



Development of occupational stress scale for medical doctors working in the teaching hospitals

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ABSTRACT

Present study was carried out to develop and validate a research instrument for the measurement of occupational stress among the medical doctors working in teaching hospitals. Review of literature was done and focus group discussions were held in order to generate items for the instrument. Initially item pool thus gathered, constituted of 80 items falling under the dimensions of psychological, physiological, social adjustment and personal life. After qualitative item analysis the items were reduced to 61 in order the establish reliability and validity of the statement empirically 61 statements were administered on 150 doctors working in teaching hospitals situated in Rawalpindi region namely Benazir Bhutto Shaheed Hospital, Holy Family Hospital and Fauji Foundation Hospital. The data was subjected to principal factor analysis; as a result five factors were extracted called subscales. Psychometric properties and percentile norm were determined for the final occupational stress scale for the medical doctors. Finding demonstrates that 44 items OSSMD is a reliable and valid instrument to be used to the measurement of occupational stress of the medical doctors working in the hospitals.

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Introduction

Doctors working in teaching hospitals are under great stress because they have to deal with lots of patients and a variety of diseases. In addition to this, they have to train the under graduate students in the field of medicine and surgery as well. Doctors are the main work force of a teaching hospital. They have to perform a number of duties during extended working hours. They come across a wide range of occupational stressors which can affect their performance in a negative way (Burbeck, 2002).

Occupational stress is related to the work place. This situation is faced by an employee when there is a total discrepancy between the workplace requirements and the person's competency to carry out those requirements in an efficient way. Many organizational factors such as work overload, being underpaid, unfriendly working environment can be some of the causes of occupational stress. It is a very complex construct to define. It is related to every person in a different way. There are many sources of stress as some may be intrinsic related to job while some are related to the role of employer and his/her attitude towards the employees of the organization, some to the employees relationships with each other, some are related to culture and climate of the concerned organization. Some sources of occupational stress are those which come from outside the work environment i.e.; a worker's personal life etc.

Occupational stress can be faced by any employee at any time. Doctors constitute a major part of work force in Health Departments. They are more exposed to stressors at the work place. Such stressors cause dissatisfaction among them and can have a negative impact upon the health and efficiency of doctors working in teaching hospitals. In the broader scenario, it will lead towards poor health care services to the common man.

Doctors provide a vital workforce in Health department in Pakistan. They have extended working hours and are untiringly providing their services to the humanity. Doctors are providing unique services that are not consistent with other social workers. Medicine as well as surgery is that unique field in which the service providers i.e.; doctors have long working hours and in addition to providing medical care to the patients, they have to fight back with ethical dilemmas as well as unjustified demands of management or relatives of patients. Due to all these circumstances, there is increased job dissatisfaction, high absenteeism, turnover intentions of doctors in hospitals. As far as their personal life and social adjustment is concerned, these aspects of their life are also affected in a negative way due to occupational stress. They may fall an easy prey to addiction, use of alcohol or smoking to relieve their stress. Nowadays it is becoming imperative to identify the major causes of occupational stress among doctors and their effects and relationships.

Fauji Foundation Hospital, Benazir Hospital and Holy Family Hospital are teaching hospital, located in different vicinities of Rawalpindi. The doctors working in these hospitals are catering to the needs of patients. As all three are teaching hospitals, so the doctors have to perform their duties round the clock. In addition to the extended working hours, the doctors have to get intensive training also so as to fulfill the demands of continuous professional development. There are many stressors for them at work place which can lead towards depression, use of relaxants, smoking etc. The main causes of occupational stress for doctors working in teaching hospitals can be work overload, being under paid, poor management practices, work related harassment, lack of opportunities for training and development etc. Major impact of occupational stress can be ill-

health, inefficiency, and unsatisfactory performance, mal-adjustments in social and personal life of doctors.

Theoretical framework

Occupational stress is a very serious health hazard which reduces employee productivity, creativity, innovation and satisfaction. It is related to increased turn over and absenteeism as well. (Cooper, 1998). Hospital staff especially the doctors are exposed to stress due to their ever changing environment as well. It is obvious that the quality of health care will be deteriorated if the health care providers i.e.; the doctors are stressed (Firth – Cozens, 1998).

In this study occupational stress was considered as independent variable whereas role ambiguity, workplace conflict, poor management practices, work related harassment, long working hours and lack of opportunities for training and development were considered the dependant variables of the study.



Method

The main objective of this study was to develop an occupational stress scale for the medical doctors and determine its psychometrics properties with the help of various statistical analyses, to attain this objective following procedure was adopted.

Generation of items pool

The items pool for the proposed Occupational Stress Scale for the Medical Doctors was generated through focus group discussions and literature review. The detail description of each part is described as under:

Literature Review

For the purpose of instrument development, existing literature on the concerned topic was extensively explored from dissertations, research articles, books, journals, magazines and internet. The available literature helped to identify different causes of stress among doctors in their professional and social/personal life.

Focus Group Discussions

A series of focus group discussions were held in order to generate the required items. Focus groups provided a structured discussion that was designed to obtain the different causes and effects of stress among the doctors working in teaching hospitals. These discussions were very fruitful in obtaining the ideas, opinions, perceptions, feelings of doctors about occupational stress, its coping strategies and the effects upon their life.

Focus group guideline

A specific guideline was formulated with the help of existing literature review and the views of experts on the mentioned topic. The guideline contained precise statements based upon the objectives of the study. The statements mentioned in the guideline addressed different domains of the occupational life of doctors. It included the statements focusing upon the stress causing factors such as work overload (long working hours), poor management practices, being underpaid (financial aspects), lack of opportunities for professional training & development and being exposed to work related harassment. The sequence of statements in the guideline was general.

Composition of Focus Groups

A total of 4 focus groups were conducted for the above mentioned purpose. Totally 35 participants took part in these focus group discussions. Each session of discussion took an average of 45 minutes for its completion. Important points of the discussion were noted by the researcher. At the end, all participants were acknowledged about their cooperation and participation. From the above sources, a pool of 80 items was generated after weeding out the repetitions, items were converted into statements, and during this process 61 statements were selected to comprise the initial item pool.

Qualitative Item Analysis

For the qualitative item analysis these 80 generated items were presented to 3 judges, including one expert from education, one from medical and one from clinical psychology, these experts were requested to evaluate each items in terms of accuracy and relevancy of its content to the construct of stress and suitability for inclusion in proposed stress scale. During this process 19 more items were discarded and remaining 61 statements attached with five point Likert scale; strongly agree, agree, undecided, disagree, strongly disagree.

Determination of Psychometric Properties of Proposed Occupational Stress Scale

Population

Population of the study included all the doctors working in different departments of Fauji Foundation Hospital, Benazir Hospital and Holy Family Hospital located in Rawalpindi.

Sample

Random sampling technique was used to select the samples of the study. Samples constituted of 150 randomly selected medical doctors working in the teaching hospitals. There were 100 male and 50 female doctors. 36% doctors held only M.B.B.S degree, whereas 33.6% had additional M. Phil degree, 17.6% had done post graduate diploma in addition to MBBS and 12.8% were having FCPS degree in addition to MBBS. The respondents' job experience varied at 28.8 % having an experience of 1-3 years, 39.2 having experience of 4-7 years, 20.8% with experience of 8-10 years and 10.4 % with job experience of more than 10 years.

Procedure

The respondents were approached individually by the researcher. Written instructions related to proper filling up of the questionnaire were explained to the respondents. The respondents were ensured that the information given by them will be kept confidential and used for research study only.

Reliability Occupational Stress Scale for the Medical Doctors

Item Total Correlation

To determine the internal consistence of OSSMD, item total correlation were computed, test reveals that all items comprising the stress scale bear significant positive correlation with total score on the test, ranging from .31 to .78.

Split Half Reliability

Split half reliability of the OSSMD were computed by dividing test into two parts 25 items in the first half and 24 items in the second half, reliability of first half is .81 and reliability of second half is .76.

Factor Analysis

Final selection and categorization of items

In order to determine the validity of occupational stress scale for the medical doctor the data were subject to principal component analysis. The analysis was carried out by using Principal Component Analysis with Varimax rotation. The

initial analysis was done using n number of solutions. But then number of factors was reduced in order to have conceptually clear factors. Factors with Eigen value of 2.63 and with loading more than 0.30 were retained in each factor. However, the items appearing in more than one factor were retained in that factor in which they were more meaningful and conceptually clear. After computing factor analysis through SPSS 16, out of 61 items, 16 were omitted as they had a non significant value. Total number of finally selected items was 44 for the scale. The item pool was categorized into five categories with the help of two experts (an educationist and a psychologist) both of them having in depth knowledge about the subject under study. With the help of experts, the items were given following five categories:

1. Work Place Stress (12 items)
2. Management related Stress (9 items)
3. Psychological effects of occupational stress (8 items)
4. Personal adjustment and occupational stress (8 items)
5. Physiological factors related to occupational stress (7 items)

Based on the data shown in table 1 five factors were extracted with Eigen values greater than 2.63. These factors explain 31.84 percentages the total variance.

Table 2 describes the factor structure of occupational stress scale. These factors were named as Work Place Stress (12 items), Management related Stress (9 items), Psychological effects of occupational stress (8 items), Personal adjustment and occupational stress (8 items) and Physiological factors related to occupational stress (7 items)

Percentile Ranks of OSSMD

Table 3 shows the percentile ranks of male and female doctors' scores obtained on OSSMD. The score of 126.50 falls on 25th percentile shows mild occupational stress, score of 138 falls on 50th percentile illustrate moderate occupational stress level, whereas a score of 148 which falls on 75th percentile represent high stress level.

Discussion

Present research was conducted to develop an occupational stress scale for the medical doctors working in teachings hospitals of Pakistan and develop its psychometric properties. As at present a very few scales are available which specifically measure the occupational stress of medical doctors working in the teaching hospitals. Occupational stress is job related stress; it is caused by intrinsic stressors of the job including poor management system, role conflict and ambiguity, lack of professional responsibility etc. items for the scale were generated by literature review and focused group discussion with doctors. Data was collected from 150 medical doctors this scale takes into account five factors namely; Table 2 describes the factor structure of occupational stress scale. These factors were named as Work Place Stress (12 items), Management related Stress (9 items), Psychological effects of occupational stress (8 items), Personal adjustment and occupational stress (8 items) and Physiological factors related to occupational stress (7 items). The labels were assigned by the researchers on the basis of face validity of the items within each factor, these factors, hereafter called subscales the details of each subscale is describe as under:

Factor 1 Work Place Stress (12items)

As the work place stressors are one of the major causes of occupational stress. An employee feels lack of motivation and powerlessness for the job due to such factors such as mal-

treatment of patients' relatives towards him/her. Items comprising factor 1 are related to job stressors

Subscale 2 Management related Stress (9 items)

The doctors have to provide health care to patients round the clock. If the management does not have an encouraging and supporting attitude towards them, they feel threatened and lonely. If such situation prevails for long, the staff turnover increases.

This subscale relates to the stressors which are caused by management attitudes.

Subscale 3 Psychological effects of occupational stress (8 items)

This subscale explains the psychological reactions of occupational stress.

The data established the reliability and validity of OSSMD. The norm of the OSSMD we expresses in terms of percentile ranks .The higher score on OSSMD indicates higher level of occupational stress.

Applied Significance

Stress is harm for the productivity of the organizations, as work of the medical doctors requires efficiencany and alertness throughout the working hours and if due to any reasons the stress level of the doctors is higher; it will definitely reduce their professional competency. Doctors those are not able to cop up with work stressors ultimately find relaxation in taking drugs or using relaxants excessively. They may become habitual smokers in order to avoid stress. Moreover their social adjustment as well as personal life also badly affected due to occupational stress. If management is aware the causes as well as level of the occupational stress of its valuable work force it will take actions to reduce The information given in this study is applicable to the following population, (a) medical students interested in pursuing career in hospitals, (b) doctors currently working in hospitals, (c) hospital administrators, (d) professors and teaching faculty of medical colleges, and (e) other researchers interested in this field. Results of this study have implications for future research that might add to the existing knowledge.

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Factor Analysis and Total Variance

Factors Total Sums of Squared Loadings			
Factors	Eigen Value	% of Variance	Cumulative %
1	3.60	7.21	7.21
2	3.41	6.83	14.05
3	3.21	6.42	20.48
4	3.05	6.10	26.58
5	2.63	5.26	31.84

Table 2
Factor Structure of Occupational Stress Scale for the Medical Doctors (N= 150)

Factors	Factor Loadings			
	1	2	3	4
5				
<u>Work Place Stress</u>				
1.	I am over burdened.			.46
2.	I have a feeling of hopelessness and powerlessness in my hospital.			.52
3.	I work in a poor physical environment.			.83
4.	I want to cry and shout when I am in a difficult situation.			.58
5.	I have a lack of motivation in my profession.			.48
6.	I cannot focus upon my work and feel unhappy about it.			.47
7.	I am easily annoyed and feel irritated by everybody.			.59
8.	My job designation allows me to take out some time for rest.			.41
9.	Relatives of patients mal-treat the doctors and me in case of a medical emergency.			.38
10.	I have a feeling of boredom in my hospital.			.46
11.	I feel dependant on my colleagues at the time of stress.			.40
12.	I am satisfied with my working conditions.			.45
<u>Management related Stress</u>				
1.	My boss is supportive in all circumstances.			.50
2.	I face conflicting situations at hospital very frequently.			.45
3.	I get appreciation for my good performance from higher authorities frequently.			.53
4.	I am satisfied with my pay structure.			.79
5.	I want to use drugs for relaxation.			.67
6.	I do not feel lonely at my workplace.			.56
7.	I have lost weight since I joined this job.			.54
8.	There is high staff turnover in my hospital.			.31
9.	I have got full opportunity of professional growth & development.			.36
<u>Psychological effects of occupational Stress</u>				
1.	I have gained weight since I joined this job.			.58
2.	I am a habitual smoker.			.33
3.	I have a family history of depression.			.52
4.	I am unable to talk about my needs and requirements to the concerned authorities.			.54
5.	I lack confidence when I have to handle patients with serious illness.			.52
6.	I have a feeling that I am good for nothing at my work place.			.33
7.	I suffer from muscle tension and have to take pain killers.			.63
8.	My colleagues help me in difficult situations.			.34
<u>Social personal adjustment and Occupational Stress</u>				
1.	I feel boredom when I have to give time to my family.			.37
2.	My job is a source of ill-health and unhappiness.			.64
3.	I enjoy free time with my family.			.55
4.	I have frequent arguments and outbursts with my spouse.			.43
5.	I smoke heavily when I am unable to cope in a different situation.			.44
6.	I have a clear understanding of my work responsibilities.			.62
7.	I frequently get tension headaches and migraine attacks.			.54
8.	I feel unable to handle combined responsibilities of job & marriage			.53
<u>Physiological Factors Related to Occupational Stress</u>				
1.	I go through mood swings frequently.			.53
2.	I handle emergency cases with full confidence.			.47
3.	I have lost my appetite due to my working conditions.			.41
4.	I have lack of interest in all activities going around me.			.40
5.	We are given training that is related to technological change and advancement that has given me confidence.			.37
6.	I do not suffer from digestive disorders at my workplace.			.67
7.	I have a raised blood pressure in difficult situations.			.54

Table 3
Percentile Ranks for
OSSMD (N=150)

Percentiles	Scores
5	112.90
10	117.00
15	119.00
20	125.00
25	126.50
30	127.00
35	131.10
40	135.00
45	137.00
50	138.00
55	140.00
60	141.60
65	143.90
70	146.00
75	148.00
80	149.00
85	152.10
90	157.60
95	164.00

Examples:

- Relatives of patients mal-treat the doctors and me in case of a medical emergency.
- I have a feeling of boredom in my hospital.
- I feel dependant on my colleagues at the time of stress.

Example:

- I have got full opportunity of professional growth & development.
- My boss is supportive in all circumstances.
- I face conflicting situations at hospital very frequently.

Examples:

- I have a feeling that I am just for nothing at my work place.
- I suffer from muscle tension and have to take pain killers.

Sub Scale 4 Social Personal Adjustment and Occupational Stress

Examples:

I feel boredom when I have to give time to my family.
 My job is a source of ill-health and unhappiness.

Sub scale 5 Physiological Factors Related to Occupational Stress

Examples:

1. I go through mood swings frequently.
2. I handle emergency cases with full confidence.