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COVID-19 confinement and related well being measurement using the EQ-5D questionnaire: A survey among the Palestinian population

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Abstract

Purpose: This study aims to assess the effect of the COVID-19 confinement on the population wellbeing using the EQ-5D questionnaire.

Methods: After receiving the written permission from the EuroQol Research Foundation, an online-based survey was prepared and a total of 1380 participants were recruited via social media. The relationships of all the factors were studied as well as the scores of the EQ-5D including EQ-5D Index, Visual Analogue Scale (VAS), and each of the EQ-5D dimension. Linear regression for the Index and VAS and Logistic regression model was used to examine each dimension.

Results: The median EQ-5D Index and VAS scores were 0.65 (0.5-0.75) and 80 (60-90), respectively. The most frequently reported problem was anxiety/depression (67.3%), followed by usual activities (48.6%). The statistical analysis showed that factors significantly associated with more reported problems in at least one EQ-5D dimension ($P < .05$) were: females, ageing, being unmarried, low income, school studies, living in refugee camps, and villages, unemployment, having chronic diseases or pain, and obesity. It is important to note that participants who responded in November showed more problems compared with December 2020. On the other hand, more problems were reported by participants who were infected, had known affected persons, had no enough information, perceived negative effect of confinement, and indicated having a high infection chance ($P < .05$).

Conclusions: This work provides important evidence on the health status and well-being during the COVID-19 confinement in a sample of the Palestinian population, affecting almost all the aspects of the health state and wellbeing. This effect could be minimised by improving the COVID-19 preventive education and monitoring that can play an important role in all health and life aspects among the Palestinian population in facing this pandemic.

1 | INTRODUCTION

The ongoing serious pandemic Coronavirus Disease 2019 (COVID-19), as it is named by the World Health Organization (WHO) on 11 February 2020, first emerged in China in late 2019, and has been spreading worldwide posing a global health threat because of the severity of this outbreak and the potential of spreading on an international scale. The WHO declared COVID-19 as a global health emergency on 31 January 2020 and subsequently, was declared as a pandemic on 11 March 2020 (https://www.who.int/emergencies/diseases/novel-coronavirus-2019). Currently, the health systems are not in a position to effectively

cope with COVID-19, since neither sufficient quantity of vaccines nor specific antiviral drugs for treating the disease are within reach for all.[1,2] Therefore, the only adopted and effective strategy for governments and individuals is to make every possible effort to stem the spread of the virus. This strategy includes, but not limited to, implementing measures, such as social distancing, personal hygiene, wearing masks, isolating patients and imposing mandatory confinement measures. However, these confinement measures have adverse effects on education, economics, social and the quality of life.[3]

As of the time of writing this article, there are more than 173 million confirmed COVID-19 cases across the world with a total of more than 3.7 million deaths.[4] In Palestine, the emergency state including measures of home confinement was declared on 5 March 2020 after seven COVID-19 cases were confirmed in Bethlehem city.[5] However, the situation becomes worse as there are more than 338 thousand confirmed cases including approximately 3800 deaths [https://corona.ps/]. Governments were obliged to adopt strict protective and preventive measures to prevent COVID-19 further spreading, in the absence of approved and safe available vaccines or effective treatment for all which included home confinement and lockdown. However, home confinement while being successful in controlling the virus spreading has multiple adverse effects on the citizens' health-related quality of life (HRQoL).[6,7] Several studies indicated that COVID-19 pandemic has a negative impact on psychological behaviours, mental health and an increase in anxiety and depression rates.[8-11]

The EQ-5D is a generic questionnaire was developed by the Euroqol group to assess the HRQoL.[12] The questionnaire allows the subject to provide a detailed description of their present health within five dimensions that are: self-care, mobility, usual activities, pain/discomfort and anxiety/depression. Moreover, EQ-5D is applicable to many different health conditions and treatment. It was initially developed and applied to English speaking populations but now it is being adapted for the use of different nations and translated to major languages taking into consideration the cultural factor.[13-16] Recently, several studies have confirmed the validity and reliability of the Arabic EQ-5D in different Arab populations and, the questionnaire proved to be a valid measure for HRQoL in Arab populations.[3,17-23] This study is the first in assessing the home confinement impact on HRQoL among the Palestinian population, using the EQ-5D Arabic version instrument. It is vital to measure the effect of COVID-19 pandemic on the HRQoL among the Palestinian population, especially that this population was under home confinement since 5 March 2020. This assessment is important for a better understanding of the COVID-19 health effects, adopting the appropriate strategy to limit these effects, and managing the post-confinement complications.

• What's known

Home confinement while being effective in controlling the virus spreading has multiple adverse effects on the citizens' health-related quality of life. Several studies indicated that COVID-19 pandemic has a negative impact on all life aspects.

• What's new

This study is the first in Palestine and possibly among Arab countries that evaluates COVID-19 confinement and its related well-being measurement using the Arabic EQ-5D questionnaire among the Palestinian population. Thus, this assessment is important for a better understanding of the COVID-19 confinement health effects, which gives an opportunity for adopting appropriate strategies to limit these effects and manage the post-confinement complications.

2 | METHODS

2.1 | Design and participants

The design of the research was an observational, cross-sectional survey. The study was carried out in Palestine with an approximate population of 5 000 000 and adult population (18 years old and above) of approximately 3 000 000. A representative sample of the adult population was chosen. The figures were taken from the 2019 census, which was made available by the Palestinian Central Bureau of Statistics (http://www.pcbs.gov.ps/default.aspx). The sample size obtained using Raosoft calculator (www.raosoft.com) by considering a 95% confidence level and margin error of 5%; thus, the estimated minimum sample size was 385 individuals. Subsequently, complete data collected from 1380 individuals between November and December 2020. However, the calculations were done with 1367, as we dropped 13 participants who indicated to be illiterate, the reason for that was because of the subjectivity of collected data.

Participants were recruited conveniently via social media, by posting the electronic survey including a photo of the EQ-5D Questionnaire on the public social media pages and applications (eg, Facebook, Whats App, etc) The participants could answer the electronic questions, then answer and re-upload the EQ-5D Questionnaire in the same electronic form. People excluded from the study were those who refused to participate and participants under 18 years old. The study was approved by the Institutional Review Board (IRB) of An-Najah University in Nablus (West Bank, Palestine) and was performed in compliance with the Helsinki Declaration for research in humans. All participants provided their informed consent to participate in this research before they were included in the study.

2.2 | Data collection and assessment tool

After getting the written permission from the EuroQol Research Foundation, a collection data notebook especially prepared to

TABLE 1 Socio-demographic characteristics and EQ-5D Index and Visual Analogue Scale (VAS) scores

	EQ5D-3L Index					EQ5D-3L VAS		
	N	(%)	Median (Q1-Q3)	*P*-value*	Spearman's rho correlation coefficient	Median (Q1-Q3)	*P*-value*	Spearman's rho correlation coefficient
Total	1367	100	0.65 (0.5-0.75)			80 (60-90)		
Response time				**.013**			.324	
November	937	68.5	0.64 (0.49-0.75)			80 (60-90)		
December	430	31.5	0.65 (0.50-0.80)			80 (70-90)		
Gender				**.000**			**.000**	
Female	905	66.2	0.60 0.49-0.75)			80 (60-90)		
Male	463	33.9	0.75 (045-1.0)			80 (70-90)		
Age				**.000****	$r = 0.186$	72.9 (22.14)	**.028****	$r = 0.060$
Living site				.063			.166	
Palestinian Refugee Camp	47	3.4	0.60 (0.39-0.75)			78 (60-85)		
City	657	48.1	0.65 (0.5-0.75)			80 (60-90)		
Village	663	48.5	0.65 (0.5-0.75)			80 (60-90)		
Residency place				**.000**			**.001**	
Gaza strip	34	2.5	0.34 (−0.05-0.54)			73 (65.8-87.3)		
Jerusalem	68	5	0.75 (0.60-1.00)			85 (70-90)		
Palestine (1948)	139	10.2	0.65 (0.50-0.75)			85 (70-90)		
West Bank	1126	82.4	0.65 (0.50-0.75)			80 (60-90)		
Educational level				**.000**			.326	
School studies	101	7.4	0.60 (0.35-0.75)			80 (62.5-90)		
University study	1092	79.9	0.64 (0.49-0.75)			80 (60-90)		
Post graduate study	174	12.7	0.75 (0.60-1.00)			80 (60-90)		
Employment status				**.000**			**.014**	
Employed	425	31.1	0.75 (0.55-1.00)			80 (70-90)		
Unemployed	127	9.3	0.65 (0.49-0.75)			78 (60-90)		
Student	815	59.6	0.60 (0.44-0.75)			80 (60-90)		
Marital status				**.000**			.182	
Married	365	26.7	0.75 (0.59-1.00)			80 (70-90)		
Single	973	71.2	0.60 (0.49-0.75)			80 (60-90)		
Separated/Divorced/ Widowed	29	2.1	0.54 (0.27-0.75)			70 (50-84)		
Income (ILS)				**.048*****			**.000**	

(Continues)

TABLE 1 (Continued)

	EQ5D-3L Index				Spearman's rho correlation coefficient	EQ5D-3L VAS		Spearman's rho correlation coefficient
	N	(%)	Median (Q1-Q3)	*P*-value*		Median (Q1-Q3)	*P*-value*	
Less than 2000	146	10.7	0.60 (0.49-0.75)			72.5 (53.8-90)		
2000-4999	649	47.5	0.64 (0.45-0.75)			80 (60-90)		
5000-9999	380	27.8	0.65 (0.50-0.75)			80 (70-90)		
10 000 and more	192	14.0	0.65 (0.50-1.00)			85 (70-90)		
Medical field working?				.123			.593	
Yes	557	40.7	0.65 (0.50-0.75)			80 (60-90)		
No	810	59.2	0.60 (0.49-0.75)			80 (60-90)		

*P-values obtained from either Mann-Whitney *U* test, or Kruskal-Wallis test.; **P-values obtained from Spearman's Correlation. Bold *P*-values are statistically significant (Mann-Whitney *U* test or Kruskal-Wallis test and Bonferroni).; ***Statistically not significant after adjustment.

record the information of the different variables was set, as well as the Arabic version of the EuroQol-5 Dimension (EQ-5D) questionnaire, a questionnaire available in over 200 languages and widely used in population health surveys, clinical studies, economic evaluation and in routine outcome measurement and many other types of studies where a generic measure of health status is useful.

The EQ-5D essentially consists of two sections: the EQ-5D descriptive system and the EQ-5D Visual analogue scale (EQ VAS). The EQ-5D descriptive system comprises the following five dimensions describing: Mobility, Self-care, Usual activities, Pain/Discomfort and Anxiety/Depression while each dimension has three levels; no problem, some problem, extreme problem (labelled 1-3). The participants were asked to indicate their health state by checking the box against the most appropriate statement concerning each dimension. The (EQ VAS) records the respondents self-rated health on a vertical VAS calibrated from 0 to 100 with higher scores indicating better health status, the endpoints are labelled "The best health you can imagine" and "The worst health you can imagine".[17]

2.3 | Data analysis

The summative instrument scores were entered as a continuous measure. The Statistical Package for the Social Sciences (SPSS v.25) was used to carry out statistical analysis and an initial descriptive analysis was performed for the main variables. A *P* value <.05 was considered statistically significant. Descriptive and comparative statistics were carried out for all variables which were expressed as frequency and percentage for categorical variables. The Kolmogorov-Smirnov test was used to assess continuous variables for normality. Subsequently, the continuous variables' scores were found to be non-normally distributed. Thus, non-parametric tests including either Mann-Whitney or Kruskal-Wallis test were used and expressed as median (interquartile range: Q1-Q3). *P*-values were adjusted with Bonferroni test for multiple-hypothesis testing by multiplying each reported p-value by the number of comparison that were conducted. Spearman's correlation coefficient was used to identify the relationships between age and EQ-5D-3L index and EQ-5D-3L VAS scores.

Chi-square test was used to assess the statistical significance of the difference in the percentages of EQ-5D dimensions as dependent variables (ie, mobility, self-care, usual activities, pain/discomfort and anxiety/depression) which were coded as 1 = no problem and 2 = some/extreme problem according to independent variables. Multiple linear regression analyses were used to evaluate the relationship between the factors with EQ-5D-3L index and EQ-5D-3L VAS. Multiple logistic regression was carried out using variables that showed statistical significances in chi-square test and other variables of clinically significance to determine factors related to EQ-5D dimensions.

TABLE 2 Clinical characteristics and EQ5D Index and Visual Analogue Scale (VAS) scores

	EQ5D-3L Index				EQ5D-3L VAS	
	N	(%)	Median (Q1-Q3)	*P*-value*	Median (Q1-Q3)	*P*-value*
Total	1367	100	0.65 (0.5-0.75)		80 (60-90)	
Chronic pain?				**.003**		**.000**
Yes	92	6.73	0.54 (0.34-0.75)		70 (50-80)	
No	1275	93.3	0.65 (0.50-0.75)		80 (60-90)	
Chronic disease?				**.015**		**.000**
Yes	98	7.2	0.62 (0.34-0.75)		70 (50-80)	
No	1269	92.8	0.64 (0.5-0.75)		80 (60-90)	
Body mass index (BMI)				.833		.311
Under weight	106	7.8	0.60 (0.5-0.75)		80 (60-90)	
Normal weight	773	56.5	0.64 (0.5-0.75)		80 (60-90)	
Over weight	351	25.7	0.65 (0.5-0.75)		80 (60-90)	
Obese	137	10.0	0.65 (0.40-1.00)		80 (60-88.5)	
No	157	11.5	0.60 (0.40-0.75)		78 (50-90)	
COVID-19 infected?				**.000**		**.016**
Yes	134	9.8	0.55 (0.39-0.75)		75 (50-90)	
No	1233	90.2	0.65 (0.50-0.75)		80 (60-90)	
COVID-19 test?				.675		.978
Yes	385	28.2	0.65 (0.50-0.75)		80 (60-90)	
No	982	71.8	0.65 (0.5-0.75)		80 (60-90)	
Known person infected with COVID-19?				**.006**		**.012**
Yes	1032	75.5	0.64 (0.50-0.75)		80 (60-90)	
No	335	24.5	0.69 (0.50-1.00)		80 (60-90)	
COVID-19 enough information?				**.017**		**.026****
Yes	1210	88.5	0.65 (0.50-0.75)		80 (60-90)	
No	157	11.5	0.60 (0.40-0.75)		78 (50-90)	
Perception of COVID-19 threat				.685		.612
It does not pose threat to health	53	3.9	0.65 (0.42-1.00)		80 (50-90)	
Dangerous for old people/or people with chronic diseases	848	62.0	0.65 (0.5-0.75)		80 (60-90)	
It is very dangerous to life	466	34.1	0.65 (0.5-0.75)		80 (60-90)	
COVID-19 announcement				.948		.198
Yes	1263	92.4	0.64 (0.49-0.80)		80 (60-90)	
No	104	7.6	0.65 (0.50-0.75)		80 (70-90)	
COVID-19 confinement effect on health				**.000**		**.000**
Maybe (Negative)	343	25.1	0.60 (0.50-0.75)		80 (50-90)	
Maybe (Positive)	160	11.7	0.75 (0.60-1.00)		80 (70-90)	
No effect	380	27.8	0.75 (0.60-1.00)		85 (75.3-90)	
Yes (Negative)	391	28.6	0.50 (0.30-0.65)		70 (50-80)	
Yes (Positive)	93	6.8	0.75 (0.60-1.00)		80 (70-90)	
Chance of COVID-19 infection				**.002**		**.000**
Low chance	319	23.3	0.65 (0.5-0.8)		80 (70-90)	

(Continues)

TABLE 2 (Continued)

	EQ5D-3L Index				EQ5D-3L VAS	
	N	(%)	Median (Q1-Q3)	*P*-value*	Median (Q1-Q3)	*P*-value*
No chance	87	6.4	0.75 (0.5-1.0)		85 (50-90)	
High chance	306	22.4	0.60 (0.41-0.75)		80 (60-90)	
Average chance	655	47.9	0.65 (0.50-0.75)		80 (60-90)	

**P*-values obtained from either Mann-Whitney *U* test, or Kruskal-Wallis test. Bold *P*-values are statistically significant (Mann-Whitney *U* test or Kruskal-Wallis test and Bonferroni).; **Statistically not significant after adjustment.

3 | RESULTS

3.1 | Socio-demographic and clinical characteristics of the participants

Data for a total of 1367 participants were analysed. The socio-demographic characteristics of the participants were summarised in Table 1. The participants had a mean age ± SD of 26.4 ± 12.4 years old (range: 18-90 years). The people of the West Bank of Palestine made up the vast majority of the participants (82.4%) with more than half of the participants as female (66.1%). Most of them (79.9%) had university study level, less than half were living in cities (48.1%) and villages (48.5%), and more than half of them were university students (59.6%). Furthermore, more than two-thirds of the participants (71.2%) were single, and the household monthly income range of 2000-4999 ILS acquired the largest percentage of the participants (47.5%). It is also noted that less than half of the participants are working in the medical field such as medicine and nursing (40.7%). The clinical characteristics of the participants were summarised in Table 2.

3.2 | EQ-5D Index and Visual Analogue Scale (VAS) scores results

The median EQ-5D index and VAS scores for the participants were 0.65 (0.5-0.75) and 80 (60-90), respectively. The participants who responded earlier (ie, November-2020) ($P < .05$), male participants ($P < .001$), and those residing in Jerusalem ($P < .001$), holding post-graduate levels ($P < .001$), employed ($P < .001$), married ($P < .001$), and with household monthly income >10 000 ILS ($P < .05$) were significantly associated with higher EQ-5D index scores. The results obtained for VAS score were almost consistent with EQ-5D results except for response time ($P > .05$), educational level ($P > .05$), and marital status ($P > .05$) who were non-significantly associated with VAS scores (Table 1). However, the VAS scores for the participants residing in Jerusalem and Palestine (1948) were almost the same and were significantly associated with higher VAS scores compared with other residency places ($P < .001$). The ageing showed to be correlated with lower Index score and VAS score ($P < .001$).

According to results summarised in Table 2, suffering from chronic pain ($P < .05$, $P < .001$, respectively) and additional chronic diseases ($P < .05$ & $P < .005$, respectively) were significantly associated with lower EQ-5D index and VAS scores, respectively. However, the body mass index (BMI) was not included in the significant associations of clinical characteristics with EQ-5D index and VAS scores. The participants who were not infected with COVID-19 ($P < .001$), did not know persons or relatives infected with COVID-19 ($P < .05$), had enough COVID-19 information ($P < .05$), indicated that confinement because of COVID-19 pandemic did not affect them ($P < .001$), and believed in no chance of COVID-19 infection ($P < .005$) were significantly associated with higher EQ-5D index scores. The VAS scores results were almost consistent as with those of EQ-5D index scores. The participants who believed in no chance of COVID-19 infection were significantly associated with the highest VAS scores (Table 2).

3.3 | Multiple linear regression for EQ-5D Index and Visual Analogue Scale (VAS)

The multiple linear regression analysis of the EQ-5D index showed that the sample multiple correlation coefficient was 0.380, and the adjusted R square was 0.134, $P < .001$. The variables significantly and independently related to EQ-5D index were response time, age, gender, employment status, marital status, income level, chronic diseases, chronic pain, BMI, COVID-19 infection, known person infected with COVID-19, COVID-19 enough information, COVID-19 confinement effect on health and chance of COVID-19 infection (Table 3). Therefore, they were accounted for 13.4% of the EQ-5D index variance. The largest standardised coefficient (β) was −0.240, which was for the employment status. So, the employment status made the strongest unique contribution to EQ-5D index variations (Table 3).

The multiple linear regression analysis of VAS showed that the sample multiple correlation coefficient was 0.254, and the adjusted R^2 was 0.053, $P < .001$. The variables significantly and independently related to the EQ-5D index were gender, employment status, income level, chronic diseases, chronic pain, BMI and COVID-19 infection, (Table 4). Therefore, they were accounted for 5.3% of the VAS variance. The largest standardised coefficient (β) was −0.099, which was suffering from chronic disease. Subsequently, the suffering from chronic diseases made the strongest unique contribution to VAS variations (Table 4).

TABLE 3 Multiple linear regression for EQ5D Index

Variables	Standardised coefficients (β)	Unstandardised coefficients (B)	SE	T	*P*-value
Response time	0.058	0.031	0.014	2.259	**.024**
Age	−0.157	−0.003	0.001	−4.264	**.000**
Gender	0.104	0.055	0.015	3.735	**.000**
Living site	0.017	0.008	0.012	0.672	.501
Educational level	0.048	0.027	0.015	1.770	.077
Employment status	−0.240	−0.067	0.010	−6.369	**.000**
Marital status	−0.129	−0.068	0.017	−3.983	**.000**
Income level	0.070	0.021	0.008	2.674	**.008**
Chronic diseases	−0.070	−0.068	0.027	−2.503	**.012**
Chronic pain	−0.062	−0.063	0.026	−2.404	**.016**
BMI	−0.069	−0.023	0.009	−2.479	**.013**
COVID-19 infected?	−0.091	−0.077	0.022	−3.567	**.000**
Known person infected with COVID-19?	−0.064	−0.037	0.015	−2.439	**.015**
COVID-19 enough information?	0.052	0.041	0.020	2.015	**.044**
COVID-19 confinement effect on health	−0.075	−0.015	0.005	−2.908	**.004**
Chance of COVID-19 infection	−0.072	−0.015	0.005	−2.780	**.006**

Note: Bold *P*-values are statistically significant.

3.4 | Percentages of reported problems in EQ-5D dimensions

Anxiety/depression was the most frequently reported problem among the participants (67.3%), followed by usual activities (48.6%), pain/discomfort (37.5%), mobility (20%) and the least frequently problem was the self-care (10.2%). Problems in EQ-5D dimensions were more likely to be reported in female participants than male participants except for self-care (Table 5). Compared with other Palestinian living sites, participants living in Palestinian Refugee Camps were more likely to report problems in mobility and self-care. The participants with school study reported more problems compared with other educational levels in all EQ-5D dimensions, except for the anxiety/depression, which was reported more among the participants with university study level. Furthermore, the anxiety/depression was the most reported problem among the participants who indicated they are single, while separated/divorced/widowed participants reported more problems related to mobility and pain/discomfort. In addition, the participants with household monthly income 2000-4999 ILS scored the highest reported problems in pain/discomfort and mobility. The results concerning the reported problems in EQ-5D dimensions' among socio-demographic characteristics were summarised in Table 5.

According to what is summarised in Table 6, the chronic pain and chronic diseases were significantly associated with mobility ($P < .001$), self-care (for chronic diseases only, $P < .005$, respectively), and pain/discomfort ($P < .001$). Subsequently, the most reported problems among participants with chronic pain and chronic diseases were pain/discomfort, mobility, and self-care compared with those without chronic pain and diseases. In addition, obese participants (ie, BMI calculations) were more likely to report problems in mobility, self-care, and almost in pain/discomfort. However, underweight participants were more likely to report problems in anxiety/depression than normal and abnormal weight participants (ie, overweight and obese) (Table 6), and it is a result worth drawing attention to it.

Participants with COVID-19 infection were more likely to report problems in 3 EQ-5D dimensions including usual activities and pain/discomfort, followed by self-care, compared with participants who were undiagnosed with COVID-19 infection. Those who knew persons/relatives diagnosed with COVID-19 infection were more likely to report problems in 3 EQ-5D dimensions represented by anxiety/depression, followed by usual activities and pain/discomfort than those who did not know. However, the striking result is more reported problems in pain/discomfort among participants without

TABLE 4 Multiple linear regressions for Visual Analogue Scale (VAS)

Variables	Standardised coefficients (β)	Unstandardised coefficients (B)	SE	T	*P*-Value
Response time	0.034	1.602	1.273	1.259	.208
Age	0.059	0.106	0.069	1.539	.124
Gender	0.088	4.121	1.357	3.036	**.002**
Living site	−0.010	−0.406	1.060	−0.383	.702
Educational level	−0.047	−2.323	1.408	−1.649	.099
Employment status	−0.078	−1.914	0.962	−1.990	**.047**
Marital status	−0.003	−0.150	1.568	−0.096	.924
Income level	0.098	2.522	0.707	3.566	**.000**
Chronic diseases	−0.099	−8.535	2.511	−3.400	**.001**
Chronic pain	−0.073	−6.480	2.400	−2.700	**.007**
BMI	−0.064	−1.848	0.842	−2.195	**.028**
COVID-19 infected	−0.090	−6.692	1.987	−3.369	**.001**
Known person infected with COVID-19	−0.050	−2.601	1.412	−1.843	.066
COVID-19 enough information?	0.050	3.506	1.870	1.875	.061
COVID-19 confinement effect on health	−0.014	−0.245	0.467	−0.524	.600
Chance of COVID-19 infection	−0.046	−0.834	0.492	−1.696	.090

Note: Bold *P*-values are statistically significant.

COVID-19 enough information. Furthermore, those who indicated been negatively affected by COVID-19 confinement reported more anxiety/depression problems, followed by problems in usual activities and pain/discomfort, mobility and self-care. In addition, the most frequently reported problems among the participants who indicated average COVID-19 infection chance was anxiety/depression, compared with participants indicated high COVID-19 infection chance, who reported more problems in pain/discomfort, mobility and self-care (Table 6).

3.5 | Multiple logistic regression analysis

The multivariate analysis showed that the average and high chance of COVID-19 infection was significantly related to increased odds of reporting problems in mobility. Participants suffering from chronic pain were more likely to report problems in mobility compared with those without chronic pain (OR = 2.001; 95% CI 1.209-3.311). Furthermore, overweight and obese participants were more likely to report problems in mobility in comparison with those underweight (OR = 2.561; 95% CI 1.289-5.086, OR = 3.660; 95% CI 1.714-7.818, respectively). In addition, believing in the negative effect of COVID-19 on health status was significantly related to increased odds of reporting problems in mobility (Table 7).

The multivariate analysis in Table 8 showed that age and response to study participation in December 2020 were significantly related to increased odds of reporting problems in self-care. Male participants were more likely to report problems in self-care compared with female participants (OR = 1.556; 95% CI 1.018-2.377). Furthermore, the participants who indicated that confinement because of the COVID-19 pandemic was negative effect were more likely to report problems in self-care (OR = 2.187; 95% CI 1.352-3.536).

According to what is summarised in Table 9, the participants residing in Jerusalem and 1948 lands were less likely to report problems in usual activities compared with those residing in Gaza (OR = 0.222; 95% CI 0.064-0.775, OR = 0.303; 95% CI 0.095-0.973, respectively). Also, having university study level was significantly related to decreased odds of reporting problems in usual activities. The participants who indicated they are university students and single were more likely to report problems in usual activities compared with employed and married participants, respectively (OR = 1.539; 95% CI 1.041-2.275, OR = 1.829; 95% CI 1.195-2.801). In addition, having known/relative person infected with COVID-19 was significantly related to decreased odds of reporting problems in usual activities. However, the participants who indicated that confinement was positive effect were more likely to report problems in usual activities (OR = 4.988; 95% CI 2.992-8.316).

TABLE 5 Percentages of reported problems in EQ-5D dimensions among socio-demographic characteristics

	Mobility		Self-care		Usual Activities		Pain/Discomfort		Anxiety/Depression	
	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value
Total	**274 (20%)**		**139 (10.2)**		**664 (48.6%)**		**513 (37.5%)**		**920 (67.3%)**	
Response time		.104		**.005**		.920		.518		**0.000**
November	199 (21.2%)		110 (11.7)		456 (48.7)		357 (38.1%)		659 (70.3%)	
December	75 (17.4%)		29 (6.7)		208 (48.8)		156 (36.3%)		261 (60.7%)	
Age	20 (19-31.3)*	.196**	20 (19-38)*	.318**	20 (19-23)*	**.000****	20 (19-30)*	.313**	20 (19-26)*	**0.000****
Gender		.092		**.015**		**.023**		**.005**		**0.000**
Male	81 (17.5%)		60 (13%)		205 (44.3)		150 (32.4%)		236 (51%)	
Female	193 (21.3%)		79 (8.7%)		459 (50.8%)		363 (40.2%)		284 (75.7%)	
Living site		**.040**		**.020**		.220		.071		0.236
Palestinian Refugee Camp	10 (21.3%)		10 (21.3%)		28 (59.6%)		25 (53.2%)		37 (78.7%)	
City	113 (17.2%)		58 (8.8%)		324 (49.3%)		239 (36.4%)		440 (67%)	
Village	15 (22.8%)		71 (10.7%)		312 (47.1%)		249 (37.6%)		443 (66.8%)	
Residency place		**.000**		**.000**		**.021**		**.000**		0.117
Gaza strip	17 (50%)		19 (55.9%)		24 (70.6%)		31 (91.2%)		27 (79.4%)	
Jerusalem	10 (14.7%)		7 (10.3%)		27 (39.7%)		15 (22.1%)		39 (57.4%)	
1948 territories	29 (20.9%)		16 (11.5%)		73 (52.5%)		46 (33.1%)		90 (64.7%)	
West Bank	218 (19.4%)		97 (8.6%)		540 (48.0%)		421 (37.4%)		764 (67.9%)	
Educational level		.218		**.000**		**.000**		**.000**		**0.000**
School study	27 (26.7%)		22 (21.8%)		59 (58.4%)		55 (54.5%)		61 (60.4%)	
University study	213 (19.5%)		101 (9.2%)		548 (50.2%)		404 (37%)		767 (70.2%)	
Post graduate study	34 (19.5%)		16 (9.2%)		57 (32.8%)		54 (31%)		92 (52.9%)	
Employment status		**.043**		.091		**.000**		**.001**		**0.000**
Employed	72 (16.9%)		40 (9.4%)		146 (34.4%)		137 (32.2%)		217 (51.1%)	
Unemployed	34 (26.8%)		20 (15.7%)		50 (39.4%)		64 (50.4%)		87 (68.5%)	
Student	168 (20.6%)		79 (9.7%)		468 (57.4%)		312 (38.3%)		616 (75.6%)	
Marital status		.068		**.007**		**.000**		.140		**0.000**
Married	64 (17.5%)		38 (10.4%)		115 (31.5%)		136 (37.3%)		198 (54.2%)	
Single	200 (20.6%)		93 (9.6%)		534 (54.9)		361 (37.1%)		702 (72.1%)	
Separated/Divorced/ Widowed	10 (34.4%)		8 (27.6%)		15 (51.7%)		16 (55.2.1%)		20 (69%)	

(Continues)

TABLE 5 (Continued)

	Mobility		Self-care		Usual Activities		Pain/Discomfort		Anxiety/Depression	
	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value
Income level		**.003**		.623		.545		**.002**		0.131
Less than 2000	28 (19.2%)		16 (11.0%)		73 (50%)		52 (35.6%)		104 (71.2%)	
2000-4999	157 (24.2%)		70 (10.8%)		321 (49.5%)		277 (42.7%)		450 (69.3%)	
5000-9999	58 (15.3%)		32 (8.4%)		186 (48.9%)		125 (32.9%)		247 (65%)	
10 000 & more	31 (16.1%)		21 (10.9%)		84 (43.8%)		59 (30.7%)		119 (62%)	
Medical field working		.961		.116		.112		.361		0.191
Yes	112 (20.1%)		48 (8.6%)		285 (51.2%)		201 (36.1%)		386 (69.3%)	
No	162 (20%)		91 (11.2%)		379 (46.8%)		312 (38.5%)		534 (65.9%)	

Note: *P*-values obtained from Chi-Square, *Median (Q1-Q3), **P*-values obtained from Mann-Whitney *U* test. Bold *P*-values are statistically significant.
Abbreviation: S/E, some/extreme.

TABLE 6 Percentages of reported problems in EQ-5D dimensions among clinical characteristics

	Mobility		Self-care		Usual activities		Pain/Discomfort		Anxiety/Depression	
	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value
Total	**274 (20%)**		**139 (10.2)**		**664 (48.6%)**		**513 (37.5%)**		**920 (67.3%)**	
Chronic pain?		**.000**		**.097**		**.562**		**.000**		**0.242**
Yes	32 (34.8%)		14 (15.2%)		42 (45.7%)		62 (67.4%)		67 (72.8%)	
No	242 (19%)		125 (9.8%)		622 (48.8%)		451 (35.4%)		853 (66.9%)	
Chronic disease?		**.00**		**.002**		**.472**		**.000**		0.496
Yes	32 (32.7%)		19 (19.4%)		51 (52%)		53 (54.1%)		69 (70.4%)	
No	242 (19.1%)		120 (9.5%)		613 (48.3%)		460 (36.2%)		851 (67.1%)	
BMI		**.004**		**.004**		.127		**.010**		**0.022**
Under weight	13 (12.3%)		5 (4.7%)		53 (50%)		30 (28.3%)		76 (71.7%)	
Normal weight	143 (18.5%)		70 (9.1%)		395 (51.1%)		174 (35.4%)		538 (69.6%)	
Over weight	78 (22.2%)		40 (11.4%)		156 (44.4%)		152 (43.3%)		227 (64.7%)	
Obese	40 (29.2%)		24 (17.5%)		60 (43.8%)		57 (41.6%)		79 (57.7%)	
COVID-19 infected.		.243		**.005**		**.004**		**.000**		0.819
Yes	32 (23.9%)		23 (17.2%)		81 (60.4%)		81 (60.4%)		89 (66.4%)	
No	242 (19.6%)		116 (9.4%)		583 (47.3%)		432 (35%)		831 (67.4%)	
COVID-19 test?		.438		.244		.631		.153		0.599
Yes	72 (18.7%)		45 (11.7%)		191 (59.6%)		156 (41.5%)		255 (66.2%)	
No	202 (20.6%)		94 (9.6%)		473 (48.2%)		357 (36.4%)		665 (67.7%)	
Known/relative person infected with COVID-19		.982		.093		**.009**		**.030**		**0.038**
Yes	107 (20.1%)		113 (10.9%)		522 (50.6%)		404 (39.1%)		710 (68.8%)	
No	67 (20%)		26 (7.8%)		142 (42.4%)		109 (32.5%)		210 (62.7%)	
COVID-19 enough information?		.166		.090		.330		**.003**		0.091
Yes	236 (19.5%)		117 (9.7%)		582 (48.1%)		437 (36.1%)		805 (66.5%)	
No	38 (24.2%)		22 (14%)		82 (52.2%)		76 (48.4%)		115 (73.2%)	
Perception of COVID-19 threat		.222		.431		.273		.526		0.136
Does not pose threat to health	13 (24.5%)		8 (15.1%)		20 (37.7%)		23 (43.4%)		29 (54.7%)	

(Continues)

TABLE 6 (Continued)

	Mobility		Self-care		Usual activities		Pain/Discomfort		Anxiety/Depression	
	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value	S/E	*P*-value
Dangerous for old people/or chronic diseases people	179 (21.1%)		87 (10.3%)		415 (48.9%)		322 (38%)		574 (67.7%)	
Very dangerous to life	82 (17.3%)		44 (9.4%)		229 (49.1%)		168 (36.1%)		317 (68%)	
COVID-19 announcement?		.829		.886		.618		.142		0.193
Yes	254 (20.1%)		128 (10.1%)		611 (48.4%)		467 (37%)		856 (67.8%)	
No	20 (19.2%)		11 (10.6%)		53 (51%)		46 (44.2%)		64 (61.5%)	
COVID-19 confinement effect on health		**.000**		**.000**		**.000**		**.000**		**0.000**
Maybe (Negative)	74 (21.6%)		30 (8.7%)		182 (53.1%)		132 (38.5%)		266 (77.6%)	
Maybe (Positive)	18 (11.3%)		4 (2.5%)		56 (35%)		47 (29.4%)		90 (56.3%)	
No	36 (9.5%)		20 (5.3%)		120 (31.6%)		79 (20.8%)		194 (51.1%)	
Yes (Negative)	126 (32.2%)		80 (21.5%)		276 (70.6%)		232 (59.3%)		317 (81.1%)	
Yes (Positive)	20 (21.5%)		5 (5.4%)		30 (23.3%)		23 (24.7%)		53 (57%)	
COVID-19 infection chance		**.001**		**.015**		.859		**.016**		**0.001**
Low chance	42 (13.2%)		26 (8.2%)		152 (47.6%)		106 (33.2%)		195 (61.1%)	
No chance	17 (19.5%)		5 (5.7%)		39 (44.8%)		26 (29.9%)		47 (54%)	
High chance	79 (25.8%)		45 (14.7%)		151 (49.3%)		135 (44.1%)		215 (70.3%)	
Average chance	136 (20.8%)		63 (9.6%)		322 (49.2%)		246 (37.6%)		463 (70.7%)	

Note: Bold *P*-values are statistically significant.

Abbreviations: BMI, body mass index; S/E, some/extreme.

TABLE 7 Multiple logistic regression analysis of the associations between mobility and influencing factors

Variable (Reference)	*P*-value	Odds ratio with 95% CI
Response time (November)		
December	.187	0.807 (0.586-1.110)
Age	.652	0.995 (0.972-1.018)
Gender (Female)		
Male	.083	0.740 (0.526-1.041)
Living site (Palestinian Refugee Camp)		
City	.276	1.627 (0.678-3.904)
Village	.061	2.270 (0.962-5.358)
Residency place (Gaza)		
Jerusalem	.140	0.349 (0.086-1.411)
Palestine (1948)	.156	0.393 (0.108-1.427)
West Bank	.055	0.310 (0.094-1.024)
Educational level (school study)		
University study	.856	1.060 (0.564-1.991)
Post graduate study	.365	1.403 (0.675-2.916)
Employment (employed)	.349	
Unemployed	.149	1.504 (0.864-2.619)
Students	.484	1.190 (0.731-1.938)
Marital status (married)	.234	
Single	.117	1.515 (0.901-2.549)
Separated/Divorced/Widowed	.340	1.625 (0.599-4.408)
Income level (less than 2000)		
2000-4999	.086	1.546 (0.940-2.542)
5000-9999	.665	0.883 (0.502-1.552)
10 000 and more	.978	0.991 (0.513- 1.913)
COVID-19 infected (No)		
Yes	.963	0.989 (0.624-1.568)
COVID-19 infection chance (low chance)	**.031**	
No chance	.109	1.718 (0.887-3.330)
High chance	**.004**	1.948 (1.238-3.066)
Average chance	**.016**	1.631 (1.094-2.430)
Chronic disease (No)		
Yes	.149	1.499 (0.865-2.597)
Chronic pain (No)		
Yes	**.007**	2.001 (1.209-3.311)
BMI (underweight)		
Normal	.082	1.762 (0.931-3.334)
Overweight	**.007**	2.561 (1.289-5.086)
Obese	**.001**	3.660 (1.714-7.818)
COVID-19 confinement effect on health (maybe negative)		
Maybe positive	**.013**	0.485 (0.274-0.856)
No effect	**.000**	0.392 (0.251-0.611)
Yes negative	**.013**	1.569 (1.098-2.243)
Yes positive	.934	1.025 (0.571-1.839)

Note: Bold *P*-values are statistically significant.

The results of the multivariate analysis of pain/discomfort (Table 10) showed that male participants were less likely to report pain/discomfort compared with female participants (OR = 0.610; 95% CI 0.452-0.822). The residency places in Jerusalem, 1948 lands, and West Bank were significantly related to decreased odds of reporting pain/discomfort. Concerning the university students, they were more likely to report pain/discomfort compared with employed participants, (OR = 1.545; 95% CI 1.018-2.347). COVID-19 infection was significantly related to decreased odds of reporting pain/discomfort. Overweight and obese participants were more likely to report pain/discomfort compared with underweight participants (Table 10). In addition, the age and positive effect of confinement were significantly related to increased odds of reporting pain/discomfort.

Male participants were less likely to report anxiety/depression compared with female participants (OR = 0.358; 95% CI 0.267-0.482). However, the age, holding of a university degree, having known relative persons who are infected with COVID-19, and having an average

TABLE 8 Multiple logistic regression analysis of the associations between self-care and influencing factors

Variable	*P*-value	Odds ratio with 95% CI
Response time (November)		
December	**.003**	0.495 (0.313-0.782)
Age	**.006**	1.038 (1.011-1.067)
Gender (Female)		
Male	**.041**	1.556 (1.018-2.377)
Living site (Palestinian Refugee Camp)		
City	.822	0.889 (0.319-2.479)
Village	.939	1.040 (0.381-2.841)
Residency place (Gaza)		
Jerusalem	.360	0.489 (0.105-2.265)
Palestine (1948)	.159	0.364 (0.089-1.484)
West Bank	.073	0.306 (0.084-1.119)
Educational level (school study)		
University Study	.294	1.584 (0.670-3.743)
Post Graduate Study	.411	1.508 (0.566-4.015)
Employment (Employed)		
Unemployed		
Students	.270	1.534 (0.717-3.282)
Marital status (married)	.068	1.924 (0.953-3.885)
Single	.118	1.804 (0.861-3.781)
Separated/ Divorced/ Widowed	.615	1.381 (0.393-4.860)
COVID-19 infected (No)		
Yes	.086	1.618 (0.934-2.802)
Known/relative person infected with COVID-19 (No)		
Yes	.615	1.136 (0.690-1.871)
COVID-19 enough information? (No)		
Yes	.792	1.084 (0.594-1.978)
COVID-19 infection chance (low chance)		
No chance	.109	0.412 (0.139-1.219)
High chance	.449	1.253 (0.699-2.248)
Average chance	.762	1.083 (0.645-1.819)
Chronic disease (No)		
Yes	.819	0.919 (0.446-1.894)
Chronic pain (No)		
Yes	.331	1.391 (0.715-2.704)
BMI (Underweight)		
Normal	.211	1.849 (0.706-4.846)
Overweight	.157	2.088 (0.752-5.795)
Obese	**.016**	3.746 (1.280-10.965)
COVID-19 confinement effect on health (maybe negative)		
Maybe positive	**.015**	0.262 (0.089-0.769)
No effect	.101	0.602 (0.329-1.104)
Yes negative	**.001**	2.187 (1.352-3.536)
Yes positive	.306	0.592 (0.217-1.614)

Note: Bold *P*-values are statistically significant.

of high infection chance were significantly related to increased odds of reporting anxiety/depression. The participants who indicated they are university students were more likely to report anxiety/depression compared with employed participants (OR = 2.686; 95% CI 1.749-4.123). However, the positive effect of confinement pandemic was significantly related to decreased odds of reporting anxiety/depression (Table 11).

4 | DISCUSSION

This study reports the first evaluation of the effect of COVID-19 confinement among the Palestinian population using the EQ-5D scale and to the best of our knowledge, this is the first study evaluating this concept in the Arab world. The recruited sample in this study was about three folds the minimum required sample size and is comparable with other studies performed in other highly populated countries such as China.[24]

According to the results of the EQ-5D index and VAS in the studied population, it is noticeable that the health status was better

TABLE 9 Multiple logistic regression analysis of the associations between usual activities and influencing factors

Variable (Reference)	*P*-value	Odds ratio with 95% CI
Age	.112	0.984 (0.964-1.004)
Gender (Female)		
Male	.398	0.888 (0.675-1.169)
Residency place (Gaza)		
Jerusalem	**.018**	0.222 (0.064-0.775)
Palestine (1948)	**.045**	0.303 (0.095-0.973)
West Bank	.060	0.341 (0.111-1.045)
Educational level (school study)		
University study	**.043**	0.588 (0.352-0.984)
Post graduate study	.075	0.577 (0.315-1.058)
Employment (employed)		
Unemployed	.441	0.827 (0.510-1.342)
Students	**.031**	1.539 (1.041-2.275)
Marital status (married)		
Single	**.005**	1.829 (1.195-2.801)
Separated/Divorced/ Widowed	.385	1.496 (0.603-3.708)
COVID-19 infected (No)		
Yes	.063	0.681 (0.455-1.020)
Known/relative person infected with COVID-19 (No)		
Yes	**.047**	0.756 (0.574-0.996)
Chronic disease (No)		
Yes	.083	1.595 (0.941-2.702)
Chronic pain (No)		
Yes	.253	0.755 (0.466-1.223)
BMI (Underweight)		
Normal	.429	1.196 (0.767-1.866)
Overweight	.416	1.231 (0.746-2.029)
Obese	.483	1.236 (0.683-2.235)
COVID-19 confinement effect on health (maybe negative)		
Maybe positive	**.003**	2.162 (1.303-3.586)
No effect	.828	1.065 (0.603-1.879)
Yes negative	.970	1.010 (0.606-1.681)
Yes positive	**.000**	4.988 (2.992-8.316)

Note: Bold *P*-values are statistically significant.

among respondents that match the following categories: December participants, male gender, being married, city residents, having a higher level of education, being employed and those earning high income. On the other hand, obese participants and those with chronic pain and/or chronic diseases recorded the lowest index and VAS scores. Among this sample, the age was negatively correlated with the EQ-5D index. These results were justifiable and comparable with the published series that assessed the quality of life using the EQ-5D instrument.[24,25]

The EQ-5D Index and VAS scores showed that participants who were infected with COVID-19 or having known affected persons reported worse health status than others who did not. On the other hand, the lowest index and VAS scores were reported by participants who believed that COVID-19 could negatively affect the health status, those estimated that they had a high chance of getting infected as well as those suffering from chronic pain or diseases. These results give the impression that COVID-19 and/or its related confinement may negatively affect every aspect of our life as it was reported in several published series.[26,27]

This study strengthens the hypothesis that the COVID-19 confinement has negative impacts on the psychological health status of the participants of whom male showed to be less affected which can be associated with the nature of the conservative Arab culture. Nevertheless, anxiety/depression was the most frequently reported problem as it is known that depression is associated with disruption of all daily life aspects.

On the other hand, it is clear that the standards of living, culture and quality of life have a great effect in the impact of home confinement related to COVID-19 on the five dimensions of the EQ-5D. Moreover, the results emphasise the impact of home confinement in relation to the educational level, residential background, income level and employment status. Therefore, the psychological, social, and economic effects are all interrelated, and accumulates in Palestine, as to having challenges facing the healthcare and limited financial resources.[28,29] In addition, it is clearly observed from the results that participants having chronic pain or diseases, or high BMI reported more problems in EQ-5D dimensions, which could

TABLE 10 Multiple logistic regression analysis of the associations between pain/discomfort and influencing factors

Variable	*P*-value	Odds ratio with 95% CI
Age	.904	1.001 (0.982-1.020)
Gender (Female)		
Male	**.001**	0.610 (0.452-0.822)
Living site (Palestinian Refugee Camp)		
City	.913	0.958 (0.450-2.042)
Village	.831	0.921 (0.434-1.957)
Residency place (Gaza)		
Jerusalem	**.001**	0.064 (0.013-0.315)
Palestine (1948)	**.002**	0.091 (0.020-0.417)
West Bank	**.004**	0.119 (0.028-0.515)
Educational level (school study)		
University study	.495	0.830 (0.486-1.418)
Post graduate study	.462	0.789 (0.419-1.484)
Employment (employed)		
Unemployed	.073	1.597 (0.957-2.666)
Students	.041	1.545 (1.018-2.347)
Income level (less than 2000)		
2000-4999	.067	1.493 (0.972-2.291)
5000-9999	.949	1.016 (0.632-1.633)
10 000 and more	.900	1.036 (0.598-1.795)
COVID-19 infected (No)		
Yes	**.000**	0.360 (0.238-0.545)
Known/relative person infected with COVID-19 (No)		
Yes	.336	0.863 (0.639-1.165)
COVID-19 enough information? (No)		
Yes	.165	0.760 (0.516-1.120)
COVID-19 infection chance (Low chance)		
No chance	.358	0.762 (0.426-1.361)
High chance	.667	1.088 (0.741-1.596)
Average chance	.878	1.025 (0.746-1.408)
Chronic disease (No)		
Yes	.412	1.254 (0.730-2.153)
Chronic pain (No)		
Yes	**.000**	3.650 (2.195-6.069)
BMI (underweight)		
Normal	.140	1.451 (0.885-2.380)
Overweight	**.003**	2.320 (1.344-4.003)
Obese	**.022**	2.098 (1.113-3.956)
COVID-19 confinement effect on health (maybe negative)		
Maybe positive	**.007**	2.137 (1.227-3.723)
No effect	.154	1.565 (0.846-2.897)
Yes negative	.756	0.914 (0.518-1.612)
Yes positive	**.000**	4.512 (2.607-7.808)

Note: Bold *P*-values are statistically significant.

be understandable as the negative effect on health status could be accumulated.

On the other hand, the results showed that respondents, who were previously infected with COVID-19 reported less problem, this could be attributed to their beliefs that the disease will no longer affect them. On the contrary, an opposite results were noted for those who believe that they have an elevated chance to be infected which confirms the previous results and the effect of psychological interference of this disease with all health and life aspects.

In this study, a large sample compared with previous studies could be examined in this field in spite of the difficulties of the ongoing COVID-19 confinement and its effects. Nevertheless, it is worth noting that our sample included a large proportion of educated people, females and those who are working or interested in the medical fields.

TABLE 11 Multiple logistic regression analysis of the associations between anxiety/depression and influencing factors

Variable	*P*-value	Odds ratio with 95% CI
Response time (November)		
December	**.004**	0.666 (0.504-0.879)
Age	.541	1.006 (0.986-1.026)
Gender (Female)		
Male	**.000**	0.358 (0.267-0.482)
Living site (Palestinian Refugee Camp)		
City	.209	0.580 (0.249-1.356)
Village	.127	0.520 (0.224-1.206)
Residency place (Gaza)		
Jerusalem	.460	0.599 (0.154-2.332)
Palestine (1948)	.309	0.508 (0.138-1.870)
West Bank	.743	0.813 (0.236-2.798)
Educational level (school study)		
University study	**.023**	1.853 (1.088-3.157)
Post graduate study	.334	1.359 (0.730-2.531)
Employment (Employed)		
Unemployed	.228	1.365 (0.823-2.262)
Students	**.000**	2.686 (1.749-4.123)
Income level (less than 2000)		
2000-4999	.665	0.904 (0.573-1.426)
5000-9999	.168	0.703 (0.427-1.160)
10 000 and more	.241	0.710 (0.400-1.259)
Marital status (married)		
Single	.683	1.094 (0.709-1.689)
Separated/divorced/widowed	.950	0.970 (0.375-2.510)
COVID-19 infected (No)		
Yes	.117	0.693 (0.438-1.097)
COVID-19 test? (No)		
Yes	.263	1.201 (0.871-1.656)
Known/relative person infected with COVID-19 (No)		
Yes	**.020**	1.445 (1.061-1.970)
COVID-19 enough information? (No)		
Yes	.337	0.806 (0.519-1.252)
Perception of COVID-19 threat (does not pose threat to health)		
Dangerous for old people/ or chronic diseases people	.371	1.359 (0.694-2.660)
Very dangerous to life	.174	1.621 (0.807-3.256)
COVID-19 announcement? (No)		
Yes	.925	0.976 (0.594-1.605)
COVID-19 infection chance (low chance)		
No chance	.283	0.741 (0.429-1.280)
High chance	**.018**	1.629 (1.089-2.438)
Average chance	**.029**	1.437 (1.039-1.039)
Chronic disease (No)		
Yes	.295	1.359 (0.765-2.414)
Chronic pain (No)		
Yes	.599	1.162 (0.665-2.029)
BMI. (Underweight)		
Normal	.491	1.194 (0.721-1.977)
Overweight	.255	1.386 (0.790-2.430)
Obese	.701	1.136 (0.592-2.180)
COVID-19 confinement effect on health (maybe negative)		
Maybe positive	**.000**	0.358 (0.231-0.553)
No effect	**.000**	0.332 (0.233-0.474)
Yes negative	.093	1.406 (0.944-2.092)
Yes positive	**.000**	0.345 (0.203-0.588)

Note: Bold *P*-values are statistically significant.

This could be justified at least partially, by the electronic status of the survey which concerns an infectious disease, and the inclusion criteria of the study for the participants to be at least 18 years old. However, it is unclear to which degree this might have affected the current results. Further studies with different tools and sampling methods are warranted in this field.

5 | CONCLUSION

This work represents the first study in Palestine that assesses the effects of COVID-19 related home confinement on the population wellbeing, and provides important evidence about the negative effect of the COVID-19 confinement on the population, affecting almost all the aspects of the health status and wellbeing. These effects could be minimised by improving the COVID-19 preventive education and monitoring that might play an important role in all health and life aspects among the Palestinian population in facing this pandemic.

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DISCLOSURES

The authors have no conflicts to declare.

AUTHOR CONTRIBUTIONS

All authors contributed equally.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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