Perceived Stress and Its Contributing Factors among Allied Health Sciences Students in West Bengal

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Abstract

Background: Stress is defined as a state of anxiety or mental strain arising from challenging circumstances, presenting a growing global health concern, particularly among students. While students find stress worrisome, many struggles to pinpoint its exact origins. Evaluating the stress levels of Allied Health Sciences students is vital for enhancing student well-being, fostering academic success, and preparing future healthcare professionals to navigate challenges in their careers.

Objectives: This study was designed to assess the status of stress among the students of Allied health sciences.

Methodology: A cross-sectional study was conducted at various universities in West Bengal, India, spanning from September 2023 to October 2024. A questionnaire based on the Perceived Stress Scale was administered to 249 students and data collection and analysis were performed using a quantitative approach.

Results: Findings indicated that out of 249 participants, the majority (65.5%) experienced stress primarily due to increased academic workload, followed by concerns related to academic failure and financial instability at rates of 61.4% and 61%, respectively. The study also highlighted a greater impact of stress on female students compared to their male counterparts.

Conclusion: Early identification and management of stress are crucial strategies to support students, promoting academic success, personal growth and effective stress management.

Keywords: Stress, Perceived Stress Scale, Mental Health, Anxiety, Allied Health Sciences.

Introduction

Stress is a prevalent reaction of the human body in response to various challenges. University students often encounter heightened stress due to social pressures, lifestyle adjustments, and academic demands [1]. The prevalence of mental health issues like anxiety and depression is increasing, underscoring the need to explore stressors and coping mechanisms [2]. Failure to adequately address stress can yield both positive and negative outcomes [3, 4]. Students grappling with excessive stress may endure significant hardships, leading to compromised academic performance and limited personal and professional development opportunities [5].

The susceptibility of students to stress varies depending on the situations encountered during their academic journey [6]. Inadequate stress management can manifest in feelings of isolation, anxiety, insomnia and persistent negative thoughts [7]. The pursuit of maintaining grades entails coping with a heavy workload and engaging in extracurricular activities. Challenges such as difficult assignments, extensive homework, and daunting classes add to the pressure [8]. The intensity of performing well in school and obtaining a degree contributes to stress among college students, who also face additional stressors beyond academics [9].

Poor stress management can negatively impact students' eating and sleeping habits, feelings of loneliness and connections with family and friends [7]. Throughout the semester, college students contend with significant stress levels due to time constraints, financial strains, and inadequate time management skills [10]. Excessive or negatively interpreted stress can adversely affect both health and academic achievement. To cope, university students often seek to avoid stress, garner social and religious support and reframe negative thoughts [11]. Efficient time management and study techniques play a crucial role in helping students manage and reduce academic stress [12].

Addressing this issue may involve incorporating stress management education into the curriculum as a potential solution [13].

Literature Review: -

- Research in 2017 concluded that Global teaching is a highly stressful profession due to competitive pressures in the education market. Private institutions in West Bengal, India, are rapidly emerging to bridge skill gaps, leading to high stress levels among one-third of educators. Age, experience, and area of residence significantly impact stress levels, while gender, income, job status, and qualifications play a lesser role. Interestingly, there's no significant difference in stress levels between teachers and administrators. The findings can guide policymakers in shaping effective human resource policies for educational institutions. [14]
- In 2021, a research study investigated depressive mood states among 77 graduate-level allied health students. The results indicated that factors

such as poor sleep quality, extended sitting time, and elevated trait physical fatigue were associated with increased severity of depressive moods across all participants. Among those experiencing depressive mood states, additional factors included reduced mental workload on non-school days and lower trait physical energy. These findings imply that addressing lifestyle factors could serve as potential interventions to alleviate depressive mood states within this student population. [15]

- Another study in 29 Jan 2019 aimed to explore predictors of trait mental and physical energy and fatigue, differentiating between stable long-term traits and temporary states. A sample of 671 participants completed an online survey assessing mood, physical activity, mental workload, diet (polyphenol consumption), and sleep quality. The findings revealed that poor sleep quality consistently predicted both mental and physical energy and fatigue. Age and depression were associated with mental and physical fatigue, while caffeine consumption related to higher physical fatigue. Distinctions were observed between predictors of mental and physical energy, emphasizing the need for further research into biopsychosocial sources influencing these traits. [16]
- On a research paper published in May 28th, 2021, in this study of undergraduates at a defense university in Sri Lanka, the majority exhibited 'normal' levels of depression, anxiety, and stress. However, a substantial percentage experienced mild to extremely severe levels of these mental health issues. Strong positive relationships were found between depression, anxiety, and stress. Factors such as degree course, current medical treatments, and a history of psychological treatments showed significant associations with mental health levels. The study concludes that while the majority had normal psychological profiles, ongoing assessment is crucial for timely interventions to enhance the mental health status of undergraduates. [17]
- In the paper of "Evidence that feelings of energy and fatigue are associated differently with gait characteristics and balance: an exploratory study" by Giulia Mahoney, Joel Martin, Rebecca Martin, Chelsea Yager, Matthew Lee Smith ORCID Icon, Zachary Grin, from pages 125-138, published online: 07 Jul 2021 investigated the impact of self-reported feelings of fatigue and energy on gait and balance in healthy young adults (n = 97). Participants completed mood assessments and underwent gait and balance tests. Backwards regression models revealed that feelings of fatigue and energy predicted 9.1% and 20.0% variance in gait characteristics, respectively. Fatigue significantly affected balance only on a firm surface with eyes open, while energy influenced balance with eyes open on both firm and foam surfaces.

These findings highlight the distinct influence of fatigue and energy on gait and balance in young adults. [18]

Aim:

- Assess the stress levels among allied health science students.
- Identify potential causes in order to develop strategies for stress management and improve overall well-being among students.

Objective:

- Quantifying stress level among students using established stress assessment tools and surveys.
- Demographic Correlation between males and females.

Methodology:

A survey was implemented to gauge stress levels and identify stressors among students in the Allied Health Sciences (AHS) program at various Universities, West Bengal. This questionnaire, administered at the Department of Allied Health Sciences, consisted of three sections. The first section gathered demographic information, including age and gender. The second section consisted of opinion-based multiple-choice questions addressing potential stress factors, while the third section utilized the Perceived Stress Scale (PSS) to assess stress levels. In alignment with Cohen, Janicki-Diverts, and Miller (2007), and Cohen, Tyrrell, and Smith (1993), the widely accepted Perceived Stress Scale-10 (PSS) was employed for evaluating perceived stress, recognized as a robust predictor of both health and disease. [19]

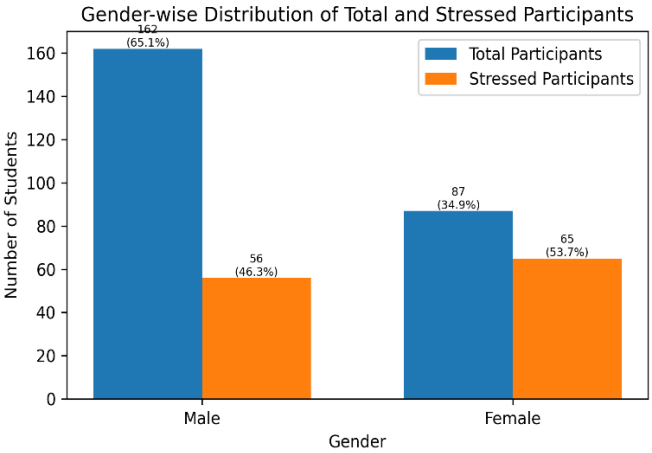
Data were collected from AHS students pursuing bachelor's degrees in various specialties, such as Medical Radiology and Imaging Technology, Medical Laboratory Technology, Physiotherapy, Critical Care Technology, Physician Assistant and Operation Theater Technology. The survey took place between September 2023 and October 2024, encompassing 249 participants.

Inclusion criteria: Encompassed every volunteer from the Allied Health Sciences department who participated in the investigation.

Exclusion criteria: Excluded students who did not volunteer or were unavailable.

Results

In this prospective study of 249 participants, 162 (65.1%) were male and 87 (34.9%) were female. Among the stressed students (n = 121), 53.7% were female and 46.3% were male.



Questionnaire based analysis:

1. How does academic workload contribute to stress in university students?

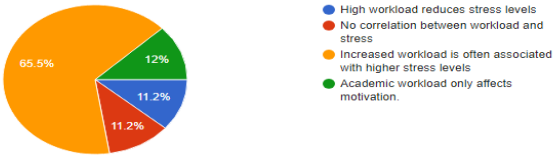


Figure: 1

From Fig. 1 we can summarize that the following are the possible reasons which contribute to stress in university students: -

- About 11.2% of respondents believe that a high academic workload genuinely reduces stress levels, possibly due to the perception that a full schedule fosters focus and engagement, providing a sense of purpose and accomplishment.

- Another 11.2% of respondents see no clear correlation between workload and stress, viewing them as separate variables with other factors influencing university students' stress levels more significantly.
- The majority (65.5%) of respondents assert a direct link between increased workload and higher stress levels, aligning with the widely held belief that a heavy academic burden exacerbates stress, anxiety, and mental health issues.
- Approximately 12% of those surveyed argue that academic workload primarily affects motivation rather than stress levels, suggesting a more indirect impact focused on a person's drive and enthusiasm to complete tasks.
- In summary, the predominant perspective is that higher workloads in university students positively correlate with increased stress levels, with a minority suggesting the opposite effect or emphasizing the impact on motivation rather than stress.

2. How does the fear of academic failure contribute to stress in university students?

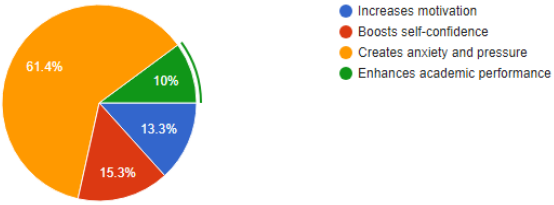


Figure: 2

From Fig. 2 we can summarize that the following are the possible reasons which contribute to stress in university students due to fear of academic failure:

- Increases motivation (13.3%): This suggests that a portion of students may experience an increase in motivation when facing the fear of academic failure.
- Boosts self-confidence (15.3%): A 15.3% contribution indicates that the fear of academic failure has a positive impact on self-confidence for a certain percentage of students
- Creates anxiety and pressure (61.4%): The highest percentage is allocated to anxiety and pressure, highlighting that a significant majority of students experience stress due to the fear of academic failure.
- Enhances academic performance (10%): This indicates that for a smaller percentage of students, the fear of academic failure contributes to improved academic performance.

3. What role do academic deadlines play in contributing stress among students?

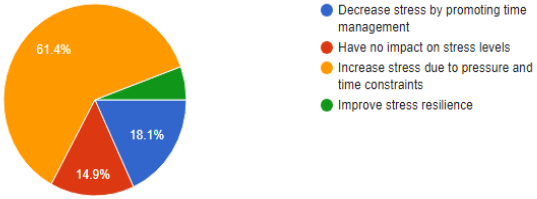


Figure: 3

From Fig. 3 we can summarize that the following are the possible reasons which contribute to stress in university students due to academic deadlines:

- Decrease stress by promoting time management (18.1%): This implies that a portion of students believes that academic deadlines serve a positive role by encouraging effective time management, ultimately reducing stress levels.
- Have no impact on stress levels (14.9%): Some students may feel that academic deadlines neither increase nor decrease stress, indicating a neutral perspective on the role of deadlines in contributing to stress.
- Increase stress due to pressure and time constraints (61.4%): The majority of students, according to the provided percentages, believe that academic deadlines have a negative impact by increasing stress.
- Improve stress resilience (5.6%): A small percentage of students feel that academic deadlines contribute positively to stress resilience, implying that the challenges posed by deadlines may help students develop the ability to cope with stress more effectively.

4. How does financial instability impact stress levels among university students?

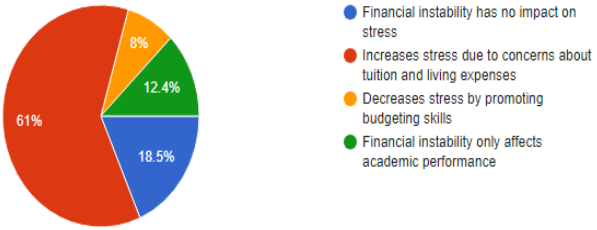


Figure: 4

From Fig. 4 we can summarize that the following are the possible reasons which contribute to stress in university students due to financial instability: -

- Increases stress due to concerns about tuition and living expenses (61%): The majority of respondents, 61%, feel that financial instability contributes to increased stress.
- Decreases stress by promoting budgeting skills (8%): A smaller percentage, 8%, believes that financial instability might actually lead to a decrease in stress.
- Financial instability only affects academic performance (12.4%): A significant portion, 12.4%, associates financial instability exclusively with its impact on academic performance.
- Resilience (18.5%): Nearly one-fifth of respondents (18.5%) link financial instability to the development of resilience.

5. Which academic factor is commonly associated with stress among university students?

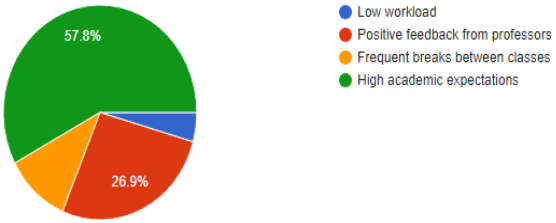


Figure: 5

From Fig. 5 we can summarize that the following are the possible reasons which contribute to stress in university students due to many academic factors-

- Low workload (4.4%): According to the provided percentages, a small proportion of university students (4.4%) associate stress with a low workload.
- Positive feedback from professors (26.9%): A significant percentage of students (26.9%) experience stress when receiving positive feedback from professors.
- Frequent breaks between classes (10.8%): A moderate percentage of students (10.8%) associate stress with frequent breaks between classes.
- High academic expectations (57.8%): The majority of university students (57.8%) identify high academic expectations as a significant factor contributing to their stress.

6. How can academic competition contribute to stress among university students?

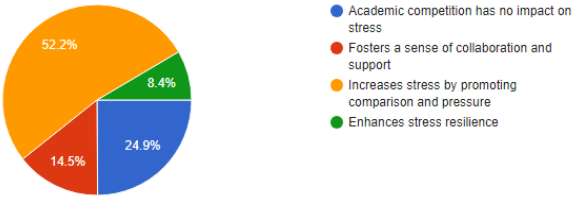


Figure: 6

From Fig. 6 we can summarize that the following are the possible reasons which contribute to stress in university students due to many academic competitions: -

- Academic competition has no impact on stress (24.9%): This viewpoint suggests that a certain portion of respondents believe that academic competition does not contribute to stress among university students.
- Fosters a sense of collaboration and support (14.5%): Another group, albeit smaller, emphasizes the positive aspects of academic competition.
- Increases stress by promoting comparison and pressure (52.2%): The majority of respondents, constituting 52.2%, assert that academic competition does contribute to stress.
- Enhances stress resilience (8.4%): A smaller but notable percentage believes that academic competition can actually enhance stress resilience among university students.

7. What role does the pressure to maintain a social image play in causing stress for university students?

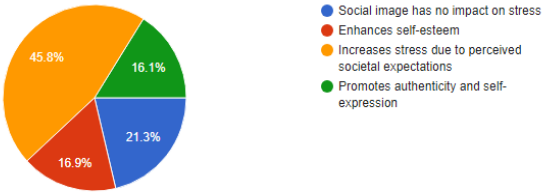


Figure: 7

From Fig. 7 we can summarize that the following are the possible reasons which contribute to stress in university students due to the pressure of maintaining a social image:-

- Social image has no impact on stress (21.3%): This suggests that for a portion of university students, maintaining a social image might not be a significant source of stress.
- Enhances self-esteem (16.9%): This implies that for a certain percentage of students, the pressure to maintain a social image may positively impact self-esteem.
- Increases stress due to perceived societal expectations (45.8%): This is a substantial percentage, indicating that a significant portion of university students experience heightened stress levels due to the perceived societal expectations they feel they must meet.
- Promotes authenticity and self-expression (16.1%): This suggests that, for some students, the pressure to maintain a social image may lead to positive outcomes, such as promoting authenticity and self-expression.

8. How does social comparison contribute to stress among university students?

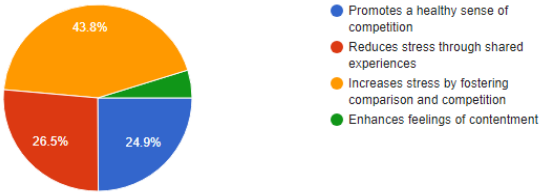


Figure: 8

From Fig. 8 we can summarize that the following are the possible reasons which contribute to stress in university students due social comparison:-

- Promotes a healthy sense of competition (24.9%): This implies that a certain proportion of university students believe that engaging in social comparison fosters a positive and healthy competitive spirit.
- Reduces stress through shared experiences (26.5%): This suggests that another portion of students perceives social comparison as a means to alleviate stress by sharing common experiences.
- Increases stress by fostering comparison and competition (43.8%): The majority of respondents appear to feel that social comparison contributes to heightened stress levels.
- Enhances feelings of contentment (4.8%): A smaller percentage of respondents believed that social comparison can enhance feelings of contentment.

Discussion

Females demonstrated higher stress levels in a study conducted by FazailaSabih et al. (20) Examining a range of contributing factors, including academic workload, financial instability, academic expectations, academic competition, pressure to maintain a social image, and social comparison, the study explores the complex landscape of stress among university students. With 249 participants and a noteworthy gender diversity, the study offers fascinating new perspectives on how students view and cope with stress. Academic Workload: Different viewpoints on the connection between stress and academic workload are shown by the analysis of the replies. Although the majority (65.5%) thinks there is a direct association, a sizable portion (11.2%) of people thinks that stress levels can be reduced by having a heavy workload. These differing perspectives highlight how complex students' perceptions of how academic demands affect their stress levels are.

Fear of Academic Failure: One complex element causing stress is the fear of academic failure. While a sizable majority (61.4%) feels pressure and worry, some students find inspiration (13.3%) and enhanced self-confidence (15.3%) in addressing this fear. This contradiction points to a nuanced interaction between pupils' emotional reactions and intellectual difficulties. In the article authored by Saurabh Kumar Sharma et al., academic concerns emerged as a primary contributor to stress among undergraduates in Allied Health Sciences.(10) Academic Deadlines: Often a source of stress, academic deadlines elicit varying perspectives. While a majority (61.4%) links deadlines to higher stress because of pressure and time limits, a noteworthy portion (18.1%) believes they promote time management and reduce stress. This demonstrates the complex impact that deadlines play in the stress that students face. Financial Instability: Sixty-one percent of respondents cited financial instability as a key source of stress. Resilience (18.5%) and the improvement of budgeting abilities (8%) are two noteworthy statistics that point to possible good results. This illustrates the variety of strategies students employ to manage the negative effects of financial difficulties on their wellbeing. Academic Factors connected with Stress: Positive feedback, regular breaks, and a light workload are not as frequently connected with stress as high academic standards, which rank highest at 57.8%. This highlights the widespread impact that high academic expectations have on kids' stress levels. Academic Competition: There are differing opinions about how academic competition increases stress, according to the study. While most (52.2%) think that academic competition makes people feel more stressed out due to pressure and comparison, a sizable portion (24.9%) thinks that it has no effect at all or even improves stress resilience (8.4%). Pressure to Uphold a Social Image: Different people have different perspectives on how stressful it is to have to maintain a social image. Although the majority (45.8%) links it to higher levels of stress, a

notable portion (21.3%) thinks social image maintenance has no effect on stress. This demonstrates the variations across individuals in the ways that cultural expectations impact stress levels. Social Comparison: There are differing opinions about how social comparison affects stress. Significant percentages believe it to be creating healthy competition (24.9%) or lowering stress through shared experiences (26.5%), but the majority (43.8%) believes it to be fostering stress through comparison and competitiveness. This illustrates how intricate the mechanics of social comparison are among college students.

Limitations of the Study

- Absence of biochemical analysis: Stress levels were measured only through self-reported assessments without objective biochemical indicators, which may reduce measurement accuracy.
- Sample specificity: The study focused on students from a single academic branch, limiting the generalizability of findings to other disciplines or regions.
- Limited time frame: The short study duration may not reflect long-term stress variations; longer follow-up studies could provide better insight.

Addressing these limitations in future research would improve the strength, accuracy, and wider applicability of findings on stress among Allied Health Sciences students.

Conclusion

The study offers an in-depth and comprehensive exploration of the numerous factors that contribute to stress among university students, highlighting the wide range of experiences, perceptions, and challenges faced by this diverse population. Students encounter stress from multiple sources, including academic workload, performance expectations, financial pressures, social relationships, career uncertainty, and the need to adapt to new environments and responsibilities. The findings emphasize that stress is not caused by a single factor but rather emerges from a complex interaction of academic, personal, social, and environmental influences that vary from one student to another.

By capturing this diversity of perspectives, the study demonstrates that students' stress experiences are shaped by their individual backgrounds, coping abilities, support networks, and institutional environments. Such variability indicates that a uniform approach to stress management may not be effective for all students.

Therefore, the findings strongly highlight the necessity for targeted interventions and well-structured support systems within educational institutions. These interventions should be designed to recognize and address the multifaceted nature of student stress by incorporating academic support

services, mental health resources, counseling facilities, peer support programs, stress-management workshops, and policies that promote a balanced academic environment. A holistic and student-centered approach can help institutions create a more supportive atmosphere that not only reduces stress levels but also enhances students' emotional well-being, academic performance, and overall quality of university life.

References:

1. Muhammad SK, Sajid M, Areef B, Syed UA, Yasir J. Prevalence of Depression, Anxiety and their associated factors among medical students in Karachi, Pakistan. *J Pak Med Assoc*.
2. Vivek BW, Girish BD, Yugantara RK, Alka DG. A study of stress among students of professional colleges from an urban area in India. *Sultan Qaboos Univ Med J*. 2013;13(3):429.
3. Nyante G, Yeh A, Quartey J, Kwakye S. Evaluating stress in undergraduate allied health science students at a university in Ghana. *J Prev Rehabil Med*. 2020;2(1):40-6.
4. Stevenson A, Harper S. Workplace stress and the student learning experience. *Qual Assur Educ*. 2006;14(2):167-78.
5. Yusoff MS, Hamid AH, et al. Prevalence of stress, stressors and coping strategies among secondary school students in Kota Bharu, Malaysia. *Int J Stud Res*. 2011;1(1):23-8.
6. Pillay AL, Ngcobo HS. Sources of stress and support among rural-based first-year university students. *S Afr J Psychol*. 2010;40(3):234-40.
7. Dyson R, Renk K. Freshmen adaptation to university life: Depressive symptoms, stress, and coping. *J Clin Psychol*. 2006;62(10):1231-44.
8. Sharma N, Kaur A. Factors associated with stress among nursing students. *Nurs Midwifery Res J*. 2011;7(1):12-21.
9. Sohail N. Stress and academic performance among medical students. *J Coll Physicians Surg Pak*. 2013;23(1):67-71.
10. Sharma SK, Singh S, Sharma S. Evaluating stress among undergraduate students. *Allied Health Sci Journal*.
11. Dwyer AL, Cummings AL. Stress, self-efficacy, social support, and coping strategies in university students. *Can J Couns Psychother*. 2001;35(3).
12. Stroud LR, Salovey P, Epel ES. Sex differences in stress responses: social rejection versus achievement stress. *Biol Psychiatry*. 2002;52(4):318-27.
13. Waghachavare VB, Dhumale GB, Kadam YR, Gore AD. A study of stress among students of professional colleges from an urban area in India. *Sultan Qaboos Univ Med J*. 2013;13(3):429.

14. Bhuin PK. Work-related Stress among the Teachers and Administrators of Privately Managed Business Schools in West Bengal. *Bhatter Coll J Multidiscip Stud*. 2017;7(2):7-16.
15. Boolani A, Yager C, et al. Correlates of depressive mood among graduate-level allied health students. *J Am Coll Health*. 2023;71(6):1685-95.
16. Boolani A, Manierre M. An exploratory multivariate study examining correlates of trait mental and physical fatigue and energy. *Fatigue*. 2019;7(1):29-40.
17. Gamage CK, Perera VB, et al. Depression, Anxiety and Stress Levels Among Allied Health Undergraduates in a Defence University, Sri Lanka. *SLJMH*.
18. Mahoney G, Martin J, et al. Evidence that feelings of energy and fatigue are associated differently with gait characteristics and balance. *Fatigue*. 2021;9(3):125-38.
19. Perera MJ, Brintz CE, et al. Factor structure of the Perceived Stress Scale-10 (PSS) across English and Spanish language responders. *Psychol Assess*. 2017;29(3):320.
20. Sabih F, Siddiqui FR, Baber MN. Assessment of stress among physiotherapy students at Riphah Centre of Rehabilitation Sciences. *J Pak Med Assoc*. 2013;63(3):346-49.