10.1371/journal.pone.0325726>
 22. Nisa, A. K., & Lestari, S. (2023). Loneliness in college students: How is the role of adjustment and social support. *Jurnal Psikologi Teori dan Terapan*, 14(03), 322-335.
 23. Parveen, S., Yasmeen, J., Ajmal, M., Qamar, M. T., Sohail, S. S., & Madsen, D. Ø. (2025). Unpacking the doctoral journey in India: Supervision, social support, and institutional factors influencing mental health and research engagement. *Social Sciences & Humanities Open*, 11, 101282. DOI : <https://doi.org/10.1016/j.ssaho.2025.101282>
 24. Prasad, K. D. V., & Vaidya, R. (2017). Causes of stress among PhD research scholars with reference to Rashtrasant Tukadoji Maharaj Nagpur University: An empirical analysis. *International Review of Management and Research*, 6(2), 472-480. URL: <https://tinyurl.com/ene7cbt7>
 25. Raksithaa, S. (2024). Publication stress amongst scholars and faculties: a concern of mental health. *Mental Health and Social Inclusion*, (ahead-of-print). DOI : <https://doi.org/10.1108/MHSI-10-2024-0177>
 26. Selye, H. (1950). Stress and the general adaptation syndrome. *British medical journal*, 1(4667), 1383. DOI : [10.1136/bmj.1.4667.1383](https://doi.org/10.1136/bmj.1.4667.1383)
 27. Stojadinović, A., Stošić, A. D. S., Đukić, T. B. M., Mitić, I. D. T., Cvetković, B. M. N., & Marković, S. M. (2025). PhD Students' Perceptions and Strategies For Managing Stress During Their PhD Studies. *International Journal of Cognitive Research in Science, Engineering and Education*, 13(2), 257-272. URL : <https://tinyurl.com/4yupky2k>
 28. Suminguit, J., Gacasan, A. A., Clarin, A. S., Generalao, W. J. E., & Baluyos, G. R. (2025). *Experiences of Students in Balancing Academics and Employment*. DOI : <http://doi.org/10.30574/ijjsra.2025.17.1.2790>