The Association between Life Satisfaction and the Extent of Depression, Anxiety and Stress among Iranian Nurses: A Multicenter Survey

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Objective: The determinants of satisfaction of life (SWL) are poorly described among Iranian employed nurses. This study aimed to assess the effect of various factors including age, gender, marital status, depression, anxiety and stress on SWL among Iranian nurses.

Method: Employed nurses in three teaching hospitals were invited to participate in this study. Ninety-four nurses (65 women and 29 men) participated in this study. Depression, anxiety, stress scale (DASS-21) was used to measure the related variables. Satisfaction with Life Scale (SWLS) was used to assess SWL. Multivariate analysis was utilized to examine the relationship between multiple variables.

Results: A noticeable proportion of Iranian employed nurses were either dissatisfied or extremely dissatisfied with life (45%). Severe depression was related to lower scores of SWLS (P: 0.001, r = -0.32). The similar outcomes were detected between anxiety and stress scales, and SWLS (P: 0.023, r = -0.23 and P: 0.008, r = -0.27 for anxiety and stress, respectively). Although females were more vulnerable to depression (P: 0.010) and stress (P: 0.013), the overall effect of gender on SWL was insignificant (0.41). Satisfactions with financial power and work environment were associated with higher scores of SWLS (P: 0.030 and 0.042, respectively). Marital status was not related to severity of depression, anxiety, stress and SWLS (P: 0.39, 0.38, 0.80, and 0.61, respectively).

Conclusion: This study revealed that poor satisfaction with financial status and work environment, depression, anxiety and stress are the major determinants of satisfaction with life among Iranian employed nurses.

Key words: *Anxiety, Depression, Iran, Life Stress, Nurses*

Life satisfaction is a multifactorial construct, which has been shown to the cognitive aspect of subjective well-being (1, 2). Measure of subjective well-being includes both emotions and cognitions (3) and is closely related to mental well-being and happiness (4). Many variables including education, wealth, health and being married a (5) have been demonstrated as determinants of life-satisfaction. Furthermore, happiness and higher levels of life satisfaction have been shown to be correlated with lower mortality rate among the healthy population (6). Along with these variables, working conditions may also affect health (7, 8). High job demand is predictive of adverse health effects including depression, anxiety and physical illness (9). Many investigations have tried to identify the correlation between working conditions and stress, anxiety and depression (10-14). In this regard, Plaisier et al. (10) assessed the contribution of working

conditions and social support to the onset of depressive and anxiety disorders among male and female employees. Their findings showed that psychological demands predict the incidence of depressive and anxiety disorders in both genders. Furthermore, social support protected against the incidence of depressive and anxiety disorders; however, social support could not compensate for the unfavorable mental effect of working conditions (10). Niedhammer et al. (11) evaluated the influence of job strains, such as major organizational changes, on mental health. Their study illustrates that job strain, low decision latitude and effort-reward imbalances were associated with depressive and psychiatric symptoms. Moreover, Sanne et al. (12) showed that high job demands and low support are risk factors for anxiety and depression. Similarly, Rusli et al. (14) demonstrated that higher job demand increases the self-perceived stress and decreases the self-perceived quality of life. In this regard, hospital staffs including nurses are known to have high and stressful workload (15). The factors predicting satisfaction of life are not fully described among the nurses. Nurses have a very sensitive job in the health care system. Therefore, identifying factors, which affect SWL, is essential to plan proper strategies to improve life satisfaction among nurses. Furthermore, satisfaction with life is a complex construct, which is affected by many variables including community variables such as social support. Thus, the determinants of satisfaction with life should be identified in every nation. To date, no study has evaluated depression, anxiety and stress among Iranian nurses working in teaching hospitals. Thus, the extent to which life satisfaction is influenced by depression, anxiety and stress has not yet been described among Iranian nurses. To our knowledge, this was the first study in Iran, which presents the effect of the extent of anxiety, depression and stress on SWL in employed nurses.

Anxiety is a subjective state of internal discomfort (16) whereas depression is usually characterized as a mood disorder. However, sometimes it is difficult to distinguish between these constructs using clinicians' ratings or self-report measures (17), and this may be due to the predominant negative affectivity in both terms. Depression, anxiety stress scale-21 (DASS-21) is a validated reliable measure to assess the three dimensions of negative affectivity (18, 19). To assess the effect of negative affectivity on life satisfaction, the combined investigation of these three components (depression, anxiety and stress) is essential. The aim of this study was to evaluate the imposed burden caused by negative affectivity on life satisfaction of Iranian nurses employed in teaching hospitals of Tehran.

Materials and Method
Participants and Study Design
Employed nurses in the emergency wards of three teaching hospitals affiliated to Tehran University of Medical Sciences (Imam Khomeini Hospital Complex, Children's Medical Center, and Shariati Hospital) were invited to participate in this study. Inclusion criteria were as follows: Persistent employed staff, and at least one-year working experience in hospital environment. Because being new in a working position may be associated with anxiety, we only included nurses with >1 year working experience. Exclusion criteria were as follows: Previous history of depression, anxiety or other psychiatric disorders, history of chronic diseases (e.g., cancer, liver dysfunction, renal disorders, diabetes, endocrine disorders, rheumatoid diseases etc.), and use of special medications such as glucocorticoid, thyroid hormones, anticonvulsive drugs, heparin, lithium, antipsychotic medications and anti-depressants. Written consent was obtained from each individual before enrollment. Because we found no accurate statistics about the life satisfaction of the nurses in Tehran, we estimated the required sample size based on the similar previous investigations and consulting with the statistics department. In this regard, Demerouti et al. assessed satisfaction with life among nurses in Germany and recruited 109 participants (20). Abraham and D'silva evaluated quality of life and job satisfaction among 100 nurses in Mangalore (21). After consulting with the statistics department, an estimated sample size of 100 was selected. However, six nurses did not complete the required questionnaires. Therefore, the remained 94 participants who had completed all the questionnaires were included in this study. Data were collected from July 2014 to December 2014. The study was approved by The Ethics Committee of Tehran University of Medical Sciences.

Demographic Characteristics
Participants' demographic characteristics including age, gender, marital status, satisfaction with financial status, work environment and interpersonal relationships were asked directly and recorded in designed forms.

Assessment of Depression, Anxiety and Stress
Depression, anxiety, stress scale-21 (DASS-21) which is a validated questionnaire (18, 19) was used to obtain the relevant scores on the extent of depression, anxiety and stress. The validation of the Persian version of this instrument showed acceptable internal consistency (22, 23). It has been demonstrated that this questionnaire has admissible reliability in both clinical and non-clinical samples in all the three dimensions (19, 24). The Dass-21 consists of 21 items, which evaluates depression, anxiety and stress. The items related to depression assessment deal with dysphoric mood (e.g., sadness or worthlessness); items related to anxiety evaluation includes items that are primarily related to symptoms of physical arousal, panic attacks, and fear (e.g., trembling or faintness); and items which are designed to measure stress are associated with existence of symptoms such as tension, irritability, and a tendency to overreact to stressful events (25).

Assessment of Satisfaction with Life

Satisfaction with life was measured with Satisfaction with Life Scale (SWLS), which was developed by Diener et al. (26). This instrument is the most popular scale for measuring SWL (27). SWLS is a suitable instrument with acceptable reliability to measure satisfaction with life among different populations (28-31). It has been demonstrated that SWLS has Chronbach's alpha internal consistency of 0.87, and test-retest correlation of 0.82. This scale contains five items and respondents are asked to answer each item on a 7-point Likert scale (from 1= strongly disagree to 7 = strongly agree). These items are as follows: "In most ways my life is close to my ideal"; "The conditions of my life are excellent"; "I am satisfied with my life"; "So far I have gotten the important things I want in my life"; and "If I could live my life over, I would change almost nothing" (31). The Persian version of this instrument is also valid and reliable (32). Bayani et al. (32) measured the reliability of the Persian version of SWLS, and the outcomes showed that this version of SWLS has the Cronbach's alpha of 0.83 and the test-retest reliability of 0.69.

Statistical Analysis

All statistical analyses were performed using SPSS software version 21 (IBM Corporation, USA). Categorical variables were described by numbers and percentages, whereas mean± standard deviation was used to describe continuous variables. Chi-square test was used to compare categorical variables. T-test and one-way analysis of variance (ANOVA) was used to compare the mean scores between groups. Pearson correlation analysis was used to assess the relationship between continuous variables. $P < 0.05$ was considered statistically significant.

Results

Ninety-four nurses (n: 65, 69.1%) women and 29 (30.9%) men) participated in this study. Thirty- four (36.2%) participants were recruited from Imam Khomeini Hospital, 35 (37.2%) from Children's' Medical Center and 25 (26.6%) from Shariati Hospital. The majority of the participants were married (n: 49, 52.1%). Most participants were relatively satisfied with their financial power (60.6%). On the other hand, dissatisfaction with work environment was commonly observed among Iranian employed nurses (53.2%). Table 1 demonstrates the baseline characteristics of the participants.

Prevalence of obtained scores of DASS-21 has been illustrated in Table 2. With respect to depression, most participants had normal mood (n: 73, 77.7%). No case of very severe depression was detected and severe depression was only found in one participant. Similarly, most nurses had a normal level of stress (91.5%). Mild, moderate and severe anxiety was

detected in 8.5%, 12.8% and 3.2% of the participants. A very severe anxiety was detected only in one nurse (Table 3).

Score of SWLS showed extreme dissatisfaction among 14 (14.9%) nurses. Only 15 (16.0%) participants had average score of SWLS. Dissatisfaction with life (SWLS: 10-14) was the most common observed scale of SWLS (n: 28, 29.8%) and the second prevalent scale of SWLS was slightly below average (n: 26, 27.7%). Eight participants (8.5%) obtained the high score of SWLS and three nurses (3.2%) reached the definition as highly satisfied. The mean obtained score of SWLS was 16.36± 6.40 (range: 5-32).

Marital status was not related to severity of depression, anxiety and stress (P: 0.39, 0.38 and 0.80, respectively).

Similarly, no association was found between marital status and SWLS (0.61). However, female gender was correlated to more severe depression and stress (P: 0.010 and 0.013, respectively). Nonetheless, gender was not related to anxiety severity (P: 0.09). Satisfactions with financial power and work environment were associated with higher scores of SWLS (P: 0.030 and 0.042, respectively), but such correlation was not detected between SWLS and satisfaction with interpersonal relationships (P: 0.92). Table 4 demonstrates the effect of baseline characteristics on the severity of depression, anxiety, stress and subsequently satisfaction with life.

Depression scale was significantly related to scores of anxiety and stress (P<0.0001, r = 0.75 and P<0.0001, r = 0.76, respectively). Similarly, there was a significant relationship between anxiety and stress (P<0.0001, r = 0.69). As expected, depression, anxiety and stress were in close association with each other as they are all related to negative affectivity. More severe depression was related to lower scores of SWLS (P: 0.001, r = -0.32). Similar outcomes were detected between anxiety and stress scales, and SWLS (P: 0.023, r = -0.23 and P: 0.008, r = -0.27 for anxiety and stress, respectively).

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Depression scale was significantly related to scores of anxiety and stress (P<0.0001, r = 0.75 and P<0.0001, r = 0.76, respectively).

Table1. Baseline Characteristics of Iranian Employed Nurses from Three Teaching Hospitals

Category		Frequency (percentage)
Gender	Male	29 (30.9)
	Female	65 (69.1)
Marital status	Single	40 (42.6)
	Married	49 (52.1)
	Divorced	4 (4.3)
	Widow/ widower	1 (1.1)
Financial satisfaction	Totally satisfied	13 (13.8)
	Relatively satisfied	57 (60.6)
	Dissatisfied	24 (25.5)
Satisfaction with work environment	Totally satisfied	4 (4.3)
	Relatively satisfied	40 (42.6)
	Dissatisfied	50 (53.2)
Satisfaction with interpersonal relationships	Totally satisfied	21 (22.3)
	Relatively satisfied	65 (69.1)
	Dissatisfied	8 (8.5)

Table2. Obtained Scores of Depression, Anxiety and Stress Scale (DASS-21) among Iranian Employed Nurses Data are Presented as Frequency (Percentage)

Category	Question	0	1	2	3
Depression	Q3 Couldn't experience positive	52 (55.3)	22 (23.4)	17 (18.1)	3 (3.2)
	Q5 Couldn't get going	37 (39.4)	24 (25.5)	27 (28.7)	6 (6.4)
	Q10 Nothing to look forward	59 (62.8)	14 (14.9)	11 (11.7)	10 (10.6)
	Q13 Sad and depressed	48 (51.1)	20 (21.3)	21 (22.3)	5 (5.3)
	Q16 Lost interest in everything	42 (44.7)	23 (24.5)	22 (23.4)	7 (7.4)
	Q17 Not worth much as person	63 (67.0)	14 (14.9)	12 (12.8)	5 (5.3)
	Q21 Life not worthwhile	61 (64.9)	12 (12.8)	15 (16.0)	6 (6.4)
Anxiety	Q2 Dryness of mouth	44 (46.8)	18 (19.1)	22 (23.4)	10 (10.6)
	Q4 Breathing difficulty	69 (73.4)	12 (12.8)	11 (11.7)	2 (2.1)
	Q7 Shakiness	53 (56.4)	20 (21.3)	19 (20.2)	2 (2.1)
	Q9 Situations made anxious	45 (47.9)	26 (27.7)	20 (21.3)	3 (3.2)
	Q15 Feeling faint	61 (64.9)	17 (18.1)	10 (10.6)	6 (6.4)
	Q19 Perspired noticeably	63 (67.0)	7 (7.4)	18 (19.1)	6 (6.4)
	Q20 Scared for no good reason	63 (67.0)	7 (7.4)	18 (19.1)	6 (6.4)
Stress	Q1 Upset by trivial things	24 (25.5)	30 (31.9)	35 (37.2)	5 (5.3)
	Q6 Overreact to situations	30 (31.9)	35 (37.2)	23 (24.5)	6 (6.4)
	Q8 Difficult to relax	18 (19.1)	23 (24.5)	32 (34.0)	21 (22.3)
	Q11 Upset easily	50 (53.2)	22 (23.4)	16 (17.0)	6 (6.4)
	Q12 Using nervous energy	48 (51.1)	25 (26.6)	17 (18.1)	4 (4.3)
	Q14 Impatient when delayed	34 (36.2)	32 (34.0)	18 (19.1)	10 (10.6)
	Q18 Touchy	24 (25.5)	33 (35.1)	22 (23.4)	15 (16.0)

0: Did not apply to me at all
1: Applied to me to some degree, or some of the time
2: Applied to me to a considerable degree, or a good part of time
3: Applied to me very much, or most of the time

Table3. Prevalence of Various Severities of Depression, Stress and Anxiety among Participants

Scale	Mean (SD)	Severity				
		Normal	Mild	Moderate	Severe	Extremely Severe
Depression	5.37 (5.1)	73 (77.7%)	12 (12.8%)	8 (8.5%)	1 (1.1%)	0 (0.0%)
Stress	7.73 (5.0)	86 (91.5%)	5 (5.3%)	3 (3.2%)	0 (0.0%)	0 (0.0%)
Anxiety	4.90 (4.7)	70 (74.5%)	8 (8.5%)	12 (12.1%)	3 (3.2%)	1 (1.1%)

SD: Standard Deviation

Table4. The Association between Demographic Characteristics of Employed Nurses and Scores of Depression, Anxiety, Stress and Satisfaction with Life Scale

Baseline Characteristics	Depression*	Anxiety*	Stress*	Satisfaction with life*
Age	0.71	0.51	0.85	0.19
Gender	0.010#	0.09	0.013#	0.41
Marital Status	0.39	0.38	0.80	0.61
Financial satisfaction	0.79	0.97	0.83	0.030β
Satisfaction with work environment	0.21	0.24	0.026^	0.042β
Satisfaction with interpersonal relationships	0.31	0.50	0.018α	0.92

*P-values stand for comparison of means between demographic groups either with T test or One-way Analysis of Variance (ANOVA)
\# Depression and Stress were more severe among women
^ More severe stress by dissatisfaction with work environment
α More severe stress by relative dissatisfaction with interpersonal relationships.
β Satisfaction with financial power and work environment was associated with higher scores in satisfaction with life scale.

Similarly, there was a significant relationship between anxiety and stress (P<0.0001, r = 0.69). As expected, depression, anxiety and stress were in close association with each other as they are all related to negative affectivity. More severe depression was related to lower scores of SWLS (P: 0.001, r = -0.32). Similar outcomes were detected between anxiety and stress scales, and SWLS (P: 0.023, r = -0.23 and P: 0.008, r = -0.27 for anxiety and stress, respectively).

Discussion

The determinants of satisfaction with life are poorly categorized among Iranian nurses. This study revealed that age, gender, marital status and satisfaction with interpersonal relationships are not significantly associated with satisfaction with life. On the other hand, poor satisfaction with financial status and work environment, depression, anxiety and stress were the major determinants of satisfaction with life.

Our results showed that a noticeable proportion of Iranian employed nurses are either dissatisfied or extremely dissatisfied with life (45%). This high prevalence of dissatisfaction with life requires emergent attention and implementation of improvement strategies. Previously, Kobau et al. reported that almost one-third of the general population in the U.S. is dissatisfied with life (33). However, in this study, we detected a much higher dissatisfaction rate among Iranian nurses. Furthermore, Kobau et al. (33) Also showed that those people who were not currently married were

experiencing higher dissatisfaction, whereas our study found no effect of marital status on SWLS scores. One reason for this discrepancy is the difference among the study populations because our study included employed nurses who are known to deal with high burden of stressful workload. It seems that the positive effect of 'being married', which was demonstrated by Kobaue et al., can be camouflaged among people dealing with stressful jobs.

Previous studies have demonstrated poorer satisfaction of life in midlife ages (34-36) which is not consistent with our results. According to our outcomes, no significant influence of age on satisfaction with life could be detected which is mainly due to relatively similar age range of the participants. In the general population, middle age adults are known to deal with job roles, family roles, and caregiving for children; moreover, an increased risk of depression and suicide has been found in this age group (37, 38). However, it seems that the role of age is insignificant as a determinant of life satisfaction in Iranian nurses with relatively comparable job characteristics and a similar age range.

Depression was found to be a major determinant of satisfaction with life among Iranian nurses. Similar results have been reported among medical students by Samaranayake & Fernando (39). Samaranayake et al. reported a negative association between SWLS scores and depression (40), which is in line with our study. These evidences, including our findings, suggest that

depression is a major factor affecting satisfaction with life.

Higher rate of depression was detected among female nurses, signifying the role of gender in determining SWL. Similar to our results, Samaranayake & Fernando (39) showed that female students were more vulnerable to depression compared to males. Moreover, higher rate of stress was observed among Iranian female nurses, which indicate gender difference on stress level. In line with our results, higher burden of work stress has been demonstrated in previous studies (41, 42).

Previously, Diener et al. (2) showed that financial status was a stronger correlate of life satisfaction in poorer countries. In line with the findings of Diener et al. (2), a positive association was observed between financial satisfaction and SWL in Iranian nurses in our study. Furthermore, satisfaction with work environment was a significant determinant of SWL. Consistent with our results, Demerouti et al. (20) showed that job demands have a strong effect on exhaustion, which may contribute to burnout between the working conditions and life satisfaction among nurses.

Samaranayake et al. (40) found a negative correlation between SWLS scores and anxiety, which is consistent with our results. In conclusion, anxiety and depression are associated with poorer satisfaction with life. The close relationship between anxiety and depression has also been observed in our study, which is due to the contribution of these two factors in the construct of negative affectivity. Our study, in line with previous investigations (39, 40), confirms that depression and anxiety are determinants of SWL.

Limitations

Satisfaction with life is a complex construct, which is affected by various factors. In this study, some of the demographic and personal variables had been taken into consideration. However, many environmental factors including social support, which have the potential to affect life satisfaction, were not assessed. It is recommended that future studies evaluate the social determinants of satisfaction with life in Iranian nurses.

Conclusion

In this study, the major determinants of satisfaction with life (SWL) were identified among Iranian nurses. This study found that age, marital status and satisfaction with interpersonal relationships were not significantly associated with SWL, whereas poor satisfaction with financial status and work environment, depression, anxiety and stress were the major determinants of SWL. Although females were more vulnerable to depression and stress, the overall effect of gender on SWL was insignificant. To our knowledge, this was the first study to identify the determinants of satisfaction with life in nurses in Tehran. In addition, this study was the first to illustrate

that depression, anxiety, stress, dissatisfaction with financial status and work environment are the major determinants of satisfaction with life among Iranian nurses.

Conflict of interest

None to be declared

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