

# Psychological Impacts and Attitudes of the Syrian Population Regarding the Covid-19 Pandemic and Face Masks during the First Syrian Lockdown

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## ABSTRACT

**Background:** This study assesses the attitudes and psychological impacts regarding COVID-19 and face masks among the Syrian population during the current pandemic and war.

**Methods:** A web-based cross-sectional Arabic survey design was employed. The survey was distributed in May 2020 during the COVID-19 pandemic and civil war in Syria. The survey contained items relating to socio-demographic characteristics and items assessing attitudes regarding COVID-19, and face masks. The chi-square test was applied to the questions against socio-demographic variables.

**Results:** Of the 4148 participants, 3053(73.6%) were female, and 3238(78.1%) were single. 423(10.2%) and 1573(37.9%) stated they had poor and moderate economic status respectively. Home quarantine has led to an increase in family problems 3016(72.7%) and has had a negative psychological impact upon 1666(40.2%) Syrians. 538(13.0%) are shy about wearing face masks in public.

**Conclusion:** Mountainous input from the Syrian government is needed to combat the threat of COVID-19 through targeted awareness campaigns and national helplines aimed at specific socio-demographic variables.

**Keywords:** Attitude; Syria; Masks; War; COVID-19.

## INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a highly infectious respiratory disease that evolved into a worldwide pandemic, spreading through respiratory aerosols invading all mucous membranes in contact. The virus continues to spread worldwide, burdened with the effects of morbidity and mortality, hitting the poorest and most vulnerable in the world. Live statistics are tracking the number of confirmed cases, recovered patients, and death toll daily. Syria announced its first confirmed case on 22 March 2020, with numbers steeply rising since then. The battle against COVID-19 has just entered its third wave in Syria [1].

The COVID-19 pandemic forced governments worldwide to impose draconian lockdowns and coerce their citizens to abide by strict preventive health practices to reduce infection rates. The use of face masks alone in the control and prevention of COVID-19 remains an issue of debate. At the start of the pandemic, the World Health Organization (WHO) recommended that face masks not be worn by the public and that masks should be reserved for healthcare workers and symptomatic individuals. WHO also stated that masks provided a false sense of security and that the use of face masks would cause people to touch their faces, thereby increasing their chances of contracting COVID-19 infection, rendering face masks ineffective for public use. Evidence supporting the use of

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face masks steadily emerged. Health authorities such as WHO subsequently reversed their opposition on face masks and urged governments to encourage the use of facemasks among the public where social distancing measures cannot be established [2].

After 10 years of conflict, life is harder than ever for displaced Syrians. 13.4 million Syrians have been forced to flee their homes since 2011, seeking safety as refugees in Lebanon, Turkey, Jordan, and beyond, or displaced inside Syria. The 6.7 million internally displaced Syrians are overcrowding many governorates. Due to the dense population, social distancing cannot be ensured; therefore, face mask use must be promoted in the country. The demand for face masks has grown since the start of the pandemic in Syria. Amid the high prices of the imported face masks, the Syrian Education Ministry, vocational institutes started producing masks as the education in these facilities had been suspended as part of the government's measures to curb the spread of COVID-19. An average of 3,000 facemasks is produced per day [3-5].

It has become increasingly apparent that behavioral science is vital for optimal pandemic management, and understanding and addressing pandemic related socially disruptive phenomena including the reluctance or refusal to follow health measures such as the wearing of face masks. A few studies have addressed attitudes regarding face masks during the COVID-19 pandemic; however, none have assessed the attitudes of wearing face masks among the Syrian population during the pandemic embedded within the war [6-8].

This study aims to assess attitudes and psychological impacts regarding COVID-19 and face masks during the current pandemic and Syrian conflict. The objectives are to identify correlations between the attitudes and socio-demographic characteristics of participants.

## METHODS

### Study design, setting, and participants

This web-based cross-sectional study was conducted using an Arabic questionnaire during May of 2020. The sample size calculated was 2401 participants based on a margin of error of 2%, and a confidence interval of 95%, for a population of 17,500,657 people using a sample size calculator. All participants residing in Syria, who fully completed the survey, and who can read and understand Arabic were included in the study. Participants under the age of 18 (years) required informed parental consent and were instructed to supply parent/guardian contact information. The researchers were responsible for contacting the parents/guardians to obtain consent before granting the child access to complete the questionnaire. The authors designed questions modelled after existing surveys to assess attitudes and psychological impacts regarding COVID-19

and face masks. The survey was translated into Arabic and was reviewed by two dialectologists and two psychiatrists, who evaluated whether the questions effectively assessed attitudes regarding both COVID-19 and face masks, and checked for double-barreled and confusing questions. A pilot study was conducted on 20 individuals to assess the relevance, clarity, and acceptability of the questionnaire. These were excluded from the final sample to avoid bias. Modifications were made based on feedback received to facilitate better comprehension before distributing the final questionnaire to the general population. The questionnaire was distributed through various social media platforms including WhatsApp, Telegram, and Facebook. After providing informed consent online, participants were directed to the first part of the survey to complete 9 questions about socio-demographic information including gender, age, residence, education level, occupation, marital status, number of household members, and economic status. Participants were also asked about the history of chronic diseases. The second part of the questionnaire contained 12 questions divided into two sections: COVID-19 (7 questions), face masks (5 questions). Ethical approval was obtained from the Institutional Review Board (IRB) of the Faculty of Medicine, Syrian Private University [9].

### Statistical analysis

Frequencies and percentages (for categorical variables) or means and standard deviations (SD) (for continuous variables) were reported. The chi-square test was applied to compare the 12 questions against socio-demographic variables (gender, age, residence, education level, occupation, marital status, number of household members, and economic status). All p-values < 0.05 were considered statistically significant [10].

## RESULTS

### Socio-demographics characteristics

Of the 5000 total participants who participated in the study, a final sample size of 4148 participants met inclusion criteria (completion rate = 83.0%), 3053(73.6%) of whom are female, and 1095(26.4%) of whom are male. The majority were single 3238(78.1%) and had attained college/university level degree 3278(79.0%). Participants' ages ranged from 12 to 70 years, with the age group 18-25 years representing a majority 2870(69.2%), while the age group > 64 years representing a minority 6(0.1%). A total of 423(10.2%) and 1573(37.9%) participants stated they had poor and moderate economic status respectively. 580(14.0%) participants mentioned a history of chronic disease(s) such as diabetes mellitus, hypertension, cardiac conditions, respiratory conditions, and others (Table 1).

**Table 1:** Socio-demographic characteristics of participants.

Socio-demographic characteristics of participants: (n=4148)					
Gender (%)	Male	1095(26.4)	Education(%)	Primary School	29(0.7)

	Female	3053(73.6)		Intermediate School	163(3.9)
Age(%)	Dec-17	159(3.8)		Secondary school	466(11.2)
	18-25	2870(69.2)		College/University	3278(79.0)
	26-34	685(16.5)		Master's degree	185(4.5)
	35-44	261(6.3)		PhD	27(0.7)
	45-54	121(2.9)	Occupation(%)	Healthcare worker	262(6.3)
	55 -64	46(1.1)		Government institution	239(5.8)
> 64	6(0.1)	Private institution		202(4.9)	
Marital Status(%)	Single	3238(78.1)		Business	203(4.9)
	Married	715(17.2)		Military	35(0.8)
	Other	1959(4.7)		Student	2540(61.2)
Economic Status(%)	4Excellent	267(6.4)		Other	667(16.1)
	3Good	1885(45.4)	Household members(%)	Alone	54(1.3)
	2Moderate	1573(37.9)		01-May	2573(62.1)
	1Poor	423(10.2)		>5	1521(36.7)
Residence(%)	Urban	2793(67.3%)	Chronic disease(s)(%)	Yes	580(14.0%)
	Rural	1355(32.7%)		No	3568(86.0%)

1Poor: income does not provide essential needs for the family. 2Moderate: income provides essential needs for the family but no more. 3Good: income provides essential needs and some luxury requirements. 4Excellent: income provides luxury requirements.

### Attitudes and impact of COVID-19 pandemic

Responses varied regarding the successful control of COVID-19, 2274(54.8) agreed, 1404(33.8) did not know, and 470(11.3)

disagreed. Only 2605(62.8%) participants are abiding by home quarantine rules. A minority of 388(9.4%) participants are finding themselves unprepared to face the national spread of the COVID-19 pandemic. Home quarantine has led to an increase in family problems 3016(72.7%), negative psychological impact 1666(40.2%), and feeling lazy and inactive 3470(83.7%) among participants (Table 2).

**Table2:** Attitudes and psychological impacts regarding COVID-19 and face masks.

The following are questions related to COVID-19 control	Yes	No	IDK
	1.Do you think the COVID-19 pandemic will be successfully controlled?	2274(54.8)	470(11.3)
2.Do you think that you or one of your relatives will be	299(7.2)	1502(36.2)	2347(56.6)

infected with the COVID-19?

The following are questions related to COVID-19 attitudes and psychological impacts

	Not at all	A little bit	To some extent	A lot
3. How well do you find yourself prepared to face the national spread of the COVID-19 pandemic?	388(9.4)	1246(30.0)	1369(33.0)	1145(27.6)
4. Are you abiding to home quarantine rules?	181(4.4)	492(11.9)	870(21.0)	2605(62.8)
5. Is home quarantine causing an increase in family problems for you?	1132(27.3)	1100(26.5)	1105(26.6)	811(19.6)
6. Does home quarantine have a positive impact on your psychological state?	1666(40.2)	1007(24.3)	836(20.2)	639(15.4)
7. Is home quarantine causing you to feel lazy and inactive?	678(16.3)	737(17.8)	1011(24.4)	1722(41.5)

The following are questions related to face mask attitudes, and psychological impacts

	Yes	No	IDK
8. Do you support wearing a mask on the street?	2943(70.9)	659(15.9)	546(13.2)
9. Are you shy about wearing a mask in the street in front of people?	538(13.0)	3275(79.0)	335(8.1)
10. Do you have an inferior view of those who wear a mask and consider it a shame?	62(1.5)	4010(96.7)	76(1.8)
11. Do you worry about what people would say about you if you put on the mask?	584(14.1)	3288(79.3)	276(6.7)
12. Will you stop wearing a mask if you are embarrassed or bullied by people?	447(10.8)	3237(78.0)	464(11.2)

### Attitudes and impact of face masks

The majority of participants support the use of face masks in public 2943(70.9%). Shockingly, 538(13.0%) are shy about

wearing a face mask in public, whereas 335(8.1%) do not know. The majority of participants reported having no inferior view of those who wear a face mask, not worrying about what people would say about them if they wear face masks, and will not cease

the use of face masks if embarrassed or bullied by any individual, representing 4010(96.7%), 3288(79.3%), and 3237(78.0%) respectively (Table 2).

differed across gender (p<0.001), age group (p=0.001), social status (p<0.001), education level (p<0.001), and occupation (p<0.001) (Table 3).

### Attitudes and psychological impact towards COVID-19 by socio-demographic variables

Attitudes towards successful control of COVID-19 significantly

**Table3:** Attitudes of participants by socio-demographic characteristics.

**Table 3.**  
Attitudes of participants by socio-demographic characteristics, n(%)

		1. Do you think the COVID-19 pandemic will be successfully controlled?					2. Do you think that you or one of your relatives will be infected with the COVID-19?				
		Yes	No	IDK	X2	P	Yes	No	IDK	X2	P
<b>Gender</b>	Male	571(52.1%)	193(17.6%)	331(30.2%)	59.728	<0.001*	126(11.5%)	328(30.0%)	641(58.5%)	55.223	<0.001*
	Female	1703(55.8%)	277(9.1%)	1073(35.1%)			173(5.7%)	1174(83.5%)	1706(55.9%)		
<b>Age group</b>	<18	81(50.9%)	26(16.4%)	52(32.7%)	38.487	<0.001*	15(9.4%)	62(39.0%)	82(51.6%)	23.111	.027*
	18-25	1520(53.0%)	339(11.8%)	1011(35.2%)			198(66.2%)	994(34.6%)	1678(58.5%)		
	26-34	412(60.1%)	57(10.9%)	198(33.3%)			59(8.6%)	271(39.6%)	355(51.8%)		
	35-44	160(61.3%)	14(5.4%)	39(32.2%)			19(7.3%)	108(41.4%)	134(51.3%)		
	45-54	73(60.3%)	9(7.4%)	16(34.8%)			4(3.3%)	47(38.8%)	70(57.9%)		
	55<	26(56.5%)	4(8.7%)	1(16.7%)			3(6.5%)	16(34.8%)	27(58.7%)		
<b>Social status</b>	Single	1717(53.0%)	403(12.4%)	1118(34.5%)	31.721	<0.001*	230(7.1%)	1141(35.2%)	1867(57.7%)	22.575	<0.001*
	Married	451(63.1%)	48(6.7%)	216(30.2%)			44(6.2%)	301(42.1%)	370(51.7%)		

	Other	106(54.4%)	19(9.7%)	70(35.9%)			25(12.8%)	60(30.8%)	110(56.4%)		
<b>Areas</b>	Urban	1515(54.2%)	323(11.6%)	955(34.2%)	1.236	0.539	199(7.1%)	983(35.2%)	1611(57.7%)	4.339	0.114
	Rural	759(56.0%)	147(10.8%)	449(33.1%)			100(7.4%)	519(38.3%)	736(54.3%)		
<b>Education</b>	Primary school	25(86.2%)	2(6.9%)	2(6.9%)	50.003	<0.001*	3(10.3%)	15(51.7%)	11(37.9%)	22.607	0.012*
	Secondary school	92(56.4%)	18(11.0%)	53(32.5%)			13(8.0%)	65(39.9%)	85(52.1%)		
	High school	279(59.9%)	41(8.8%)	146(31.3%)			36(7.7%)	184(39.5%)	264(52.8%)		
	University/College	1761(53.7%)	377(11.5%)	1140(34.8%)			219(6.7%)	1168(35.6%)	1891(57.7%)		
	Master's degree	106(57.3%)	29(15.7%)	50(27.0%)			24(13.0%)	63(34.1%)	98(53.0%)		
	PHD	11(40.7%)	3(0.1%)	13(48.1%)			4(14.8%)	7(25.9%)	16(59.3%)		
<b>Occupation</b>	Health care worker	151(57.6%)	33(12.6%)	78(29.8%)	53.775	<0.001*	29(11.1%)	89(34.0%)	144(55.0%)	40.974	<0.001*
	Government institution	154(64.4%)	16(6.7%)	69(28.9%)			13(5.4%)	105(43.9%)	121(50.6%)		
	Private institution	113(55.9%)	33(16.3%)	56(27.7%)			22(10.9%)	83(41.1%)	97(48.0%)		
	Business	120(59.1%)	29(14.3%)	54(26.6%)			21(10.3%)	73(36.0%)	109(53.7%)		
	Military	21(60.0%)	3(8.6%)	11(31.4%)			3(8.6%)	11(31.4%)	21(60.0%)		
	Student	1307(51.5%)	310(12.2%)	923(36.3%)			174(6.9%)	862(33.9%)	1504(59.2%)		
	Other	408(61.2%)	46(6.9%)	213(31.9%)			37(5.5%)	279(41.8%)	351(52.6%)		
<b>Economic status</b>	Excellent	152(56.9%)	30(11.2%)	85(31.8%)	9.449	0.15	23(8.6%)	113(42.3%)	131(49.1%)	16.444	0.012*
	Good	1027(54.5%)	204(10.8%)	654(34.7%)			113(6.0%)	683(36.2%)	1089(57.8%)		
	Moderate	858(54.5%)	173(11.0%)	542(34.5%)			121(7.7%)	553(35.2%)	899(57.2%)		
	Poor	237(56.0%)	63(14.9%)	123(29.1%)			42(9.9%)	153(36.2%)	228(53.9%)		

chronic diseases	Yes	315(54.3%)	81(14.0%)	184(31.7%)	5.062	0.08	62(10.7%)	195(33.6%)	323(55.7%)	12.681	0.002*
	No	1959(54.9%)	389(10.9%)	1220(34.2%)			237(6.6%)	1307(31.5%)	2024(56.7%)		

The thought of self or family contracting COVID-19 infection significantly differed across gender (p<0.001), age group (p=0.027), social status (p<0.001), education level (p=0.012), occupation (<0.001), economic status (p=0.012), and chronic disease(s) (p=0.002) (Table 3).

Preparedness to face the national spread of pandemic significantly differed across gender (p=0.007), age group(p=0.001), social status (p<0.001), education level (p=0.026), occupation (<0.001), and economic status (p<0.001) (Table 4).

**Table4:** Attitudes of participants by socio-demographic characteristics.

Table 4. Attitudes of participants by socio-demographic characteristics, n (%)

Charact eristics		3. How well do you find yourself prepared to face the national spread of the COVID-19 pandemic?						4. Are you abiding to home quarantine rules?					
		Not all	at A bit	little mes	Someti	Too much	X2	P	Not all	at A bit	little mes	Someti	Too much
Gender	Male	94(8.6%)	311(28.4%)	344(31.4%)	346(31.6%)	12.005	0.007*	102(9.3%)	180(16.4%)	274(25%)	539(49.2%)	165.171	<0.001*
	Female	294(9.6%)	935(30.6%)	1025(33.6%)	799(26.2%)			79(1.9%)	312(10.2%)	596(19.5%)	2066(67.7%)		
Age group	<18	18(11.3%)	51(32.1%)	50(3.7%)	40(52.2%)	41.59	0.001*	4(2.5%)	6(3.8%)	42(26.4%)	107(67.3%)	70.031	<0.001*
	18-25	270(9.4%)	852(29.7%)	1000(34.8%)	748(26.1%)			103(3.6%)	330(11.5%)	603(21%)	1834(63.9%)		
	26-34	64(9.3%)	217(31.7%)	202(29.5%)	202(29.5%)			41(6%)	95(13.9%)	135(19.7%)	414(60.4%)		
	35-44	26(10%)	72(27.6%)	72(27.6%)	91(34.9%)			17(6.5%)	35(13.4%)	52(19.9%)	157(60.2%)		
	45-54	8(6.6%)	39(32.2%)	35(28.9%)	39(32.2%)			11(9.1%)	19(15.7%)	28(23.1%)	63(52.1%)		
	55<	0(0%)	14(30.4%)	10(21.7%)	22(47.8%)			2(4.3%)	6(13%)	10(21.7%)	28(60.9%)		
Social status	Single	289(8.9%)	973(30%)	1123(34.7%)	853(26.3%)	34.637	<0.001*	121(3.7%)	366(11.3%)	667(20.6%)	2084(64.4%)	26.288	<0.001*
	Married	69(9.7%)	229(32%)	193(27%)	224(31.3%)			46(6.4%)	105(14.7%)	157(22%)	407(56.9%)		
	Other	30(15.4%)	44(22.6%)	53(27.2%)	68(34.9%)			14(7.2%)	21(10.8%)	46(23.6%)	114(58.5%)		

Areas	Urban	258(9.2%)	840(30.1%)	909(32.5%)	786(28.1%)	1.569	0.666	102(3.7%)	334(12%)	593(21.2%)	1764(63.2%)	10.433	0.015*
	Rural	130(9.6%)	406(30%)	460(33.9%)	358(26.5%)			79(5.8%)	158(11.7%)	277(20.4%)	841(62.1%)		
Education	Primary school	4(13.8%)	2(6.9%)	12(41.4%)	11(37.8%)	27.31	0.026*	4(13.8%)	4(13.8%)	5(17.2%)	16(55.2%)	44.095	<0.001*
	Secondary school	23(14.1%)	51(32.3%)	44(27%)	45(27.6%)			19(11.7%)	17(10.4%)	35(21.5%)	92(56.4%)		
	High school	57(12.2%)	134(28.8%)	159(34.1%)	116(24.9%)			27(5.8%)	45(9.7%)	108(23.2%)	286(61.4%)		
	University/College	287(8.8%)	1002(30.6%)	1091(33.3%)	898(27.4%)			121(3.7%)	398(12.1%)	669(20.4%)	2090(63.8%)		
	Master's degree	15(8.1%)	50(27%)	55(29.7%)	65(35.1%)			7(3.8%)	24(13%)	46(24.9%)	108(58.4%)		
	PHD	2(7.4%)	7(25.9%)	8(29.6%)	10(37%)			3(11.1%)	4(14.8%)	7(25.9%)	13(48.1%)		
	Occupation	Health care worker	19(7.3%)	58(22.1%)	90(34.4%)	95(36.3%)	50.003	<0.001	22(8.4%)	46(17.6%)	62(23.7%)	132(50.4%)	170.142
	Government institution	20(8.4%)	80(33.5%)	54(22.6%)	85(35.6%)			11(4.6%)	26(10.9%)	44(18.4%)	158(66.1%)		
	Private institution	14(6.9%)	70(34.7%)	61(30.2%)	57(28.2%)			14(6.9%)	37(18.3%)	40(19.8%)	111(55%)		
	Business	19(9.4%)	53(26.1%)	71(35%)	60(29.6%)			18(8.9%)	43(21.2%)	53(26.1%)	89(43.8%)		
	Military	3(8.6%)	11(31.4%)	11(31.4%)	10(28.6%)			9(25.7%)	11(31.4%)	6(17.1%)	9(25.7%)		
	Student	237(9.3%)	776(30.6%)	889(35%)	638(25.1%)			69(2.7%)	242(9.5%)	533(21%)	1696(66.8%)		
	Other	76(11.4%)	198(29.7%)	193(28.9%)	200(30%)			38(5.7%)	87(13%)	132(19.8%)	410(61.5%)		
Economic status	Excellent	25(9.4%)	61(22.8%)	89(33.3%)	92(34.5%)	46.689	<0.001*	16(6%)	21(7.9%)	65(24.3%)	165(61.8%)	43.747	<0.001*
	Good	142(7.5%)	550(29.2%)	674(35.8%)	519(27.5%)			54(2.9%)	208(11%)	395(21%)	1228(65%)		
	Moderate	160(10.2%)	512(32.5%)	495(31.5%)	406(25.8%)			74(4.7%)	205(13%)	329(20.9%)	965(61.3%)		
	Poor	61(14.4%)	123(29.1%)	111(26.2%)	128(30.3%)			37(8.7%)	58(13.7%)	81(19.1%)	247(58.4%)		
chronic diseases	Yes	62(10.7%)	167(13.4%)	176(30.3%)	175(30.2%)	4.691	0.196	28(4.8%)	75(12.9%)	132(22.8%)	345(59.5%)	3.19	0.363
	No	326(9.1%)	1079(30.2%)	1193(33.4%)	970(27.2%)			153(5.3%)	417(11.7%)	738(20.7%)	2260(63.3%)		

Abiding to home quarantine rules significantly differed across gender ( $p<0.001$ ), age group ( $p<0.001$ ), social status ( $p<0.001$ ), area ( $p=0.015$ ), education level ( $p<0.001$ ), occupation ( $p<0.001$ ), and economical status ( $p<0.001$ ) (Table 4).

Home quarantine leading to an increase in family problems significantly differed across gender ( $p<0.001$ ), age group ( $p<0.001$ ), social status ( $p<0.001$ ), education level ( $p=0.002$ ), occupation ( $p<0.001$ ), economic status ( $p<0.001$ ), and chronic diseases(s) ( $p=0.001$ ) (Table 5).

**Table5:** Attitudes of participants by socio-demographic characteristics.

Attitudes of participants by socio-demographic characteristics, n (%)														
Characteristics		5. Is home quarantine causing an increase in family problems for you?						6. Does home quarantine have a positive impact on your psychological state?						
		Not at all	A little bit	Sometimes	Too much	X2	P	Not at all	A little bit	Sometimes	Too much	X2	P	
Gender	Male	342(31.2%)	270(24.7%)	299(27.3%)	184(16.8%)	16.412	0.001*	495(45.2%)	235(21.5%)	194(17.7%)	171(15.6%)	18.702	<0.001*	
	Female	790(19%)	830(27.2%)	806(26.4%)	627(20.5%)			1171(38.4%)	772(25.3%)	642(21%)	468(15.3%)			
Age group	<18	32(20.1%)	44(27.7%)	44(27.7%)	39(24.5%)	68.436	<0.001*	65(40.9%)	39(24.5%)	33(20.8%)	22(13.8%)	119.516	<0.001*	
	18-25	728(25.4%)	793(27.6%)	747(26%)	602(21%)			1239(43.2%)	716(24.9%)	529(18.4%)	386(13.4%)			
	26-34	214(31.2%)	161(23.5%)	192(28%)	118(17.2%)			257(37.5%)	165(24.1%)	150(21.9%)	113(16.5%)			
	35-44	91(34.9%)	68(26.1%)	70(26.8%)	32(13.3%)			65(24.9%)	49(18.8%)	78(29.9%)	69(26.4%)			
	45-54	38(31.4%)	29(24%)	40(33.1%)	39(32.2%)			24(19.8%)	28(23.1%)	36(29.8%)	33(27.4%)			
	55<	25(54.3%)	5(10.9%)	12(26.1%)	4(8.7%)			12(26.1%)	10(21.7%)	8(17.4%)	16(34.8%)			
Social status	Single	289(8.8%)	973(30%)	1123(34.7%)	853(26.3%)	22.253	0.001*	1353(41.8%)	813(25.1%)	613(18.9%)	459(14.2%)	53.604	<0.001*	
	Married	69(9.7%)	229(32%)	193(27%)	224(31.3%)			225(31.5%)	154(21.5%)	188(26.3%)	148(20.7%)			
	Other	30(15.4%)	44(22.6%)	53(27.2%)	68(34.9%)			88(45.1%)	1007(24.3%)	836(20.2%)	639(15.4%)			
Areas	Urban	750(26.9%)	734(26.3%)	754(27%)	555(19.9%)	1.638	0.651	1114(39.9%)	650(23.3%)	584(20.9%)	445(15.9%)	7.682	0.053	
	Rural	382(28.2%)	366(27%)	351(25.9%)	256(18.9%)			552(40.7%)	357(26.3%)	252(18.6%)	194(14.3%)			
Education	Primary school	4(13.8%)	2(6.9%)	12(41.4%)	11(37.9%)	35,606	0.002*	10(34.5%)	7(24.1%)	4(13.8%)	8(27.6%)	27.526	0.025*	
	Secondary school	23(14.1%)	51(31.3%)	44(27%)	45(27.6%)			59(36.2%)	43(26.4%)	35(21.5%)	26(16%)			
	High school	57(12.2%)	134(28.8%)	159(34.1%)	116(24.9%)			186(39.9%)	120(25.8%)	88(18.9%)	72(15.5%)			
	University/College	287(8.8%)	1002(30.6%)	1091(33.3%)	898(27.4%)			1336(40.8%)	798(24.3%)	665(20.3%)	479(14.9%)			
	Master's degree	15(8.1%)	50(27%)	55(29.7%)	65(35.1%)			64(34.6%)	37(20%)	38(20.5%)	46(24.9%)			

	PHD	2(7.4%)	7(25.9%)	8(29.6%)	10(37%)			11(40.7%)	2(7.4%)	6(22.2%)	8(29.6%)		
<b>Occupation</b>	Health care worker	88(33.6%)	64(24.4%)	76(29%)	34(13%)	50.572	<0.001*	85(32.4%)	54(20.6%)	57(21.8%)	66(25.2%)	92.202	<0.001*
	Government institution	92(38.5%)	59(24.7%)	49(20.5%)	39(16.3%)			64(26.8%)	46(19.2%)	65(27.2%)	64(26.8%)		
	Private institution	60(29.7%)	51(25.2%)	58(28.7%)	33(16.3%)			64(31.7%)	50(24.8%)	52(25.7%)	36(17.8%)		
	Business	64(31.5%)	43(21.2%)	55(27.1%)	41(20.2%)			96(47.3%)	47(23.2%)	33(16.3%)	27(13.3%)		
	Military	10(28.6%)	12(34.3%)	10(28.6%)	3(8.6%)			15(42.9%)	8(22.9%)	7(20%)	5(14.3%)		
	Student	624(24.6%)	703(27.7%)	670(26.4%)	543(21.4%)			1092(43%)	637(25.1%)	476(18.7%)	335(13.2%)		
	Other	194(29.1%)	168(25.2%)	187(28%)	118(17.7%)			250(37.5%)	165(24.7%)	146(21.9%)	106(15.9%)		
<b>Economic status</b>	Excellent	102(38.2%)	64(24%)	60(22.5%)	41(15.4%)	50.267	<0.001*	85(31.8%)	69(25.8%)	49(18.4%)	64(24%)	33.906	<0.001*
	Good	523(27.7%)	536(28.4%)	503(26.7%)	323(17.1%)			731(38.8%)	469(24.9%)	405(21.5%)	280(14.9%)		
	Moderate	407(25.9%)	398(25.3%)	441(28%)	327(20.8%)			653(41.5%)	376(23.9%)	318(20.2%)	226(14.4%)		
	Poor	100(23.6%)	102(24.1%)	101(23.9%)	120(28.4%)			197(46.6%)	93(22%)	64(15.2%)	69(16.3%)		
<b>chronic diseases</b>	Yes	152(26.2%)	136(23.4%)	142(24.5%)	150(25.9%)	17.598	0.001*	267(46%)	123(21.2%)	98(16.9%)	92(15.9%)	12.045	0.007*
	No	980(27.5%)	964(27%)	963(27%)	661(18.5%)			1399(39.2%)	884(24.8%)	738(24.8%)	547(15.3%)		

Home quarantine leading to laziness and inactiveness significantly correlated with gender (p=0.003), age group (p<0.001), social status (p<0.001), education level (p<0.001), and occupation (p<0.001) (Table 6).

**Table6:** Attitudes of participants by socio-demographic characteristics.

Attitudes of participants by socio-demographic characteristics, n (%)													
		7. Is home quarantine causing you to feel lazy and inactive?						8. Do you support wearing a mask and/or gloves on the street?					
		Not at all	A bit	little	Sometimes	Too much	X2	P	Yes	No	IDK	X2	P
<b>Gender</b>	Male	212(19.4%)	186(17%)	281(25.7%)	416(38%)	14.25	0.003*	758	213	124(11.3%)	16.347	<0.001*	
		(69.2%)											



	Military	12(34.3%)	8(22.9%)	9(25.7%)	6(17.1%)			23(65.7%)	8(22.9%)	4(11.4%)		
	Student	301(11.9%)	424(16.7%)	585(23%)	1239(48.4%)			1834(72.2%)	341(13.4%)	365(14.4%)		
	Other	138(20.7%)	137(20.5%)	174(26.1%)	218(32.7%)			474(71.1%)	107(16.0%)	86(12.9%)		
<b>Economical status</b>	Excellent	41(15.4%)	40(15%)	78(29.2%)	108(40.4%)	13.205	0.154	195(73.0%)	43(16.1%)	29(10.9%)	13.666	0.034*
	Good	290(15.4%)	358(19%)	444(23.6%)	793(42.1%)			1367(72.5%)	284(15.1%)	234(12.4%)		
	Moderate	278(17.7%)	262(16.7%)	398(25.3%)	635(40.4%)			1102(70.1%)	244(15.5%)	227(14.4%)		
	Poor	69(16.3%)	77(18.2%)	91(21.5%)	186(44%)			279(66.0%)	88(20.8%)	56(13.2%)		
<b>chronic diseases</b>	Yes	101(17.4%)	93(16%)	140(24.1%)	246(42.2%)	1.758	0.624	411(70.9%)	90(15.5%)	79(13.6%)	0.166	0.92
	No	577(16.2%)	644(18%)	871(24.4%)	1476(41.4%)			2532(71.0%)	569(15.9%)	467(13.1%)		

**Attitudes and psychological impact towards face masks by socio-demographic variables:**

Attitudes towards supporting wearing face masks significantly differed across gender (p<0.001), age group (p<0.001), social

status (p<0.001), occupation (p<0.001), and economical status (p=0.034) (Table 6).

Being shy with regards to wearing face masks in public significantly differed across gender (p<0.001), age group (p=0.020), social status (p=0.020), occupation (p<0.001), and economical status (p=0.046) (Table 7).

**Table7:** Attitudes of participants by socio-demographic characteristics.

<b>Attitudes of participants by socio-demographic characteristics, n (%)</b>											
		9. Are you shy about wearing a mask and/or gloves in the street in front of people?					10. Do you have an inferior view of those who wear a mask and/or gloves and consider it a shame?				
		Yes	No	IDK	X2	P	Yes	No	IDK	X2	P
<b>Gender</b>	Male	153(14.0%)	882(80.5%)	60(5.5%)	14.053	0.001*	26(2.4%)	1034(94.4%)	35(3.2%)	23.588	<0.001*
	Female	385(12.6%)	2393	275(9.0%)			36(1.2%)	2976(97.5%)	41(1.3%)		
		-78.40%									
<b>Age group</b>	<18	25(15.7%)	121(76.1%)	13(8.2%)	30.833	0.002*	4(2.5%)	145(91.2%)	10(6.3%)	38.201	<0.001*
	18-25	384(13.4%)	2229(77.7%)	257(9.0%)			43(1.5%)	2775(96.7%)	52(1.8%)		
	26-34	85(12.4%)	565(82.5%)	35(5.1%)			6(0.9%)	671(98.0%)	8(1.2%)		
	35-44	31(11.9%)	212(81.2%)	18(6.9%)			3(1.1%)	256(98.1%)	2(0.8%)		

	45-54	8(6.6%)	106(87.6%)	7(5.8%)			4(3.3%)	115(95.0%)	2(1.7%)		
	55<	2(4.3%)	39(84.8%)	5(10.9%)			1(2.2%)	43(93.5%)	2(4.3%)		
<b>Social status</b>	Single	438(13.5%)	2522	278(8.6%)	11.701	0.020*	45(1.4%)	3131(96.7%)	62(1.9%)	5.489a	0.241
			-77.90%								
	Married	80(11.2%)	594(83.1%)	41(5.7%)			11(1.5%)	691(96.6%)	13(1.8%)		
	Other	20(10.3%)	159(81.5%)	16(8.2%)			6(3.1%)	188(96.4%)	1(0.5%)		
<b>Areas</b>	Urban	354(12.7%)	2218	221(7.9%)	1.087	0.581	41(1.5%)	2699(96.6%)	53(1.9%)	0.242	0.886
			-79.40%								
	Rural	184(13.6%)	1057	114(8.4%)			21(1.5%)	1311(96.8%)	23(1.7%)		
			-78.00%								
<b>Education</b>	Primary school	6(20.7%)	22(75.9%)	1(3.4%)	17.538	0.063	2(6.9%)	27(93.1%)	0(0.0%)	29.435	0.001*
	Secondary school	24(14.7%)	131(80.4%)	8(4.9%)			6(3.7%)	149(91.4%)	8(4.9%)		
	High school	59(12.7%)	363(77.9%)	44(9.4%)			11(2.4%)	442(94.8%)	13(2.8%)		
	University /College	431(13.1%)	2574(78.5%)	273(8.3%)			42(1.3%)	3184(97.1%)	52(1.6%)		
	Master's degree	17(9.2%)	162(87.6%)	6(3.2%)			1(0.5%)	181(97.8%)	3(1.6%)		
	PHD	1(3.7%)	23(85.2%)	3(11.1)			0(0.0%)	27(100.0%)	0(0.0%)		
<b>Occupation</b>	Health care worker	20(7.6%)	227(86.6%)	15(5.7%)	45.024	<0.001*	3(1.1%)	252(96.2%)	7(2.7%)	12.684	0.392
	Government institution	32(13.4%)	190(79.5%)	17(7.1%)			2(0.8%)	233(97.5%)	4(1.7%)		
	Private institution	17(8.4%)	175(86.6%)	10(5.0%)			3(1.5%)	196(97.0%)	3(1.5%)		
	Business	36(17.7%)	161(79.3%)	6(3.0%)			7(3.4%)	194(95.6%)	2(1.0%)		
	Military	1(2.9%)	31(88.6%)	3(8.6%)			1(2.9%)	34(97.1%)	0(0.0%)		
	Student	356(14.0%)	1943(76.5%)	241(9.5%)			35(1.4%)	2452(96.5%)	53(2.1%)		
	Other	76(11.4%)	548(82.2%)	43(6.4%)			11(1.6%)	649(97.3%)	7(1.0%)		
<b>Economic status</b>	Excellent	31(11.6%)	224(83.9%)	12(4.5%)	12.81	0.046*	5(1.9%)	257(96.3%)	5(1.9%)	10.254	0.114
	Good	223(11.8%)	1494(79.3%)	168(8.9%)			20(1.1%)	1837(97.5%)	28(1.5%)		
	Moderate	218(13.9%)	1233(78.4%)	122(7.8%)			32(2.0%)	1504(95.6%)	37(2.4%)		
	Poor	66(15.6%)	324(76.6%)	33(7.8%)			5(1.2%)	412(97.4%)	6(1.4%)		

<b>chronic diseases</b>	Yes	63(10.9%)	478(82.4%)	39(6.7%)	4.859	0.088	13(2.2%)	557(96.0%)	10(1.7%)	2.587	0.274
	No	475(13.3%)	2797(78.4%)	296(8.3%)			49(1.4%)	3453(96.8%)	66(1.8%)		

Having an inferior view of those who wear a face mask significantly differed across gender (p<0.001), age group (p<0.001), and education level (p<0.001) (Table 7).

face mask significantly differed across age group (p<0.001), social status (p<0.001), education level (p=0.013), and occupation (p<0.001) (Table 8).

Worrying about what people would say about you if you wear a

**Table8:** Attitudes of participants by socio-demographic characteristics.

<b>Attitudes of participants by socio-demographic characteristics, n (%)</b>											
		11. Do you worry about what people would say about you if you put on the mask and/or gloves?					12. Will you stop wearing a mask and/or gloves if you are embarrassed or bullied by people?				
		Yes	No	IDK	X2	P	Yes	No	IDK	X2	P
<b>Gender</b>	Male	177(16.2%)	848(77.4%)	70(6.4%)	5.372	0.068	144(13.2%)	842(76.9%)	109(10.0%)	10.05	0.007*
	Female	407(13.3%)	2440(79.9%)	206(6.7%)			303(9.9%)	2395(78.4%)	355(11.6%)		
<b>Age group</b>	<18	22(13.8%)	121(76.1%)	16(10.1%)	69.578	<0.001*	24(15.1%)	111(69.8%)	24(15.1%)	46.509	<0.001*
	18-25	459(16.0%)	2203(76.8%)	208(7.2%)			327(11.4%)	2192(76.4%)	351(12.2%)		
	26-34	77(11.2%)	568(82.9%)	40(5.8%)			69(10.1%)	551(80.4%)	65(9.5%)		
	35-44	18(6.9%)	237(90.8%)	6(2.3%)			16(6.1%)	230(88.1%)	15(5.7%)		
	45-54	5(4.1%)	112(92.6%)	4(3.3%)			7(5.8%)	108(89.3%)	6(5.0%)		
	55<	0(0.0%)	44(95.7%)	2(4.3%)			4(7.7%)	45(86.5%)	3(5.8%)		
<b>Social status</b>	Single	500(15.4%)	2508(77.5%)	230(7.1%)	32.203	<0.001*	374(11.6%)	2477(76.5%)	387(12.0%)	21.761	<0.001*
	Married	60(8.4%)	617(86.3%)	38(5.3%)			54(7.6%)	603(84.3%)	58(8.1%)		
	Other	24(12.3%)	163(83.6%)	8(4.1%)			19(9.7%)	157(80.5%)	19(9.7%)		
<b>Areas</b>	Urban	377(13.5%)	2242(80.3%)	174(6.2%)	5.449	0.066	286(10.2%)	2209(79.1%)	298(10.7%)	5.537	0.063
	Rural	207(15.3%)	1046(77.2%)	102(7.5%)			161(11.9%)	1028(75.9%)	166(12.3%)		
<b>Education</b>	Primary school	6(20.7%)	20(69.0%)	3(10.3%)	22.409	0.013*	5(17.2%)	23(79.3%)	1(3.4%)	14.937	0.134

	Secondary school	21(12.9%)	127(77.9%)	15(9.2%)			22(13.5%)	127(77.9%)	14(8.6%)		
	High school	51(10.9%)	393(84.3%)	22(4.7%)			49(10.5%)	371(79.6%)	46(9.9%)		
	University /College	484(14.8%)	2567(78.3%)	227(6.9%)			350(10.7%)	2540(77.5%)	388(11.8%)		
	Master's degree	22(11.9%)	157(84.9%)	6(3.2%)			21(11.4%)	150(81.1%)	14(7.6%)		
	PHD	0(0.0%)	24(88.9%)	3(11.1%)			0(0.0%)	26(96.3%)	1(3.7%)		
<b>Occupation</b>	Health care worker	20(7.6%)	228(87.0%)	14(5.3%)	47.722	<0.001*	27(10.3%)	213(81.3%)	22(8.4%)	29.857	0.003*
	Government institution	24(10.0%)	204(85.4%)	11(4.6%)			19(7.9%)	197(82.4%)	23(9.6%)		
	Private institution	29(14.4%)	160(79.2%)	13(6.4%)			16(7.9%)	167(82.7%)	19(9.4%)		
	Business	24(11.8%)	173(85.2%)	6(3.0%)			26(12.8%)	163(80.3%)	14(6.9%)		
	Military	4(11.4%)	30(85.7%)	1(2.9%)			6(17.1%)	29(82.9%)	0(0.0%)		
	Student	416(16.4%)	1934(76.1%)	190(7.5%)			293(11.5%)	1925(75.8%)	322(12.7%)		
	Other	67(10.0%)	559(83.8%)	41(6.1%)			60(9.0%)	543(81.4%)	64(9.6%)		
<b>Economic status</b>	Excellent	32(12.0%)	220(82.4%)	15(5.6%)	12.511	0.051	25(9.4%)	208(77.9%)	34(12.7%)	17.475	0.008*
	Good	242(15.6%)	1497(79.4%)	146(7.7%)			169(9.0%)	1507(79.9%)	209(11.1%)		
	Moderate	245(15.6%)	1237(78.6%)	91(5.8%)			202(12.8%)	1189(75.6%)	182(11.6%)		
	Poor	65(15.4%)	334(79.0%)	24(5.7%)			51(12.1%)	333(78.7%)	39(9.2%)		
<b>chronic diseases</b>	Yes	70(12.1%)	476(82.1%)	34(5.9%)	3.238	0.198	61(10.5%)	468(80.7%)	51(8.8%)	4.102	0.129
	No	514(14.4%)	2812(78.8%)	242(6.8%)			386(10.8%)	2769(77.6%)	413(11.6%)		

Ceasing the use of face masks if embarrassed or bullied by others significantly differed across gender (p=0.007), age group (p<0.001), social status (p<0.001), occupation (p=0.003), and economical status (p=0.008) (Table 8).

## DISCUSSION

To the best of our knowledge, this is a first report assessing Syrians Attitudes and psychological impacts regarding both COVID-19, and face masks during the current pandemic.

Our results showed that approximately half of the participants believed that the pandemic will be finally controlled. This finding is lower compared with studies conducted in China and Malaysia. This attitude could be attributed to the severely under-equipped Syrian healthcare system that lacks the capacity to contain such a pandemic. The estimated number of intensive care unit beds with ventilators is a mere 325, and the theoretical

maximum number of cases that can be adequately treated is only 6,500. In the absence of a vaccine, effective treatment protocol for COVID-19 and medications at the time of the survey, the hope of such a crisis to be tamed has diminished.

The majority of participants supported wearing face masks publicly. Since the outbreak of COVID-19, the importance of using face masks has become ubiquitous. Previous studies conducted at the same institution reported a high level of awareness, 89.3% knew that wearing a face mask outside was a preventive measure against the spread of COVID-19; however, only 39.1% of the Syrian population wore face masks publicly. Face masks can break the transmission cycle of respiratory microorganisms. However, effectiveness can be limited by the lack of any of the following 3: knowledge, practice, and attitude.

Almost all participants did not have an inferior view of those who wear a face mask. Despite that, a small proportion of

participants stated they will stop wearing face masks if they are embarrassed or bullied by individuals. This result reflects the lack of national bullying helplines and organizations to support victims in Syria.

The quarantine negatively affected participants' psychological state, with the majority suffering from an increase in family problems, and feeling lazy and inactive. This is not surprising as the majority of them were abiding by home quarantine rules. A study conducted during the COVID-19 pandemic revealed that most Syrians suffer from depressive (83.4%) and anxiety (69.6%) symptoms.

This novel pandemic parallels a deteriorating Syrian economy and has increased demand for many products including face masks resulting in a supply shortage- driving the nation into a hyperinflation crisis. Millions of Syrians are in poverty, forced to choose between buying food to escape starvation and face masks to escape morbidity and mortality.

## STRENGTHS AND LIMITATIONS

A major strength of this study lies in its large sample recruited during a critical period, the early stage of the COVID-19 pandemic and the civil war. On the other hand, this study has several limitations. First, due to the over-representation of the well-educated Syrians of good socio-economic status, in the sample, the findings may not generalize to other groups of the Syrian population especially those who lack access to the internet. Elderly and rural residents that have limited access to the internet represented a minority in this study. Second, self-reporting has certain limitations compared with structured interviews. Third, Credible published national data regarding the socio-demographic characteristics of Syrians are not available to evaluate the representativeness of our sample.

## CONCLUSION

This study has revealed varying attitudes and significant psychological impacts regarding both the COVID-19 pandemic and face masks. Based on the findings the Syrian government must put efforts into providing national helplines for Syrians and reach out to targeted groups to provide further support.

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