

Health-related quality of life of nurses in university hospitals in Morocco: Cross-Sectional Observational Study

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Abstract

This study aimed to measure the health-related quality of life of nurses in university hospitals in Morocco. A cross-sectional study was conducted among 223 nurses at the largest university hospital center in Morocco. All nurses who have practiced at the bedside and have at least one year of work are included. A set of socio-demographic, professional and health characteristics were collected. Quality of life was assessed with the Medical Outcomes Study Short Form-12. Descriptive statistics, univariate and multivariate analyzes were performed to analyze the data. The total score for physical health is 43.5 ± 7.4 , and the total score for mental health is 39.60 ± 8.20 . Of the four physical health subscales, the physical pain score is the lowest. The emotional role score is lowest compared to the four mental health subscales. In multivariate analyzes, the variables age, a number of years of practice, and suffering from a chronic disease are significantly associated with physical health. Intention to leave the hospital is significantly related to both physical and mental health. No study has explored the quality of life of nurses in university hospitals in Morocco. The quality of life of nurses in university hospitals both physical and mental is below average. The more the quality of life is degraded, the higher the intention to leave the profession, hence the importance of paying great attention to the question of the quality of life of healthcare personnel. The implementation of strategies to strengthen the environment and the working conditions of professionals is Paramount.

Keywords: Quality of life, Study Short Form-SF12, physical health, mental health, nurses, health professionals.

INTRODUCTION

The societal evolution, the development of psychology and the great change in the relationship between caregiver and patient have allowed the emergence of other subjective concepts to measure the state of health of patients, previously limited to biological measures, morbidity, and mortality. Among these subjective concepts, the quality of life is preponderant, defined by the world health

organizationas "the perception that an individual has of his place in existence, in the context of the culture and the system of values in which he lives, in relation to his goals, expectations, norms and concerns" Quoted by El Emrani, Senhaji and Bendriss, 2016.

In addition to its subjectivity, the concept of quality of life is multidimensional. This multidimensionality stems from the

consideration of a wide range of elements, including physical, functional, emotional and social well-being (Curtis et al., 1997). In the health field, these four dimensions are generally the main ones validated by the available factor analyses and studies with a compilation of health scales (Cella, 2007).

The majority of empirical studies conducted have focused on measuring the impact of diseases on the quality of life of patients (L. Chang, 2004; J, 2006; Wändell, 2005). However, Aware of the importance of the concept of quality of life for the effectiveness of organization of care, Western countries have focused in recent years on research exploring the quality of life of care professionals (Chen et al., 2010; Tountas et al., 2007).

In Morocco, the research carried out generally targets the concept of burnout among nurses, the concept of quality of life which includes in addition to the psychic dimension the physical, social and emotional dimensions has not been the subject of empirical studies even in university hospitals recognized by an excessive workload and significant professional and organizational demands, knowing that the satisfaction of patients' needs is determined by the physical, emotional and mental capacities of the nurse required by the nature and specificity of the nursing (Ohler et al., 2010). This study aimed to measure the health-related quality of life of nurses in Moroccan university hospitals using the SF12 questionnaire and to determine the association between the two quality of life scores and nurses' characteristics.

Study assumptions

This study aims to determine the relationship between the quality of life of nurses and socio-demographic, professional and health characteristics, indeed a set of hypotheses are proposed:

Hypothesis 1: The socio-demographic level of the nurse influences his quality of life. Studies report the lack of association between age and quality of life (Ioannou et al., 2015).

Hypothesis2: the professional characteristics of the nurse influence his quality of life. The

deterioration in the quality of life is common with the increase in professional length (Zaidi et al., 2020).

Hypothesis 3: the state of health of the nurse has an impact on the level of his quality of life. Some studies report a negative association between suffering from an illness and quality of life (Cella, 2007; J, 2006).

Methods

Design, Setting Of the Study

This was a cross-sectional observational study, with prospective data collection from nurses at Morocco's largest university hospital between January and December 2019. It is a public administrative establishment endowed with legal and moral personality and financial autonomy. Composed of 10 Hospitals, with a functional bedding capacity of 2347 beds and a human capital of 6536 including 2654 nurses, the center contributes to the implementation of the State's policy in terms of tertiary level care, public health, medical training, dentistry, pharmaceuticals as well as in terms of research, expertise, and innovation.

Sample

All nurses who practiced at the bedside and at least one year were included. Excluded from this study: 1) Head nurses or nurses who are involved in administrative activities within the care unit, as they are more responsible for management and organizational activities than for patient care. 2) Nurses of the technical profile, namely: statistical technician, radiology technician, laboratory technician, pharmacy technician. Since the nature of their services does not allow them to be permanently at the patient bedside, to feel the workload and the emotional and physical burden generated by the demands and suffering of patients. 3) nurses refusing to give consent.

We distributed 340 questionnaires knowing that the target population of our study is of the order of 2354 nurses. We were able to retrieve 238 questionnaires.

The questionnaire was distributed to participants; accompanied by an information sheet detailing the study protocol, participants were encouraged to ask questions related to the study and any information concerning them was kept anonymous and confidential. Written informed consent was obtained from all participants with their participation. After collecting the questionnaires, The Statistical Package for Social Sciences (SPSS) version 25 (IBM CORP, armork, USA) was used to analyze the data.

Patient and Public Involvement

The participants were not involved in the design, or conduct, or reporting, or dissemination plans of our research. There is no plan to disseminate the research findings to the participants.

Measures

For each nurse, the following characteristics were recorded:

Socio-Demographic Characteristics: included age, sex (male, female), marital status (Unmarried, Married), number of children and level of education (bachelor's, bachelor's / masters)

Professional Characteristics: included the nursing specialty (Resuscitation anesthesia nurse, Mental health nurse, Physiotherapist / Speech therapist, Sage-femme, Multipurpose nurse), years of practice, intention to leave the exercise at the hospital center (yes or no) and the type of schedule (Normal weekly activities, Weekly on-call activities)

Health Characteristics: included suffering from a chronic illness (yes or no), duration of illness per year, the number of medical certificates filed in the past 6 months.

Quality Of Life Measurement Instrument:

The SF-12 is a widely used instrument for assessing quality of life. The SF-12 is derived from the SF-36 and contains only 12 items. These items are categorized into two domains, a physical and a mental domain, both including six items (Ware et al., 1996); the scores of the

quality of life domains range from 0 to 100, with higher scores referring to higher quality of life. Several studies have reported the good psychometric properties of the SF-12 in different age groups, including older persons, and a variety of countries. In the current study, the Cronbach's alpha was 0.86 and 0.79 for the physical and the mental domain of the SF-12, respectively

A Moroccan Arabic version of the SF-12 exists and is considered to be a valid tool with which we can assess the health status of the general Moroccan population (Obtel et al., 2013).

Statistical Analysis

Data are presented as mean \pm standard deviation (SD) for continuous variables with normal distribution, and as median with interquartile range for variables with skewed distribution. Categorical variables are expressed in frequency and percentage.

To study the relationships between the different dependent and independent variables, we first used univariate analysis, each score of the quality of life (score of the physical quality of life and the score of the mental quality of life) was analyzed according to each characteristic of the participants (socio-demographic, professional and health). Second, a multivariate analysis was performed including the variables for which the univariate analyzes appeared significant or producing a value $p \leq 0.05$. It analyzes are carried out on the SPSS software. For all p -values ≤ 0.05 are considered statistically significant.

RESULTS

Description of nurse' characteristics

Of the 238 questionnaires, 223 (93.6%) were processed, fifteen questionnaires (6.3%) were rejected because they were incomplete. Among the 223 nurses, 70% of whom are female, with the mean age of the participants being 34 years. 61,8% are married, 66% of the nurses participating in the study have a university level of study.

Among the participants, one hundred and thirty-five are versatile nurses, twenty-nine are midwives, the rest are anesthesia-intensive care nurses, mental health nurses, speech therapists and physiotherapists. Weekly on-call activities are carried out by 51% of participants, 70% have less than ten years of service while 16% have more than 20 years of service.

The health-related characteristics of the participants reveal that 34% suffer from a chronic disease, the average duration of the disease is just over eight years and the average number of medical certificates filed by participants in the last six months is of 0.4. The table 1 details the characteristics of the sample of this study.

Table 1. *Socio-demographic, professional and health variables of the study population (M ± SD). M: mean; SD: standard estimate*

	n	%	M	SD
<i>Socio-demographic variables</i>				
Age (per year)			34	10
Sex				
Male	68	31%		
Female	155	69%		
Marital status				
unmarried	85	38		
Married	138	62%		
Number of children			1,2	1,15
Type of accommodation				
Own accommodation	105	47%		
Accommodation rent	76	34%		
Accommodation with family	42	19%		
Level of study				
Bachelor's / Masters	147	66%		
Bachelor's	76	34%		
<i>Professional variables</i>				
Nursing Specialty				
Resuscitation anesthesia nurse	19	8,5%		
Mental health nurse	23	10,3%		
Physiotherapist / Speech therapist	18	8%		
Midwife	25	11%		
Multipurpose nurse	138	62%		
Schedule type				
Normal weekly activities	110	49%		
Weekly on-call activities	113	51%		
Type of custody				
Day Guard	22	18%		
Night Guard	16	13%		
Alternation between day and night duty	82	69%		
Intention to leave the hospital center				
Yes	99	45%		
No	124	55%		
Number of practice years			10,2	9,4
<i>Health variables</i>				
Chronic illness				
Yes	75	34%		
No	148	66%		
Duration of illness per year			8,3	6,2
Number of medical certificates (during the last 6 months)			0,4	0,8

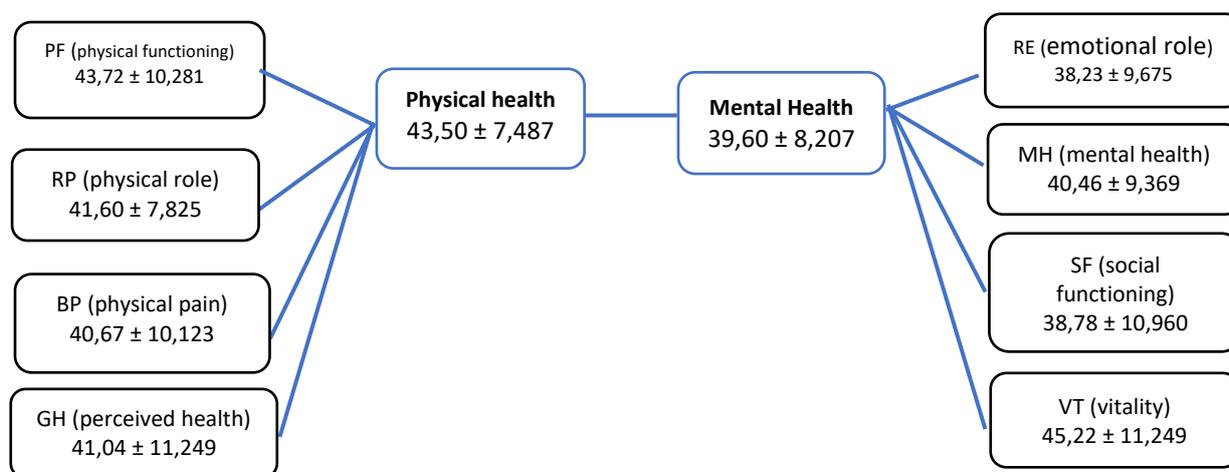
Description of the measuring instrument

The quality-of-life score of the nurses participating in the study is less than 50 in these two components: physical and mental.

The total score for physical health is 43.5 ± 7.4 , physical functioning has the highest score 43.72 ± 10.281 while the score for physical pain comes last 40.67 ± 10.12 , the perceived health with a score of 41.04 ± 11.24 and the physical role is 41.60 ± 7.825 .

Regarding the total score for mental quality of life, it is lower than the score for physical quality of life 39.60 ± 8.20 , the vitality score leads the mental health scores 45.22 ± 11.249 which remains below average while the emotional role is lowest 38.23 ± 9.675 . Social functioning is 38.78 ± 10.960 and mental health is 40.46 ± 9.36 . Figure 1 shows the description of the measuring instrument.

Figure 1. Description of the measuring instrument ($M \pm SD$)



M: mean; SD: standard estimate

Association between the two dimensions of quality of life and of nurses' characteristics

Univariate analysis

Regarding the physical quality of life, the variables associated with a poorer physical quality of life are Age ($\beta - 0.09$, 95% CI -0.19 to -0.003 ; $P = 0.04$), the number of 'Years of practice ($\beta - 0.16$, 95% CI 0.26 to -0.05 ; $P = 0.002$), Intention to leave the university hospital center ($\beta - 3.13$, 95% CI -5.07 to -1.19 ; $P = 0.002$), Suffering from chronic disease ($\beta - 3.89$, 95% CI -5.91 to -1.88 ; $P = 0.000$). The Level of Study (Bachelor / Master) ($\beta 3.01$, 95% CI 0.98 to 5.05 ; $P = 0.004$) is associated with a good quality of life.

Regarding the mental quality of life, the variables associated with a poorer mental quality of life are the intention to leave the university hospital ($\beta - 2.90$, 95% CI -5.04 to -0.77 ; $P = 0.008$). The Specialty (Mental health nurse, Physiotherapist / Speech therapist Midwife) is associated with a good mental quality of life, respectively ($\beta 4.33$, 95% CI 0.79 to 7.87 ; $P = 0.01$); ($\beta 3.80$, 95% CI -0.13 to 3.57 ; $P = 0.05$). Also, night watch work is significantly and positively linked to good mental health ($\beta 5.19$, 95% CI 1.05 to 9.33 ; $P = 0.01$). Univariate analysis of the socio-demographic, professional and health characteristics of nurses to quality of life was summarized in table 2.

Table 2. Univariate analysis of the socio-demographic, professional and health characteristics of nurses, to quality of life

	Physical health			Mental Health		
	β	95% CI	P	β	95% CI	P
Socio-demographic variables						
Age (per year)	-0,09	-0,19; -0,003	0,04	0,01	-0,09 ;0 ,12	0,79
Sex						
Male	0,54	-1,58; 2,67	0,61	0,18	-2,15; 2,51	0,88
Female	Ref			Ref		
Marital status						
Unmarried	1,67	-0,34; 3,69	0,10	0,91	-1,31; 3,13	0 ,42
Married	Ref			Ref		
Number of children	0,18	-0,88; 1,25	0,73	-0,25	-1,43 ;0 ,92	0,66
Type of accommodation						
Own accommodation	0,09	-2,80; 0,99	0,94	-0,37	-3,35 ;2,60	0,80
Accommodation rent	-1,84	-4,68 ;0 ,99	0,20	-0,85	-3,98 ;2,28	0,59
Accommodation with family	Ref			Ref		
Level of study						
Bachelor's / Masters	3,01	0,98; 5,05	0,004	0,85	-1,41; 3,12	0,45
Bachelor's	Ref			Ref		
Professional variables						
Nursing Specialty						
Resuscitation anesthesia nurse	1,54	-2,01; 5,10	0,39	0,26	-3,58; 4,10	0,89
Mental health nurse	1,10	-2,17; 4,37	0,51	4,33	0,79; 7,87	0,01
Physiotherapist / Speech therapist	2,91	-0,73; 6,55	0,11	3,80	-0,13; 3,57	0,05
Midwife	-0,26	-3,42; 2,90	0,87	-1,16	-4,57; 2,25	0,50
Multipurpose nurse	Ref			Ref		
Number of practice years	-0,16	-0,26; -0,05	0,002	-0,01	-0,12; 0,10	0,81
Schedule type						
Normal weekly activities	-0,28	-2,25; 1,68	0,77	-0,32	-2,48; 1,83	0,76
Weekly on-call activities	Ref			Ref		
Type of custody						
Day Guard	-1,09	-4,38 ;2,19	0,51	2,18	-1,45 ;5,82	0,24
Night guard	-0,63	-4,38 ;3,11	0,73	5,19	1,05 ;9,33	0,01
Alternation between day and night duty	Ref			Ref		
Intention to leave the hospital center						
Yes	-3,13	-5,07; -1,19	0,002	-2,90	-5,04; -0,77	0,008
No	Ref			Ref		
Health variables						
Chronic illness						
Yes	-3,89	-5,91; -1,88	0,00	-0,48	-2,76; 1,79	0,67
No	Ref			Ref		
Duration of illness per year	-0,13	-0,50; 0,22	0,46	0,35	-0,04 ;0 ,75	0,07
Number of medical certificates (during the last 6 months)	-0,59	-1,78; 0,60	0,33	-1,10	-2,41; 0,20	0 ,09
Physical health	=====	=====	=====	-0,15	-0,29; -0,008	0,03
Mental Health	-0,12	-0,24; -0,006	0,03	=====	=====	=====

Multiple analysis

After adjusting for multiple confounding variables, the independent variables were associated to the physical quality of life; Age (β 0,25; 95% CI 0,01to 0,49;P =0,03),Number of Years of practice (β -0,31;95% CI -0,57 to -0.04; P = 0.02), Suffering from chronic disease

(β -2,87, 95% CI -4,96 to -0,78; P = 0.007).The intention to leave the university hospital is significantly linked to both physical quality of life (β -2.2; 95% CI -4.14 to -0.30; P = 0.02) and mental quality of life (β - 2.89; 95% CI - 5.10to -0.67; P = 0.01).No variable among the rest affects the mental quality of life in the

multivariate analysis. The result of the analysis on multiple variables related to the quality of

life was summarized in Table 3.

Table 3. *Multiple analysis adjusting for variables affecting related to the quality of life*

	Physical health			Mental Health		
	β	95% CI	P	β	95% CI	P
Socio-demographic variables						
<i>Age (per year)</i>	0,25	0,01;0,49	0,03	0,16	-0,11 ;0,44	0,24
<i>Level of study</i>						
<i>Bachelor's / Masters</i>	1,945	-0,023; 4,12	0,08	0,41	-2,10 ;2,92	0,74
<i>Bachelor's</i>	Ref			Ref		
Professional variables						
<i>Number of practice years</i>	-0,31	-0,57; -0,04	0,02	-0,14	-0,45 ;0,16	0,35
<i>Intention to leave the hospital center</i>						
<i>Yes</i>	-2,2	-4,14; -0,30	0,02	-2,89	-5,10; -0,67	0,01
<i>No</i>	Ref			Ref		
Health variables						
<i>Chronic illness</i>						
<i>Yes</i>	-2,87	-4,96; -0,78	0,007	-0,15	-2,56;2,25	0,90
<i>No</i>	Ref			Ref		

Discussion

Our work is the first to explore the quality of life of nursing staff at the level of university hospitals at the national level. The objective of this study is to measure the quality of life of nursing staff, to respond to research hypotheses on the type of relationship between quality and socio-demographic, professional and health characteristics. In general, the quality of life of our study population is very low below average in these two psychological and physical components.

Scores related to physical health vary between the score (40.67 ± 10.12) for physical pain and (43.72 ± 10.28) for physical functioning. These results clearly illustrate a deplorable physical quality of life among nurses in our study population.

Regarding mental health, the finding is more alarming at the level of its four dimensions, and more particularly the emotional role (38.23 ± 9.67) and social functioning (38.78 ± 10.960). The exploration of studies carried out in other countries shows a huge disparity (Guler & Kuzu, 2009; Ioannou et al., 2015; Konstantinou et al., 2018; Silva et al., 2010) , the scores observed in our study population are lower. This finding can be justified by the very high psychological demand, insufficient decision-making latitude and weak social support faced

by healthcare staff in Morocco (O Laraqui et al., 2008) , according to Karasek's model, the support of colleagues and superiors was a major factor balance within an organization, an essential pillar to achieve its objectives, hence the importance of strengthening this social support in any approach to improving the quality of life at work (Tripodi et al., 2007) . Also, musculoskeletal disorders are among the first-line health problems complained of by caregivers in Morocco, particularly cervical and back spine pain as reported by (Omar Laraqui et al., 2017). These disorders have an impact on the ability to work and on quality. of nurses' lives, an additional anatomical site affected by musculoskeletal disorders, decreased the quality of life score by 2.5 points (Minh et al., 2019).

Based on the results of the multivariate analysis cited above, some of the assumptions made at the start of the study process are confirmed, mainly regarding the physical dimension of quality of life. The correlation between age and physical quality of life is significant and positive; which is in contrast with studies attesting to the absence of association between the age and the physical quality of life of nurses (Augusto Landa et al., 2008; Ioannou et al., 2015; Konstantinou et al., 2018) , while other studies confirm a negative correlation (E. M. L. Chang et al., 2007; Lambert et al., 2007).

Mental health is not associated with the age variable, thus strengthening studies (Augusto Landa et al., 2008; Ioannou et al., 2015; Konstantinou et al., 2018) and does not support others that attest a positive correlation (E. M. L. Chang et al., 2007; Lambert et al., 2007).

Professional characteristics, in particular length of service in the exercise of the profession, has a negative and significant influence on the physical quality of life of the population in our study, which is consistent with the results of the study specifying that the score for physical quality appeared to be better in the group of nurses with less than 10 years of work tenure compared to the group of nurses with more than 10 years of work with lower scores (Rassas et al., 2018).

The state of health has an influence, in fact suffering from chronic illness has a significant and negative impact on the physical quality of life of nurses at the University Hospital Center. Research studies exploring the quality of life of patients with chronic diseases such as inflammatory bowel disease and diabetes confirm this correlation (Blondel-Kucharski et al., 2001; Hossini et al., 2020; Irvine, 2004). Chronic whatever, decreases the quality of life, it weakens the capacities for social and professional integration as a consequence of the decrease in the capacity to work and the physical and psychological difficulties that it generates (Avril, 2010).

What is remarkable about our study, that it took its analysis further and found other surprising correlations; the intention to leave the hospital center is associated significantly and negatively with the quality of life in these two components, physical as psychic. Nurses who perceive their quality of life to be degraded have more desire to quit their profession. Nurses who are often or always tired are almost three times more likely to quit their profession than those who never are or sometimes, Musculoskeletal disorders double the intention to quit nursing and a personal diagnosis of mental health disorders the most. triples while a medical diagnosis quadruple it (Jasseron et al., 2006).

Conclusions

Our study clearly showed the significant deterioration in the quality of life of nurses at University Hospital Center, both physical and mental. It is concomitant with an increase in professional length and the development of a chronic disease. The more the quality of life, whether physical or mental, is degraded, the higher the intention to leave the profession. These results seem interesting and original to us since there are no empirical studies testing such a relationship in Moroccan third-level hospitals, recognized by the excellence of their care offer which requires a high level of intellectual capacities. and physical, involving the physical and mental quality of life of caregivers if organizational and managerial measures are not taken into consideration. In this sense, our study enriched the literature in the field of quality of life and shed new experimental light on the influence of quality of life on the retention of health professionals.

Managerial involvement

Based on the results, great vigilance must be attributed to the issue of the quality of life of nursing staff, both by operational managers and strategists, to distinguish it as a potential lever on the personal, professional, and organizational level. To achieve this, strategies for strengthening the environment and working conditions for professionals are paramount through the development of ergonomics at work, specifically physical ergonomics, Consolidation of occupational medicine, as well as the establishment of a listening system offering psychological support and ensuring the detection of psychosocial risks, the development of nursing leadership and the anchoring of the policy and culture of recognition to the work of nursing staff and the implementation of tools and procedures guaranteeing a reconciliation between personal and professional life.

Limitations of the study

While this work represents a significant contribution to understanding the quality of life of health professionals, it is not without limits. Recognized limits to quantitative work, carrying out a qualitative study, even an exploratory one, is interesting to better understand the effect of the variables. A comparison of the relationships observed with the discourse of the participants themselves would allow these results to be deepened. Also, the subjectivity of the responses can be cited as a limitation of the present study. Scientific studies targeting the working conditions of nurses are essential to further identify the issue of the quality of life of nurses and put in place action plans adapted to real needs.

Knowing that excellence in care is the raison of the nursing profession and reflects the importance given to human life, this observation invites us to encourage other scientific research hypotheses targeting the relationship between quality of life and the quality of care provided by nurses.

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