

Quality of Life in Nurses Working in Neyshabur Hospitals

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ABSTRACT

Background: Nurses might be exposed to various hazards which may affect their general well-being and quality of life (QOL).

Objectives: The objective of this study was to assess the QOL in nurses working in Neyshabur hospitals and some factors associated with it, with the use of Short Form Health Survey (SF-36) scale.

Materials and Methods: This cross-sectional study was performed among nurses of Neyshabur hospitals from February to April 2012. For evaluating QOL we used Iranian version of SF-36 questionnaire. Pearson's correlation coefficient, t-independent test and Multiple Linear Regression Model were used for analyzing the data.

Results: The mean age of study population was 31.02 ± 6.74 years. Of all participants, 146 persons (77.7%) were female and 42 persons (22.3%) were male. Emotional role (RE), vitality (VT) and physical role (RP) had the lowest subscale scores, while physical function (PF), bodily pain (BP) and social functioning (SF) had the highest subscale scores. Backward multiple linear regression model revealed that years in occupation was significantly associated with five subscales (PF, VT, SF, BP and General Health) and Mental Component Summery (MCS). Employment status was associated with RP subscale and Physical Component Summery (PCS), while house ownership was associated with RP subscale of the SF-36 scale ($P < 0.05$).

Conclusions: According to our findings, Neyshabur nurses have SF-36 scores that might indicate a relatively moderate QOL. Also, QOL in Neyshabur nurses depends on some occupational factors.

► Implication for health policy/practice/research/medical education:

Nurses provide higher quality services for their patients when they are healthy and possess desirable Quality Of Life (QOL); So, by identifying the Quality Of Life in nurses we would be able to help them and their patients.

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1. Background

The world health organization (WHO) has defined quality of life (QOL) as "an individual's perception of his/her position in life in the context of the culture and value systems in which they live and in relation to their goals, expecta-

tions, standards and concerns" (1). Recently, many general instruments have been used to measure QOL in different groups (i.e., population, patients, workers, etc). One of such instruments is the SF-36 questionnaire, a generic instrument translated and validated in Iran by Montazeri (2). In this regard, QOL of people with a health problem (i.e.,

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cancer, diabetes, hypertension, etc) was evaluated in many studies (3-29); But there are few studies that have evaluated the QOL of health care workers, for example nurses, who provide health care services for patients.

Nurses are among the greatest providers of services in the health care system and in their work settings, they may be exposed to a wide array of chemical, biological, psychosocial (i.e., stress, depression, etc) and physical hazards (i.e., injuries, transmission of infectious diseases, etc). Consecutively, such conditions may affect the QOL of nurses. It is noteworthy that nurses provide higher quality services for their patients when they are healthy and possess desirable QOL. Therefore, it is important to pay particular attention to nurses' general health conditions and QOL.

2. Objectives

The objective of this study was to assess the QOL in nurses working in Neyshabur hospitals and some factors associated with it, with the use of the SF-36 scale.

3. Materials and Methods

In this cross-sectional study, data were collected from February to April 2012 in Neyshabur hospitals (22 Bahman and Hakim) in Neyshabur (A city in Northeast of Iran). Of all nurses ($n = 220$), 22 were excluded because they refused to participate in the study. Therefore, 198 questionnaires were collected (response rate = 90%). All of participants provided informed consent after the purpose of study was explained for them. Inclusion criteria for participating in the study included the nurses who work in Neyshabur hospitals in addition to their agreement for participation.

3.1. Procedure and Study Instrument

In this study, questionnaires have been filled out by participants and for enhancing the accuracy, participants were explained that their responses would remain confidential. A trained person explained how to complete the questionnaires for each participant. We used the Iranian version of the SF-36 questionnaire in this study that was validated in Iran by Montazeri (2). This questionnaire contains 36 items that are divided into eight subscales: physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), vitality (VT), general health (GH), social functioning (SF), role limitations due to emotional problems (RE) and mental health (MH). Three subscales (MH, RE, and SF) correlate most highly with the mental aspect of QOL and are associated with subscale of VT, contribute most to the scoring of mental component summery (MCS) measure (30). The physical aspect of QOL correlates most highly with the subscales including PF, RP, and BP, which are associated with subscale of GH, contribute most to the scoring of physical component summery (PCS) measure (31). This study also focuses on analyzing and reporting PCS and MCS. The SF-36 was scored according to the recommendations by Ware et al (31). The scores

of each item are transformed to a 0-100 scale, where 100 is the best and zero is the worst score.

3.2. Dependent and Independent Variables

Eight subscales of SF-36 questionnaire were considered as dependent variables. Other collected data including sex, age, marital status, employment status, income level (per month), years in occupation, existence of any chronic disease morbidity, family size, number of children, shift type and house ownership were considered as independent variables. The age of participants was classified into two categories of ≤ 35 years and > 35 years. Nurses were also categorized into two groups of single/divorced and married according to marital status. Employment status was categorized into two categories including official and contractual. Income level was classified into two categories including ≤ 5 million Rials and > 5 million Rials per month. Also, years in occupation was divided into two categories including < 10 years and ≥ 10 years. Family size was divided into two categories including ≤ 4 and > 4 . Number of children was divided into two categories including 1 and ≥ 2 . Shift type was categorized into two categories including fixed and circular. House ownership was categorized into two categories including tenant and private house.

3.3. Statistical Analyses

Descriptive analyses were performed including the frequencies, percentages, ranges, means, and standard deviations (SD). Pearson's correlation coefficient was used to determine the level of agreement between eight subscales of SF-36. To investigate the association between participants' characteristics and their QOL, t-independent test was performed. Multiple Linear Regression model with backward method was performed to control confounding effects. Transformed scores were used for statistical analyses in all subscales. SPSS software, version 16 was used to analyze the collected data. P values less than 0.05 were considered statistically significant.

4. Results

In total, 198 nurses filled out the SF-36 questionnaire in this study. Ten questionnaires had more than 20% of missing data and thus were excluded from the study. The analysis was restricted for the remaining 188 respondents. Some of the characteristics of study population are shown in *Table 1*. The mean age of female and male participants was 29.5 and 36.2 years respectively and this difference was statistically significant ($P < 0.001$).

Table 2 presents correlations between eight subscales of SF36; as observed, there were statistically significant correlations between all subscales ($P < 0.05$). There was also a significant correlation between PCS and eight subscales in addition to MCS and eight subscales of SF36. As *Table 3* shows, the total mean score of SF-36 was 64.7 and among the different subscales of SF-36, the lowest and the highest

Table 1. Characteristics of Study Population (n = 188)

Characteristics	No.	%
Sex^a		
Male	42	22.3
Female	146	77.7
Marital Status		
Single/Divorced	43	22.9
Married	145	77.1
Employment Status^a		
Official	35	18.8
Contractual	151	81.2
Mean \pm SD Age, y	31.02 \pm 6.74	
Mean \pm SD Years in Occupation	6.1 \pm 6.31	

^a Some data were missing**Table 2:** Correlation Coefficients for the PCS, MCS and Eight Subscales of SF-36

	PF	RP	RE	VT	MH	SF	BP	GH	PCS	MCS
PF										
CC	1	0.433	0.203	0.422	0.361	0.379	0.503	0.454	0.750	0.367
Sig		<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
RP										
CC		1	0.387	0.315	0.312	0.417	0.458	0.274	0.826	0.440
Sig			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
RE										
CC			1	0.538	0.548	0.556	0.336	0.361	0.438	0.899
Sig				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
VT										
CC				1	0.759	0.523	0.404	0.556	0.528	0.790
Sig					<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MH										
CC					1	0.528	0.388	0.448	0.479	0.494
Sig						<0.001	<0.001	<0.001	<0.001	<0.001
SF										
CC						1	0.510	0.490	0.584	0.759
Sig							<0.001	<0.001	<0.001	<0.001
BP										
CC							1	0.407	0.765	0.470
Sig								<0.001	<0.001	<0.001
GH										
CC								1	0.624	0.525
Sig									<0.001	<0.001
PCS										
CC									1	0.588
Sig										<0.001
MCS										
CC										1
Sig										

Abbreviations: BP, bodily pain; CC, Correlation coefficients; GH, general health; MCS, mental component summery; MH, mental health; PCS, physical component summery; PF; physical functioning; RE, role limitations due to emotional problems; RP, physical problems; SF, social functioning; Sig, Significant. (2-tailed); VT, vitality

Table 3. Comparison of the Mean Scores in the PCS, MCS, Eight Subscales and Total of SF-36 According to Nurses' Characteristics

	Subscales											Total Mean(SD)
	PF Mean(SD)	RP Mean(SD)	RE Mean(SD)	VT Mean(SD)	MH Mean(SD)	SF Mean(SD)	BP Mean(SD)	GH Mean(SD)	PCS Mean(SD)	MCS Mean(SD)		
Total	77.3(21.4)	59.8(39.8)	55.9(44.9)	57.7(18.4)	62.6(17.6)	69.4(19.8)	70.1(23.4)	65(18.9)	68(19.7)	61.4(21)	64.7(18.1)	
Sex												
Male	75.8(24.2)	62.5(41)	62.7(46.7)	60.9(21)	67.1(16.7)	70.5(18.3)	72.4(21.1)	62.1(20.7)	68.2(19.1)	65.3(21.5)	67.4(17.5)	
Female	77.8(20.6)	59.1(39.5)	53.9(44.3)	56.8(17.5)	61.3(17.7)	69.1(20.2)	69.4(24.1)	65.8(18.3)	68(19.9)	60.3(20.8)	64.3(18.2)	
P value	0.606	0.624	0.263	0.191	0.060	0.678	0.469	0.276	0.951	0.168	0.341	
Age												
≤ 35 yr	79.6(20.9)	62.8(38.4)	56.2(44.6)	59(16.6)	62.7(16.4)	69.4(18.7)	71.2(23.5)	67.6(16.9)	70.3(19)	61.8(19.5)	66.1(16.8)	
> 35 yr	71.8(20.5)	51.8(41.5)	54.8(45.3)	53(22.2)	60.1(20.1)	69.9(21.9)	66.6(23.8)	58.8(20.6)	62.2(19.5)	59.4(59.4)	60.8(19.9)	
P value	0.036	0.113	0.855	0.111	0.403	0.883	0.271	0.006	0.018	0.562	0.095	
Marital status												
Single/Divorced	86.4(16.6)	75(35.4)	65.9(42)	62.9(18.3)	65.7(18.3)	77.1(17.7)	79.7(20.1)	74.5(16.7)	78.9(16.8)	67.9(19.2)	73.4(15.7)	
Married	75.1(21.6)	55.9(39.9)	53.3(45.4)	56.3(18.2)	61.7(17.5)	67.4(19.8)	67.4(23.7)	62.3(18.6)	65.2(19.2)	59.7(21.1)	62.4(17.9)	
P value	0.002	0.006	0.099	0.041	0.197	0.005	0.003	<0.001	<0.001	0.025	<0.001	
Employment status												
Official	67.6(21.3)	47.9(41.7)	61.9(45.1)	53.6(21.7)	63.8(21.5)	71.4(22)	64.5(21.9)	59.1(20)	59.8(19.2)	62.7(23.4)	61.2(19.5)	
Contractual	80.1(20.4)	62.8(38.7)	54.5(44.8)	58.7(17.5)	62.1(16.6)	69(19.2)	71.3(23.2)	66.4(18.4)	70.1(19.1)	61.1(20.4)	65.6(17.6)	
P value	0.001	0.045	0.382	0.135	0.673	0.520	0.123	0.40	0.004	0.692	0.194	
Income level (mo)												
≤ 5000000 Rial	79.2(26.2)	63.9(40.4)	59.3(46.5)	60.6(20)	64(19.6)	72.9(15.6)	69.3(20.3)	72.8(17.6)	71.3(22.3)	64.2(21.7)	67.7(21)	
> 5000000 Rial	76.8(76.8)	56.8(39.2)	55.8(44.8)	57.2(18.6)	61.3(18.1)	68.9(19.6)	70(22.8)	64.9(19.1)	67.1(19)	60.8(20.9)	64(17.5)	
P value	0.668	0.472	0.762	0.476	0.559	0.413	0.897	0.100	0.396	0.525	0.406	
Years in occupation												
<10 yr	80.5(20.7)	62.1(40)	56.1(45.2)	60.2(18.6)	63.5(16.7)	72.9(19.8)	72.6(24.7)	67.9(19.3)	70.8(20.8)	63.2(20.8)	67(18.8)	
≥ 10 yr	65(22.3)	55.7(40.8)	42.4(43.9)	49.3(18)	56.2(22.1)	58.5(20.2)	56.9(28.2)	52.3(21)	57.5(19.3)	51.6(22.3)	54.5(18.9)	
P value	0.003	0.508	0.207	0.015	0.090	0.003	0.011	0.001	0.008	0.024	0.007	
Chronic disease												
No	68.2(22.8)	45.5(37.5)	63.6(43.5)	52.7(17.8)	59.6(20.4)	67.6(22.4)	56.1(23.6)	54.6(23.6)	56.1(17.1)	60.9(21.8)	58.5(17.5)	
Yes	79.2(20.5)	62.3(39.1)	54.2(45.1)	58.1(18.6)	62.8(17.5)	69.6(19.3)	71.5(22.9)	66.7(18.1)	69.9(19.1)	61.2(20.9)	65.6(17.8)	
P value	0.021	0.058	0.358	0.203	0.431	0.654	0.004	0.004	0.001	0.952	0.082	

Family size												
≤ 4	74.4(21.2)	55.2(39.2)	53.6(45.2)	56(17.5)	61.2(17.4)	68.2(20.6)	67(23.8)	62.4(18.8)	64.7(18.8)	59.7(21.1)	62.2(17.7)	
> 4	80(26.5)	73.2(39.8)	61.9(45)	59.6(26.4)	61.7(20.8)	69.6(18.2)	72.7(24.6)	70.4(16.7)	74.1(20.8)	63.2(24.8)	68.1(21)	
P value	0.365	0.108	0.518	0.627	0.910	0.796	0.399	0.133	0.086	0.569	0.212	
Children number												
1	73.5(20.6)	66.1(37)	50.8(46.1)	54.1(19)	57.9(19.1)	64(20.9)	67.3(25.5)	58.8(20.3)	66.4(20.7)	56.7(22.6)	61.5(19.6)	
≥ 2	71(23.2)	56.7(40.4)	54.1(46.8)	55.1(20.8)	63.5(19.5)	70.3(18.5)	66.6(23.7)	60.7(18.8)	63.7(17.4)	60.7(22.7)	62.2(17.5)	
P value	0.605	0.261	0.743	0.804	0.184	0.140	0.894	0.658	0.514	0.407	0.863	
Shift type												
Fix	71.7(24)	52.1(42)	61(42.5)	59.4(16.5)	63(17.4)	68.1(19.1)	68.4(22.6)	64.6(19.9)	64.2(21.6)	62.9(19.6)	63.5(18.1)	
Circular	79.7(20.1)	63(38.7)	53.8(45.9)	57.1(19.2)	62.3(17.7)	69.8(20)	70.3(23.9)	65.3(18.5)	69.6(18.7)	60.8(21.5)	65.2(18)	
P value	0.430	0.108	0.349	0.474	0.808	0.606	0.626	0.831	0.133	0.555	0.593	
House ownership												
Private house	78.9(19.8)	63(39.8)	53.6(44.5)	55.9(17.4)	62.3(16.9)	68.6(20)	69.3(24.2)	63.5(19)	68.7(18.9)	60.1(20.4)	64.4(17.2)	
Tenant	72.5(22.4)	45.7(37.3)	56.4(44.5)	57.4(19.2)	58.7(18.2)	68.8(18.9)	66.8(21.8)	64.9(17.2)	62.5(19.2)	60.3(21.1)	61.4(17.9)	
P value	0.064	0.009	0.708	0.610	0.220	0.961	0.524	0.644	0.052	0.947	0.306	

mean scores were found for RE subscale (Mean = 55.9) and PF subscale (Mean = 77.3), respectively. The mean scores of the PCS, MCS, eight subscales and total of SF-36 according to sex, age, marital status, employment status, income level, years in occupation, chronic disease existence, family size, number of children, shift type and house ownership are presented in Table 3. As Table 3 shows, there were significant differences between different states of some variables (age, marital status, employment status, years in occupation, chronic disease existence and house ownership) in six subscales of SF-36 ($P < 0.05$). Table 4 presents the results of Backward Multiple Linear Regression model; variables with significant relations were as follows: years in occupation, employment status and house ownership. Table 4 shows the positive and negative relations in this study. Positive relations included: between RP subscale and employment status, between the PCS and employment status. Negative relations included: between PF, VT, SF, BP, GH subscales and years in occupation, between the MCS and years in occupation, between RP subscale and house ownership. We did not observe any significant relation between various factors and RE or MH subscales after use of regression model.

5. Discussion

The present study was designed to assess the QOL in nurses working in Neyshabur hospitals and some factors associated with it, with the use of the SF-36 scale. According to our findings, the total mean score of SF-36 was 64.7 that indicates a relatively moderate QOL in Neyshabur' nurses. In a study conducted by Assarrodi, which was conducted to investigate the relation between spiritual well-being and QOL in nurses, they observed that the mean score of QOL was 64.38 (32). In another study conducted by Allaf Javadi in order to compare the QOL in nurses of special care and internal surgical wards, they observed that mean scores of QOL were 69.66 and 62.17, respectively (33).

Among the different subscales of SF-36, the lowest mean score was found for RE subscale (55.9%), implying that more than 44% of Neyshabur' nurses, had problems with their work or other regular daily activities as a result of emotional problems (such as feeling depressed or anxious) in the last four weeks. Moreover, the highest mean score was shown for PF subscale (77.3%) indicating that lower than 23% of physical activities of Neyshabur' nurses, was limited a lot or limited a little. In a study conducted by Aghamolaei in order to investigate the determinants of health-related quality of life (HRQOL) in general population living in Bandar Abbas, the lowest and the highest mean scores were found for GH and RE subscales, respectively (34). Additionally, assarrodi showed that the lowest and the highest mean scores were observed for RE and RP subscales, respectively (32). Daher et al performed another study to assess the HRQOL among Iraqis living in Malaysia, and they observed that the lowest and the highest mean scores were found for VT and PF subscales, respectively

Table 4. Backward Multiple Linear Regression Model Analyses of Significant Factors Associated With Qol

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Pvalue
	B	SE	Beta		
PF Subscale					
Years in occupation	-12.13	5.37	-0.227	-2.26	0.026
RP Subscale					
Employment Status	19.29	7.55	0.196	2.56	0.012
House Ownership	-20.92	6.56	-0.244	-3.19	0.002
VT Subscale					
Years in occupation	-10.92	4.42	S	-2.47	0.015
SF Subscale					
Years in occupation	-14.42	4.76	-0.283	-3.03	0.003
BP Subscale					
Years in occupation	-15.05	6.12	-0.236	-2.46	0.016
GH Subscale					
Years in occupation	-15.60	4.45	-0.337	-3.51	0.001
PCS					
Employment Status	14.94	5.50	0.264	2.72	0.008
MCS					
Years in occupation	-11.58	5.05	-0.218	-2.29	0.024
Total					
Years in occupation	-12.44	4.51	-0.260	-2.76	0.007

Abbreviations: BP, bodily pain; GH, general health; MCS, mental component summery; PCS, physical component summery; PF, physical functioning; RP, physical problems; SF, social functioning; VT, vitality

(35). In this study, we observed that the mean score of PCS is more than the mean score of MSC, implying that participants in this study had fewer problems in physical component in compare with mental component. This findings confirm the results of Assarrodi, Allaf Javadi and Daher' studies (32, 33, 35). But the report of Aghamolaei showed that the mean score of PCS is lower than the mean score of MSC (34).

As Table 3 shows, single/divorced participants reported higher QOL in compare to married participants in the PCS, MCS and eight subscales of SF-36, and the differences were statistically significant (except in RE and MH subscales). In the report of Aghamolaei, they observed that marital status could not significantly decrease the scores of SF-36 in both mental and physical aspects (34). But in Tajvar's report married participants had higher HRQOL in compare to single people (36).

As Table 4 shows, years in occupation was the most important factor affecting the QOL of study population in total and also in MCS and five subscales (PF, VT, SF, BP and GH) of SF-36. Years in occupation was negatively related to MCS and subscales such as: PF, VT, SF, BP and GH. This subject indicates that having more work experience reduced QOL in some physical and mental subscales. Employment status was the other factor that was associated with PCS and RP

subscales. Such results indicate that employment status was related only with physical subscale. House ownership was another factor that was associated with RP subscale. In the study conducted by Aghamolaei, sex, age, education and employment status were significantly related to the PCS and MCS (34). Sex was significantly associated with PCS and marital status was associated with MCS in the study conducted by Daher (35). Thumboo observed that educational level and housing type (markers of socio-economic status) were also associated with SF-36 scores (37).

This study has several limitations: First, causality between the compared variables could not be concluded due to the cross-sectional design of the study. Second, most variables were assessed by self-report and desirable responses might have been given. Third, 22 persons were excluded from the study because of refusal to participate in the study and 10 persons were also excluded because their questionnaires had more than 20% of missing data.

From the findings of this study, it appears that Neyshabur' nurses have SF-36 scores that might indicate a relatively moderate QOL and the findings also confirm that years in occupation is the major factor that affects their QOL. Thereby, interventional programs should be designed and implemented by Neyshabur Faculty of Medical Science, in order to help nurses to improve their QOL and general

well-being, especially among nurses with more work experience.

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Authors' Contribution

A.G carried out the design and coordinated the study and prepared the manuscript. MF and ZH participated in data collection. PL participated in data analyses. All authors read and approved the final manuscript.

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