Original Article

Psychosocial problems in nurses of Pakistan: A psychometric approach

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Objective: To develop a Psychosocial Problems scale for nurses in Pakistan.

Methodology: This study was conducted by exploring the construct of psychosocial problems from 300 nurses from government hospitals through semi structured interview. List of 40 items were finalized by excluding the repetition which were further validated by the experts. Content validity indexed was applied to finalize the list after expert validation so the 40 items were retained which further piloted on 30 nurses for assessing the user friendliness of scale. Sample of 300 nurses for exploratory and 700 nurses for confirmatory factor analysis was selected with mean age 30.34±2.90 years. They were given the psychosocial problems scale (PSPS), DASS-21 (Depression, Anxiety, Stress Scale), Self-esteem scale along with a demographic form.

Results: Exploratory factor analysis with varimax rotation yielded three factors solution named as *intrapersonal, work related and exhaustion* which were further validated through confirmatory factor analysis and found to be the best fit model as the x^2/DF=4.33 , CFI=0.93, NFI=.91, TLI= .90 and RMSEA=.06. The PSPS found the sound psychometrics as test retest reliability was .95, split half reliability was .97 also have sound concurrent and discriminant validity.

Conclusion: PSPS was found to have sound psychometrics as well as having the best representation of the psychosocial problems among nurses. Further, it discussed in terms of counseling services and improving mental health among nurses. (Rawal Med J 202;45:910-914).

Keywords: Psychometrics, mental health, nurses.

INTRODUCTION

Nursing profession is the back bone of the health care system and considered one of the most stressful.[1] Nature of job is so demanding as having direct contact with injured and sick people, so the health care system with limited number of nurses cannot function properly. Nurses face many stressors in their working environment because of the responsibility to provide care and comfort to the patients.[2,3,4] Indicators of stress in nurses have different components as shortage of staff nurses, long working hours, lack of professional benefits as pay scale and gratuity and lack of recognition as prestigious professionals.[5,6] Exposure to the series of traumatic experiences and when the demands exceeds the resources, it create extreme state of tension, preoccupation with the emotional pain in nurses.[7,8]

These stressors affects the physical and mental health of nurses as well as quality of patient care.[9,10,11] Nurses in the healthcare system goes through these stressors but every person have different impact of same situation. So the individual background of the person biological factors, psychological experiences and social factor plays a roles so the reaction of the person varies.[12] Unfortunately, no attempt has been made to develop any tool for psychosocial problems among nurses. This study sought to assess the effect of psycho social problems as overall stressors, how they affect the performance of the person in the social, occupational and other important areas of functioning.

METHODOLOGY

Scale was converted into self-report measure where the instructions for the participants were given as to rate each item according to with it reflects your understanding. Before administering

the scales on actual population it was administered on 30 nurses to check their feasibility and understanding of the scale. No ambiguity or difficulty has been found.

Participants. This stage aimed to establishing the factorial structure, validity and reliability of the final set of statements. Participants were 300 nurses with age range from 25-35 years (mean 30.34±2.90) from Lahore selected by using stratified sampling technique. Inclusion criteria was having at least 2 years of experience, regular service in their institutes and registered employees from Pakistan Nursing Council, no longer in their probationary period. Exclusion criteria was nurses working on contract bases, absents from duty or on vacations and working on both government and private hospitals. Institutional Review Board approved the study. Self-constructed demographic Performa was used to gather information about key demographics of the participants.

Psychosocial Problems Scale (PSPS). This was administered to rate the level of psychosocial problems. It was a four point Likert scale comprised on 30 items after confirmatory factor analysis, response options were 0-4 as 0 or not at all, 1 for rarely, 2 for to some extent, 3 for often and 4 for always. PSPS has three factors named as intrapersonal, work related, exhaustion, also have sound psychometrics.

DASS was used to assess the concurrent validity of the PSPS. DASS explains the depression anxiety and stress among the participants while the PSPS was made for general psychosocial problems of nurses so by keeping in mind the sensitivity of the construct DASS was used for concurrent validity. DASS was four point Likert scale, comprised of twenty one items. Every person have to rate its items according to the level of severity. Cronbach alfa of DASS was .95.[13]

Statistical Analysis: Confirmatory factor analysis was conducted to verify the factorial structure of PSPS provided evidence for the fitness of model with regards to the factor structure identified via EFA. The initial and final models of CFA were compared using the values of chi square, CFI, TLI, NFI and RMSEA. ***Split half reliability*** was established by following the even and odd method which shows the strong split half reliability as r=.97, p<0.001. ***Test retest reliability*** was established with one week interval on 30% sample which was r=0.95, p<0.001. ***Content validity*** was established during scale development in the expert validation phase. ***Concurrent validity*** was established with DASS which shows high concurrent validity of the scale. ***Discriminant validity*** was established with Self Esteem Scale (SES). High discriminant validity was found between both scales.

RESULTS

Principal Component Factor Analysis was carried out with varimax rotation to convert the cluster of items into common themes. The numbers of factors were determined through the Scree Plot (Fig. 1). Initial cronbach alpha was .95. KMO test value was .94 and the Bartlet test of sphericity was significant (p<.001), eigen value was greater than 1 and three factors solution was found to be the best fit model for the psychosocial problems scale.

Fig 1. Scree plot showing factors of psychosocial problems scale for nurses.

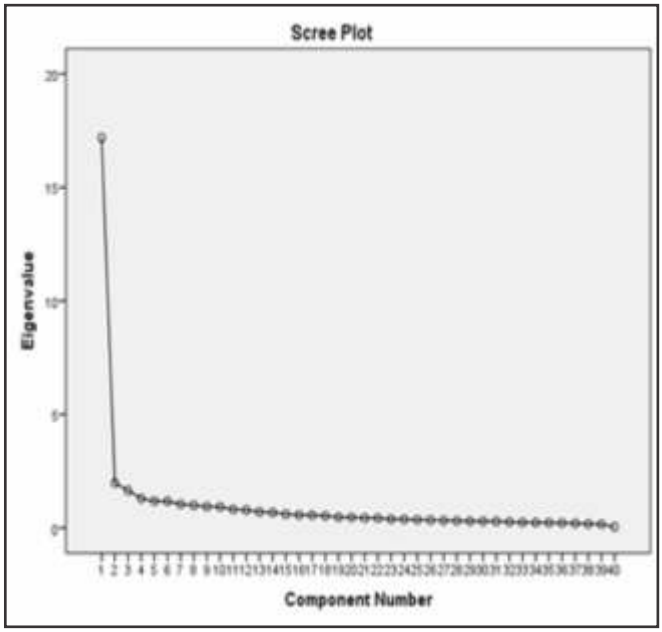


Table 1. Factors structure and internal consistency of 40 items of PSPS.

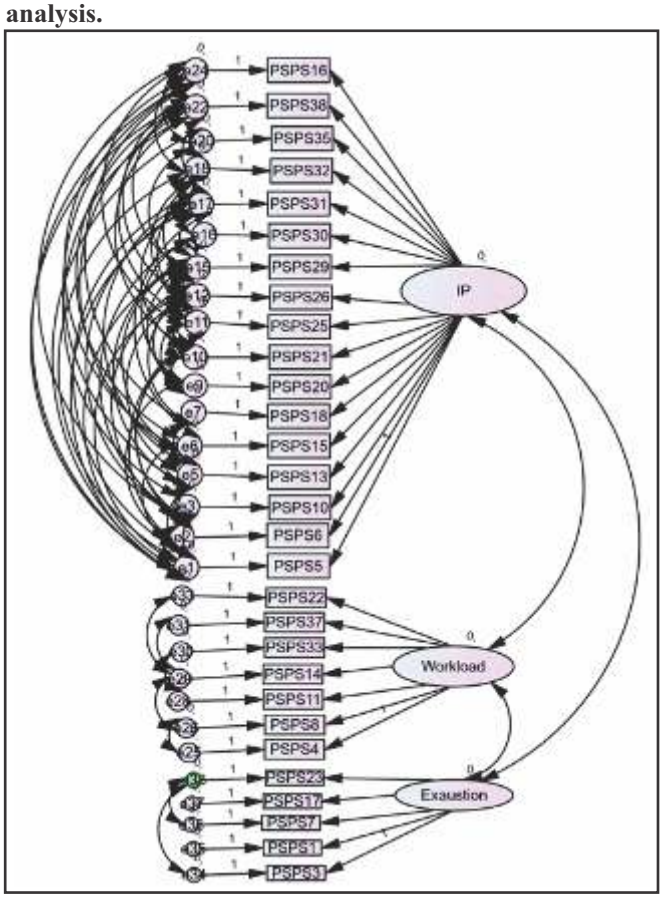
Item No	F1	F2	F3	Item No	F1	F2	F3
5	**.56**	.41	.29	35	**.64**	.35	.14
6	**.57**	.24	.42	36	**.64**	.33	.09
10	**.50**	.43	.18	38	**.70**	.24	.22
12	**.58**	.27	.31	40	**.68**	.22	.08
13	**.59**	.32	.25	4	.20	**.62**	.33
15	**.60**	.19	.18	8	.12	**.57**	.40
16	**.37**	.34	.28	9	.15	**.60**	.39
18	**.55**	.40	.18	11	.18	**.68**	.10
19	**.52**	.42	.40	14	.19	**.60**	.05
20	**.44**	.15	.40	22	.27	**.58**	.17
21	**.59**	.21	.42	33	.33	**.63**	.10
25	**.57**	.38	.18	37	.41	**.62**	.11
26	**.46**	.35	.40	39	.31	**.69**	.16
27	**.57**	.08	.28	1	.39	.44	**.47**
28	**.51**	.33	.47	2	.29	.40	**.51**
29	**.66**	.11	.29	3	.40	.22	**.67**
30	**.66**	.28	.35	7	.24	.09	**.72**
31	**.65**	.06	.33	17	.18	.17	**.58**
32	**.63**	.33	.27	23	.12	.32	**.60**
34	**.69**	.35	.12	24	.17	.08	**.58**
Eigen Value	42.95	47.90	52.07	Internal consistency	.96	.80	.95

Table 2. Model specifications of the post hoc confirmatory factor analysis.

Parameter	Coefficient
x^2/DF	4.33
CFI	0.93
TLI	0.90
NFI	0.91
RMSEA	0.06

x^2= Chi square, CFI=Comparative fit index, TLI= Tucker-Lewis fit index, RMSEA=Root Mean Square Error.

Fig 2. Finalized best fit model of confirmatory factor analysis.



Final CFA model representing three factorial structure having thirty items which is the best fit model for the psychosocial problems among nurses showed that the factor loading exceeds the desirable standards (Fig. 2).

Factors Description: ***Factor 1: Intrapersonal.*** Items of the PSPS were selected on the base of the criteria having factor loading of .30 or greater.[16] In this way, 24 items were loaded on Factor 1 which converted into common themes describing the intrapersonal state of mind of the person. As the items were "not able to concentrate on work, having headache, don't want to talk with others, to feel irritability and wants to live alone".

Factor 2: Work Related. The three factors were closely analyzed in terms of content and themes. Nine factors were loaded on the F 2 by following the factor loading criteria. Items were highlighting the work related issues of the nurses as "No appreciations by the seniors, no respect from the

patient's relatives, misbehave by the seniors, not giving importance to the problems of the nurses.

Factor 3: Exhaustion. Third factor of PSPS loaded by following Kline criteria which described the overload and exhaustion in nurses as the items included "Overload of work, feeling tired, irritability and mood disturbance" (Table 1).

Confirmatory Factor Analysis: This suggested a three factor structure for the psychosocial problems Scale (PSPS) which were intrapersonal, work related and exhaustion. Confirmatory factor analysis indicated the 1st model of CFA with three factors having twenty four items in F1, nine items in F2 and seven items in F3 was presenting the values as x^2/DF=7.34, CFI=.78, NFI=.76 ,TLI=.77, RMSEA=.09 which were not suitable for good fit. Continue analysis was carried out to find out the best fit model for the scale. Although both models resulted in different values Fig. 2 indicates that the finalized model met the criteria for good fit model for nurses as having seventeen items in F1, seven items in F2 and five items in F3 showing results x^2/DF=4.33, CFI=0.93, NFI=.91, TLI= .90, RMSEA=.06. (Table 2).

DISCUSSION

Healthcare profession is said to be one of the oldest and most stressful profession.[17] It has been seen that nurses performs highly stressful jobs and facing many problems as high workload and long working hours, sleep deprivation, frustration, anxiety, lack of nursing staffs, lack of acceptance and unfair nursing management.[18] Not only the occupational stress affects nurses but the direct exposure to the patients experiencing trauma can negatively affect their physical and mental health.[19]

Current study is the first attempt to identify the experience and expression of psychosocial problems and to develop a reliable and valid scale for measuring the psychosocial problems among nurses because before taking certain steps it is very important to understand the phenomena of psychosocial problems among nurses according to their own perspectives. So for this purpose initially the phenomenology was explored from the nurses and the list of items further validated from experts.

CONCLUSION

PSPS found to have sound psychometrics as well as having the best representation of the psychosocial problems among nurses. Further, it discussed in terms of counseling services and improving mental health among nurses.

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