

Prevalence of Work Related Psychological Stress and Work Ability among Nursing Students: A Cross Sectional Study

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How to cite this article: Vinit Mody, Vraj Barot, Rucha Parolekar et. al. Prevalence of Work Related Psychological Stress and Work Ability among Nursing Students: A Cross Sectional Study. Indian Journal of Physiotherapy and Occupational Therapy 2022;16(3):98-102.

Abstract

Background: Nursing is seen as an apparently stressful occupation, as nurses assume the role of caregivers and supervisors for their patients and also become role models and educators for their families and working environment. Nursing students don't differ from other category of students as they actually experience more stress when compared with them. One of the reasons of experiencing more stress by nursing students is that majority of them are younger and middle-aged group. A high level of occupational stress has been found to reduce nursing quality and working ability. So, the aim of this study was to find the prevalence rate of work related psychological stress and work ability among nursing students.

Method: A short form questionnaire was prepared which consisted of survey related questions from Perceived Stress Scale and Work Ability Index. Total 101 nursing students were selected on the basis of selection criteria and the questionnaire was distributed amongst them. Data analysis using scientific calculation showed that there was high prevalence rate of moderate level of perceived stress among nursing students but their working ability was excellent in context with their physical and psychological demands.

Conclusion: There was significant prevalence rate of work related psychological stress but working ability was not so much affected among nursing students.

Keywords: Perceived Stress Scale; Work Ability Index.

Introduction

Nursing, the biggest health care profession, may be defined as a process of action, reaction, interaction and transaction in which nurses provide health care to the patients and then become affected by

complex interactive factors including social, cultural, economic and political situations.¹ It has been widely reported that musculoskeletal disorders (MSD) and psychological stress are significantly prevalent and most common health complaints in health care

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workers and especially in hospital staff, nurses and physical therapists.²⁻¹²

Stress has become one of the important factors influencing individual efficacy and satisfaction in modern-day hospital settings. Stress is a state which affects the mind and body. Environmental events or social situations that have the potential to induce stress are known as 'social stressors'.

Occupational stress may be defined as a situation wherein job-related factors interact with an employee, changing his/her psychological and physiological condition in a way that the person is forced to deviate from normal functioning. The WHO defines occupational stress as 'the physiological and emotional responses that occur when workers perceive an imbalance between worker's effort and associated reward'.

A high level of occupational stress has been found to reduce nursing quality. Several studies concluded that nurse workload and nurse health indicators are key factors that must be addressed in effective workplace, health promotion & recruitment and retention strategies.^{13,14}

Bernburg et al.¹⁵ defined work ability as "the sum of factors enabling an employee in a certain situation to manage his/her working demands successfully" or defined as the balance between the employee's/ individual's resources and the work demands.

Perceived Stress Scale (PSS): PSS is the most widely utilized psychological tool for measurement of perception of stress. It is a measure of the degree to which situation in one's life are considered as stressful. Items are designed to show how unpredictable, uncontrollable and overloaded participants find their lives. The scale also includes a count of direct queries about current levels of experienced stress. The items are easy to comprehend and the response alternatives are simple to grasp. The questions in the PSS ask about emotions and thoughts during the last month. In each case, participants are asked how often they felt a certain way.^{16,17}

Work Ability Index (WAI): WAI is a tool used in clinical occupational health and research to assess work ability during health examinations and workplace surveys. The index is determined on the

basis of the answers to a series of questions which take into consideration the demands of work, the worker's health status and resources.¹⁸⁻²¹

Materials and Method

Study Design: A Cross-Sectional study

Study Population: Nursing students

Study Setting: Nursing Colleges in Vadodara

Sampling Design: Convenience sampling method

Sample size: 101 students

Inclusion criteria:

- Age group - 19 to 24 years
- Gender - both male and female
- Students having nursing clinical exposure for atleast 5 hours
- Students showing acute signs of health related dysfunction and psychological stress
- Students who are able to comprehend commands
- Willingness to participate in the study

Exclusion criteria:

- Students suffering from chronic health disorders like early osteoarthritis, hyperglycemia, cardiopulmonary disorders, thyroid dysfunction etc.
- Students suffering from major psychological ailments like schizophrenia, dementia etc.
- Any previous trauma, surgery or infection anywhere in the body.

Materials used:

- Perceived Stress Scale (PSS)
- Work Ability Index (WAI)

Outcome Measures:

1) Perceived Stress Scale (PSS)

- PSS is the most widely utilized psychological tool for measurement of perception of stress.
- It is a measure of the degree to which situations in one's life are considered as stressful.
- Items were designed to tap how unpredictable,

uncontrollable and overloaded participants find their lives.

- The scale also includes a count of direct queries about current levels of experienced stress.
- The items are easy to comprehend and the response alternatives are simple to grasp.
- The questions in the PSS ask about emotions and thoughts during the last month.
- Scoring: PSS scores are obtained by responses (e.g. 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7 & 8) and then summing across all scale items.
- Individual scores on PSS can range from 0-40 with higher scores indicating higher level of perceived stress:
 - a) Scores ranging from 0-13 will be considered low stress
 - b) Scores ranging from 14-26 will be considered moderate stress
 - c) Scores ranging from 27-40 will be considered high perceived stress

2) Work Ability Index (WAI)

- The Work Ability Index (WAI) contains questions concerning work, work ability and health status.
- The tool involves a questionnaire, which serves to conduct a self-assessment. The focus is on the health workers and their work ability assessed by themselves.
- The index is justified on the basis of the answers to a series of questions which take into consideration the demands of work, the worker's health status and resources.
- The health worker completes the questionnaire before the interview with an occupational health professional who rates the responses according to the instructions.
- Validity: The validity and reliability of the WAI has been assessed in correlation analyses. The WAI and all its items reliably assessed work disability, retirement and mortality.
- Scoring: The best possible rating on the index is 49 points and the worst is 7 points.

The total score is obtained by adding up the points of each item, except for items 2, 3 and 7 for which there are unique scoring rules.

For Item 2 (work ability in context to the demands of the job)

- a. For physically demanding work
 - The work ability score for the physical demands of the job is multiplied by 1.5 (answers from 3 to 5)
 - The work ability score for the mental demands of the job is multiplied by 0.5. (answers from 1 to 2)
- b. For mentally demanding work
 - The work ability score for the physical demands of the job is multiplied by 0.5 (answers from 1 to 2)
 - The work ability score for the mental demands of the job is multiplied by 1.5 (answers from 3 to 5)
- c. For work that is both physically and mentally demanding the work ability score remains same

For item 3 (number of current diseases diagnosed by a physician)

- 5 or more diseases = 1 point
- 4 diseases = 2 points
- 3 diseases = 3 points
- 2 diseases = 4 points
- 1 disease = 5 points
- no disease = 7 points (only diseases diagnosed by a physician are counted)

For item 7 (mental resources), it is divided in three questions that are added together and the sum is modified as follows:

- sum 0-3 = 1 point
- sum 4-6 = 2 points
- sum 7-9 = 3 points
- sum 10-12 = 4 points

A short form questionnaire was prepared which consisted of survey related questions from Perceived Stress Scale (PSS) and Work Ability Index (WAI). Total 101 nursing students (age 19-24 years) were selected (convenience sampling) on the basis of inclusion and exclusion criteria from various Nursing colleges in Vadodara. Proper knowledge & education regarding the study was provided to the students prior to the commencement of the study. After taking consent from the students, study was executed. The questionnaire was distributed amongst the students selected for this study and the responses were recorded for further data analysis.

Results and Discussion

- Data was analysed by Microsoft Excel 2019. Prior to the statistical test, data was screened for normal distribution by Shapiro-Wilk test. After normal distribution of the data, scientific calculation was applied for data analysis.

Table 1: Frequency of different age (in years)

Age (Years)	Frequency	Percent	Cumulative Percent
19	4	3.9	3.9
20	29	28.8	32.7
21	47	46.6	79.3
22	14	13.9	93.2
23	5	4.9	98.1
24	2	1.9	100
Total	101	100	

Table 2: Age distribution in years

N	101
Mean	21.5
Std. Deviation	1.87

Interpretation: The above table shows that mean age of students is 21.5 ± 1.87 years taken for this study.

Table 3: Prevalence rate of Perceived Stress among nursing students

	Perceived Stress (in %)		
	Low	Moderate	High
Male	2	13	1
Female	8	75	2
Total	10	88	3

Table 4: Prevalence rate of Work Ability among nursing students

	Work Ability (in %)		
	Good	Moderate	Excellent
Male	5	1	10
Female	33	2	50
Total	38	3	60

In this current study, the dependant variable, Perceived Stress Scale, was used. This is the most widely used tool for the perception of stress. The scale includes a count of direct queries about current levels of experienced stress. The questions in the PSS ask about emotions and thoughts during the last month. The other dependant variable, Work Ability Index, was used. It contains questions concerning work, work ability and health status of healthcare workers.

The results of this study (using scientific calculation) showed that there was high prevalence rate of moderate level of perceived stress (88%) among nursing students but their working ability was excellent (60%) in context with their physical and psychological demands.

Conclusion

The results of this study supported the alternative hypothesis and indicated that there was significant prevalence of work related psychological stress and work ability among nursing students. But, the findings also showed that working ability was not so much affected among nursing students in relation with their physical and psychological demands. So, it was concluded that there was high prevalence rate of moderate level of perceived stress with excellent level of working ability among nursing students.

Limitations

- The present study only examined a total of 101 nursing students using a convenience sampling method and this sample size is not sufficient for identifying a significant prevalence rate of work related psychological stress and work ability among nursing students.
- This was a one time (longitudinal) study, so no follow-up with the students was taken.
- Gender distribution was unequal.

Ethical clearance: Ethical clearance was obtained from The Institutional Review Board from Pioneer Physiotherapy College, Vadodara.

Source of funding: Self

Conflict of interest: Nil

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