

QUALITY OF LIFE OF HEALTH CARE PROFESSIONALS IN PANDEMIC TIMES

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Abstract

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Objective: Our objective is to provide a descriptive analysis of the quality of life among a large sample of health professionals in the early days of the pandemic.

Method: We surveyed in the first months of the pandemics with the logistical support of the Health ministry in Brazil reaching more than 200,000 varied health professionals, with quality-of-life data, assessed using the WHOQOL-BREF, available to 97,379. We segregated the professionals by their reported field of work.

Results: The different professions report a diverse quality of life, suggesting a more heterogeneous pattern of impairment. The social relations domain of quality of life was the most affected in our sample.

Conclusion: Knowing the target population and the features related to worsening of quality of life might help to prepare the professionals for what they must face and to improve mental health in this population.

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Introduction

A widespread pandemic is an event where there is a rupture of the life pattern and people felt helpless and suffering, creating a need for basic things such as medical care and shelter against environmental conditions. Exactly as described as a natural disaster, a pandemic is not classically described as a disaster but mimics one in how its disorganized society and promoted distress. It caused an increase in stress and long-term consequences (Cherry et al., 2017). The societal structure showed all the responses to a disaster, it first had a panic, a rush to the supermarkets, a closure of schools, and an end of world perspective. Since the pandemic stands for longer than imagined for most there are also feelings of tiredness, powerlessness, and exhaustion after something bad. Some increased the psychiatric symptoms and fear of being infected was spread everywhere while the

pandemic disseminated and generated more affected and deaths to count. However, months later people started to adjust their behavior and expectancies, and a new routine was established. Everything started to open and the sensations of everything had gone until the next infection wave and a new movement to a home and city closure. The economic burden increases enormously, but no one could see another way to handle the whole situation.

In China when the COVID-19 first hit a country, a Chinese study shows that participants felt horrified and apprehensive due to the pandemic one week after the Wuhan lockdown (Zhang & Ma, 2020). Family and friends devoted increased support and they shared feelings and caring for family members and others. At this point, a Chinese sample has reported no financial stress, no stress at home or work, but even having only a week of lockdown, they considered the pandemic condition

as a mildly stressful situation (Zhang & Ma, 2020). Besides their quick response, there is all the novelty and expectations about the potential of the dissemination and severity of an infectious disease. It suddenly reached the whole world distributing uncertainty to all and disrupting the perceived individual's ability to live a fulfilling life for both the risk of disease or the social distancing procedures and social isolation. The World Health Organization (WHO) outlines one definition of QOL; "An individual's perception of their position in life in the context of the culture in which they live and about their goals, expectations, standards and concerns" (WHOQOL Group, 1995). Quality of life includes environmental, individual, and economic features. In the pandemic, there is a rupture in the economic status, social networking, and a reduction in perceived social support that might change the quality-of-life perceptions. For patients with SARS COV-2, the psychological and physical burden result in loss of perceived QOL (Chen et al., 2020). But the perceived QOL of a health professional is still poorly documented.

Health professionals were in the front line. It is important to fully understand how the pandemic impacted them even to still accounting and to prepare to stand the necessary care. One of the conditions already described to promote a better response to any disaster is the sense of preparedness. However, it is widely recognized that individual and community preparedness might mitigate hazards since it improves decision-making through protective actions. There is no way to be prepared for a pandemic on such a scale as COVID-19 has been, however, the sense of preparedness came by the interaction of some features in a complex way: having a previous experience, perceiving the risk, and feeling prepared. In Korea, recognition of emergency code recognition by nurses was positively correlated with self-confidence and disaster-related nursing competencies (Jeong & Lee, 2020). About infectious diseases, health care professionals are at frequent risk to have contact with infectious diseases. Sometimes a life-threatening disease, such as caused by the Ebola virus and it might have compromised some quality-of-life features increasing the social isolation of health professionals (Lehmann et al., 2016). In the Ebola outbreak, lack of knowledge about the disease and fatigue were good predictors of the loss of quality of health (Lehmann et al., 2016).

Besides the differences expected in quality of life due to the pandemic context, particular aspects of each health profession may lead to more specific patterns of QOL in physical, psychological, social, and environmental domains. When we analyze each question of the most used measure of QOL in a health setting, the WHOQOL-BREF instrument proposed by the World Health Organization (WHOQOL Group, 1995), physical QOL depends on the assessment and objective conditions of physical health and activities, including the presence of diseases and other illness which may reduce this aspect of QOL. Health professionals usually have increased access to health services, and this may lead to an increase in physical QOL. Regarding psychological aspects of QOL, clinical psychologists usually have a more consistent self-monitoring regarding their mental health, as well the widespread practice of themselves maintain a regular assessment or psychotherapy with other psychologists or psychiatrists, possibly increasing the psychological aspects of QOL. In this sense, we can expect different patterns of QOL regarding different health professions.

In this study, we evaluated the QOL in a large sample of health professionals at the very beginning

of a pandemic in Brazil, a country largely hit by the COVID-19, using the WHOQOL-BREF instrument.

Methods

Participants

In this study, we assessed a large sample of health Brazilian professionals enrolled in COVID-19 assessment and treatment in the early days of the pandemic (n=97379). The sample was formed by medical doctors (n=990), speech therapists (n=507), physiotherapists (n=17.436), psychologists (n=2352), nurses (n=16.640), nurse assistants (n=3152), communitarian health agents (n=185), biologists (n=2252). Biomedics (n=4360), physical educators (8061), biochemists/pharmaceutics (n=3535), nutritionists (n=13.680), dentists (n=2343), social workers (n=4.224), Occupational Therapists (n=1470), Veterinaries/Sanitarists (n=7073) and other professionals (n=2010). An additional 7490 participants with occupations non-related to healthcare were included as a control group. The sample was recruited and assessed using an online platform developed in SurveyMonkey@.

Using this online interface, we developed a structured questionnaire regarding sociodemographic data (including profession and socioeconomic status), history of physical diseases and mental disorders, behaviors, and attitudes towards the COVID-19 pandemic, as well-structured measures of QOL and mental health. A detailed description of these procedures can be seen elsewhere (Serpa et al., 2020; Joaquim et al., 2021). Participants were assessed between March and May of 2020 when Brazil was facing the initial moments of the COVID-19 pandemic. On 31/05 we had 514.200 confirmed COVID-19 cases and 29.314 deaths, according to Brazilian health authorities (Ministério da Saúde do Brasil, 2020).

Assessment of Quality of Life

We used the WHOQOL-BREF questionnaire (WHOQOL Group, 1995) to assess the quality of life in our sample. The instrument involves 26 questions designed to assess four domains of aspects of this construct: physical, psychological, social, and environmental quality of life. The WHOQOL-BREF was adapted to Brazilian Portuguese by Fleck and colleagues (Fleck et al., 1999; 2000) and shows robust evidence of validity and reliability in this context. Normative data was provided by Cruz and colleagues (Cruz et al., 2011) studying a sample of 751 adults aged between 20 and 64 years. WHOQOL-BREF scores were computed as recommended using the syntax available from the Washington University (WHOQOL Group, 1997) and transformed into a 100-points scale to perform descriptive statistics.

Statistical procedures

We used descriptive statistics to better characterize our sample. WHOQOL-BREF scores were stratified according to each professional group. Univariate analysis of variance was used to compare the different professions, using the Games-Howell post hoc test for multiple comparisons. Those procedures were performed in SPSS 25.0.

Our sample size provides >99% power to detect low, moderate, or large effect sizes according to computations

using the G*Power software version 3.1.9.2 (Faul. et al., 2007). However, due to multiple comparisons, we adopted more conservative significance values at (0.01), despite the post hoc test and the large sample size.

Results

The participant's description is shown in **table 1**. Most of our sample was formed by middle-aged (61%) women (80%). At the time 4% of our sample was tested for COVID-19 and 1% were positive. Participants showed a history of mental disorders (23%), direct work with COVID-19 diagnosis and treatment (2%), and current economical struggle (36%) or the fear of it (47%), suggesting an environmental context marked by negative stress.

The results from the WHOQOL-BREF are shown in **table 2**. We added the normative values from the full sample of Cruz and colleagues' study (2011) as

reference. Comparing the normative data with our current sample we saw an increased physical (58.90 to 59.57) but lower social relations (76.20 to 62.92) quality of life, without large differences in the psychological and environmental quality of life (lesser than 2 points in each).

A comparison between different professions showed a more heterogeneous pattern of differences (**Figure 1**). The highest quality of life scores for most professionals was in the physical domain, followed by psychological, social relations, and environmental domains. Higher environmental than the social quality of life was seen in Medical doctors, and similar values between those two domains were seen in Occupational Therapists and Veterinarians. Post hoc comparison revealed an overall similar pattern. Most significant differences were seen in the physical domain, while fewer differences were seen in the social relations.

Table 1. Participant's description

		N	%
Sex	Male	19166	20%
	Female	78213	80%
Age	<30 years	30270	31%
	30-50 years	57259	61%
	>50 years	7850	8%
Occupation	Non-Health related profession	7490	8%
	Community Health Agent	185	0%
	Nurse Assistant	3152	3%
	Biology	2254	2%
	Biomedicine	4369	5%
	Physical Education	8061	8%
	Nurse	16640	17%
	Pharmaceutical Science	3535	4%
	Physical Therapy	17436	18%
	Speech Therapy	507	1%
	Medicine	990	1%
	Nutrition	13680	14%
	Dentistry	2343	2%
	Psychology	2352	2%
	Social Worker	4224	4%
	Occupational Therapist	1470	2%
Veterinary	7073	7%	
Other	2010	2%	
History of mental disorder	No	74750	77%
	Yes	22862	23%
Tested for COVID-19	No	93972	96%
	Yes	3799	4%
Positive Testing for COVID-19	No	96623	99%
	Yes	1148	1%
Direct work with COVID-19	No	95544	98%
	Yes	2227	2%
Economic Struggle (current)	No	62827	64%
	Yes	34944	36%
Fear of economic Struggle (future)	No	51492	53%
	Yes	46279	47%

Table 2. Quality of life in different health professions

	Quality of Life (WHOQOL-BREF scores) ^a							
	Physical		Psychological		Social Relations		Environment	
	M	SD	M	SD	M	SD	M	SD
Normative data ^b	58.90	10.50	65.90	10.80	76.20	18.80	59.90	14.90
Non-Health related profession	72.04	16.83	67.87	17.70	63.41	20.81	60.25	15.78
Communitary Health Agent	68.29	16.97	66.03	18.11	63.49	20.51	54.29	16.49
Nurse Assistant	70.61	17.48	66.84	18.67	62.90	21.91	52.54	16.39
Biology	69.33	16.84	64.99	18.05	62.02	20.67	59.60	15.76
Biomedicine	69.70	16.18	63.64	18.07	61.97	20.83	58.02	14.94
Physical Education	73.67	16.29	69.28	17.41	64.62	20.41	61.13	15.21
Nurse	70.14	16.93	65.10	18.04	61.74	21.11	57.41	15.52
Pharmaceutical Science	71.80	16.51	66.32	17.60	62.15	21.22	56.92	15.81
Physical Therapy	70.24	16.01	63.71	17.44	61.95	20.27	59.24	14.97
Speech Therapy	68.62	16.37	64.19	16.73	60.63	20.18	59.29	14.68
Medicine	69.90	16.34	64.30	17.89	60.31	21.48	62.68	15.54
Nutrition	68.46	16.16	62.13	17.34	60.69	20.47	58.29	15.29
Dentistry	68.91	17.41	64.57	18.06	61.16	21.91	59.35	15.70
Psychology	72.21	15.45	69.87	15.58	64.17	19.80	61.12	14.53
Social Work	71.03	16.60	68.20	16.96	64.06	20.35	57.81	14.93
Occupational Therapy	67.63	15.80	62.67	16.30	60.91	19.47	60.76	14.05
Veterinary	69.17	16.62	62.79	18.45	59.80	20.92	59.90	15.15
Other	71.33	17.28	66.87	18.08	63.47	21.71	54.91	16.07

a - Higher scores indicate higher quality of life

b - Based on Cruz and colleagues (2011) normative values for the Brazilian population

Discussion

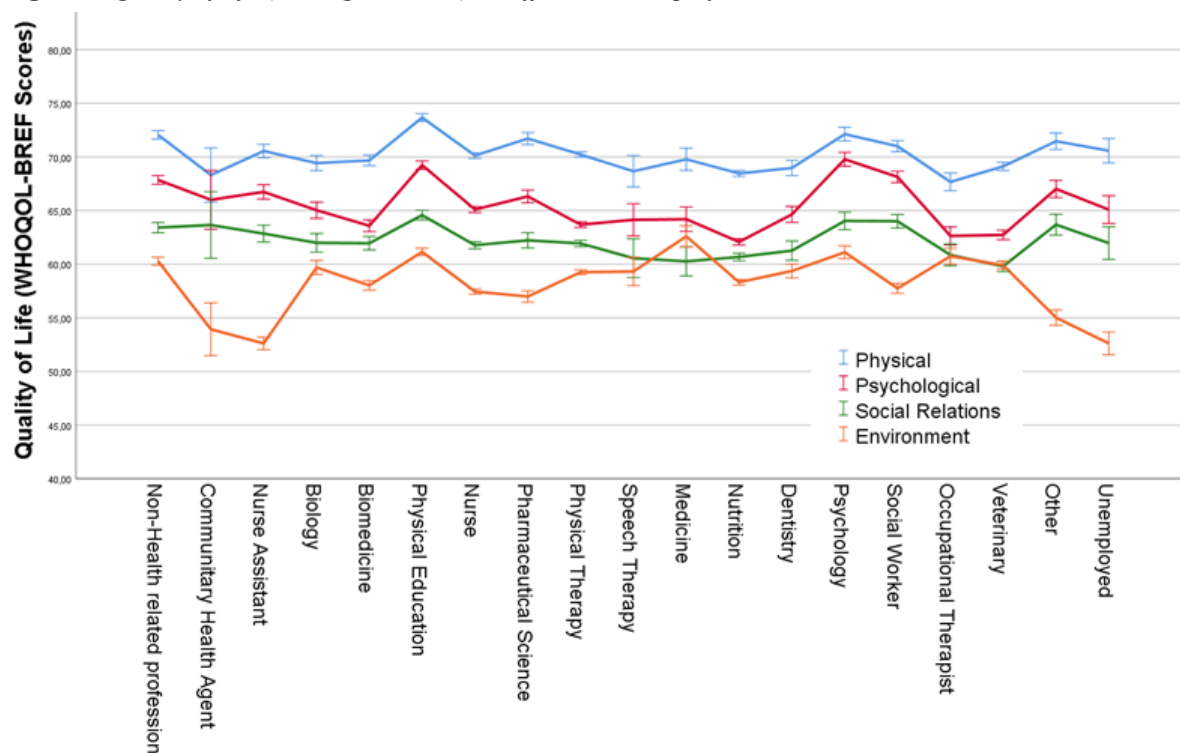
QOL is a wide concept representing a state consisting of experiences, capacities, relationships, and reactions in a specific circumstance. The four domains of the instrument represent well information about physical information (e.g., sleep, energy, and pain), psychological (e.g., Feelings, body image, and self-esteem), social relationships (e.g., Personal and social support), and environment (e.g., Home, safety, leisure) (Skevington, et al., 2004). We choose to measure the QOL using the WHOQOL-BREF, since it seems to have good psychometric properties and reliability, being also an integrated instrument and well-validated but not exhaustive to fill in epidemiological surveys (Skevington et al., 2004) and contemplating these different biopsychosocial domains.

Overall, at the beginning of the pandemic, all health professions answer relatively well to the instability and uncertainty of its effects in daily life, with higher scores in the physical domain and similar scores in psychological and environmental domains. However, already in these first months, scores in the social relationship domain were significantly lower than the parameters in normative data. This might be related to the initial emphasis on social distancing adopted in the early stages of the pandemic, which may have hindered social contact and therefore the social domain of quality of life but worked reasonably well to maintain or improve the physical aspects of it. The social relations domain of quality of life is usually the higher score in

Brazilian studies (Cruz et al., 2008; Almeida-Brasil et al., 2017), and its lower values may reflect some of the negative consequences of fighting COVID-19. Besides the initial financial impact of COVID-19 in Brazilian familiar incomes, those with a college or higher degree (all samples besides community health agents, nurse assistants, and other non-listed health-related professions) showed overall similar values. Medical doctors showed higher scores in this domain, reflecting the overall higher salary of this profession compared to the other ones.

Regarding specific professions, we observed a more heterogeneous pattern of QOL worsening according to each profession. If we consider an overall mean of WHOQOL-BREF scales, there was a difference of 5 points between those who reported the highest reported QOL (professionals of Psychology and Physical Education, mean score 67) with the lowest (professionals of Nutrition, 62). Medical doctors, nurses, physiotherapists – maybe the professionals more directly involved in fighting COVID-19 showed a somewhat average score (64). When we analyze specific QOL domains, the highest differences in Physical were observed between professionals of Physical Education (74) and Occupational Therapy (68); in the psychological domain between professionals of Psychology (70) and nutrition (68); in the domain of the social relations between professionals of Physical Education (65) and Medicine or Veterinary (60); and lastly in the environmental domain between professionals of Medicine (63) and nurse assistants (53).

Figure 1. Quality of life (WHOQOL scores) in different health professions



Those differences seem related to the characteristics of each profession (such as the physical involvement in work practice seen in Physical Education or the mental health constant care of Psychology) or average income (in Brazil, the monthly income of medical doctors are about 7 times higher than nurse assistants). The lower scores in social QOL might be a direct effect of the pandemic and the means of fighting it, including social distancing. Changes in social relationships and social support networks are usually related to this aspect of QOL (Wedgeworth, et al., 2017). Altogether, those factors represent different aspects of biopsychosocial functioning, including the general health status, familiar and social relationships, as well satisfied with life and work practice, which are the main predictors of QOL (Tockel et al., 2018). Nonetheless, other factors such as the presence of chronic disease and mental disorders may also affect QOL (Lewko et al., 2019).

Related to the COVID-19 pandemic in Portugal, healthcare professionals had the perception of being at higher risk than the general population to be infected by SARS-COV-2, because of the close contact with potentially infected cases and because they consider the health system was poorly prepared to contain the pandemic (Peres et al 2020). Besides the risk, the QOL among healthcare professions was quite stable among professions. The purposeful activities might be a reason to preserve the QOL. In a previous study evaluating the doctors, the WHOQOL-BREF was associated with professional fulfillment and a sense of purpose (Rapala and Jasiński, 2005), which might help to understand the preservation of wellbeing. Nonetheless, new methods of assessment and intervention regarding physical and mental health (Marazziti, 2020; Yacelga et al., 2020; Orrù. Et al., 2020).

The knowledge of features impacting the quality of life in health professionals and the handling of these conditions is undoubtedly important to improve those interventions aiming to decrease work stress, to avoid

fatigue related to the health profession, and to improve the care and safety of patients.

Conclusion

We find a relatively small effect of the COVID-19 pandemic in the QOL of different health professions. Quality of life measures a state representing psychological, social, physical, and environmental conditions, which may have different subjective and objective predictors. Health professionals have a purposeful activity and sense of the meaning of their activities at the beginning of the pandemic, which may reduce the negative impact of the stressful and fearful context in their QOL. However, the social aspects of QOL are an area of vulnerability among health professionals, especially physicians.

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