CHAPTER 3

Methodology

This chapter describes the methodology of this study. It includes the description of the research design; the target population and sample; the setting; the instruments, the protection of human subjects; the data collection procedure; and the data analysis.

Research Design

A descriptive correlational research design was used to examine the level of job stress and presenteeism among nurses, and also to analyze the relationship between job stress and presenteeism among nurses in three tertiary care hospitals in Karachi, the Islamic republic of Pakistan.

Population and Sample

Population

The target population consisted of 805 nurses. The three TCHs included in this study were: the Jinnah Postgraduate and Medical Centre (JPMC), Karachi; the Civil Hospital Karachi (CHK); and the Abbasi Shaheed Hospital (ASH) Karachi. All three hospitals are located in Karachi. The population of each hospital above at the time was 395; 300; and 110 respectively.

Samples

The sample was comprised of nurses' diploma holders; bachelor's degree holders; and master's degree holders. The sample size was calculated by using the Yamane (1973) formula at level of significance 0.05 and was found to be 267 nurses. In consideration of the possible loss of subjects, deliberately, 53 additional questionnaires (constituting 20% of the total) were added (Burns & Grove, 2005) (Appendix A). The total number of questionnaires, therefore, was 320. The inclusion criteria for selection

of nurses included nurses who were working in any of the hospitals and were willing to participate in this study. The exclusion criteria for the study were staff nurses, including administrators (the Nursing Superintendent and Nursing Supervisors) and also some other staff nurses, who were on study leave and maternity leave during the data collection period. The reason was that the nurse administrators performed administrative work at different levels, and usually had less patient contact. Thereby among the administrators the stressors and active work engagement may have different from among the staff nurses.

The proportional stratified random sampling method was used to select the number of nurses in each hospital. In this regard, first, the population in each hospital was separated, according to respective units or departments. Then, the required sample was drawn from each section. Moreover, this was process was done without use of the replacement technique. According to the proportion of the sample size, the number of nurses in each tertiary care hospital was calculated as follows:

Table 1

Number of Population and Sample from Each Hospital and Department

Department/ Hospital	JPMC		CHK		ASH	
	Population	Sample	Population	Sample	Population	Sample
Medical	95	40	65	29	30	15
Surgical	70	27	50	20	20	9
Uro/Nephro	65	29	55	24	10	5
Gynae/Obstetric	60	26	55	19	20	6
Operation Theaters (All)	55	17	40	13	10	5
Eye/ENT/Skin	50	18	35	13	10	5
Total	395	157	300	118	110	45

The total population of nurses in all of the hospitals was 805; their distribution among the three hospitals namely, JPMC, CHK, and ASH was 395, 300, and 110 respectively. The sample was collected based on the formula of Yamane (1973) from each hospital as 157, 118, and 45 respectively.

The simple random sampling technique was used to select the sample from each hospital and each ward. This process was used until the required number of nurses was obtained. The sample selection excluded 30 subjects who had participated in a reliability test, in order to avoid repeated measure bias. In this study, a total of 320 questionnaires were distributed to the sample of the nurses in the three TCHs. The response rate was 297 (93%); incomplete questionnaires were 15 (5%); and among them, 282 (88%) questionnaires were completed for data analysis.

Research Setting

The study was conducted in three tertiary care hospitals in Karachi, Pakistan. The hospitals were: the Jinnah Postgraduate and Medical Centre (JPMC); the Civil Hospital (CH); and the Abbasi Shaheed Hospital (ASH). All the hospitals are located in Karachi.

Research Instruments

The instrument used in this study was a questionnaire consisting of the following three parts: (1) the Demographic Data Form; (2) the Extended Nursing Stress Scale; and (3) the Stanford Presenteeism Scale (Appendix D).

Part I: Demographic Data Form

The Demographic Data Form was designed and developed by the researcher to collect each nurse's personal information - including her or his age; gender; marital status; level of nursing education; number of years of work experience; and basic monthly salary.

Part II: The Extended Nursing Stress Scale

The Extended Nursing Stress Scale developed by French et al., in 2000 was used to measure job stress. The ENSS contains 57 items arranged in nine subscales: (1) Death and Dying, with 9 items, (2) Conflict with Physicians, with 5 items, (3) Inadequate Emotional Preparation, with 3 items, (4) Problems Relating to Peers, with 6 items, (5) Problems Relating to Supervisors, with 7 items; (6) Work Load, with 9 items; (7) Uncertainty Concerning Treatment, with 9 items, (8) Patients and their Families, with 8 items; and (9) Discrimination, with 3 items. The responses were rated

by using the 5-point Likert Scale, ranging from 1 (Doesn't Apply) to 5 (Extremely Stressful). There were no specific cut scores or published mean norms for the ENSS which would determine whether or not an individual was stressed; however, higher scores generally indicated a higher level of stress (French et al., 2000). The internal consistency of the ENSS associated with previous studies was .80 (French et al., 2000). Items were computed by the methods of sum and average, in order to obtain a mean score for each scale. Higher scores indicated higher job stress. To indicate the level of JS in each component, the mean score of all items contained in each component was divided into 3 levels, by using class intervals (French et al., 2000). The interpretations of the mean scores overall and among each subscale of ENSS - are as follows:

Table 2

Categorization of Level of Overall Job Stress with Dimensions

JS Subscales	Level of Job Stress		
	Low	Moderate	High
Overall Score	57-133	134-210	211-285
Death and dying	7-16	17-25	26-35
Conflict with physicians	5-11	12-18	19-25
Inadequate emotional preparation	3-6	7-11	12-15
Problems relating to peers	6-13	14-21	22-30
Problems relating to supervisors	7-16	17-25	26-35
Work load	9-21	22-33	34-45
Uncertainty concerning treatment	9-21	22-33	34-45
Patients and their families	8-18	19-29	30-40
Discrimination	3-6	7-11	12-15

Part III: The Stanford Presenteeism Scale (SPS-6)

The Stanford Presenteeism Scale (SPS-6) developed by Koopman, et al. (2002) comprising on Completing Work (CW) and Avoiding Distraction (AD). Each dimension contained 3 items. Three of the items in ADS scored were reversed. Responses were rated by using the 5-point Likert scale, ranging from 1 (Strongly disagree with the statement) to 5 (Strongly agree with the statement). The internal consistency of the SPS-6 associated with previous studies was .80 (Koopman et al., 2002). According to Pelletier and Koopman (2003) the cut-off score for presenteeism in the lower quartile is 18. The mean score below cut-off score is considered low presenteeism, whereas the mean score above cut-off score is considered high presenteeism. To indicate the level of presenteeism in each component, the mean score of 3-items in each component was divided into two levels, by using class intervals (Koopman et al., 2002) as follow:

Table 3

Categorization of Level of Overall Presenteeism with Dimensions

Presenteeism Subscales	Level of Presenteeism	
	Low	High
Overall Score	6-18	19-30
Completing Work	3-8	9-15
Avoiding Distraction	3-8	9-15

Validity of the Instruments

The validity of Expanded Nursing Stress Scale 57- items was confirmed before the final scale was approved and used (French et al., 2000). Discriminant validity of the Expanded Nursing Stress Scale (ENSS) was examined by computing Product Moment Correlations with overall Life Stress ($r = .17$, $p < .001$ [one-tailed test]) and Health Problems Index ($r = .34$, $p < 0.01$ [two-tailed test]) and the content validity of the instrument was established through a penal (Hamaideh et al., 2008). On the other hand, concurrent validity of the Stanford Presenteeism Scale-6 (SPS-6) was found to be high,

with strong to moderate correlations between Stanford Presenteeism Scale-6 (SPS-6) scores and scores on specific measures of presenteeism.

Reliability of the Instruments

The checking of the reliability of the ENSS and SPS-6 test was done before the administration of the questionnaires using Cronbach's alpha. A convenient sample of 20 nurses with the same characteristics as the actual sample was recruited from JPMC; these nurses were excluded from the sample for data collection. In this study, .80 was the Cronbach's alpha reliability of the ENSS and SPS-6 Scales.

Protection of Human Subjects

Prior to data collection, the research protocol was approved by the Research Ethics Review Committee of the Faculty of Nursing at Chiang Mai University in Thailand (Appendix E). Further ethical clearance from each tertiary hospital's research review committees where available and permission from each TCH's Chief Executive Officer were taken in collaboration with the principal Nursing Superintendents/Matrons. All participants were informed about the purpose and methodology of the study. They were informed that participation in the study would be voluntary – and that, subsequently, they could refuse to participate or withdraw from the study at any time without being penalized or losing any benefits. Likewise, the participants were informed that it would be ensured that their responses would be kept confidential; their identities would not be exposed in any research reports and publications of the study. Finally, the participants who agreed to participate in the study were requested to sign a written consent form.

Data Collection Procedures

The data for this study were collected from the beginning of February to the end of March in 2016 in the three tertiary care hospitals, Karachi, Pakistan. In the collection procedure, the following steps were performed:

1. The researcher submitted the research proposal to the Faculty of Nursing Chiang Mai University Research Ethics Review Committee for review.

2. Following approval from the Research Ethics Review Committee (Ethics Permission letter No. 001/2016; Study Code: EXP – 003 – 2559) at the Faculty of Nursing Chiang Mai University, the package for the study including the proposal; the cover letter requesting permission for data collection (Appendix H); and copies of the structured questionnaire were forwarded to the Executive Officer and Nursing Superintendent of the three tertiary care hospitals in Karachi, Pakistan for approval and for permission to begin collecting data.

3. Permission for data collection to conduct the study from the Chief Executive Officers and nursing superintendents of the three tertiary care hospitals in Karachi, Pakistan was obtained.

4. The researcher personally met the nursing superintendent for each hospital. The Nursing Superintendent arranged a meeting to introduce the nursing supervisors and clarified the study to them. The 2 coordinators (Ward In-charge Nurses) in each hospital were also selected by the Nursing Supervisors in the respective hospitals (totaling 6) who were assigned to distribute questionnaires to nurses.

5. The sample size of nurses from each hospital was selected based on the proportion of the population. The researcher randomly selected the samples from the name list of nurses who met the criteria in each unit/ward. The method of simple random sampling was used for nurses' selection from the sample frame of each ward/unit - excluding the ones who participated in reliability test.

6. The research coordinators distributed the 320 questionnaires with an information sheet regarding this study. An informed consent form in an open envelope was administered to all the subjects.

7. The subjects were asked to return the questionnaires within two weeks in closed envelopes in a designated box, which was placed under the safeguard of the ward in-charge nurses.

8. All questionnaires were collected by the six coordinators from the box. Then the researcher collected the questionnaires from the coordinators after two weeks.

9. The completeness of every questionnaire was assessed by the researcher for data analysis. All 15 incomplete questionnaires were excluded (05%). The response rate was 297 (93%). The number of questionnaires which had undergone a complete analysis by the researcher was 282 (88%).

Data Analysis Procedure

The data was analyzed using a statistical software package (SPSS 13.0). Both descriptive and inferential statistics were used. In this study, 0.05 was the significance alpha (α) level. The data analysis was carried out using complete questionnaires.

1. The demographic data were analyzed using frequency, mean and standard deviation.

2. The level of job stress and presenteeism among nurses was analyzed using frequency, mean, and standard deviation. The classification of the level of each score was done according to the suggestions of the developer of the instrument.

3. The relationship between each component of job stress and presenteeism were explored using a non-parametric statistical test Spearman's rank-order correlations coefficient because the data showed non-normal distribution after tested by Kolmogorov-Smirnov test. For overall presenteeism, Kolmogorov-Smirnov was 1.389 and Asymp. Sig. (2-tailed) = .04; whereas, for overall job stress, Kolmogorov-Smirnov was 1.332 and Asymp. Sig. (2-tailed) = .05 respectively. In relation to the relationship between the two variables, ($r = < 0.3$) was considered as a weak relationship, ($r = 0.3$ to ≤ 0.5) was considered a moderate relationship and ($r = > 0.5$) was regarded as a strong relationship (Burns & Grove, 2005).

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