
Knowledge, attitude, and practice of obstetricians towards pregnancy in COVID- 19 pandemic

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Abstract

Background: COVID- 19 is a global disease declared by the WHO as a pandemic. Proper knowledge about the disease may increase the chances of protection against catching an infection.

Objective: This study aimed to evaluate the obstetricians' knowledge, attitude, and practice towards pregnancy during COVID- 19 pandemic.

Study design: This was a cross-sectional study conducted from October 2020 to March 2021. We surveyed a total of 120 obstetricians using a questionnaire that was published and distributed electronically. The questionnaire was validated statistically through principal component analysis and the calculation of Cronbach's alpha for the whole questionnaire and each section. The questionnaire included two main sectors: sector (one) inquired about the sociodemographic characteristics of the participants (age, sex, status, and years of experience); sector (two) included the physicians' knowledge, attitude, and practices towards COVID- 19 in pregnancy.

Results: The mean age of the participants was 40.73 ± 12.58 . The calculated Cronbach's Alpha was more than 90% for the whole questionnaire and individually for each section. Generally, 55.64% of the participants had adequate knowledge about the COVID-19 pandemic; 76.5% had proper attitudes towards this pandemic, and 74.8% practiced with caution during this global outbreak. The full scale for knowledge, attitude, and practice was 8.8 ± 7.9 , 6.27 ± 4.49 , and 13.71 ± 5.99 .

Conclusion: The attitude and practice of the obstetricians about COVID- 19 were encouraging; however, they need proper training to improve their knowledge. Misconceptions about this pandemic exist.

Keywords: obstetricians; knowledge; attitude; practice; COVID- 19; pregnancy.

Introduction

Coronavirus disease (COVID- 19) is a severe pandemic affecting the whole world, as declared by the WHO (1). This outbreak in a maternal and child health institute would result in catastrophic consequences (2). Health care systems across nations struggle to protect their health care workers. Multiple strategies have been adopted as rescheduling nonurgent health care services like medical appointments and surgeries. These options are not available for obstetricians. Women continue to deliver or present with life-threatening emergencies whether a pandemic is present or not. Although most of these women are not infected, their minority represent a significant risk for obstetricians (3). The lack of an evidence-based management plan for pregnant women infected with COVID- 19 increases the mental and physical stress on obstetricians (4, 5). Additionally, lack of knowledge, faulty attitudes and practices among physicians lead to increased risk of infection (6, 7). Accordingly, this study aimed at evaluating the knowledge, attitudes, and practice of the obstetricians towards the COVID- 19 pandemic.

Methods

This was a cross-sectional study conducted at the obstetrics and gynecology department at Suez Canal University hospital. The study was conducted from October 2020 to March 2021. We surveyed a total of 120 obstetricians, according to the sample size calculated before the study. They were informed that the data were confidential. The questionnaire was anonymous. Their acceptance to answer the questionnaire was considered as consent to participate in the study.

Regarding previous literature (8, 9), a questionnaire was constructed and distributed electronically to the participants. The questionnaire was tested on 10 participants and then published and distributed electronically.

The questionnaire was validated statistically through principal component analysis and the calculation of Cronbach's alpha for the whole questionnaire and each section.

The questionnaire included two main sectors: sector (one) inquired about the sociodemographic characteristics of the participants (age, sex, status, place of residency training, length of practice, place of current practice); sector (two) included the physicians' knowledge (20 questions scored as 1 for correct responses and 0 for unsure or wrong ones), attitude (10 questions scored as 1 for correct responses and 0 for unsure or wrong ones), and practices (10 questions scored as 2, 1, and 0 for correct, sometimes, and wrong responses) towards COVID- 19 in pregnancy (COVID-19 incubation period, transmission, signs and symptoms, antenatal care for women not suspected or confirmed to have COVID-19, antenatal care for women with suspected or confirmed COVID

-19, drug therapy for COVID-19, Obstetric medications in women with COVID-19, termination of pregnancy, postpartum care, and practices as well as attitudes of the participants to decrease the risk of infection).

Ethical approval: This study was conducted after approval of the research ethics committee of faculty of medicine, Suez Canal University, in 28/9/2020 with an approval number of #4298.

Results

The study included 120 obstetricians with a mean age of 40.73 ± 12.58 . There were 69 (57.50%) and 51 (42.50%) male and female physicians, respectively. They were either residents 40 (33.33%), specialists 30 (25%), or consultants 50 (41.67%) with a mean duration of experience 14.93 ± 12.13 years.

The calculated Cronbach's Alpha was more than 90% for the whole questionnaire and individually for each section. This means that the reliability or the internal consistency of the whole questionnaire and each section

individually were excellent. Moreover, each section showed a statistically significant ANOVA. Average interitem correlations calculated were within the ideal range for all of the measurements done, which also adds to the internal consistency strength. The intraclass correlation was also more than 0.90 for the whole questionnaire and each section individually. This means excellent consistency or reproducibility of quantitative measurements made by different respondents answering the questionnaire (Table 1).

Generally, 55.64% of the participants had adequate knowledge about the COVID-19 pandemic; 76.5% had proper attitudes towards this pandemic, and 74.8% practiced with caution during this global outbreak. This resulted in a misconception rate of 31.02%.

The scale for knowledge of all participants revealed a total score of 8.8 ± 7.9 (Table 2). At the same time, the full scale for attitude was 6.27 ± 4.49 (Table 3). Finally, the full scale for practice was 13.71 ± 5.99 (Table 4).

Discussion

Since the WHO declared this global pandemic, the number of cases has been increasing worldwide. This represents a significant challenge facing health care workers. Adequate knowledge, attitude, and safe practices are crucial to guarantee safety for the health care team while managing possibly infected cases (10).

Testing the knowledge, attitude, and practices of physicians and particularly obstetricians who face emergencies requiring rapid intervention, is paramount. Lifesaving procedures cannot be delayed due to limited resources as personal protective equipment. Additionally, in limited-resource countries, women are admitted in the ward for some time depending on their relatives for food and assistance, making isolation difficult and overcoming infection control measures (11). Few studies are available about this issue, especially in Egypt.

The current study revealed that 55.64% (total score 8.8) of the participants had adequate knowledge about the COVID-19 pandemic, and 74.8% (total score 6.27) practiced with caution. An earlier study reported that 65.1% of their healthcare providers had adequate knowledge about this pandemic. Additionally, 57.5% of them adhered to safety measures during their practices (12). Other studies reported high levels of knowledge of their participants (89.51% and 82.4%) (13, 14), especially obstetricians and pediatricians (78.9%) (15). This discrepancy would be rendered to the different rates of misapprehensions about COVID- 19 - 62.5% (12) versus 31.02% in our population-. Besides, many of the topics related to pregnancy are contentious, with frequent substitutions (16, 17). Some studies reported neonatal complications (2, 18) while others did not (17, 19). Also, the difference in the training administered to the participants might have a role (12). Additionally, some studies used directed questions rather than multiple-choice ones.

A significant proportion of the physicians had positive attitudes towards this pandemic represented in applying safety precautions during this pandemic. This agreed with previous studies (14, 16, 20). This high score would be explained by the definite declaration of COVID- 19 as a pandemic when conducting these studies. Additionally, the WHO has recommended certain precautions to avoid infection that the governments and physicians practice (16). However, this would not guarantee protection because of insufficient knowledge (21).

However, this was higher than the results reported by others (57.5%, 44%) (12, 14). This difference would be related to their recruitment of healthcare workers while the current study targeted obstetricians. Also, the difference in the misconceptions plays a significant role.

Misconceptions about COVID- 19 were present in about 31.02% of the participants.

Higher results were reported in a previous study (62.5%) (12). This would be related to the presence of erroneous reports and unconfirmed results spreading so fast, confusing and misleading healthcare workers.

Strength and limitations: This was the first study to evaluate the obstetricians' knowledge, attitude, and practice towards COVID-19 pandemic. The questionnaire was distributed electronically through groups including obstetricians and gynecologists, which obscured the number of physicians refusing to participate in the study. Also, this would limit the generalizability of the results. This was a self-administered questionnaire which might not reflect the actual practice. The source of their knowledge was not evaluated. A more significant number of participants would be more informative. We recruited obstetricians and gynecologists only. The inclusion of all healthcare workers would be more representative.

Conclusion: The knowledge, attitude, and practice of the obstetricians about COVID-19 were encouraging. Misconceptions about this pandemic exist that need proper education and training of the healthcare workers.

Conflict of interest: None.

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Table I: Reliability analysis.

Statistic	ALL	SECTION 1(Knowledge)	SECTION 2 (Attitude)	SECTION 3 (Practice)
Cronbach's alpha	97.8%	96.5%	90.5%	92.1%
Average Interitem correlation	0.451	0.423	0.446	0.551
Average Interitem covariance	0.089	0.062	0.085	0.215
Intraclass correlation coefficient	0.978	0.965	0.905	0.921
ANOVA's p-value	<0.001	<0.001	<0.001	<0.001

Table II: Descriptive statistics for the Knowledge scale.

		Agree	Not sure	disagree	Scale Mean \pm SD
Causative organism of COVID-19 is called SARS-CoV-2 (Severe Acute Respiratory Syndrome – Coronavirus 2).		100 (83.33)	8 (6.67)	12 (10.00)	0.83 \pm 0.37
Incubation period reported for SARS-CoV-2 varies between 6 and 14 days.		20 (16.67)	73 (60.83)	27 (22.50)	0.17 \pm 0.37
Transmission of infection could be:	Close contact	112 (93.33)	2 (1.67)	6 (5.00)	0.93 \pm 0.25
	Droplet	115 (95.83)	4 (3.33)	1 (0.83)	0.96 \pm 0.2
	Airborne	66 (55.00)	31 (25.83)	23 (19.17)	0.55 \pm 0.5
	Faeco-oral	39 (32.50)	29 (24.17)	52 (43.33)	0.33 \pm 0.47
	Object contamination	93 (77.50)	16 (13.33)	11 (9.17)	0.78 \pm 0.42
	Surface contamination	99 (82.50)	15 (12.50)	6 (5.00)	0.83 \pm 0.38
Vertical transmission can occur.		44 (36.67)	42 (35.00)	34 (28.33)	0.37 \pm 0.48
COVID-19 has a teratogenic effect.		5 (4.17)	58 (48.33)	57 (47.50)	0.04 \pm 0.2
COVID-19 leads to increased risk of miscarriage.		47 (39.17)	55 (45.83)	18 (15.00)	0.39 \pm 0.49

Adverse health outcomes due to COVID-19, include:	respiratory distress	103 (85.83)	10 (8.33)	7 (5.83)	0.86 ± 0.35
	prematurity	62 (51.67)	39 (32.50)	19 (15.83)	0.52 ± 0.5
	foetal death	38 (31.67)	53 (44.17)	29 (24.17)	0.32 ± 0.47
Pregnancy is a state of partial immunosuppression where morbidity/mortality due to COVID-19 is higher.		102 (85.00)	10 (8.33)	8 (6.67)	0.85 ± 0.36
Pregnancy is a state of partial immunosuppression where there is more vulnerability to COVID-19 infection		95 (79.17)	17 (14.17)	8 (6.67)	0.79 ± 0.41
Symptoms/signs include	dyspnea	114 (95.00)	2 (1.67)	4 (3.33)	0.95 ± 0.22
	Fever	118 (98.33)	1 (0.83)	1 (0.83)	0.98 ± 0.13
	Fatigue	117 (97.50)	0 (0.00)	3 (2.50)	0.98 ± 0.16
	dry cough	117 (97.50)	1 (0.83)	2 (1.67)	0.98 ± 0.16
	anorexia	95 (79.17)	14 (11.67)	11 (9.17)	0.79 ± 0.41
	myalgia	108 (90)	7 (5.83)	5 (4.17)	0.9 ± 0.3
	sputum production	39 (32.50)	27 (22.50)	54 (45.00)	0.33 ± 0.47
	Pneumonia	106 (88.33)	11 (9.17)	3 (2.50)	0.88 ± 0.32
	anosmia (loss of smell)	118 (98.33)	1 (0.83)	1 (0.83)	0.98 ± 0.13
	ageusia (loss of taste)	116 (96.67)	1 (0.83)	3 (2.50)	0.97 ± 0.18
Statins can be used		50 (41.67)	23 (19.17)	47 (39.16)	0.42 ± 0.5
Use of ibuprofen is encouraged		20 (16.67)	3 (2.50)	97 (80.83)	0.17 ± 0.37

There is an effective medication currently, which is safe and effective against COVID-19.	20 (16.67)	4 (3.33)	96 (80.00)	0.17 ± 0.37
Hydroxychloroquine/chloroquine can be used with the same regimen as that of non-pregnant patients	45 (37.50)	25 (20.83)	50 (41.67)	0.38 ± 0.49
Hydroxychloroquine and azithromycin can be combined in a regimen for COVID-19 in pregnant patients.	20 (16.67)	39 (32.50)	61 (50.83)	0.17 ± 0.37
Antiviral treatment is not recommended in pregnant patients.	13 (10.83)	40 (33.33)	67 (55.84)	0.11 ± 0.31
Plasma of patients who recovered from COVID-19 infection can be used and has proved promising.	96 (80.00)	0 (0.00)	24 (20.00)	0.8 ± 0.4
Antibiotics are to be used in all of COVID-19 suspected patients.	34 (28.33)	23 (19.17)	63 (52.50)	0.28 ± 0.45
Glucocorticoids are generally beneficial for COVID-19 patients.	43 (35.83)	35 (29.17)	42 (35.00)	0.36 ± 0.48
Adequate rest, hydration, nutritional support, antipyretics, and water and electrolyte balance are not supportive measures by any means.	39 (32.50)	30 (25.00)	51 (42.50)	0.33 ± 0.47

Table III: Descriptive statistics for the attitude

	Agree	Not sure	disagree	Scale Mean ± SD
Modification of antenatal care visit appointments are protective or helps in reduction of transmission of COVID-19	82 (68.33)	26 (21.67)	12 (10.00)	0.68 ± 0.47
Appointments for normal growth scans and follow-ups should be cancelled	60 (50.00)	9 (7.50)	51 (42.50)	0.5 ± 0.5
Pregnant women should be isolated	90 (75.00)	9 (7.50)	21 (17.50)	0.75 ± 0.43
Pregnant women should adapt social distancing	119 (99.17)	0 (0.00)	1 (0.83)	0.99 ± 0.09
Termination of pregnancy before viability will never be required to improve maternal conditions	70 (5.83)	3 (2.50)	47 (39.17)	0.58 ± 0.5
CT/X-ray are not allowed during pregnancy of a COVID-19 suspected subject.	29 (24.17)	9 (7.50)	82 (68.33)	0.24 ± 0.43
The usual manpower can be present in the labor ward of infected patients.	13 (10.83)	10 (8.33)	97 (80.84)	0.11 ± 0.31
COVID-19 is not an indication for cesarean delivery.	80 (66.67)	13 (10.83)	27 (22.50)	0.67 ± 0.47

General anesthesia should be avoided as much as possible.	103 (85.84)	7 (5.83)	10 (8.33)	0.86 ± 0.35
Direct breastfeeding is recommended in women infected with COVID – 19	33 (27.50)	21 (17.50)	66 (55.00)	0.28 ± 0.45
Separation of neonates from their mothers becomes essential in case of a probable COVID-19 mother.	73 (60.84)	16 (13.33)	31 (25.83)	0.61 ± 0.49

Table IV: Descriptive statistics for the practice

	Yes	Some-times	No	Scale Mean ± SD
You delay appointments till end of working day/operation room list for suspected/confirmed cases	94 (78.33)	6 (5.00)	20 (16.67)	0.62 ± 0.49
You use portable ultrasound machine	93 (77.50)	2 (1.67)	25 (20.83)	1.62 ± 0.76
While managing subjects who are COVID-19 infected, you have your full personal protective gear	108 (90)	12 (1.00)	0 (0.00)	1.57 ± 0.82
You shorten the duration of presence near to or in contact with a case	96 (80.00)	7 (5.83)	17 (14.17)	1.9 ± 0.3
You encourage home birth	22 (18.33)	12 (10.00)	86 (71.67)	1.66 ± 0.72
You delay elective caesarean section deliveries until the patient is both negative and no longer contagious.	22 (18.33)	14 (11.67)	84 (70.00)	0.47 ± 0.79
You recommend social distancing to decrease the risk of infection	114 (95.00)	4 (3.33)	2 (1.67)	0.48 ± 0.79
You reduce the number of visits to decrease the risk of infection	107 (89.17)	11 (9.17)	2 (1.67)	1.93 ± 0.31
You recommend telehealth to decrease the risk of infection	79 (65.83)	32 (26.67)	9 (7.50)	1.88 ± 0.38
You recommend antenatal vaccinations to decrease the risk of infection	37 (30.83)	43 (35.83)	40 (33.33)	1.58 ± 0.63