The Quality of Life among the Adult Population during COVID-19 in Saudi Arabia

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Abstract

Background: Quality of Life (QoL) is affected by many factors such as age, sex, mental health, relationships, economic status, sociodemographic characteristics and stress. The COVID-19 pandemic is a stressful factor globally, which may affect QoL. Therefore, this study assessed the QoL among the adult population during the COVID-19 pandemic in Saudi Arabia.

Methodology: This cross-sectional study evaluated the QoL in the general population of Saudi Arabia during the COVID-19 pandemic using the World Health Organization Quality of Life-BREF questionnaire. A p-value <0.05 was considered to be statistically significant. Ethical approval was obtained from the Faculty of Medicine, Umm Al-Qura University, Makkah, Saudi Arabia.

Results: A total of 1,978 participants were recruited from across the Kingdom of Saudi Arabia. Half of the participants were women (1136, 57.4%). Most (1,890, 95.6%) were Saudis. Half of the participants had good QoL in the physical, psychological, social, and environment domains, representing 1,104 (55.8%), 1143 (57.8%), 1,233 (62.3%), and 1,022 (51.7%), respectively. A significant association was noticed between age/BMI and the physical domain (p-values of 0.001 and 0.001, respectively).

Conclusion: The COVID-19 pandemic has affected QoL in many aspects. Women, university and below students; widowed, separated, and divorced people; the retired; people not working in the medical field and people with a chronic disease reported poor QoL.

Key words:
Quality of life, COVID-19 pandemic, general population, Saudi Arabia, Adult.

Introduction

Quality of life (QoL) defines an individual's perceptions of the cultural context and value systems they live to with regard to their goals, expectations, standards, and responsibilities. The eight QoL domains include physical and psychological health, independence, social relations, spirituality, and personal beliefs. The COVID-19 pandemic has affected more than 235 countries and is a stressful factor globally. Many countries have endorsed a lockdown and shifted to virtual learning, among many other factors, to decrease the rate of infection]1[. QoL is affected by many factors such as age, sex, mental health, relationships, economic status, and sociodemographic characteristics]2,3[. Many instruments, both generic and disease-specific, can measure QoL. The World Health Organization (WHO) has created a generic instrument to measure QoL.

The WHOQOL is an acceptable instrument used in many languages. The validity of the Arabic version was reported in 2009]4[.

The COVID-19 pandemic, as announced by the WHO in March 2020]5[, is an infectious disease caused by severe acute respiratory syndrome coronavirus 2]6,7[. The first identification of the disease was in December 2019 in Wuhan, China. By 29 September 2020, more than 235 countries had been affected by the disease, with 33 million confirmed cases and more than one million deaths worldwide]8[.

Hajj and Umrah make Saudi Arabia one of the most affected countries during the COVID-19 pandemic due to mass gatherings. The tremendous effort by the government and Ministry of Health includes stopping direct flights from China, pending hajj and Umrah, and closing two holy mosques for cleaning and disinfection. Moreover, education was shifted to remote learning and virtual classrooms; however, these, plus stay-at-home orders increased anxiety, stress, and depression]9,10[. Previous studies have linked COVID-19 to a notable psychological influence on the general population, particularly younger people, women, and patients with a chronic disease in contrast to older individuals, men, and well-educated people with post-graduate degrees. Despite these factors, when family members, relatives, or friends become infected with COVID-19, anxiety levels increase]11,12[. The impact of COVID-19 on the QoL of the Saudi population is not well characterized. Therefore, this study assessed the QoL among the adult population during COVID-19 in Saudi Arabia.

Subjects and Methods

Study design and population

During the COVID-19 pandemic, this cross-sectional study evaluated the QoL in the general population of Saudi Arabia using the WHOQOL-BREF questionnaire through a link shared on social media. The population sampling techniques used were the convenience and snowball sampling techniques, and the participants who accepted to be involved in the study met the inclusion criteria.

Inclusion and exclusion criteria

In this study, both genders aged 18 years or more of the Saudi and non-Saudi populations who agreed to give informed consent, who can read and understand Arabic or English, and who have access to social media, were included. People who declined to participate in this study or had a psychiatric illness were excluded.

Data collection

Using Google Forms that include consent forms, data were collected using anonymous Arabic and English online questionnaires shared through social media (WhatsApp, Facebook) and email. Motivating the participants to distribute the questionnaire to more people was a goal to raise the number of respondents. The questionnaire consisted of two parts: FIRST, Demographic and socioeconomic characteristics include age, gender, residence, height, weight, smoking status, level of education, occupation, working in the medical field, income, marital status, and other comorbidities. SECOND, The WHOQOL-BREF is a simple, self-administered tool to assess QoL]13[. The validity and reliability of the Arabic version of the WHOQOL-BREF were evaluated in a previous study]4[. It consists of 26 questions. Using a five-point Likert response scale ranging from 1 (very dissatisfied/very poor) to 5 (very satisfied/very good), the 26 questions representing the four main domains of physical health (seven items), social relations (three items), psychological health (six items), and environment (eight items) were rated. The remaining two items were a rating of subjective satisfaction with health and an overall rating of QoL, and these constituted the general items on QoL and health.

The scores were totaled in three ways. The first was a summation of the raw scores of the constituent items. The second and third ways consisted of transforming the raw scores. In the second way, the raw scores were transformed into scores that ranged from 4 to 20 to be in line with the WHOQOL-100 instrument. The third way converted the 4–20 scores into a 0–100% scale to show the positive correlation between the domain score and QoL. The cutoff value for the WHOQOL-BREF in this study was <60 for the overall domains to determine those participants with poor QoL]14[. The license for this index was taken from the official site of the WHO, the owner of this index; and the License ID code was 362004.

Statistical analysis

Statistical Package for the Social Sciences (SPSS) version 25 was used for the statistical analysis. The mean and standard deviation were calculated to describe the continuous variables, while numbers and percentages were used for the categorical variables. Chi-square test was used to compare between variables. A p-value <0.05 was statistically significant.

Research ethics

The ethics committee of the Faculty of Medicine, Umm Al-Qura University (Code: HAPO-02-K-012-2021-01-519) approved this study. All the participants included in this study were informed about their consent. No financial prizes were given for finishing the survey.

Results

A total of 1,978 participants were recruited from across the Kingdom of Saudi Arabia. Most were from the western region (1,433, 72.7%). Just over half of the participants were women (1,136, 57.4%), with 842 (42.6%) men. Most of them (1,890, 95.6%) were Saudi citizens, and 88 (4.4%) were other nationalities. Nearly all the participants (1,598, 80.8%) were non-smokers. Most (1,573, 79.5%) had a university level of education. Half (1,013, 51.2%) were single. About one-third (705, 36.6%) had a job, and 677 (34.2%) were students. More than one-third (780, 36.6%) reported a sufficient income , and 384 (19.4%) mentioned that they had an insufficient income. The minority of the participants (353, 17.8%) had a chronic disease, and only 108 (5.5%) had a psychological illness. Altogether, 267 (13.5%) participants were infected with COVID-19, and 776 (39.9%) had had contact with a confirmed case of COVID-19 (Table 1).

Table 1: Demographic Data

Age	32.68 (SD±13.17) 95%CI (32.10-33.26)	
BMI	26.43 (SD±6.58) 95%CI (26.14-27.71)	
Gender	Male	842 (42.6%)
	Female	1136 (57.4%)
Residency	Western Region	1433 (72.4%)
	Southern Region	124 (6.3%)
	Eastern Region	154 (7.8%)
	Central Region	223 (11.3%)
	Northern Region	44 (2.2%)
Nationality	Saudi	1890 (95.6%)
	Non - Saudi	88 (4.4%)
Smoker	Yes	380 (19.2%)
	No	1598 (80.8%)
Level of education	Illiterate	9 (0.5%)
	University	1573 (79.5%)
	Below university	396 (20%)
Marital status	Single	1013 (51.2%)
	Married	881 (44.5%)
	Widowed, Separated, Divorced	84 (4.2%)
Current employment status	Working	705 (36.6%)
	Unemployment	409 (20.7%)
	Student	677 (34.2%)
	Retired	187 (9.5%)
Work in medical field	Yes	237 (12%)
	No	1741 (88%)
Totally monthly household income	Insufficient income	384 (19.4%)
	Sufficient income	780 (39.4%)
	Middle income	814 (41.2%)
Currently ill OR do you have a medical condition	Yes	353 (17.8%)
	No	1625 (82.2%)
Suffer from psychological disease	Yes	108 (5.5%)
	No	1870 (94.5%)
Get COVID-19 infection	Yes	267 (13.5%)
	No	1711 (86.5%)
Contact with confirmed case of COVID-19	Yes	776 (39.2%)
	No	1202 (60.8%)

Abbreviation BMI: Body Mass index
Frequency test, mean, Stander deviation used to describe the variables

Half of the participants had good QoL in the physical, psychological, social, and environmental domains, accounting for 1,104 (55.8%), 1,143 (57.8%), 1,233 (62.3%), and 1,022 (51.7%), respectively (Table 2).

Table 2: Frequency table of the domains

Domain	Poor QOL	Moderate QOL	Good QOL
Physical health	241 (12.2%)	633 (32%)	1104 (55.8%)
Psychological well-being	290 (14.7%)	545 (27.6%)	1143 (57.8%)
Social relationships	305 (15.4%)	440 (22.2%)	1233 (62.3%)
Environment	224 (11.3%)	732 (37%)	1022 (51.7%)

Abbreviation: QOL: Quality of life
Frequency test used to describe the variables

The majority of the male and female participants had good QoL in the physical domain, 535 (63%) and 569 (50.1%), respectively (p=0.001). A significant relation was observed between chronic disease and poor QoL (p=0.001). The participants who had a psychological illness had poor QoL (p=0.001). A significant association was noticed between age/BMI and the physical domain (p-values of 0.001 and 0.001, respectively). No significant impact of smoking was found in this domain (p=0.789). No relationship was noted between COVID-19 infection and good QoL (p=0.155) (Table 3).

Table 3: Physical health domain compared to Demographic data

		Poor QOL	Moderate QOL	Good QOL	P value
Gender	Male	89 (10.6%)	218 (25.9%)	535 (63.5%)	0.001
	Female	152 (13.4%)	415 (36.5%)	569 (50.1%)	
Residency	Western Region	181 (12.6%)	456 (31.8%)	796 (55.5%)	0.795
	Southern Region	13 (10.5%)	44 (35.5%)	67 (54%)	
	Eastern Region	19 (12.3%)	50 (32.5%)	85 (55.2%)	
	Central Region	26 (11.7%)	66 (29.6%)	131 (58.7%)	
	Northern Region	2 (4.5%)	17 (38.6%)	25 (56.8%)	
Nationality	Saudi	229 (12.1%)	599 (31.7%)	1062 (56.2%)	0.286
	Non - Saudi	12 (13.6%)	34 (38.6%)	42 (47.7%)	
Smoker	Yes	47 (12.4%)	116 (30.5%)	217 (57.1%)	0.789
	No	194 (12.1%)	517 (32.4%)	887 (55.5%)	
Level of education	Illiterate	3 (33.3%)	2 (22.2%)	4 (44.4%)	0.296
	University	184 (11.7%)	506 (32.2%)	883 (56.1%)	
	Below university	54 (13.6%)	125 (31.6%)	217 (54.8%)	
Marital status	Single	96 (9.5%)	330 (32.6%)	587 (57.9%)	0.002
	Married	133 (15.1%)	270 (30.6%)	478 (54.3%)	
	Widowed, Separated, Divorced	12 (14.3%)	33 (39.3%)	39 (46.4%)	
Current employment status	Working	92 (13%)	195 (27.7%)	418 (59.3%)	0.001
	Unemployment	50 (12.2%)	139 (34%)	220 (53.8%)	
	Student	51 (7.5%)	234 (34.6%)	392 (57.9%)	
	Retired	48 (25.7%)	65 (34.8%)	74 (39.6%)	
Work in medical field	Yes	17 (7.2%)	66 (27.8%)	154 (65%)	0.004
	No	224 (12.9%)	567 (32.6%)	950 (54.6%)	
Totally monthly household income	Insufficient income	51 (13.3%)	141 (36.7%)	192 (50%)	0.100
	Sufficient income	94 (12.1%)	231 (29.6%)	455 (58.3%)	
	Middle income	96 (11.8%)	261 (32.1%)	457 (56.1%)	
Chronic disease	Yes	188 (53.3%)	152 (43.1%)	13 (3.7%)	0.001
	No	53 (3.3%)	481 (29.6%)	1091 (67.1%)	
Psychological disease	Yes	25 (23.1%)	50 (46.3%)	33 (30.6%)	0.001
	No	216 (11.6%)	583 (31.2%)	1071 (57.3%)	
Got COVID-19 infection	Yes	34 (12.7%)	98 (36.7%)	135 (50.6%)	0.155
	No	207 (12.1%)	535 (31.3%)	969 (56.6%)	
Contact with confirmed case of COVID-19	Yes	90 (11.6%)	250 (32.2%)	436 (56.2%)	0.815
	No	151 (12.6%)	383 (31.9%)	668 (55.6%)	

Abbreviation: QOL: Quality of life
Chi-square test used to compare between variables

More than half of the men and women showed good QoL in the psychological domain (p=0.001). There was a significant association between poor QoL and chronic medical disease/psychological disease (p=0.001). Age and BMI were found to have significant relationships with the psychological domain (p-values of 0.001 and 0.001, respectively). No relation between COVID-19 infection/contact with a confirmed case of COVID-19 and poor QoL was found (p-values of 0.297 and 0.934, respectively) (Table 4).

Table 4: Psychological well-being Domain compared to Demographic data

		Poor QOL	Moderate QOL	Good QOL	P value
Gender	Male	96 (11.4%)	194 (23%)	552 (65.6%)	0.001
	Female	194 (17.1%)	351 (30.9%)	591 (52%)	
Residency	Western Region	220 (15.4%)	394 (27.5%)	819 (57.2%)	0.498
	Southern Region	15 (12.1%)	39 (31.5%)	70 (56.5%)	
	Eastern Region	22 (14.3%)	36 (23.4%)	96 (62.3%)	
	Central Region	26 (11.7%)	60 (26.9%)	137 (61.4%)	
	Northern Region	7 (15.9%)	16 (36.4%)	21 (47.7%)	
Nationality	Saudi	277 (14.7%)	514 (27.2%)	1099 (58.1%)	0.230
	Non - Saudi	13 (14.8%)	31 (35.2%)	44 (50%)	
Smoker	Yes	52 (13.7%)	99 (26.1%)	229 (60.3%)	0.551
	No	238 (14.9%)	446 (27.9%)	914 (57.2%)	
Level of education	Illiterate	3 (33.3%)	1 (11.1%)	5 (55.5%)	0.220
	University	219 (13.9%)	437 (27.8%)	917 (58.3%)	
	Below university	68 (17.2%)	107 (27%)	221 (55.8%)	
Marital status	Single	115 (11.4%)	315 (31.1%)	583 (57.6%)	0.001
	Married	152 (17.3%)	211 (24%)	518 (58.8%)	
	Widowed, Separated, Divorced	23 (27.4%)	19 (22.6%)	42 (50%)	
Current employment status	Working	98 (13.9%)	183 (26%)	424 (60.1%)	0.001
	Unemployment	64 (15.6%)	114 (27.9%)	231 (56.5%)	
	Student	70 (10.3%)	207 (30.6%)	400 (59.1%)	
	Retired	58 (31%)	41 (21.9%)	88 (47.1%)	
Work in medical field	Yes	14 (5.9%)	71 (30%)	152 (64.1%)	0.001
	No	276 (15.9%)	474 (27.2%)	991 (56.9%)	
Totally monthly household income	Insufficient income	65 (16.9%)	126 (32.8%)	193 (50.3%)	0.001
	Sufficient income	114 (14.6%)	177 (22.7%)	489 (62.7%)	
	Middle income	111 (13.6%)	242 (29.7%)	461 (56.6%)	
Chronic disease	Yes	241 (68.3%)	103 (29.2%)	9 (2.5%)	0.001
	No	49 (3%)	442 (27.2%)	1134 (69.8%)	
Psychological disease	Yes	38 (35.2%)	38 (35.2%)	32 (29.6%)	0.001
	No	252 (13.5%)	507 (27.1%)	1111 (59.4%)	
Get COVID-19 infection	Yes	45 (16.9%)	79 (29.6%)	143 (53.6%)	0.297
	No	245 (14.3%)	466 (27.2%)	1000 (58.4%)	
Contact with confirmed case of COVID-19	Yes	111 (14.3%)	214 (27.6%)	451 (58.1%)	0.934
	No	179 (14.9%)	331 (27.5%)	692 (57.6%)	

Abbreviation: QOL: Quality of life
Chi-square test used to compare between variables

In the social relationship domain, 60.6% of the participants who had a chronic disease had significantly poor QoL compared with only 5.6% who did not (p=0.001). In addition, there was a relationship between poor QoL and psychological illness (p=0.001). In the social relationship domain, there were significant relationships between it and age and BMI (p-values of 0.001 and 0.001, respectively). No association was found between COVID-19 infection/contact with a confirmed case of COVID-19 and poor QoL (p-values of 0.220 and 0.837, respectively) (Table 5).

Both psychological disease and history of chronic disease showed a significant relation with poor QoL in the environment domain (p=0.001). A significant association was noticed for age/BMI and the environment domain (p-values of 0.001 and 0.001, respectively) (Table 5).

Table 5: Social relationships Domain compared to Demographic data

		Poor QOL	Moderate QOL	Good QOL	P value
Gender	Male	110 (13.1%)	150 (17.8%)	582 (69.1%)	0.001
	Female	195 (17.2%)	290 (25.5%)	651 (57.3%)	
Residency	Western Region	232 (16.2%)	320 (22.3%)	881 (61.5%)	0.094
	Southern Region	15 (12.1%)	25 (20.2%)	84 (67.7%)	
	Eastern Region	20 (13%)	41 (26.6%)	93 (60.4%)	
	Central Region	33 (14.8%)	38 (17%)	152 (68.2%)	
	Northern Region	5 (11.4%)	16 (36.4%)	23 (52.3%)	
Nationality	Saudi	295 (15.6%)	418 (22.1%)	1177 (62.3%)	0.516
	Non - Saudi	10 (11.4%)	22 (25%)	56 (63.6%)	
Smoker	Yes	54 (14.2%)	90 (23.7%)	236 (62.1%)	0.641
	No	251 (15.7%)	350 (21.9%)	997 (62.4%)	
Level of education	Illiterate	3 (33.3%)	0 (0%)	6 (66.7%)	0.123
	University	233 (14.8%)	363 (23.1%)	977 (62.1%)	
	Below university	69 (17.4%)	77 (19.4%)	250 (63.1%)	
Marital status	Single	130 (12.8%)	232 (22.9%)	651 (64.3%)	0.002
	Married	152 (17.3%)	194 (22%)	535 (60.7%)	
	Widowed, Separated, Divorced	23 (27.4%)	14 (16.7%)	47 (56%)	
Current employment status	Working	104 (14.8%)	148 (21%)	453 (64.3%)	0.001
	Unemployment	64 (15.6%)	103 (25.2%)	242 (59.2%)	
	Student	78 (11.5%)	156 (23%)	443 (65.4%)	
	Retired	59 (31.6%)	33 (17.6%)	95 (50.8%)	
Work in medical field	Yes	20 (8.4%)	60 (25.3%)	157 (66.2%)	0.006
	No	285 (16.4%)	380 (21.8%)	1076 (61.8%)	
Totally monthly household income	Insufficient income	72 (18.8%)	102 (26.6%)	210 (54.7%)	0.011
	Sufficient income	108 (13.8%)	173 (22.2%)	499 (64%)	
	Middle income	125 (15.4%)	165 (20.3%)	524 (64.4%)	
Chronic disease	Yes	214 (60.6%)	110 (31.2%)	29 (8.2%)	0.001
	No	91 (5.6%)	330 (20.3%)	1204 (74.1%)	
Psychological disease	Yes	42 (38.9%)	29 (26.9%)	37 (34.3%)	0.001
	No	263 (14.1%)	411 (22%)	1196 (64%)	
Get COVID-19 infection	Yes	50 (18.7%)	53 (19.9%)	164 (61.4%)	0.220
	No	255 (14.9%)	387 (22.6%)	1069 (62.5%)	
Contact with confirmed case of COVID-19	Yes	117 (15.1%)	169 (21.8%)	490 (63.1%)	0.837
	No	188 (15.6%)	271 (22.5%)	743 (61.8%)	

Abbreviation: QOL: Quality of life
Chi-square test used to compare between variables

Discussion

The study assessed the QoL among the adult population during COVID-19 in Saudi Arabia. The main objective was to investigate the possible differences in QoL related to both demographic and pandemic-specific factors, with particular attention to the physical, psychological, social, and environmental domains of QoL. Despite some of the limitations of online studies, our study's finding provides useful insight into the effects of the COVID-19 pandemic on the QoL and its associated factors. Our results showed several significant differences in QoL levels related to the relevant variables.

According to gender, women reported significantly poorer QoL than men in all the domains (physical, psychological, social, and environment). By contrast, a study conducted in Italy revealed significant results in all the domains except the social domain]15[. This contradicts a Saudi Arabian study that showed an overall increased risk of lower QoL in men]16[.

Regarding the level of education, no significant results were observed in any of the domains. However, the Italian study showed poor QoL in students at both the university level and below]15[.

Regarding marital status, single people reported better QoL in all the domains, while widowed, separated, and divorced individuals had poorer QoL.
Concerning employment status, retired individuals demonstrated the poorest QoL compared with workers, the unemployed, and students. On the contrary, in the literature, unemployed individuals before the pandemic and people who lost their job during the pandemic reported a decrease in QoL]15,16[.

On the contrary, those who work in the medical field had good QoL compared to people outside the medical field. Health care workers have reliable information about the pandemic and know how to deal with such situations.

Concerning the influence of chronic disease on QoL, our results showed significantly lower QoL in people with a chronic illness, which is consistent with the findings of previous studies]16,17[. However, an Italian study found no significant result]15[. This finding can be described by the urgency of medical care that could be difficult to provide to people with chronic diseases during the COVID-19 pandemic.

Limitations

When interpreting the results, the following limitations must be considered. Age was not included in the analysis. Considering the online survey, the outcome of the result was not distributed equally through the five regions of the Kingdom; moreover, the online survey was based on a self-rating test rather than clinical assessment, despite that being the best method to collect data during the COVID-19 pandemic and lockdown. We are unaware of any studies that have assessed QoL before the COVID-19 pandemic in the general Saudi population; thus, two measurement comparisons were missing (before and during the pandemic).

Conclusion

The COVID-19 pandemic has affected QoL in many aspects. Overall, women, university and below students; widowed, separated, and divorced people; the retired; people not working in the medical field; and people with a chronic disease reported poor QoL during the COVID-19 pandemic and lockdown in Saudi Arabia. For those people, certain measures should be initiated. There needs to be more attention and more accessibility to public health in line with the Saudi vision 2030, which provides a healthy life for any individuals living in the Kingdom.

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