Quality of life among healthcare workers: A multicentre cross-sectional study in Italy.

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The quality of life in the healthcare professionals: a multicenter study in Italy

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Abstract

Background

The study aims to evaluate the quality of life in healthcare professional, physicians, nurses and prevention technicians for health safety at workplaces and environment's safeguard.

Methods

A cross sectional study was carried out in a population of health professionals in ten Italian Regions, to evaluate the health-perceived status related to their role.

Health status of participants was assessed using the Italian version of the SF-36 questionnaire. Differences for quantitative variables between groups were tested using T-test and ANOVA. A multiple linear regression was performed to assess the influence on the SF-36 scales of the variables age, gender, role, socializing time, working time, years spent in the health care system and in the specific department.

Results

Sample was comprised of 324 healthcare workers (57.1% women, mean age 39.04±10.15), of which 52.6% was medical doctors, 36.8% nurses, 10.5% prevention technicians.

Differences in Mental Health score was positively associated with the amount of socializing time. Workers with a job career longer than 15 years achieved a General Health score lower than those spending less time.

The multivariate analysis showed that increasing age is positively associated with Role Emotional level (β= 0.243; p=0.002), while an inverse relationship appears for General Health (β=- 0.218; p=0.007) and Physical Function (β=- 0.246; p=0.001). For the roles, nurses seem to experience lower values of Bodily Pain (β=- 0.214; p<0.001), Social Function(β=- 0.242; p=0.001), Role Emotional (β=- 0.211; p=0.006) scores if compared with physicians. By comparing the mean scores of the sample with the Italian general population, the healthcare workers achieved higher values of General

Health, Physical Function, Role Physical, Bodily Pain and Mental Health while lower ones resulted for Vitality, Social Function and Role Emotional.

Conclusions

Healthcare professionals have different Health related quality of life results. In particular, nurses is a professional category with low levels of quality of life. These results can be taken into account in order to recognize the roles and the attitudes that could mainly causes frustration, dissatisfaction and emotional stress in the healthcare professionals.

Background

What is currently defined as the Quality of Life (QoL) in bio-medical issues corresponds in reality to what the English authors call "Health Related Quality of Life" and concerns to those aspects of quality of life that are related to disease and health and therefore "adjusted" by the medicine [1].

The concept of Quality of Life requires to add to the biomedical factors other factors such as:

- Individual factors

- Environmental factors

- Economical factors

The perception of health and quality of life in patients has been an interesting target of intensive investigation in recent years, but for the healthcare personnel the literature focusing on their quality of life in Italy is scarce, except for some specific items, and these issues need to be better appreciated. It is important to understand healthcare personnel's characteristics and explore the relationship of their level of burden with quality-of-life parameters and psychosocial aspects of their job. This will optimize the use of support and interventional measures and help to reduce negative effects on their lives. Minimizing the burden on healthcare personnel will possibly improve the quality of life and medical outcomes of their patients and the relationships with their private life.

There is evidence of elevated rates of psychological stress and stress related disorder do exist among hospital staff [2].

For example, Burnout syndrome (BOS) was identified in the early 1970s in human service professionals, most notably healthcare workers. Burnout syndrome has been described as an inability to cope with emotional stress at work or as excessive use of energy and resources leading to feelings of failure and exhaustion. Although depression affects nearly every aspect of the person's life, symptoms of burnout occur only at work. Wide variations in the prevalence of Burnout in health care professionals have been reported across specialties, both in doctors and in nurses. Workplace climate and workload were determinants of Burnout syndrome [3-6].

Concerning the possible predictors of burnout, Shanafelt et al. reported that physicians who spent less than 20% of time working on the most meaningful activities had a higher risk of burnout syndrome [7].

Hospitals and health prevention unit are characterized by a high level of work-related stress, a factor known to increase the risk of low quality of life [8-11].

So, the working lives of physicians and nurse are often characterized by a high level of work-related stress: tiredness, high turnover, night shift, workload and stressful work environments like intensive care units, severity of illness and conflicts with co-workers or with patients [12].

The workload of Intensive Care Unit physicians, as an example, is physically demanding, allows limited rest and is associated with sleep deprivation and objective markers of physiologic stress (ketonuria, arrhythmia or heart rate abnormalities)[13], that may causes rebounds in their private and social life.

Also the prevention technicians are exposed to high level of stress. They have the civil and legal liability of their role, their workload is often related to the needs of the health service surveillance and they have to guarantee the availability in their activities, so they often have no spare time for the human relationships, except that with their colleagues.

The work environment and psychosocial factors have been considered largely responsible for the health problems observed in hospital's staff.

Psychosocial aspects refer to the interaction between work environment, content and conditions and worker capacity, needs, culture, extra-work personal elements, which may, according to perception and experience, influence health, satisfaction, and work performance [14-16].

The aim of this study was to evaluate the health-perceived status of healthcare professionals, in particular of :

— medical doctors;

— nurses;

— prevention technicians for health safety at workplaces and environment's safeguard.

Moreover, we wanted to compare the results from the above healthcare personnel with those from the general population.

Methods

Population and setting

A pilot cross sectional study was carried out, in a population of health professionals, in the following Italian Regions: Abruzzi, Calabria, Emilia Romagna, Lazio, Liguria, Lombardy, Marche, Sicily, Apulia and Tuscany. The selection of the participants was made recruiting healthcare personal, participating in courses of continual medical education in all the Regions described .

Concerning physicians and nurses, they are representative of the whole activity of the Italian's structures, working in a plurality of wards and contests in the regions that we chose in the Italian territory and for the prevention technicians we selected the staff of the whole activity of the Prevention's Department (safety and prevention at workplace, public health service, veterinary

service and food safety service) in the area of the central Italy, specifically Rome, the Province of Rome and the Province of Latina.

Quality of life measurement

The health status of participants was assessed using the Italian version of the Short-Form 36 item questionnaire. The crude estimates were transformed, using the procedure described by Apolone and Mosconi [17-20].

Statistical analysis

Descriptive analysis

The aim of this analysis was to describe quantitative and categorical variables means and standard deviations (SD) and frequencies were used, respectively.

Univariate and multivariate analysis

Differences between groups in the SF-36 scales were tested using T-test and ANOVA test. Moreover, the means of the variables (SF -36 Scores) of our sample were compared with the means of the Italian sample [21] using the T-test. Furthermore, we conducted a multivariate analysis using a linear regression in order to assess the influence on the SF-36 scales (as dependent variables) of the explanatory variables: age, gender, role, time of socializing in hours per week, time of working in hours per week, years spent in health system, years spent in the specific department. We selected variables that had a p-value<0.25 at univariate analysis, according with Hosmer and Lemeshow procedure [22].

The level of significance was set at p≤0.05. Statistical analysis was performed with SPSS 12.0 software for Windows.

Results

The sample was comprised of 324 healthcare workers. Of them, 57.1% (185) were women. The mean age of this sample was 39.04±10.15. The characteristics of the sample are showed in Table 1. 52.6 % (170) were medical doctors, 36.8% (119) were nurses and 10.5 % (34) were prevention technicians. The mean of years spent in the Health Care Service was 16.64±9.08.

At the univariate analysis women had Bodily Pain scores lower than men, and this result was statistically significant *(p=0.005)*.

We found differences for the outcome Mental Health that results to be positively associated with the amount of socializing time: in fact who spent more time in social activities seems to have a higher Mental Health score (*p*=0.009 at T- test). Moreover, health care workers with a job career longer than 15 years achieved a General Health score lower than those spending less working time in Health System (*p*=0.005).

Moreover, the healthcare workers spending in socializing activities more than 8 hours for week had a Mental Health score higher than others (p=0.009), while who worked more than 40 hours for week had a lower Vitality score (p=0.005).

All the other results of the univariate analysis are showed in Table 2 and 3.

As shown in Table 4, results of the multivariate analysis showed that increasing age results to be positively associated with Role Emotional level (β= 0.243; p=0.002), while an inverse relationship appears for General Health and Physical Function levels (β=-0.218; p=0.007 and β=-0.246; p=0.001, respectively).

Moreover, nurses seem to experience lower values of Bodily Pain (β=-0.214; p<0.001), Social Function (β=- 0.242; p=0.001) , Role Emotional (β=- 0.211; p=0.006) scores if compared with physicians.

As concerning gender, women achieved lower values of Vitality and Mental Health scores (β=-0.210; p=0.007 and β=- 0.168; p=0.046, respectively) than men do.

Additionally in Table 5 findings of comparing the mean scores of the study sample with the Italian general population [21] are reported: the healthcare workers achieved higher values with statistically significant differences for General Health (p=0.002), Physical Function (p<0.0001), Mental Health (p=0.042) while lower ones resulted for Vitality (p=0.019), Social Function (p<0.0001) and Role Emotional (p=0.015).

Discussion

To our knowledge, this is the first Italian study evaluating the quality of life in the healthcare staff and its perception among different categories of health care workers as physicians, nurses and technicians.

Even if a strong association between healthcare working and occupational stress has already been described by several Italian studies, how different categories of health care workers face the potential effect of healthcare working has not yet been fully explored [23-27].

By comparing the mean scores of the study sample with the Italian general population [21], the health care workers achieved higher values of General Health, Physical Function, Role Physical, Bodily Pain and Mental Health while lower ones resulted for Vitality, Social Function and Role Emotional.

Our findings show that health care workers have a more positive attitude towards their health status if compared with the general population, probably due to the type of daily activities closely

connected with physical suffering, pain and emotional distress. Additionally, our study puts in evidence that women seem to be more sensitive to health care work-related stress, probably because to their greater empathy respect to men.

Workers in the health systems are constantly called to handle feelings and "strong emotions", they bring to the workplace an emotional "baggage" that may undermine the professional skills and their lack of vitality , as our results show, in our opinion, was due to restrictions on their personal time because they spend many hours each day at workplace and to the sense of failure regarding their hopes and expectations at work. We suppose that it could be useful to act in two ways. On one hand, improving all those interventions targeted to training, that is an effective approach that delineates methods for revitalizing, reawakening the ideals of the health profession and increasing energy and enthusiasm for working. On the other hand, giving health care professionals the opportunity to benefit from interventions oriented to cope the sense of failure and the physical stress, for example an individual counselling or continued informal support. The improve of good relationships with colleagues and positive coping mechanisms could be good to prevention depression [28]. May be needed a review of the workload in our Health System, because high turnover, night shifts and workload seems, according with our questionnaires, so hard and tiring and that often causes rebounds in the private and social life [29].

Some limitations and strengths of this study should be reported.

First of all this study has some limitations related to the study design because we performed a cross-sectional study, but we supposed that SF- 36 is the best way to investigate these topics. For the strengths, we considered a sample distributed in different Italian regions, to acquire knowledge and data before missing regarding quality of life in different categories of health care professionals [30-32]. Moreover, to avoid confounding we performed the multivariate analysis so the results were adjusted for possible confounders.

Conclusions

This study put in evidence that the health care professionals have a different perception of quality of life, based on their different role. The nurses and the women seem to experience the worst results related to the emotional factors.

We showed like the health care workers have a better perception of life if compared with the general population, even if they are daily exposed to physical suffering, pain and emotional distress. It is important that as health professionals, we recognize the roles and the attitudes that could mainly causes frustration, dissatisfaction and emotional stress, to prevent the development of these symptoms in order to protect our colleagues and the people, patients or not, that we meet everyday in our job.

Competing interests

The Authors stated they have no conflict of interest.

Authors' contributions

FK administered questionnaires, participated in the design of the study and drafted the manuscript. MRG performed the statistical analysis and helped to draft the manuscript. AM performed the statistical analysis. GLT conceived of the study and designed the study and WR and AB carried out the coordination.

All authors read and approved the final manuscript.

Acknowledgements

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Table 1. Characteristics of the sample

Characteristics		Frequencies N (%)
Gender	M	133 (42.9)
	F	182 (57.1)
Role	Physicians	166 (52.6)
	Nurses	118 (36.8)
	Technicians	31 (10.5)
Age		Mean±SD
		39.04±10.15
Macro Regions	North -Central	105 (33.1)
	South- Central	212 (66.8)
Working time (hours)	≥ 40	185 (58.4)
	≤ 40	131 (41.4)
Socializing time per week (hours)	≥ 8	176 (55.6)
	≤ 8	140 (44.3)
Years in healthcare system	≤ 15	211 (66.7)
	≥ 15	105 (33.2)

Table 2. Results of univariate analysis for SF-36 scales according to gender and age groups

	General health (GH)	Physical function (PF)	Role physical (RP)	Bodily pain (BP)	Social functioning (SF)	Vitality (VT)	Emotional Role and status (ER)	Mental health (MH)
Variables (N)	Media±SD	Media±SD	Media±SD	Media±SD	Media±SD	Media±SD	Media±SD	Media±SD
Gender								
M (133)	70.43±15.23	93.12±12.62	82.70±29.07	80.24±21.50	69.64±20.94	62.33±17.77	75.06±34.31	71.62±15.48
F (182)	68.23±18.41	92.65±11.00	76.65±32.14	73.09±22.08	66.35±23.22	56.69±19.53	67.86±35.99	67.09±18.15
p	0.19	0.39	0.068	**0.005**	0.12	**0.008**	0.084	**0.015**
Age								
<40 (180)	71.25±17.62	93.97±9.29	77.08±31.37	75.72±23.03	64.65±22.57	56.72±19.42	65.46±36.01	66.75±17.26
≥40 (136)	66.39±16.08	91.42±14.16	82.17±30.87	76.68±21.77	71.70±21.36	62.14±17.93	78.30±33.16	72.07±16.64
p	**0.012**	**0.048**	0.10	0.53	**0.004**	**0.007**	**0.002**	**0.006**

p-value at t-test

Table 3. Results of univariate analysis for SF-36 scales according to professional factors

Variables (N)	General health (GH) Media±SD	Physical function (PF) Media±SD	Role physical (RP) Media±SD	Bodily pain (BP) Media±SD	Social functioning (SF) Media±SD	Vitality (VT) Media±SD	Emotional Role and status (ER) Media±SD	Mental health (MH) Media±SD
Role								
Physicians (166)	71.04±16.84	94.58±9.98	82.83±29.23	80.49±19.90	69.50±21.86	56.87±18.21	73.69±34.38	67.89±16.14
Nurses (118)	66.81±17.69	91.13±10.63	72.45±33.07	69.54±24.16	64.30±23.81	59.95±19.47	66.24±36.62	70.07±18.98
Tecnicians (31)	68.45±15.83	90.16±20.18	86.29±30.84	79.03±22.83	71.37±17.13	68.06±18.33	74.73±35.71	72.25±14.45
p^	0.133	**0.043**	**0.011**	**0.001**	0.095	**0.008**	0.211	0.337
Socializing time per week (hours)								
<8 (140)	68.08±18.11	93.27±10.87	77.05±32.06	74.94±21.77	66.16±22.57	54.83±18.35	68.45±35.07	66.07±16.44
≥8 (176)	69.45±16.34	92.56±12.32	80.68±30.53	77.09±23.04	68.89±22.79	62.41±18.81	73.01±35.62	71.04±17.43
p°	0.772	0.773	0.355	0.495	0.347	**<0.001**	0.243	**0.009**
Working Time (hours)								
<40 (131)	66.78±17.07	91.05±13.54	79.39±32.00	75.20±22.62	69.46±23.41	61.33±17.63	71.24±36.40	70.09±16.84
≥40 (185)	70.85±17.00	94.16±10.01	79.19±30.72	76.08±22.04	66.41±21.44	57.44±19.72	70.81±34.76	68.29±17.41
p°	**0.036**	**0.038**	0.86	0.576	0.214	**0.050**	0.954	0.341
Years in health system								
<15 (211)	71.03±16.85	93.60±9.59	77.61±31.42	78.80±22.77	65.52±22.41	57.69±19.17	68.01±35.55	68.00±17.76
≥15 (105)	65.43±17.13	91.41±14.99	82.62±30.64	76.80±21.95	72.02±21.55	61.08±18.29	76.98±34.47	71.13±15.83
p°	**0.005**	0.097	0.205	0.897	**0.016**	0.054	**0.041**	0.141
Years in specific word								
<6 (160)	70.44±17.22	93.11±9.91	77.97±30.63	74.63±21.99	67.27±21.49	56.20±19.14	69.58±34.55	67.13±17.53
≥6 (124)	67.08±17.35	93.19±10.99	79.23±32.15	77.64±22.89	67.44±24.48	60.69±18.06	71.91±36.71	70.94±17.19
p°	0.200	0.882	0.823	0.378	0.98	0.48	0.553	0.090

° t-test^ Anova

Table 4. Results of multivariate analysis for each SF-36 Scale (only significant results of linear regressions are shown)

Outcomes	Variables		Coefficiente β	P-value	R²
General health (GH)	Age		-0.218	**0.007**	**0.048**
Physical function (PF)	Age		-0.246	**0.001**	**0.061**
Social function (SF)	Nurses		-0.243	**0.001**	**0.059**
	Physicians*				
Role physical (RP)	Nurses		-0.204	**0.006**	**0.042**
	Physicians*				
Bodily pain (BP)	Nurses		-0.214	**<0.001**	**0.046**
	Physicians*				
Vitality (VT)	Gender	M*			**0.137**
		F	-0,210	**0.007**	
	Socializing Time (hours)		0,151	**0.048**	
	Working Time (hours)		-0,291	**<0.001**	
Emotional Role and status (ER)	Age		0.243	**0.002**	**0.124**
	Nurses		-0.211	**0.006**	
	Physicians*				
Mental health (MH)	Gender	M*			**0.028**
		F	-0.168	**0.046**	

* Reference group

Table 5 . Comparisons of SF-36 score means between Healthcare professional and the Italian general population

SF 36 scores	Italy 1995 (Mean±SD)	Health professional 2009 (Mean±SD)	p-value
Physical function (PF)	84.46±23.18	92.83± 11.73	**< 0.0001**
Role physical (RP)	78.21±35.93	79.27±31.06	0.601
Bodily pain (BP)	73.67±27.65	75.92±22.72	0.149
General health (GH)	65.22±22.28	69.14±17.05	**0.002**
Vitality (VT)	61.89±20.69	59.14±18.91	**0.019**
Social function (SF)	77.43±23.34	67.69±22.16	**< 0.0001**
Emotional Role and status (ER)	76.16±37.25	71.04± 35.31	**0.015**
Mental health (MH)	66.59±20.89	68.99 ±17.13	**0.042**