

Original Article

Perceived Stress and Associated Factors Among Army Personnel

Khan MHU¹, Zihan MAH²

1. Lt Col Dr. Md. Hasmat Ullah Khan
MBBS, MPH
CO 11 Fd Amb
2. Captain Dr. Mohaimen Al Hassan Zihan
MBBS, MO
11 Fd Amb

Correspondence to:

Lt Col Dr. Md. Hasmat Ullah Khan
MBBS, MPH
CO 11 Fd Amb
E-mail: 11fdambulance@gmail.com
Mobile: 01769-092192



Submission Date : 11 July 2024
Accepted Date : 06 August 2024

Abstract:

Background: Army personnel life is full of challenges. Perceived stress means feelings about the uncontrollability and unpredictability of one's life. The objective of this study was to measure the level of perceived stress and to determine the associated factors for perceived stress among army personnel. **Methods:** A cross-sectional study was carried out from January to April 2024 among 500 army personnel and data were collected from Savar cantonment by face-to-face interview with semi-structured questionnaire following random sampling technique. **Results:** The study revealed that mean age of respondent was 28.20 (± 7.7). Most of the respondents were male (92.8%). Officers were 6.4% and JCOs 3.2% and ORs 90.4%. Perceived stress scale revealed that low stress 39.6% and moderate stress 59.2% and high perceived stress 1.2%. Majority 284 (56.8%) of the respondents had high individual morale and 432 (86.4%) of the respondent were performed regular physical exercise and 232 (46.4%) of the respondent had sleep duration of 6-7 hours and 448 (89.6%) of the respondent didn't have any relationship/family problems and 312 (62.4%) of the respondents had high unit morale. **Conclusion:** Perceived stress scale provides us with a way to self-evaluate and self-report of our own stress level thus facilitating more timely and cost-effective intervention strategies. This study suggests that stress is associated with high individual morale, sleep duration, high unit morale, relationship or family problems and low physical activity. By reducing stress one can lead a quality life.

Keywords: Perceived stress scale, Individual morale, Sleep duration, Unit morale

Introduction:

Perceived stress denotes how much change is occurring in one's life and confidence in one's ability to deal with problems or difficulties. Perceived stress reflects the interaction between an individual and their environment.¹ Perceived stress is an individual's thoughts or feelings about how much stress they are under at a given point in time or over a specific time period.² Perceived stress focuses on the perception of stress rather than the actual events causing stress. By measuring perceived stress, the Perceived Stress Scale (PSS) helps to identify individuals who may be at risk for stress-related health issues.³ The results can guide interventions and coping strategies to manage stress more effectively. The PSS is valuable in both research and clinical settings to study stress and its impact

on health on army personnel. High perceived stress levels are related to increased risk of hypertension, heart attacks, and other cardiovascular issues.⁴ The PSS helps in identifying individuals at risk and implementing preventive measures. Army life is sometimes stressful. In army life, stress is associated with individual and unit morale, sleep patterns, relationship or family problems and low physical activity etc.

The Perceived Stress Scale (PSS-10) is a widely used questionnaire designed to assess stress levels in individuals developed by Cohen and colleagues in 1983, it evaluates how an individual perceives their life in terms of unpredictability, controllability, and overload over the previous month.^{2,5-8}

The questions of the PSS-10 scale are easy to answer like 0 for 'never', 1 for 'almost never', 2 for 'sometimes', 3 for 'fairly often', 4 for 'very often'. The questions of the PSS-10 ask about feelings and thoughts of an individual's during the last month. In every question, the person is asked how often they felt or thought in a certain way. Reverse scoring (4 to 0) is being applied to four of the questions (4, 5, 7, and 8). The sum score of all the questions represents the total score of the PSS, with higher scores indicating more perceived stress.⁹

The PSS-10 consists of negatively phrased questions (question number 1, 2, 3, 6, 9, and 10) and positively phrased questions (question number 4, 5, 7, and 8). The negatively phrased questions in the scale shows the helplessness behavior of any individual which is unable to escape or to avoid. The positively phrased questions, reflect an individual's efficacy beliefs about their capabilities to influence the stressful events that affect their lives.¹⁰⁻¹²

This study aims to measure the level of perceived stress and to determine the associated factors for

perceived stress among army personnel. In Bangladesh study about perceived stress scale is limited. So, this kind of study needs more in number which can help to decrease stress and lead a healthy life.

Materials and Methods:

This cross-sectional study was conducted among 500 army personnel to measure the level of perceived stress and to investigate the associated factors for perceived stress among army personnel. Data were collected from Savar cantonment through face-to-face interview. The duration of study period was four months from January to April 2024. Irrespective of age both male and female army personnel were included. Data were collected with a semi-structured questionnaire by face-to-face interview by a checklist. The data were compiled and analysis of data was done by SPSS 29.0 The perceived stress scale questionnaires were given to the respondents were as follows:

The question is this scale about individual feeling and thoughts during last one month.¹³⁻²⁰

Ser	Characteristics	Marking
1	In the last month, how often have you been upset because of something that happened unexpectedly?	0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often, 4=Very Often
2	In the last month, how often have you felt that you were unable to control the important things in your life?	0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often, 4=Very Often
3	In the last month, how often have you felt nervous and "stressed"?	0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often, 4=Very Often
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	4=Never, 3=Almost Never, 2=Sometimes, 1=Fairly Often, 0=Very Often
5	In the last month, how often have you felt that things were going your way?	4=Never, 3=Almost Never, 2=Sometimes, 1=Fairly Often, 0=Very Often
6	In the last month, how often have you found that you could not cope with all the things that you?	0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often, 4=Very Often
7	In the last month, how often have you been able to control irritations in your life?	4=Never, 3=Almost Never, 2=Sometimes, 1=Fairly Often, 0=Very Often
8	In the last month, how often have you felt that you were on top of things?	4=Never, 3=Almost Never, 2=Sometimes, 1=Fairly Often, 0=Very Often
9	In the last month, how often have you been angered because of things that were outside of your control?	0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often, 4=Very Often
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often, 4=Very Often
	Interpretation of perceived stress scale:	Total Score (Based on PSS)----
	• 0-13=Low stress	
	• 14-26=Moderate stress	
	• 27- 40=High perceived stress	

Results:

Table-I: Distribution of the respondents by socio-demographic characteristics (n=500)

Variables	Respondents	
	Frequenc	Percentage
Marital status	y	
Married	276	55.2
Unmarried	220	44.0
Divorced	4	0.8
Age		
Min years	18	100
Max years	49	
Mean	28.20(±7.7)	
Gender		
Male	464	92.8
Female	36	7.2
Religion		
Islam	476	95.2
Sanatan	24	4.8
Education		
SSC	96	19.2
HSC	344	68.8
Graduate Secondary	52	10.4
Masters	8	1.6
Rank		
Officer	32	6.4
JCO	16	3.2
ORS	452	90.4
Service duration		
0-5 years	188	37.6
6-10 years	140	28.0
11-15 years	52	10.4
16-20 years	40	8.0
21-25 years	52	10.4
26 years onward	28	5.6

Majority of the respondents were married 276(55.2%) and 230(44%) were unmarried and 4(0.8%) were divorced. Age of the respondent from 18-49 years. Mean age was 28.20(±7.7).Most of the respondent 464(92.8%) were male and 36(7.2%) were female. Officers were 32(6.4%) and JCO's were 16(3.2%) and ORS were 452(90.4%).

Table-II: Distribution of the respondents by perceived stress scale (n=500)

Types of stress	Respondents	
	Frequency	Percentage
0-13 Low Stress	198	39.6
14-26 Moderate Stress	296	59.2
27-40 High Perceived Stress	6	1.2

Table-II shows Perceived Stress Scale of respondents that low stress were 198(39.6%) and Moderate Stress were 296(59.2%) and High Perceived Stress were 6(1.2%).

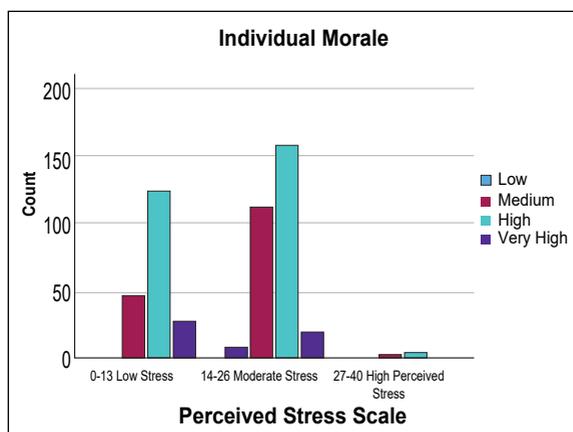


Figure-1: Distribution of respondent by individual morale (n=500)

Majority 284(56.8%) of the respondents had high individual morale and 160 (32.0%) were moderate individual morale and very high individual morale were 48(9.6%) and low individual morale were 8(1.6%).

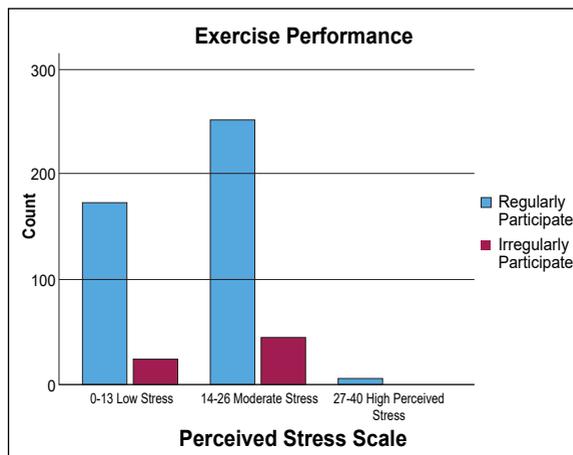


Figure-2: Distribution of respondent by exercise performance (n=500)

Majority 432(86.4%) of the respondent were performed regular physical exercise while 68 (13.6%) were performed irregular physical exercise.

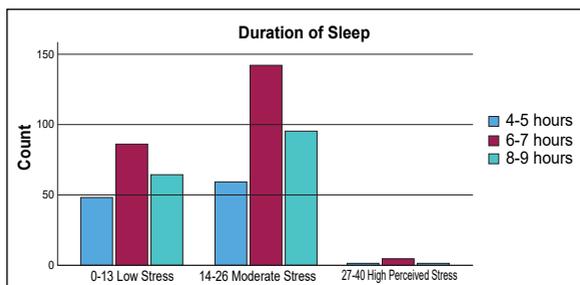


Figure-3: Distribution of respondent by duration of sleep (n=500)

Majority 232(46.4%) of the respondent had sleep duration of 6-7 hours and 160(32%) had sleep duration of 8-9 hours and 108(21.6%) had sleep duration of 4-5 hours.

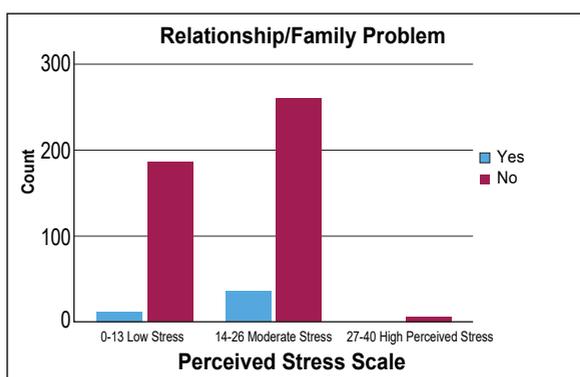


Figure-4: Distribution of respondent by relationship/family problem (n=500)

Majority 448(89.6%) of the respondent didn't have any relationship/family problems and only 48(9.6%) had relationship/family problems.

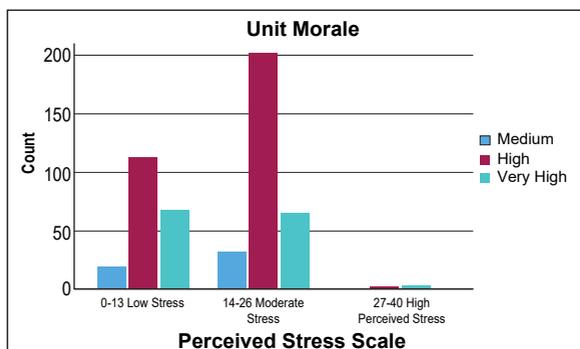


Figure-5: Distribution of respondent by unit morale (n=500)

Majority 312(62.4%) of the respondents had high unit morale and 136(27.2%) were very high unit morale and medium unit morale were 52(10.4%)

Discussion:

This cross-sectional study was conducted to measure the level of perceived stress and to determine the associated factors for perceived stress among army personnel. A total number of 500 army personnel were included in this study. This study may act as a source of information for perceived stress among army personnel.

Study results of perceived stress scale of respondents revealed that majority of them had moderate stress 296(59.2%) and 198(39.6%) had low stress and only 6(1.2%) had high perceived stress. A similar study was conducted by Cohen S et al²¹ showed that among sample of 2,000 community-based respondents in the US found 25-34 years age perceived stress scale were moderate like this study.

Here majority 432(86.4%) of the respondent performed regular physical exercise while 68(13.6%) performed irregular physical exercise. A similar study conducted by Childs E et al²² showed that regular exercise is purported to relieve stress.

Majority 232(46.4%) of the respondent had sleep duration of 6-7 hours and 160(32%) had sleep duration of 8-9 hours and 108(21.6%) had sleep duration of 4-5 hours. Other study also shows 6-7 hours normal sleep duration is helpful to reduce stress level. A similar study by Cohen &Williamson, 1988 shows that person's higher score on the PSS also report poorer health practices, such as sleeping fewer hours.²³

Majority 448(89.6%) of the respondent didn't have any relationship/family problems and only 48(9.6%) had relationship/family problems. Here majority of them were Moderate Stress 296(59.2%) and low stress were 198(39.6%). Similar result seen by Hampel P et al²⁴ and Bai X et al²⁵ study where the relationship/family problems leads to increase higher levels of perceived stress.

Majority 284(56.8%) of the respondents had high individual morale and 160(32.0%) were moderate individual morale and very high individual morale were 48(9.6%). Here majority of them were Moderate Stress 296(59.2%) and low stress were 198(39.6%). A similar study conducted by Steinheider B et al²⁶ showed less stress where

individual morale is high.

Majority 312(62.4%) of the respondents had high unit morale and 136(27.2%) were very high unit morale and medium unit morale were 52(10.4%). Here majority of them were Moderate Stress 296(59.2%) and low stress were 198(39.6%). A similar study conducted by Dyches KD et al²⁷ showed that less stress where unit morale is high.

Conclusion:

Perceived stress scale provides a way to self-evaluate and self-report of our own stress level thus facilitating more timely and cost-effective intervention strategies. This study suggests that stress is associated with high individual morale, sleep duration, high unit morale, relationship or family problems and low physical activity. By reducing stress one can lead a quality life.

References:

1. Chan SF, La Greca AM. Perceived stress scale (PSS). In Encyclopedia of behavioral medicine 2020 Oct 20 (pp. 1646-1648). Cham: Springer International Publishing.
2. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *Journal of health and social behavior*. 1983 Dec 1;385-96.
3. Taylor JM. Psychometric analysis of the ten-item perceived stress scale. *Psychological assessment*. 2015 Mar;27(1):90.
4. Kivimäki M, Steptoe A. Effects of stress on the development and progression of cardiovascular disease. *Nature Reviews Cardiology*. 2018 Apr;15(4):215-29.
5. Costa C, Briguglio G, Mondello S, Teodoro M, Pollicino M, Canalella A, Verduci F, Italia S, Fenga C. Perceived stress in a gender perspective: a survey in a population of unemployed subjects of Southern Italy. *Frontiers in public health*. 2021 Apr 1;9:640454.
6. Roubinov DS, Turner AP, Williams RM. Coping among individuals with multiple sclerosis: Evaluating a goodness-of-fit model. *Rehabilitation psychology*. 2015 May;60(2):162.
7. Smith KJ, Rosenberg DL, Timothy Haight G. An assessment of the psychometric properties of the perceived stress scale-10 (PSS 10) with business and accounting students. *Accounting Perspectives*. 2014 Mar;13(1):29-59.
8. Townsend S, Medvedev ON. Perceived stress scale (PSS). In *Handbook of Assessment in Mindfulness Research 2022* Sep 20 (pp. 1-13). Cham: Springer International Publishing.
9. Islam MN. Psychometric properties of the Bangla version of PSS-10: Is it a single-factor measure or not?. *Hellenic Journal of Psychology*. 2020 Nov 18;17(1):15-34.
10. Ribeiro Santiago PH. Psychometric Properties of the Perceived Stress Scale (PSS), Social Support Scale (SSS) and Sense of Personal Control Scale (SPCS) in Aboriginal Australian Populations (Doctoral dissertation).
11. Kaskons E. Simple but not Easy: An Examination of the Test-Retest Reliability of the Perceived Stress Scale (PSS-10) and Exploration of a Meditation App for Stress Management with High School Students. Lesley University; 2022.
12. Dalessandro C, Lovell A. Race, Marginalization, and Perceptions of Stress Among Workers Worldwide Post-2020. *Sociological Inquiry*. 2023 Aug;93(3):571-91.
13. Wongpakaran N, Wongpakaran T. The Thai version of the PSS-10: An Investigation of its psychometric properties. *BioPsychoSocial medicine*. 2010 Dec;4:1-6.
14. Smith KJ, Rosenberg DL, Timothy Haight G. An assessment of the psychometric properties of the perceived stress scale-10 (PSS 10) with business and accounting students. *Accounting Perspectives*. 2014 Mar;13(1):29-59.
15. Bastianon CD, Klein EM, Tibubos AN, Brähler E, Beutel ME, Petrowski K. Perceived Stress Scale (PSS-10) psychometric properties in migrants and native Germans. *BMC psychiatry*. 2020 Dec;20:1-9.
16. Taylor JM. Psychometric analysis of the ten-item perceived stress scale. *Psychological assessment*. 2015 Mar;27(1):90.
17. Cole SR. Assessment of differential item functioning in the Perceived Stress Scale-10. *Journal of epidemiology and community health*. 1999 May;53(5):319.
18. Martin, R. A., Kazarian, S. S., & Breiter, H. J. (1995). Perceived stress, life events,

- dysfunctional attitudes, and depression in adolescent psychiatric inpatients. *Journal of Psychopathology and Behavioral Assessment*, 17(1),81-95.
19. Mozumder MK. Reliability and validity of the Perceived Stress Scale in Bangladesh. *Plos one*. 2022 Oct 27;17(10):e0276837.
 20. Anjum A, Hossain S, Hasan MT, Christopher E, Uddin ME, Sikder MT. Stress symptoms and associated factors among adolescents in Dhaka, Bangladesh: findings from a cross-sectional study. *BMC psychiatry*. 2022 Dec 19;22(1):807.
 21. Cohen S, Janicki-Deverts D, Doyle WJ, Miller GE, Frank E, Rabin BS, Turner RB. Chronic stress, glucocorticoid receptor resistance, inflammation, and disease risk. *Proceedings of the National Academy of Sciences*. 2012 Apr 17;109(16):5995-9.
 22. Childs E, De Wit H. Regular exercise is associated with emotional resilience to acute stress in healthy adults. *Frontiers in physiology*. 2014 May 1;5:87290.
 23. Cohen S, Williamson G. Perceived stress in a probability sample of the US In *The Social Psychology of Health: Claremont Symposium on Applied Social Psychology*; Spacapam, S., Oskamp, S., Eds.
 24. Hampel P, Petermann F. Perceived stress, coping, and adjustment in adolescents. *Journal of adolescent health*. 2006 Apr 1;38(4):409-15.
 25. Bai X, Jiang L, Zhang Q, Wu T, Wang S, Zeng X, Li Y, Zhang L, Li J, Zhao Y, Dai J. Subjective family socioeconomic status and peer relationships: mediating roles of self-esteem and perceived stress. *Frontiers in psychiatry*. 2021 Mar 24;12:634976.
 26. Steinheider B, Hoffmeister V, Brunk K, Garrett T, Munoz R. Dare to care: Exploring the relationships between socio-moral climate, perceived stress, and work engagement in a social service agency. *Journal of Social Service Research*. 2019 Mar 18.
 27. Dyches KD, Saboe KN, Anderson JA, Wilk JE, Hinman SJ, Sipos ML, Quartana PJ. Modeling the indirect association of combat exposure with anger and aggression during combat deployment: The moderating role of perceived unit morale. *Military Psychology*. 2017 Apr 6;29(4):260-70.