

## Quality of life among health care workers in primary health care centres in ministry of health Jeddah 2017

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### Abstract

**Objectives:** To assess and identify predictors of the quality of life among health care workers in the Ministry of Health (MOH) primary health care centers in Jeddah City, 2017.

**Materials and Methods:** A cross-sectional study design was followed to include 489 health care workers.

**Results:** The mean percent score for participants' quality of life physical component summary was 64.5±19.4% that of mental component summary was 60.9±17.5%, while their mean percent score of health related quality of life was 62.7±17.5%. Their best attained health-status components were "bodily pain" and "social functioning" subscales (72.9±23.7% and 68.4±22.3%, respectively). On the other hand, their least attained health-status components were "role limitations due to emotional problems" and "energy/fatigue" (58.7±4.7% and 56.6±18.6%, respectively).

**Conclusions:** HRQoL of PHC providers in Jeddah City is suboptimal. The mental component of HRQoL is lower than the physical component. Some subscales of HRQoL are specially low. The main determinants of low HRQoL associated with PHC providers' personal and work characteristics include being a female, older age, having a chronic disease, serving at "Central" PHC, and being a dentistry assistant.

**Keywords:** Quality of Life.

### Introduction

Although the quality of life assessment was almost unknown about two decades ago, it has rapidly become an integral variable of outcome in clinical research. Over 1000 new articles are indexed each year under "quality of life". Currently, the importance of quality of life is broadly acknowledged.<sup>1</sup>

Quality of life (QOL) is one of the most important issues in every organization, especially in health organizations. When a health organization offers good quality of life to their employees, their production will improve, leading to better well-being of their healthcare workers (HCW). Eventually, they will have high commitment and ultimately reduce costs that incur due to a high level of stress. Hence, by having good quality of life, the society can enjoy increased health organizational productivity and higher opportunity for growth with better participation from HCW that has a significant impact on the community. Moreover, a happy HCW will experience positive feeling and this feeling becomes carried to their patients, family and the society.<sup>2</sup>

HCWs need to be clear about the conceptual definition of QOL and not to confound it with functional status, symptoms, disease processes, or treatment side-effects. Although the definition of QOL is still evolving, Revicki and colleagues defined QOL as "a broad range of human experiences related to one's overall well-being. It implies values, based on subjective functioning in comparison with personal expectations and is defined by subjective experiences, states, and perceptions". This definition denotes a meaning for QOL that transcends health.<sup>3</sup>

Although QOL has been the focus of attention for over a decade, only few studies were conducted in Saudi Arabia,

while there are no studies done in Jeddah City. Therefore, this study is intended to give insight into the QOL among HCWs at the respective health organization.<sup>4</sup>

Thinkers have discussed the "good life" and the desirable society for millennia. In the last decades, scientists offered several alternative approaches to defining and measuring the quality of life.<sup>5</sup> The Quality of Life Scale (QOLS), first developed by the American psychologist, John Flanagan, befits this definition of QOL.

QOL represent 5 conceptual domains of QOL that were empirically derived from the 6500 critical incidents that Flanagan and his team collected. Its scores are summed so that a higher score indicates a higher QOL.<sup>3</sup>

It also allows for objective comparisons to be made between the situations of particular groups and what is normative. Considerable agreement exists that QOL is multidimensional.<sup>6</sup> QOL measures have become increasingly popular as outcome measures. Currently, the RAND-36 is perhaps the most widely used health-related quality of life (HRQOL) survey instrument worldwide. It is comprised of 36 items that assess eight health concepts: physical functioning, role limitations caused by physical health problems, role limitations caused by emotional problems, social functioning, emotional well-being, energy/fatigue, pain, and general health perceptions. Physical and mental health summary scores are also derived from the eight RAND-36 scales.<sup>7,8</sup>

The World Health Organization's project to develop a quality of life instrument (the WHOQOL) has been developed collaboratively in several culturally diverse centers over four years and produces a multi-dimensional profile of scores across six domains and 24 subdomains of quality of life.<sup>9</sup>

However, there is a critical appraisal of the quality of QOL measurements, since QOL is a uniquely personal perception, denoting the way that individual persons feel about their health status and/or nonmedical aspects of their lives.<sup>10-11</sup>

There is no consensus on what quality of life really is. Considering how multidimensional and subjective this concept is, health organizations created a different questionnaire encompassing the physical, psychological, social and environmental aspects. This questionnaire, which is today the basis for studies about individual health status, is a tool used to assess the well-being of individuals.<sup>12-13</sup>

No study has been conducted to evaluate QOL among MOH HCWs in Jeddah. Therefore, the Investigator chose HCWs population since if they have a bad QOL, they will have a negative impact on their professional work. Moreover, the investigator has a special interest in this topic because she always fights to be able to cope with the type of work she does and to maintain a proper work-life balance. Also, she frequently comes across several experiences of HCWs having bad quality of life.

This study aimed to assess the quality of life and its predictors among HCWs in MOH PHCCs in Jeddah 2017.

## Materials and Methods

A cross-sectional study design among Health care workers at MOH PHCC in Jeddah City. All PHCC workers who were present during the time of conducting the study were included: PHC physician (Dentists, GPs, family physicians & family medicine residents), Nurses, Technicians (Lab and radiology technicians), Pharmacists, and administrative staff. While PHC physicians with less than one year experience were excluded.

According to the latest available data, the total number of HCWs in MOH PHCCs in Jeddah is 2264. The "minimum" sample size was calculated using the online Raosoft sample size calculator program (14) to be 475, based on the following data: Estimated prevalence of 50% (to maximize the sample size), Confidence level of 95%, Acceptable margin of error of 4%, Population size of 2,264.

A "multistage random sampling technique was followed. The calculated sample size was distributed over 5 sectors, according to their geographic areas, i.e., north-West, north-east, central, south-west, and south-east. Each stratum has 8-12. PHCCs.

- 1<sup>st</sup> stage: the investigator selected 2 PHCCs from each sector by simple random technique. This accounted for 10 PHCCs.
- 2<sup>nd</sup> stage: the investigator reached all HCWs in the selected PHCCs of each sector by taking all HCWs from each center. Staff were selected by proportional allocation from each PHCC.

In addition to participants' sociodemographic variables, a self-administered validated Arabic version questionnaire of the SF-36, from RAND, was used in this study.<sup>7</sup> This standard questionnaire was used to evaluate MOH PHC physicians' health related quality of life (HRQoL). It consists of 36 questions that measure the HRQoL in two components, i.e., physical and mental health status, with eight subscales. The physical health domain includes physical functioning, role limitations due to physical problems, bodily pain and general health. On the other hand, the mental health component includes vitality (energy/fatigue), social functioning, role limitations due to emotional problems, and emotional wellbeing.<sup>15</sup>

Each item within the SF-36 questionnaire evaluates the positive and negative aspects of participants' health status, with a percent score that ranges from 0% (indicating worst quality) to 100% indicating the best quality of life.<sup>16</sup>

After getting all necessary official permissions from the higher authority, the investigator visited each selected MOH PHCC and personally distributed the questionnaire sheets to the HCW, hand by hand during their break time and then collected the sheets at the same day, one PHCC a day.

Collected data were entered and analyzed using the Statistical Package for Social Sciences (SPSS, version 22). Descriptive statistics for the total scores and sub-scores for QOL were calculated. Categorical data were presented as frequencies and proportions, while quantitative data were presented as means and standard deviations. For comparison, t-test and one way-analysis of variance (ANOVA) for continuous data were applied. P-values < 0.05 were considered as statistically significant.

All official approvals were fulfilled, i.e., the research committee approval, higher authority, local, institutional and departmental approvals. Written or verbal consents from each participant was obtained before data collection.

## Results

**Table 1: Personal characteristics of study sample**

Personal characteristics	No.	%
Gender		
• Male	213	43.6
• Female	276	56.4
Age		
• <25 years	23	4.7
• 25-35 years	250	51.1
• 36-45 years	148	30.3
• 46-55 years	56	11.5
• >55 years	12	2.5

Nationality		
• Saudi	451	92.2
• Non-Saudi	38	7.8
Marital status		
• Single	88	18.0
• Married	347	71.0
• Divorced	44	9.0
• Widow	10	2.0
Number of children		
• 0	148	30.3
• 1	72	14.7
• 2	84	17.2
• 3	96	19.6
• 4+	89	18.2
Chronic diseases		
• Absent	537	73.2
• Present:	131	26.8
• Diabetes	53	10.8
• Hypertension	58	11.9
• Dyslipidemia	28	5.7
• Bronchial asthma	24	4.9
• Others	20	4.1
Position		
• Physician	101	20.7
• Dentist	32	6.5
• Pharmacist	28	5.7
• Technician	83	17.0
• Nurse	143	29.2
• Dentistry assistant	14	2.9
• Administrator	88	18.0
Monthly income (SR)		
• <10,000	95	19.4
• 10,000-14,999	186	38.0
• 15,000-19,999	123	25.2
• 20,000-24,999	57	11.7
• 25,000-29,999	12	2.5
• ≥30,000	16	3.3
Experience in PHC		
• <5 years	95	19.4
• 5-9 years	171	35.0
• 10-19 years	144	29.4
• 20+ years	79	16.2

Table 1 shows that 56.4% of participants were females. Age of 51.1% of participants was 25-35 years, while 30.3% of them aged 36-54 years. The majority of participants (92.2%) were Saudi. Most participants (71%) were married. Almost one third of participants (30.3%) had no children, while 19.6% had 3 children and 18.2% had 4 children or more. About one fourth of participants had chronic disease, mainly diabetes (10.8%) or hypertension (11.9%). Less than third 29.2% of participants were nurses, 20.7% were physicians, 18% were administrators, 17% were technicians, 6.5% were dentists, 5.7% were pharmacists and 2.9% were

dentistry assistants. The monthly income of 38% of participants was 10,000-14,999 SR, while 25.2% had a monthly income of 20,000-24,999 SR. more than one third of participants (35%) had 5-9 years' experience in PHC, while 29.4% had 10-19 years' experience.

**Table 2: Participants' percent scores (Mean±SD) for their health status components**

Health Status Components	Mean±SD
<b>Physical component summary:</b>	64.5±19.4
• Physical functioning	64.2±28.0
• Bodily Pain	72.9±23.7
• Role limitations due to physical health	58.7±4.7
• General Health	62.2±15.6
<b>Mental component summary:</b>	60.9±17.5
• Role limitations due to emotional problems	55.1±42.6
• Energy/fatigue	56.6±18.6
• Social functioning	68.4±22.3
• Emotional well-being	63.7±18.3
<b>Health-Related Quality of Life</b>	62.7±17.5

Table 2 show that score for participants' quality of life physical component summary (Mean±SD) was 64.5±19.4%, that of mental component summary was 60.9±17.5%, while their mean percent score of health related quality of life was 2.7±17.5%. Their best attained health-status components were "bodily pain" and "social functioning" subscales (72.9±23.7% and 68.4±22.3%, respectively). On the other hand, their least attained health-status components were "role limitations due to emotional problems" and "energy/fatigue" (58.7±4.7% and 56.6±18.6%, respectively).

Table 3 shows that female participants' mean percent score for physical component summary was significantly less, i.e., worse, than that for males (62.7±19.3 and 66.8±19.4, respectively, p=0.019). Moreover, mean percent scores for participants' physical component summary differed significantly according to their age (p=0.022), with younger participants (i.e., aged <25 years) having the highest score. In addition, participants who had chronic diseases had significantly lower physical component summary than those who did not have chronic diseases (59.8±19.7 and 66.2±19.0, respectively, p=0.001). However, participants' physical component summary did not differ significantly according to their nationality, marital status or number of children. Participants' "physical component summary" scores differed significantly according to their geographical sector (p=0.046), with highest among participants at the Northwestern sector and lowest (68.1±21.2) among those at Central sector (59.6±19.1). Moreover, participants' "physical component summary" differed significantly according to their monthly income (p=0.022), being best attained by those who had ≥30,000 SR (70.2±20.6). In addition, their scores differed significantly according to their experience in PHC (p=0.009), with highest scores among those with least experience (69.5±17.7). However, their "physical

component summary" scores did not differ significantly according to their position. Table (14) shows that female participants' mean percent score for mental component summary was significantly less, i.e., worse, than that for males (59.2±20.2 and 63.1±19.0, respectively, p=0.030). Moreover, participants who had chronic diseases had significantly lower mental component summary than those who did not have chronic diseases (56.4±19.8 and 62.6±19.4, respectively, p=0.002). However, participants' mental component summary did not differ significantly according to their age, nationality, marital status or number of children. Participants' "mental component summary" scores differed significantly according to their position (p=0.028), being best attained by technicians (66.0±19.0) and least attained by dentistry assistants (52.4±16.2). However, their "mental component summary" scores did not differ significantly according to their sector, monthly income or experience in PHC. Female participants' mean percent score for "health-related quality of life" was significantly less, i.e., worse, than that for males (61.0±17.5 and 65.0±17.2, respectively, p=0.012). Moreover, participants who had chronic diseases had significantly lower "health-related quality of life" than those who did not have chronic diseases (58.1±18.3 and 64.4±16.9, respectively, p<0.001). However, participants' "health-related quality of life" did not differ significantly according to their age, nationality, marital status or number of children. Participants' "health-related quality of life" scores differed significantly according to their position (p=0.038), being best attained by technicians (67.6±16.5) and least attained by dentistry assistants (55.8±16.3). However, their "health-related quality of life" scores did not differ significantly according to their sector, monthly income or experience in PHC.

**Table 3: Participants' mean percent scores of "physical component summary", "mental component summary", and "health-related quality of life" according to their personal and work characteristics**

Personal and work characteristics	No.	Physical component summary		Mental component summary		health-related quality of life	
		Mean±SD	P-value	Mean±SD	P-value	Mean±SD	P-value
Gender							
• Male	213	66.8±19.4		63.1±19.0		65.0±17.2	

• Female	276	62.7±19.3	0.019	59.2±20.2	0.030	61.0±17.5	0.012
Age							
• <25 years	23	71.2±21.2		63.7±20.4		67.4±20.0	
• 25-35 years	250	66.1±18.4		62.3±20.1		64.2±16.8	
• 36-45 years	148	63.4±20.9		59.2±19.6		61.3±18.3	
• 46-55 years	56	58.0±17.2		57.3±18.0		57.7±15.9	
• >55 years	12	61.8±20.4	0.022	64.8±22.1	0.270	63.3±19.7	0.057
Nationality							
• Saudi	451	64.8±19.2		61.3±19.8		63.1±17.3	
• Non-Saudi	38	60.3±21.5	0.170	56.3±19.1	0.134	58.3±18.9	0.108
Marital status							
• Single	88	67.1±19.2		61.4±19.0		64.3±17.0	
• Married	347	64.6±19.2		61.3±19.6		63.0±17.2	
• Divorced	44	60.5±18.9		58.2±21.8		59.3±18.4	
• Widow	10	56.4±26.7	0.162	54.8±25.0	0.572	55.6±25.5	0.259
Number of children							
• 0	148	66.6±18.7		62.1±18.9		64.3±16.9	
• 1	72	65.4±19.1		61.8±20.4		63.6±16.8	
• 2	84	64.8±19.9		62.6±20.5		63.7±18.1	
• 3	96	64.9±20.5		60.2±21.4		62.5±19.2	
• 4+	89	59.6±18.6	0.101	57.5±18.2	0.406	58.5±16.2	0.147
Chronic diseases							
• Absent	537	66.2±19.0		62.6±19.4		64.4±16.9	
• Present	131	59.8±19.7	0.001	56.4±19.8	0.002	58.1±18.3	<0.001
Sector							
• Northeastern	118	64.7±18.7		60.1±18.9		62.4±16.7	
• Northwestern	96	68.1±21.2		63.6±23.1		65.8±20.4	
• Southeastern	81	65.5±17.3		60.2±16.8		62.8±14.9	
• Southwestern	98	64.8±19.7		60.3±20.5		62.5±17.8	
• Central	96	59.6±19.1	0.046	60.6±19.0	0.711	60.1±16.9	0.265
Position							
• Physician	101	65.1±19.5		60.4±21.3		62.7±17.2	
• Dentist	32	64.0±18.8		61.1±19.3		62.6±17.2	
• Pharmacist	28	65.0±18.3		60.5±22.4		62.8±18.0	
• Technician	83	69.2±18.5		66.0±19.0		67.6±16.5	
• Nurse	143	62.0±20.2		57.6±20.1		59.8±18.8	
• Dentistry assistant	14	59.2±18.7		52.4±16.2		55.8±16.3	
• Administrator	88	64.4±19.1	0.208	63.7±16.9	0.028	64.0±16.0	0.038
Monthly income (SR)							
• <10,000	95	64.7±19.9		61.2±18.5		63.3±17.1	
• 10,000-14,999	186	66.5±18.5		62.5±19.5		64.5±17.2	
• 15,000-19,999	123	64.4±19.7		58.5±21.5		61.5±18.1	
• 20,000-24,999	57	56.5±18.6		57.7±19.3		57.1±17.5	
• 25,000-29,999	12	64.1±20.1		58.1±20.4		61.1±16.9	
• ≥30,000	16	70.2±20.6	0.022	68.8±16.9	0.189	69.5±15.2	0.051
Experience in PHC							
• <5 years	95	69.5±17.7		62.3±20.0		65.9±16.5	
• 5-9 years	171	64.8±19.5		61.8±20.1		63.3±17.7	
• 10-19 years	144	63.5±20.5		60.5±19.5		62.0±18.0	
• 20+ years	79	59.6±17.7	0.009	58.2±19.4	0.506	58.9±16.7	0.064

Table 4 shows that participants who had chronic diseases had significantly less "physical functioning" than those who did not have chronic diseases (59.0±26.5 and 66.1±28.3, respectively, p=0.013). However, the "physical functioning" subscale did not differ significantly according to participants' gender, age, nationality, marital status or number of children. Participants "physical functioning"

differed significantly according to their monthly income, being best attained by those who had 15,000-19,999 SR, 10,000-14,999 SR and those who had ≥30,000 SR (65.0±31.1, 66.9±25.4 and 67.4±26.4, respectively, p=0.034). However, the "physical functioning" subscale did not differ significantly according to geographical sector, participants' position, or their experience in PHC. Female

participants had significantly less, i.e., worse "social functioning" than males (69.5±23.8 and 66.5±23.0, respectively, p<0.001). Moreover, participants who had chronic diseases had significantly less, i.e., worse "bodily pain" than those who did not have chronic diseases (67.7±25.1 and 77.4±22.8, respectively, p=0.003). However, the "bodily pain" subscale did not differ significantly according to participants' age, nationality, marital status or number of children. "bodily pain" subscale differed significantly according to participants' experience in PHC, being lowest among those with 20+ years' experience and highest among those with <5 years' experience (67.1±25.9 and 80.6±18.3, respectively, p=0.002). However, the "emotional wellbeing" subscale did not differ significantly according to participants' geographical sector, position or monthly income. The subscale of "role limitations due to physical health" did not differ significantly according to participants' personal characteristics. Participants "role limitations due to physical health" differed significantly according to their monthly income, being best attained by those who had 25,000-29,999 SR, 10,000-14,999 SR, and those who had ≥30,000 SR (62.5±42.0, 62.6±39.9 and 73.4±39.2, respectively, p=0.013). However, this subscale

did not differ significantly according to geographical sector, participants' position, or their experience in PHC. Participants who had chronic diseases had significantly less, i.e., worse "general health" than those who did not have chronic diseases (56.4±16.4 and 64.3±14.7, respectively, p<0.001). Moreover, non-Saudi participants had significantly less, i.e., worse "general health" than Saudi participants (55.7±15.6 and 62.7±15.5, respectively, p=0.007). In addition, the "general health" subscale differed significantly according to their marital status, being lowest (i.e., worse) among divorced participants and highest (i.e., best) among single participants (55.6±18.2 and 63.9±14.3, respectively, p=0.016). However, participants' "general health" subscale did not differ significantly according to their gender, age, or number of children. The "general health" subscale differed significantly according to participants' position, being lowest (i.e., worst) among dentistry assistants and highest (i.e., best) among dentists (57.5±12.5 and 65.3±17.4, respectively, p=0.037). However, the "general health" subscale did not differ significantly according to participants' geographical sector, monthly income or experience in PHC.

**Table 4: Participants' mean percent scores of "physical functioning", "bodily pain", "role limitations due to physical health", and "general health" according to their personal and work characteristics**

Personal and work characteristics	No.	Physical functioning		Bodily pain		Role limitations due to physical health		General health	
		Mean±SD	P-value	Mean±SD	P-value	Mean±SD	P-value	Mean±SD	P-value
Gender									
• Male	213	65.1±29.3		77.4±22.8		61.6±40.1		63.2±15.8	
• Female	276	63.5±27.1	0.539	69.5±23.8	<0.001	56.4±41.0	0.162	61.4±15.4	0.197
Age									
• <25 years	23	67.2±32.9		84.2±19.9		68.5±40.0		65.0±15.0	
• 25-35 years	250	66.0±28.0		74.0±22.6		61.1±39.6		63.2±14.3	
• 36-45 years	148	63.6±28.6		71.4±24.7		57.3±42.1		61.5±17.6	
• 46-55 years	56	56.3±24.2		67.8±24.3		48.7±40.3		59.3±15.2	
• >55 years	12	63.8±26.8	0.214	72.9±30.1	0.061	54.2±43.7	0.203	56.3±16.7	0.212
Nationality									
• Saudi	451	64.0±28.2		73.2±23.6		59.5±40.1		62.7±15.5	
• Non-Saudi	38	65.9±25.9	0.691	70.5±24.5	0.500	49.3±41.3	0.140	55.7±15.6	0.007
Marital status									
• Single	88	66.1±31.4		76.3±22.9		61.9±39.2		63.9±14.3	
• Married	347	64.0±27.4		72.5±23.5		59.1±40.5		62.7±15.1	
• Divorced	44	63.6±26.4		71.7±24.1		51.1±43.5		55.6±18.2	
• Widow	10	55.0±26.0	0.677	63.3±32.6	0.299	50.0±45.6	0.465	57.5±23.4	0.016
Number of children									
• 0	148	65.8±29.1		75.2±22.5		62.8±39.9		62.7±14.8	
• 1	72	67.4±27.2		75.2±22.0		57.6±39.5		61.4±16.0	
• 2	84	63.5±30.3		72.4±25.6		61.3±40.8		61.8±16.5	
• 3	96	63.4±28.4		73.5±24.8		59.6±40.5		62.9±15.9	
• 4+	89	60.3±24.1	0.524	67.3±23.4	0.129	49.2±42.2	0.142	61.5±15.6	0.940
Chronic diseases									
• Absent	537	66.1±28.3		74.9±22.9		59.6±40.1		64.3±14.7	
• Present	131	59.0±26.5	0.013	67.7±25.1	0.003	56.1±42.3	0.396	56.4±16.4	<0.001
Sector									
• Northeastern	118	63.9±27.7		73.8±22.5		58.1±40.4		63.1±13.3	
• Northwestern	96	68.5±27.8		74.2±22.7		65.4±41.3		64.1±20.0	

• Southeastern	81	63.2±25.1		76.1±22.3		62.7±34.5		59.9±16.1	
• Southwestern	98	66.1±30.4		72.7±25.8		59.4±42.6		61.0±13.6	
• Central	96	59.1±28.1	0.193	68.3±24.6	0.236	48.7±42.0	0.055	62.2±14.5	0.379
Position									
• Physician	101	64.8±29.8		73.7±22.4		57.4±43.8		64.3±15.8	
• Dentist	32	62.5±30.1		73.5±23.5		54.7±41.4		65.3±17.4	
• Pharmacist	28	71.6±28.6		75.0±23.8		49.1±38.8		63.6±13.5	
• Technician	83	67.2±27.3		77.4±22.6		68.4±38.5		63.7±15.5	
• Nurse	143	65.0±26.0		68.7±24.4		55.6±40.7		58.6±16.4	
• Dentistry assistant	14	66.4±24.7		64.5±25.4		48.2±41.0		57.5±12.5	
• Administrator	88	57.3±29.0	0.196	74.9±23.9	0.100	62.2±38.3	0.168	63.2±13.7	0.037
Monthly income (SR)									
• <10,000	95	61.1±32.1		74.4±24.2		60.5±38.7		62.9±14.0	
• 10,000-14,999	186	66.9±25.4		74.2±22.5		62.6±39.9		62.1±15.4	
• 15,000-19,999	123	67.4±26.4		71.3±24.3		56.9±40.7		61.8±16.2	
• 20,000-24,999	57	55.5±28.5		69.6±24.1		41.7±43.1		59.0±17.1	
• 25,000-29,999	12	52.9±33.9		76.3±23.8		62.5±42.0		64.6±12.7	
• ≥30,000	16	65.0±31.1	0.034	72.2±28.1	0.726	73.4±39.2	0.013	70.0±15.9	0.228
Experience in PHC									
• <5 years	95	29.1±29.1		80.6±18.3		65.3±38.3		64.5±14.6	
• 5-9 years	171	28.3±28.3		71.9±23.5		61.0±40.5		61.1±16.6	
• 10-19 years	144	27.3±27.3		72.4±24.7		55.4±42.6		61.8±16.0	
• 20+ years	79	26.9±28.0	0.086	67.1±25.9	0.002	51.9±39.4	0.103	62.3±13.6	0.371

Table 5 shows that participants who had chronic diseases had significantly less "vitality" than those who did not have chronic diseases (53.7±20.4 and 57.6±17.8, respectively, p=0.041). Moreover, female participants had significantly less "vitality" than males (53.5±18.9 and 60.5±17.4, respectively, p<0.001). However, the "vitality" subscale did not differ significantly according to participants' age, nationality, marital status or number of children. The "vitality" subscale differed significantly according to participants' position, being lowest among dentistry assistants and highest among technicians (44.7±18.9 and 63.0±17.5, respectively, p=0.001). However, the "vitality" subscale did not differ significantly according to participants' geographical sector, monthly income or experience in PHC. Participants who had chronic diseases had significantly less "social functioning" than those who did not have chronic diseases (62.8±22.2 and 70.4±22.1, respectively, p=0.001). Moreover, female participants had significantly less "social functioning" than males (66.5±23.0 and 66.5±23.0, respectively, p=0.040). However, the "social functioning" component did not differ significantly according to participants' age, nationality, marital status or number of children. The component of "social functioning" did not differ significantly according to participants' work characteristics. Table (20) shows that participants who had chronic diseases had significantly less "role limitations due to emotional problems" than those who did not have

chronic diseases (48.3±41.0 and 57.6±43.0, respectively, p=0.033). However, the "physical functioning" subscale did not differ significantly according to participants' gender, age, nationality, marital status or number of children. Participants' "role limitations due to emotional problems" differed significantly according to their geographical sector, being best among participants at Northwestern sector and least among participants at Southeastern sector (67.7±43.9 and 49.4±37.3, respectively, p=0.014). However, this component did not differ significantly according to participants' position, monthly income, or their experience in PHC. Participants who had chronic diseases had significantly less "emotional wellbeing" than those who did not have chronic diseases (60.8±20.5 and 64.7±17.3, respectively, p=0.033). Moreover, female participants had significantly less "emotional wellbeing" than males (62.1±18.9 and 65.8±17.3, respectively, p=0.017). However, the "physical functioning" component did not differ significantly according to participants' age, nationality, marital status or number of children. The "emotional wellbeing" subscale differed significantly according to participants' position, being lowest among dentistry assistants and highest among technicians (58.6±12.4 and 68.1±17.2, respectively, p=0.016). However, the "emotional wellbeing" subscale did not differ significantly according to participants' geographical sector, monthly income or experience in PHC.

**Table 5: Participants' mean percent scores of "vitality", "social functioning", "role limitations due to emotional problems", and "emotional wellbeing" according to their personal and work characteristics**

Personal and work characteristics	No.	Vitality		Social functioning		Role limitations due to emotional problems		Emotional wellbeing	
		Mean±SD	P-value	Mean±SD	P-value	Mean±SD	P-value	Mean±SD	P-value
Gender									
• Male	213	60.5±17.4		70.7±21.2		55.6±42.0		65.8±17.3	
• Female	276	53.5±18.9	<0.001	66.5±23.0	0.040	54.8±43.1	0.852	62.1±18.9	0.017
Age									
• <25 years	23	58.6±14.9		73.9±21.6		58.0±47.4		64.2±16.8	
• 25-35 years	250	57.8±18.9		68.7±22.9		58.5±42.8		64.3±18.8	
• 36-45 years	148	55.3±19.0		66.5±21.8		52.5±42.6		62.5±18.0	
• 46-55 years	56	54.7±16.6		67.4±19.2		44.6±39.3		62.5±18.5	
• >55 years	12	51.0±22.0	0.443	78.1±29.3	0.294	61.1±39.8	0.206	69.0±12.3	0.712
Nationality									
• Saudi	451	56.9±18.6		68.8±22.4		55.5±42.6		64.0±18.6	
• Non-Saudi	38	52.0±17.7	0.114	62.8±20.2	0.112	50.9±42.3	0.520	59.6±14.0	0.148
Marital status									
• Single	88	55.3±17.8		69.5±23.5		59.8±42.9		61.1±18.6	
• Married	347	57.2±18.3		68.3±21.8		54.9±42.3		64.9±17.7	
• Divorced	44	56.3±20.4		67.9±23.4		48.5±44.0		60.0±20.4	
• Widow	10	46.5±25.0	0.296	63.8±26.0	0.882	50.0±46.1	0.513	58.9±23.8	0.125
Number of children									
• 0	148	56.1±17.3		69.8±21.9		58.8±43.4		63.5±18.4	
• 1	72	59.1±17.8		69.4±20.9		56.5±42.5		62.2±18.3	
• 2	84	59.3±19.5		68.8±22.9		57.1±41.6		65.3±19.1	
• 3	96	54.8±21.1		67.4±23.8		55.6±43.2		63.0±21.0	
• 4+	89	54.6±17.3	0.265	65.6±22.2	0.667	45.7±41.3	0.220	64.3±13.9	0.852
Chronic diseases									
• Absent	537	57.6±17.8		70.4±22.1		57.6±43.0		64.7±17.3	
• Present	131	53.7±20.4	0.041	62.8±22.2	0.001	48.3±41.0	0.033	60.8±20.5	0.033
Sector									
• Northeastern	118	58.4±15.6		67.8±20.8		50.0±43.7		64.2±16.7	
• Northwestern	96	54.9±21.5		69.4±25.3		67.7±43.9		62.2±20.5	
• Southeastern	81	58.2±18.3		68.1±21.1		49.4±37.3		65.2±17.2	
• Southwestern	98	53.7±18.8		69.3±23.6		57.1±42.5		61.1±19.3	
• Central	96	57.5±18.8	0.281	67.3±20.9	0.956	51.7±42.1	0.014	65.9±17.5	1.186
Position									
• Physician	101	54.9±19.4		68.9±22.0		57.1±45.5		60.7±18.9	
• Dentist	32	58.1±16.0		62.9±23.6		57.3±43.4		66.2±20.8	
• Pharmacist	28	57.9±18.1		70.1±22.9		47.6±45.7		66.4±18.4	
• Technician	83	63.0±17.5		73.9±19.8		59.0±41.4		68.1±17.2	
• Nurse	143	53.1±18.9		64.9±22.9		51.3±41.6		60.9±18.9	
• Dentistry assistant	14	44.7±18.9		63.4±28.4		42.9±46.1		58.6±12.4	
• Administrator	88	58.9±17.1	0.001	70.2±21.5	0.062	59.1±40.0	0.551	66.5±16.0	0.016
Monthly income (SR)									
• <10,000	95	59.1±18.1		68.8±23.8		54.7±40.9		65.0±18.5	
• 10,000-14,999	186	56.9±19.0		69.8±21.1		59.0±42.2		64.3±18.9	
• 15,000-19,999	123	54.9±19.4		65.8±23.6		50.7±43.6		62.8±18.9	
• 20,000-24,999	57	53.8±18.2		65.4±21.4		49.7±42.8		61.9±16.5	
• 25,000-29,999	12	55.3±12.9		71.9±19.3		44.4±49.9		60.9±13.7	
• ≥30,000	16	60.3±13.5	0.436	76.6±20.9	0.305	75.0±47.5	0.155	63.1±13.9	0.884
Experience in PHC									
• <5 years	95	56.8±17.6		70.0±21.8		57.9±43.3		64.4±18.1	
• 5-9 years	171	58.3±19.6		66.2±23.3		59.6±42.2		63.2±19.0	
• 10-19 years	144	55.5±18.5		70.1±22.3		52.1±43.3		64.2±17.3	
• 20+ years	79	54.4±17.6	0.402	67.9±20.7	0.402	47.7±40.5	0.140	62.9±18.8	0.917

## Discussion

Quality of life has been recognized as an important measure in numerous healthy populations. For the provision of satisfactory public health care, it is necessary to have health care workers with a high quality of life (17). Decline in health care workers' quality of life may lead to reduced professional performance, quality, and safety of provided health care services.<sup>18</sup>

Therefore, the present study aimed to assess the quality of life among primary health care workers and to determine predictors of their quality of life.

Results of the current study showed that MOH primary health care physicians' quality of life in Jeddah City is generally suboptimal. Out of 100%, participants' quality of life physical component summary mean percent score was  $64.5 \pm 19.4\%$ , that of mental component summary was  $60.9 \pm 17.5\%$ , while their mean percent score of health related quality of life was  $62.7 \pm 17.5\%$ . Their best attained health-status scores were for "bodily pain" and "social functioning" subscales ( $72.9 \pm 23.7\%$  and  $68.4 \pm 22.3\%$ , respectively), while their least attained health-status scores were for "role limitations due to emotional problems" and "energy/fatigue" ( $58.7 \pm 4.7\%$  and  $56.6 \pm 18.6\%$ , respectively).

These findings are in accordance with those reported by several other studies. Khalooei and Homaei<sup>18</sup> reported that the mean HRQoL score of family medicine team members was 71.6%. Gholami et al.<sup>19</sup> found that the nursing staff quality of life mean score was 64.7%. Moreover, Sveinsdóttir and Gunnarsdóttir<sup>20</sup> demonstrated that healthcare workers' quality of life was not satisfactory. Shanafelt et al.,<sup>21</sup> in USA, reported physicians' quality of life is lower than that among other US workers.

However, Kheiraoui et al.,<sup>22</sup> in Italy, reported that healthcare workers had relatively higher quality of life scores, with the highest attained mean score of  $92.8 \pm 11.7$  for "physical health" and "role physical" ( $78.2 \pm 35.9$ ), while the least scores were for "vitality" ( $61.9 \pm 20.7$ ) and "general health" ( $65.2 \pm 22.3$ ).

The identified unfavorable HRQoL among health care workers at MOH primary health care centers in Jeddah necessitates further studies to explore the possible causative factors leading to their suboptimal quality of life and to put plans for its improvement. Kheiraoui et al.<sup>22</sup> reported that burnout and increased burden among healthcare workers is responsible for their lowered quality of life. They suggested that minimizing the burden on healthcare personnel is expected to improve their quality of life and medical outcomes of their patients.

Results of the current study showed that some personal characteristics were associated with lower HRQoL scores among primary health care workers. Female gender was significantly associated with lower HRQoL regarding both physical component summary and its bodily pain subscale, as well as the mental component summary and its subscales of vitality, social functioning and emotional wellbeing.

Similarly, Kheiraoui et al.<sup>22</sup> reported that female healthcare workers had consistently lower scores for all eight subscales of SF-36, with statistically significant

differences regarding bodily pain ( $p=0.005$ ), vitality ( $p=0.008$ ) and mental health ( $p=0.015$ ). They explained this common finding by being related to the responsibilities of women outside of work (child care, domestic and family commitments).

Liang et al.<sup>23</sup> added that it has been observed that health of female physicians is usually poorer than that of males. For example, female doctors suffer from more minor physical ailments and higher suicidal rate than male doctors.<sup>24</sup> Therefore, health of female health care providers should be considered and a support-network system should be developed.<sup>25,26</sup>

It was not surprising to realize in the present study that primary health care workers with chronic diseases had consistently and significantly lower scores in all components and subscales of HRQoL than those who did not have chronic disease.

Lam and Lauder<sup>27</sup> noted that advances in medicine have prolonged the life of many people with chronic diseases, which may not kill but rather threaten the quality of life of sufferers.

The present study also identified few other personal characteristics as determinants of some components and subscales of HRQoL among primary health care workers. Older participants had significantly lower scores for "physical component summary" than younger ones. Non-Saudi participants had significantly lower scores for "general health" subscale than Saudi ones. Divorced/single participants had significantly lower scores for "general health" subscale than others.

Almalki et al.,<sup>28</sup> in Jazan Region, Saudi Arabia, reported that significant differences were associated with nurses' HRQoL were their gender, age, marital status, dependent children, dependent adults, nationality, and payment per month.

Results of the current study showed that some work-related characteristics were also associated with lower HRQoL scores among primary health care workers. HRQoL components and subscales that were significantly associated with the geographic location of sectors, i.e., "physical component summary", "role limitations due to emotional problems" subscale, with "Central" being associated with significantly lower scores. Dentistry assistants were consistently and significantly associated with low scores for "general health"; "vitality"; "emotional wellbeing" subscales; "mental component summary" component and the "health-related quality of life". Participants with relatively lower monthly income had significantly lower HRQoL scores regarding "physical component summary"; "physical functioning" and "role limitations due to physical health" subscales. Participants' longer experience in PHC was significantly associated with lower HRQoL scores regarding both "physical component summary" component and "bodily pain" subscale.

Regarding the significant impact of age on health care providers' quality of life, Baldwin et al.<sup>29</sup> noted that older people feel more pain than younger ones. However, the research objects of the study are young clinical doctors.

Therefore, young doctors unlikely suffer from senile and chronic diseases.

The study of Liang et al.,<sup>23</sup> in China, reported that risk factors for poor quality of life among health care providers' include being a female, lower job title or position, and lower salary. Sonnentag and Zijlstra<sup>30</sup> stressed that, with high wages, individuals' material life can be guaranteed, and QOL can be improved. Thus, the government should also strengthen the financial support for health care providers.<sup>31</sup>

It is to be noted that, personal and work-related characteristics that are significantly related to lower quality of life, (e.g., female gender, lower salary, working at Central PHC center, being a dentistry assistant, having a longer PHC experience, etc.) necessitate further study to identify the cause(s) for lowered HRQoL among primary health care providers and to suggest the proper strategy that can be used by primary health care managers and policy makers at the Saudi MOH for developing and appropriately implementing successful plans to improve their HRQoL.

### Conclusions

Based on findings of the present study, it can be concluded that health related quality of life (HRQoL) of primary health care providers in Jeddah City is suboptimal. The mental component of HRQoL is lower than the physical component. Some subscales of HRQoL are specially low, e.g., Role limitations due to emotional problems or due to physical health and vitality. The main determinants of low HRQoL that are associated with primary care providers' personal characteristics include being a female, older age, and having a chronic disease, while those associated with primary care providers' work characteristics include serving at "Central" PHC, being a dentistry assistant.

The researchers recommended: explore the cause(s) for lowered HRQoL among primary health care providers, especially those with significant risk factors (i.e., females, those working in Central PHCC, those with chronic diseases, etc.). Conduct further studies to assess HRQoL of primary care providers in other areas of the Kingdom of Saudi Arabia and to explore more risk factors associated with low HRQoL. And propose the proper strategy for developing and implementing the necessary plans to improve HRQoL among PHC providers.

**Conflict of Interest:** None.

### Abbreviations

ANOVA: One way-analysis of variance

CI: Confidence interval.

GP: GENERAL practitioner.

HRQoL: Health related quality of life

HCW: Health Care Workers

IM-ITE: Internal Medicine In-Training Examination

MOH: Ministry Of Health

OR: Odds ratio

PHCC: Primary Health Care Centres.

QOL: Quality of life.

SPSS: Statistical Package for Social Sciences

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