

Self – Care Practices of Pregnant Women during COVID-19 Pandemic

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1.ABSTRACT

Background: COVID- 19 pandemic is an emerging infection and also a re-emerging viral respiratory disease that has affected all aspects of ante natal care among pregnant women. **Aim:** This study aims to assess self-care practices of pregnant women during COVID-19 pandemic. **Study design:** Descriptive study design. **Setting:** The study was carried out at the antenatal outpatient clinic in obstetrics and gynecology hospital , Mansoura University **Sample type:** A purposive sample was used. **Study subjects:** The study subjects included 495 pregnant women. **Tools:** Two tools were used, structured interviewing questionnaire and Pregnancy Self-Care practices. **Results:** The current study showed that most of the studied women always wash their hands before and after preparing meals and took sufficient time for cooking. Also, most of the pregnant women watched T.V as a form of recreational activities. Moreover, the study results showed that most of the studied women always wash their hands before and after they used toilet. Furthermore, most of the studied women always attend ante natal visits regularly. **Conclusion:** The current study concluded that, COVID-19 pandemic affect pregnant women self-care practices, physical exercise, personal hygiene, rest and sleep& following up of the primary health care services were the most affected practices also work burden among the studied pregnant women was highly affected by COVID-19 pandemic. **Recommendations:** Simple designed brochures will be provided to pregnant women to explain the importance of antenatal care visits and education through online classes or by attendance.

Keywords: : COVID-19, Pregnant women, Self-Care Practices.

2.Introduction:

Corona virus is an epidemic disease that has posed a threat to human life all over the world (*Wu et al., 2022*). On February 11, 2020, World Health Organization (WHO) designated the virus as COVID-19, indicating that it posed a global threat (*WHO, 2022*). Pregnancy makes women more susceptible to viral infections and produces a partial immune system suppression (*Özcan, Elkoca, & Yalçın, 2020*). Due to physiological changes, increased susceptibility to infections, and mechanical and safety dysfunctions, pregnant women are regarded a particularly vulnerable population in any outbreak of infectious disease (*Dashraath, Wong, Lim& et al., 2020*). Physiological changes during pregnancy, such as lower Functional Residual Capacity (FRC), a raised diaphragm, and alterations in cellular immunity, result in higher susceptibility to viral infections and, as a result, more critical outcomes (*Alzamora et al., 2020& Dashraath et al., 2020*).

Pregnant women also face some special challenges due to the responsibility of caring

for other children and family members. On the other hand, the need to receive regular care from maternity services increases the risk of exposure to infection with viruses in this population group. Pregnant women in many countries have avoided attending healthcare facilities for fear of contracting COVID-19 as a result of hospital visits, or have felt isolated from social support networks and healthcare facilities dedicated to pregnant women suspected of having COVID-19(*Hussein& Ashkanani, 2020*)

Prenatal care referrals are reduced as a result of the social distancing programs and the fear of becoming infected; also, pregnant women are more ready to limit the frequency of prenatal care visits, prenatal care visits deficiency during pregnancy could be quite extremely harmful. According to studies, the majority of pregnant women prefer online access to health information and services (*Chen, Li, Zhang, Zhao& Yu, 2020*).

Pregnant women experience sadness, worry, fear and frustration as a result of

pandemic. All of these elements affect self-care and health-care practices. Individuals engage in such practices in order to preserve and promote their health and illness prevention. Pregnant women, on the other hand, are concerned about how to care for their pregnancies and carry out their delivery preparations during the new corona virus pandemic, so all of pregnant women's self-care practices were affected by the pandemic (*Masjoudi, Aslani, Seifi, Khazaeian, & Fathnezhad-Kazemi, 2022*).

Significance of the study

The current situation of the COVID-19 outbreak worldwide is frightening (Wang et al., 2022). By early June 2020, there had been more than 7 million confirmed COVID-19 infections worldwide, with over 400,000 deaths, with large numbers in Italy, Spain, and the United States (*WHO, 2022*). COVID-19 active cases have expanded dramatically in Egypt, reaching 100,708 instances on September 9, 2020. 93 of the 617 pregnant women with COVID-19 required oxygen therapy by April, while 35 others had a critical form of COVID-19. Preexisting diabetes, previous preeclampsia, and prenatal hypertension or preeclampsia, as well as preexisting diabetes, previous preeclampsia, and gestational hypertension or preeclampsia, were all linked to the severity of the disease (*Tuite et al., 2020*).

Due to the severe public health measures implemented to reduce community transmission, COVID-19 pandemic has been connected with fear and worry. This is likely to lead to increased stress, worry, loneliness, and depression, especially among pregnant women, who will be concerned for their own health and the safety of their unborn child. Because the women are unable to follow doctor orders for periodic checkup visits, all aspects of antenatal care will be impacted by their fear of contracting the COVID-19 virus, which affect self-care practices and psychological condition of women which has a negative effect on health of mother and baby as it affect pregnant women's (nutrition, personal hygiene, physical activity, rest and sleep, follow up primary health care services)

which all necessary to enhance better pregnancy outcomes, so this study was conducted to assess self-care during COVID-19 among pregnant women (*Cowling & Aiello, 2020*).

COVID-19 has affected all societal groups and pregnant women of the affected groups as a result of physiological and psychological changes, as well as on the follow-up system during pregnancy, in addition to its impact on self-care, whether nutrition, activities or follow-up, and thus the impact is not only on the mother but includes the fetus. World Health Organization (WHO) recommends a minimum of four follow-up visits during pregnancy, in most of the developed world, the follow-up visits are periodically performed every four weeks in the first 32 weeks, every two weeks up to week 36, and then once weekly (*WHO, 2022*).

The attendance rate to outpatient units for antenatal care was lower during the pandemic as compared to the corresponding periods in 2018 and 2019, there was a significant decrease in the number of patients attending outpatient units and the routine follow-up of pregnant women was interrupted during periods of the pandemic (*Yildiz, 2021*).

Aim of the study:

The present study aimed to assess self-care practices of pregnant women during COVID-19 pandemic.

Research questions:

What are the self-care practices among pregnant women during COVID-19 pandemic?

1. Subjects and Method:

2.1 Research design:

A descriptive study design was used

2.2 Study Setting:

The study was carried out at antenatal outpatient clinic in Obstetric and Gynecologic hospital, Mansoura University. The clinic was opened five days weekly from 9am to 1 pm. The care was provided by 4 nurses and 5 physicians daily. The hospital is consisted of one floor that is divided in to six clinics; reception, waiting room for women, antenatal examination clinic, gynecological examination

clinic, vesicular mole section and resting room for health care providers. During COVID-19 pandemic, the number of cases who are admitted to the unit is limited to 30 cases per day to control spread of infection.

2.3 Sampling

A purposive sample of 495 pregnant women with the following inclusion criteria: Age 18-35 years old, No history of stressors in the last 3 months, complete the questionnaire completely & Free from medical and psychological disorders, exclusion criteria: not complete the questionnaire and having psychological problems.

2.4 Tools of data collection:

To achieve the aim of this study, Two tools were utilized to collect data for this study.

Tool (I): Structured interviewing questionnaire: It will be developed by the researcher after reviewing the related literatures. (*Masjoudi, Aslani, Seifi, Khazaeian, & Fathnezhad-Kazemi, 2022*). It will consist of two parts:

Part (1): Socio- demographic characteristics of the pregnant woman, Age (years), Marital status, abortion, mode of delivery, previous pregnancy and delivery related problems.

Part (2): Obstetric data of the pregnant women: It included obstetric and current pregnancy history.

Tool (II): Pregnancy Self-Care practices: This scale will be developed by the researcher after reviewing the related literatures (Kadham, Jihad & Larranaga, 2016). It will include items to assess self-care practices during pregnancy as (nutritional practices, physical activity and sports practices, personal hygienic practices, burden of work, rest and sleep practices, follow up of primary health care services). The women indicate their level of agreement with statements from strongly disagree to strongly agree using five items likert scale. Scoring System Bad (<50%, <77) , Average (50-<75%; 77-<115,5) , Good (≥115,5).

2.5 Validity and Reliability of the tools

- Data collection tools were tested and juried for the content validity by three specialists in women health and midwifery nursing field. These experts assessed the tool for clarity, relevance and applicability. Changes were considered according to their comments as certain sentences were simplified to be easily understood by the women.
- Reliability of the tool2 was tested for its internal consistency by using Cranach's Alpha test it was (0.736) this indicated that tool was highly reliable.

2.6 Pilot study:

A pilot research was carried out on 50 pregnant women (10% of the sample size) who visited prenatal clinics in the previously mention settings. The goal of the pilot study was to evaluate the clarity and applicability of the tools used in the study prior to the start of data collection, as well as the time required for response. The pilot findings were not included in the sample size, and adjustments to the tools were made as a consequence of data analysis of the pilot results, such as paraphrase of some words.

2.7 Ethical considerations:

The Ethics Committee of the Faculty of Nursing, Mansoura University granted official permission, and an official letter from the Faculty of Nursing, Mansoura University was directed to the director of obstetric and gynecological hospital at Mansoura university to obtain official permission to conduct the study after explaining its goal.

The research's purpose was explained to the subjects, and signed permission to participate in the study was acquired. Participation in the study was entirely optional, and all participants were free to leave at any moment. Throughout the study, anonymity, privacy, safety, and confidentiality were strictly maintained. The study participants were informed that the findings will be utilized as part of the required research for their Master's degree, as well as for publishing and education.

2.8 Field work:

- This process was started by obtaining approval from the concerned authorities in the previous mentioned setting. Tool for data collection was designed after reviewing the national and international related literatures. Then pilot study was conducted on 50 pregnant women before collecting the actual sample. This process took about one month from beginning of January 2021 to the beginning February 2021.
- The current study was carried out from the beginning of February to the end of August. The researcher attended the previously mentioned setting three days per week until the end of complete data of studied women (495). The researcher introduced herself to the nurses and the women, explained the aim of the study and obtained the women's consent to participate in the study after assuring the confidentiality of data.
- Then the researcher assessed self-care practices among the studied pregnant women (nutritional practices, physical exercises and sports practices, personal hygiene, burden of work, rest and sleep and follow up the primary health care services).
- Women were permitted to ask for any interpretation and explanation.
- The researcher asked the pregnant woman and recorded her answers in the data collection sheet.
- The researcher followed the recommended personal protective measures during data collection process as well as, privacy and safety were absolutely assured.
- The researcher attended the study setting until completion the data collection process.

2.9 Statistical analysis

Collected data were coded, computed and statistically analyzed using SPSS (statistical package of social sciences), version 26. Data were presented as frequency and percentages (qualitative variables) and mean \pm SD (quantitative continuous variables). Chi square (χ^2) was used for comparison of categorical

variables. Student's t test was used for comparison of continuous quantitative variables (two groups) and one-way a nova (F test) was used for comparison of continuous quantitative variables (more than two groups). The difference was considered significant at $P \leq 0.05$.

Results

Table (1) Presents that more than one third of the studied pregnant women aged from (25-30). The mean age was (26.57 \pm 5,0) years. More than half of them (54.3%) had secondary education & less than two thirds of them (67.3%) came from rural area. About three quarters of the studied women (74.9%-75.2% respectively) were house-wives and had enough income & most of them (99%) were married with 1-5 years duration.

Table (2) Shows that more than one third of the studied women were gravida two and primi-para (36.4%-36.8%) respectively. More than half of them (55.2%) delivered by cesarean section and more than one third of them (38.4%) were > 25 weeks of gestation. Most of them (83,2%) attended ante natal visits more than four times. Gestational hypertension and chronic hypertension were the most obstetric and medical problems among the studied pregnant women respectively.

Table (3) Presents that most of the studied women (97.8%- 98.6% respectively) always wash their hands before and after preparing meals and took sufficient time for cooking. Less than two thirds of the them (63.8%- 66.1% respectively) always use microwave in cooking and ate well balanced diet. More than half of the studied women (54.3%) sometimes ate fresh food and half of them (50.1%) sometimes ate fast food regularly. Less than two thirds of the studied women (68.3%) rarely ate more than three side dishes per meal.

Table (4) Describes that about one third of the studied women (31.9%) performed regular indoors exercise during pregnancy and most of them (91.7%) watched TV as a form of recreational activities.

Table (5) Illustrates that most of the studied women (98.8%, 96.0%&99.0% respectively) always wash their hands before and after they used toilet, took daily shower and maintained keeping genital area clean and dry. More than half of them (56.4%) sometimes brushed their teeth at least twice daily and less than half of them (45.3%) sometimes used antiseptics in water during perineal care. More than one third of the studied women (43.0%) always perform breast care in the third trimester of pregnancy.

Table (6) Shows that more than one half of the studied women (53.7%,52.5% respectively) were always perform their daily activity easily and were able to took care for their children. Less than half of them (44.2%) sometimes were able to clean their house regularly. More than two thirds of them (78.2%) rarely took care for extended family and less than half of them (45.5%) rarely needed assistance during performing their daily activity.

Table (7) Describes that more than half of the studied women (60.0%, 65.3% respectively) slept well at night (6-8hours) and took naps during the day. Most of them (91.7%) took shower as a practice to improve their sleeping.

Table (8) Illustrates that most of the studied women (94.1%, 95.8%&97.0%

respectively) always attend ante natal visits regularly, performed local abdominal examination and received counseling from health care center. Less than one third of them (31.3%) sometimes performed ultra sound examination and more than one quarter of them (29.5%) sometimes received counseling on line. Most of the studied women (98.5%) received tetanus vaccination during pregnancy

Figure (1): Type of sports among studied pregnant women practicing exercises during pregnancy (156).

Figure (2) Time of practicing sports among studied pregnant women practicing exercises during pregnancy (156).

Figure (3): Number of practicing sports among studied pregnant women practicing exercises during pregnancy (156).

Figure (4): Levels of personal hygiene.

(Figure 5): Distribution of the studied pregnant women according to their sleep hours.

Figure (6): Distribution of the studied pregnant women according to counseling topics.

Figure (7): Distribution of the studied pregnant women according their level of self-care practice.

Table (1): Socio demographic characteristics of the studied pregnant women n= (495)

Characters	Items	No	%
Age (years)	<20	30	6.1
	20-	144	29.1
	25-	196	39.6
	30-	79	16.0
	35-40	46	9.3
	Range 18 – 40, Mean ± SD = 26.57 ± 5.0 years		
Education	Primary	40	8.1
	Secondary	269	54.3
	University	167	33.7
	Postgraduate	19	3.8
Residence	Rural	335	67.3
	Urban	160	32.2
Occupation	Employed	124	25.1
	Housewife	371	74.9
Income	Not enough	117	23.6
	Enough	372	75.2
	Enough & save	6	1.2

Marital status	Married	490	99.0
	Divorced	5	1.0
Duration of marriage (years)	<1	21	4.2
	1-	220	44.5
	5-	170	34.3
	10-	64	12.9
	15 – 20	20	4.1
Range 1 – 20, Mean ± SD = 5.30 ± 4.0 years			

Table (2): Obstetric and current pregnancy history among the studied pregnant women n= (495)

Obstetric history	No	%	Current pregnancy	NO	%
Gravidity			Gestational age (weeks)		
- 1 (primigravida)	138	27.9	- 1 – 12	49	9.9
- 2	180	36.4	- 13 – 24	121	24.4
- 3	111	22.4	- 25 – 36	190	38.4
- 4+	66	13.3	- 37+	135	30.9
			Range 4-43, Mean±SD=29.50±8.70Weeks		
Parity					
- 1	182	36.8			
- 2	110	22.2			
- 3+	49	9.9			
Abortion			Ante natal visits		
- No abortion	436	88.1	- < 4 visits	83	16.8
- 1	42	8.5	- ≥ 4 visits	412	83.2
- 2+	17	3.4			
Mode of delivery					
- Vaginal	68	13.7			
- CS	273	55.2			
Previous obstetric-health problems			Current obstetric-health problems		
- Yes	38	7.7	- Yes	53	10.7
- No	457	90.15	- No	442	89.3
Types (49)			Types (65)		
- Pre-eclampsia	3	7.1	- Pre-eclampsia	2	3.8
- Placenta Previa	8	19.0	- Placenta Previa	11	20.8
- Gestational HTN	21	50.0	- Gestational HTN	29	54.7
- Gestational DM	7	16.7	- Gestational DM	10	18.9
- Others (hyperemesis)	10	23.8	- Others (hyperemesis)	13	24.5
Previous Medical-health Problems			Current Medical health Problems		
- Yes	34	6.9	- Yes	43	8.7
- No	461	93.1	- No	452	91.3
Types (34)			Types (43)		
- DM	8	23.5	- DM	9	20.9
- HTN	11	32.3	- HTN	13	30.2
- Heart disease	7	20.6	- Heart disease	9	20.9
- Others (renal)	8	23.5	- Anemia	12	28.0

Table (3): Distribution of nutritional Practices among the studied pregnant women n= (495)

Nutritional Practices	Always		Sometimes		Rarely	
	No	%	No	%	No	%
1. Washing hands before and after preparing meals.	484	97.8	10	2.0	1	0.2
2. Taking sufficient time for cooking.	488	98.6	7	1.4	0	0.0
3. Maintaining eating of fresh food.	224	45.3	269	54.3	2	0.4
4. Using microwave in cooking. #	316	63.8	37	7.5	142	28.7
5. Keeping the cleanliness of utensils and cutting boards.	488	98.6	6	1.2	1	0.2
6. Eating a well-balanced diet.	327	66.1	162	32.7	6	1.2
7. Taking sufficient time to chew food.	474	95.8	17	3.4	4	0.8
8. Eating breakfast every day.	347	70.1	144	29.1	4	0.8
9. Eating three meals a day.	328	66.3	159	32.1	8	1.6
10. Eating more than three side dishes per meal.	5	1.0	152	30.7	338	68.3
11. Eating fast food regularly. #	162	32.7	248	50.1	85	17.2
12. Eating salty diet.	326	65.9	119	24.0	50	10.1
13. Eating sugary diet.	158	31.9	227	45.9	110	22.2
14. Taking dietary supplements regularly.	416	84.0	61	12.3	18	3.6
15. Drinking tea immediately after meals.	160	32.3	181	36.6	154	31.1
16. Taking digestive drugs after eating.	143	28.9	206	41.6	146	29.5
17. Drinking water regularly.	337	68.1	152	30.7	6	1.2
Average score of nutritional practice						
Minimum – Maximum			35.0 – 51.0			
Mean ± SD			43.64 ± 2.87			

reversed score

Table (4): Distribution of physical activity and sports practice among the studied pregnant women

Physical activity and sports practice	Yes		No	
	No	%	No	%
1. Practicing regular exercise during pregnancy.	158	31.9	337	68.1
2. Engaging in any kind of sports.	156	31.5	339	68.5
3. Participating in any recreational activity, such as (495) #	495	100.0	0	0.0
-Listening to Quran and or music	180	36.4		
- Watching TV	454	91.7		
- Reading	320	64.4		
Score of physical activity& sports				
Minimum – Maximum			0.0 – 3.0	
Mean ± SD			1.57 ± 0.99	

Multiple response

Table (5): Distribution of personal hygienic practices among the studied pregnant women n= (495)

Personal Hygiene	Always 3		Sometimes 2		Rarely 1	
	No	%	No	%	No	%
1.Bruching teeth at least twice daily	139	28.1	279	56.4	77	15.6
2.Washing hands before and after using toilet	489	98.8	6	1.2	0	0.0
3.Taking daily shower	475	96.0	20	4.0	0	0.0
4.Using antiseptics in water during performing perineal care	181	36.6	224	45.3	90	18.2
5.Using cosmetics deodorants	390	78.8	47	9.5	58	11.7
6. Changing under wears at least twice daily	464	93.7	30	6.1	1	0.2

7.Keeping under wear dry, ironed & not tight	353	71.3	141	28.5	1	0.2
9.Performing breast care in the third trimester	213	43.0	150	30.3	132	26.7
10.Maintaing of genital area clean and dry	490	99.0	5	1.0	0	0.0
11. Wearing comfortable clothes	360	72.7	108	21.8	27	5.5
12. Following precautionary measures of COVID-19						
- Cleaning hands often	441	89.0	51	10.3	3	0.6
- Coughing or sneezing in bent blow not hands	313	63.2	165	33.3	17	3.4
- Avoid touching eyes, nose and mouth						
- Limiting social gatherings and time spent in crowded places	288	58.2	185	37.4	22	4.4
- Avoid close contact with someone who is sick	373	75.4	106	21.4	16	3.2
- Cleaning and disinfecting frequently touched objects and surfaces	344	69.5	132	26.7	19	3.8
	441	89.1	50	10.1	4	0.8
8. Performing vaginal douching regularly	161	32.5	259	52.3	75	15.1
Score of personal hygiene						
Minimum – Maximum			26.0 – 51.0			
Mean ± SD			43.76 ± 4.91			

Figure (1): Substances used by pregnant women during vaginal douching

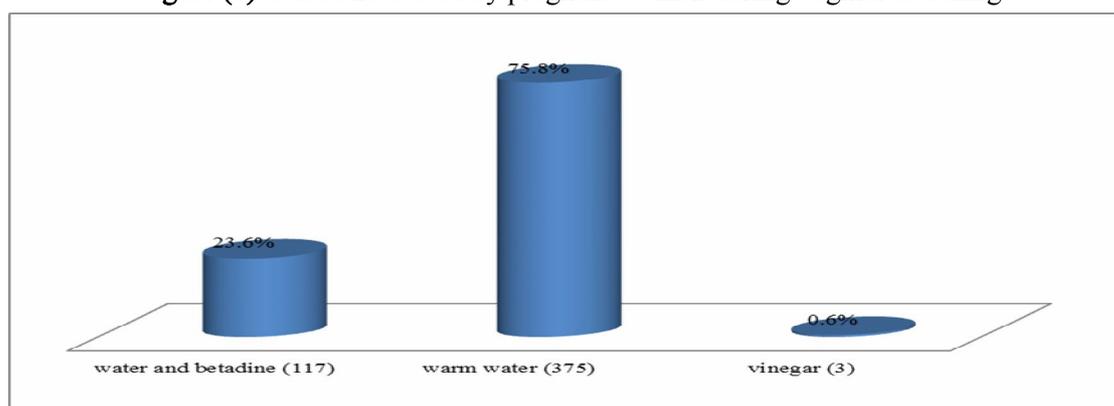


Figure (2): Causes for using vaginal douching by pregnant women

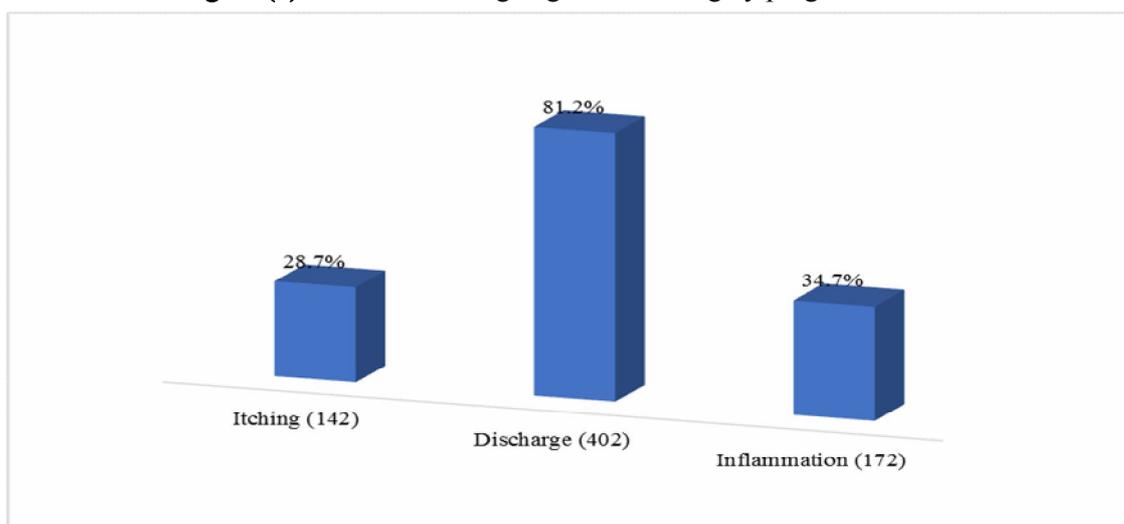


Figure (3): Recommended person for using vaginal douching

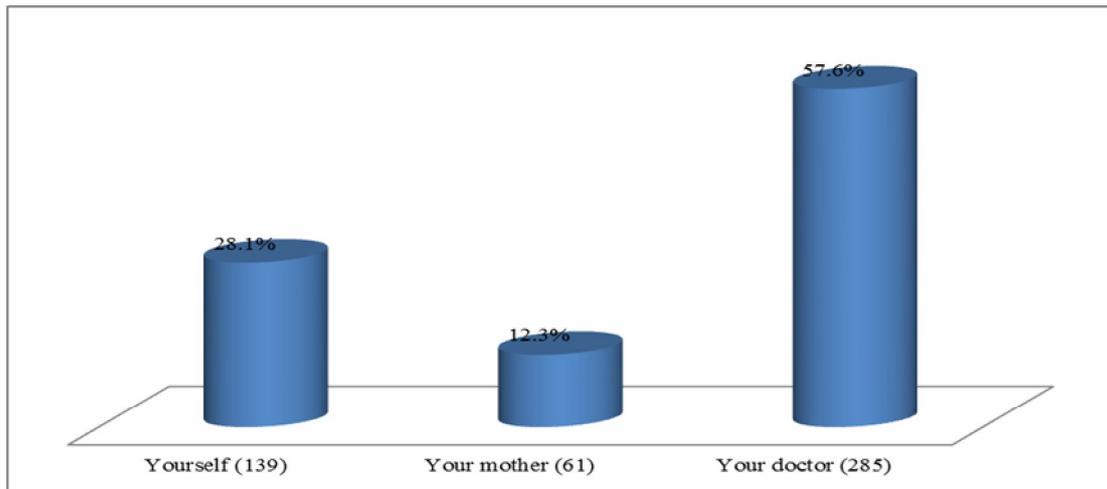


Table (6): Distribution of burden of work among the studied pregnant women n= (495)

Burden of work	Always 3		Sometimes 2		Rarely 1		
	No	%	No	%	No	%	
1.Performing daily activity easily	266	53.7	199	40.2	30	6.1	
2.Ability for cleaning house regularly	243	49.1	219	44.2	33	6.7	
3.Needing assistance during performing daily activity	125	25.3	146	29.5	224	45.5	
4.Caring for extended family (468)	57	11.5	24	5.5	387	78.2	
5.Ability to caring for children	260	52.5	64	12.9	33	6.7	
6. Attending the work regularly	16	3.2	106	21.4	2	0.4	
7.Taking a sick leave from your work	45	9.1	68	13.7	11	2.2	
Score of work burden							
Minimum – Maximum	6.0 – 20.0						
Mean ± SD	10.789± 2.79						

Table (7): Distribution of rest and sleep practices among the studied pregnant women n= (495)

Rest and sleep	Yes		No	
	No	%	No	%
1. Sleeping well at night.	297	60.0	198	40.0
2. Number of sleeping hours				
- < 6 hours (1)	196	39.6		
- 6 – 8 hours (2)	299	60.4		
- > 8 hours (3)	0	0.0		
3. Practices performed to improve sleep such as: #				
- Drinking milk	237	47.9		
- Taking shower	454	91.7		
- Performing massage	25	5.1		
- Taking sedatives	1	0.2		
4. Having naps during the day.	323	65.3	172	34.7
Average score of rest and sleep				
Minimum – Maximum	0.0 – 3.0			
Mean ± SD	2.21± 0.77			

Multiple response

Table (8): Distribution of the studied pregnant women according to their health care services that they have each follow-up visit n= (495)

Follow up the primary health care services (Health care services that you have each follow up visit)	Always 3		Sometimes 2		Rarely 1	
	No	%	No	%	No	%
1. Atending antenatal care visits regularly	466	94.1	27	5.5	2	0.4
2. General examination	401	81.0	92	18.6	2	0.4
3. Local examination	474	95.8	20	4.0	1	0.2
4. Ultra sound examination	148	29.9	156	31.5	191	36.0
5. Weight monitoring regularly	285	57.5	131	26.5	79	16.0
6. Following up for checking teeth & oral hygiene	46	9.3	47	9.5	402	81.2
7. Receiving counseling from health care center	480	97.0	13	2.6	2	0.4
8. Receiving counseling through online	119	24.0	146	29.5	230	46.5
			Yes		No	
			No	%	No	%
9. Receiving vaccination during pregnancy			274	54.7	219	54.3
Average score of follow up						
Minimum – Maximum			10.0 – 25.0			
Mean ± S3			19.59± 2.36			

Figure (4): Types of vaccines provided to pregnant women

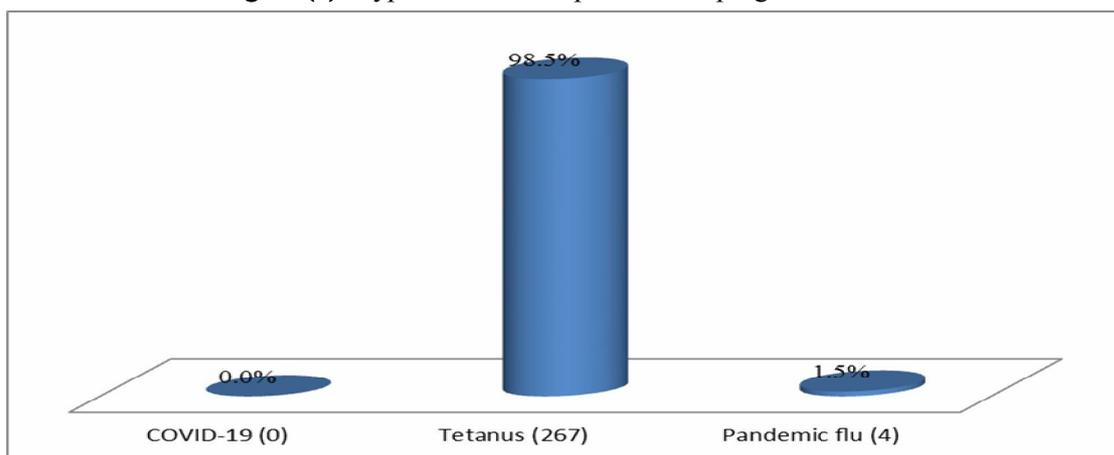


Figure (5): Type of sports among studied pregnant women practicing exercises during pregnancy (156)

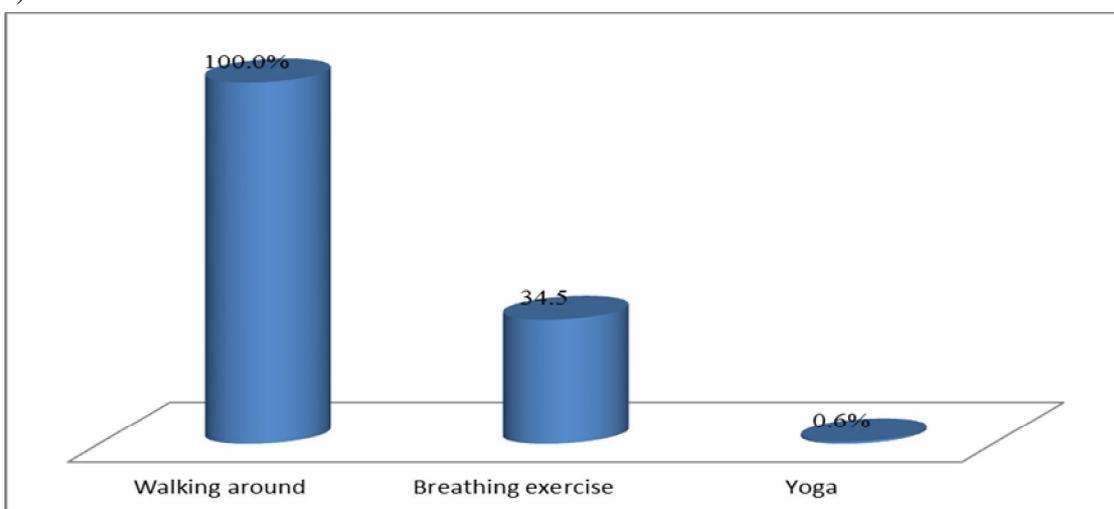


Figure (6): Time of practicing sports among the studied pregnant women (156)

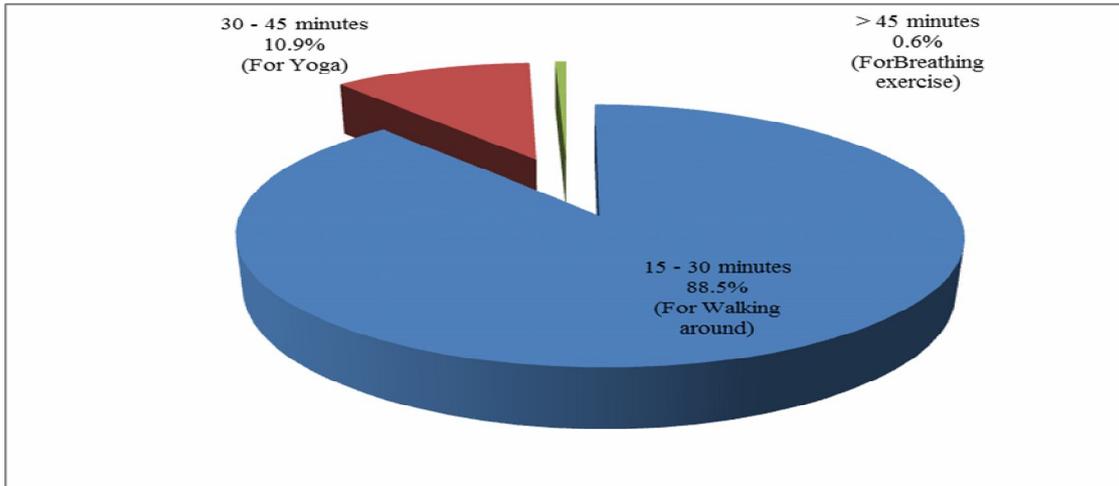


Figure (7): Number of practicing sports among studied pregnant women practicing exercises during pregnancy (156)

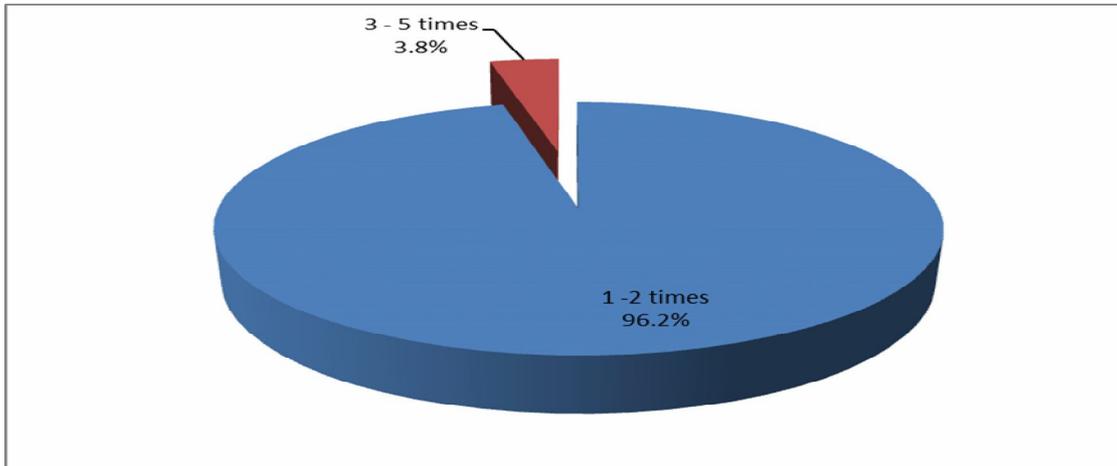


Figure (8): Level of personal hygienic practices among the studied pregnant women

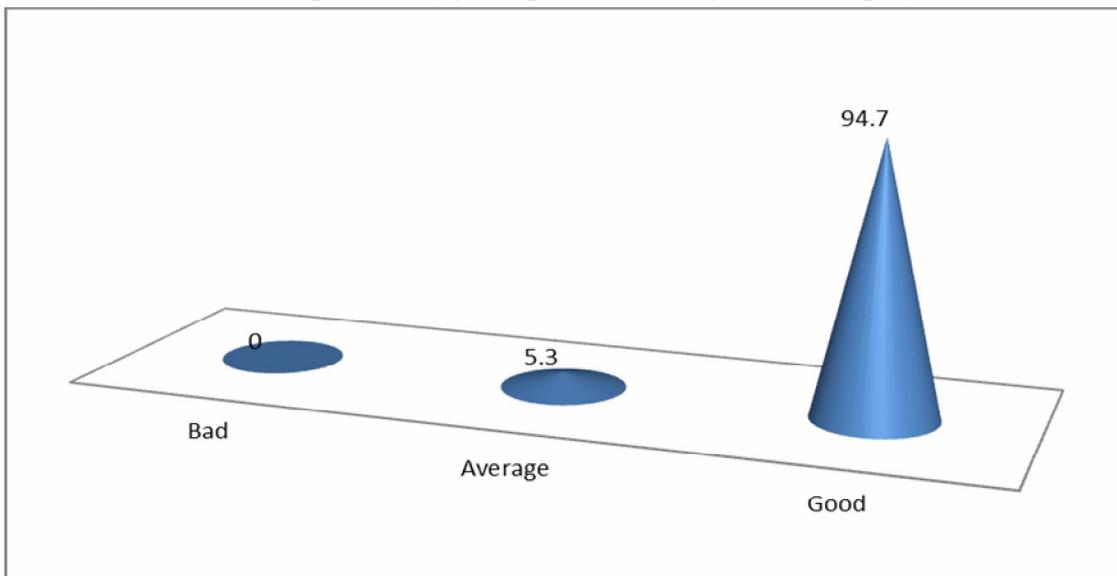


Figure (9): Distribution of the studied pregnant women according to their sleep hours

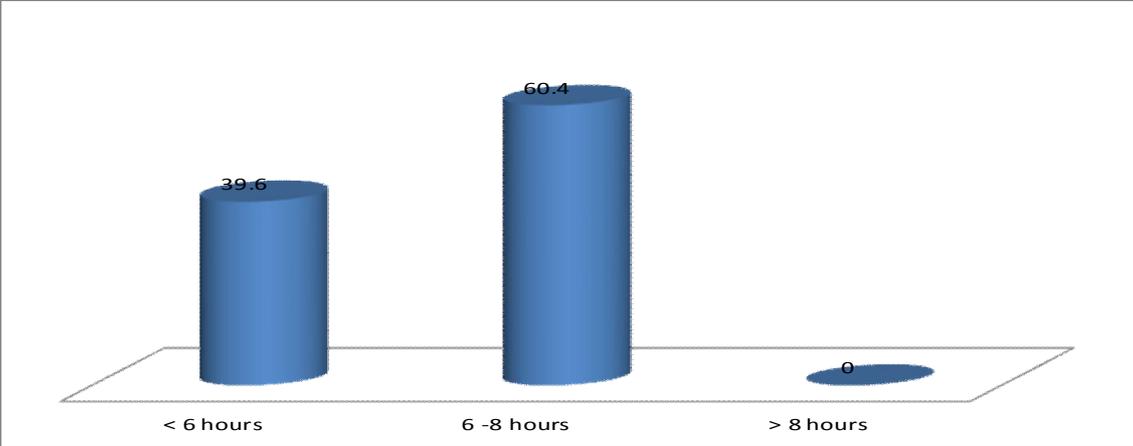


Figure (10): Distribution of the studied pregnant women according to counseling topics

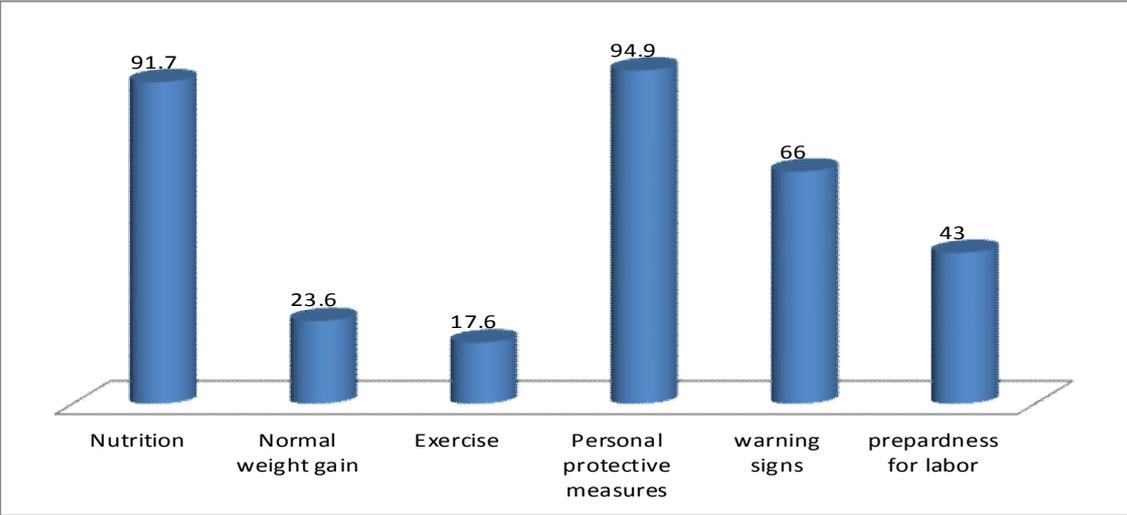
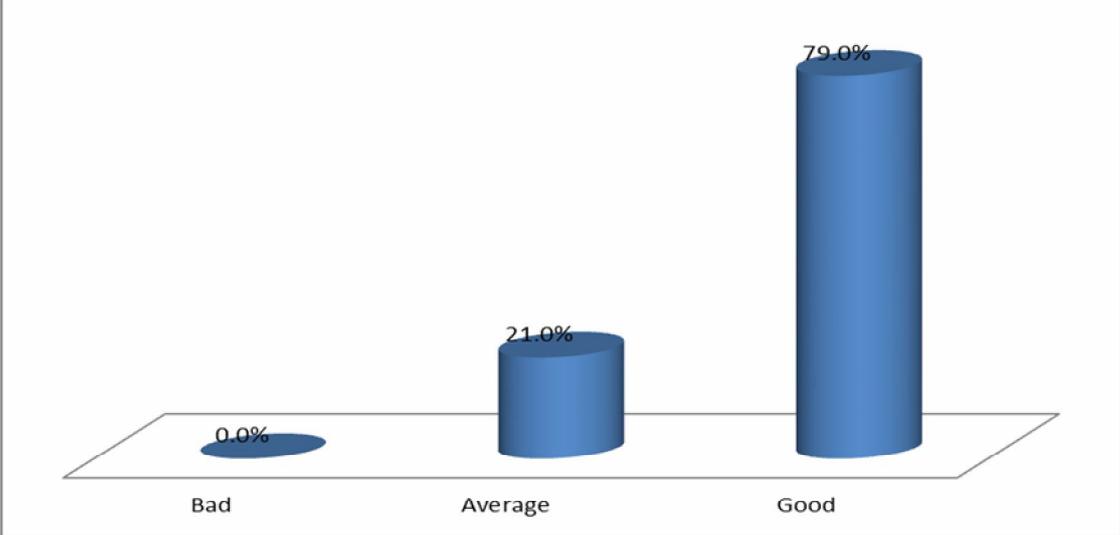


Figure (11): Distribution of the studied pregnant women according their level of self-care practices.



Discussion

The current study aimed to assess self-care practices of pregnant women during COVID-19 pandemic. The study aim was achieved through the study results.

Considering to nutritional practices among the studied pregnant women, the current study reported that most of the studied women always washed their hands before and after preparing meals and took sufficient time for cooking. In addition, less than two thirds of the studied women always use microwave in cooking and more than two thirds of them ate well balanced diet. More than half of the studied women sometimes ate fresh food and half of them sometimes ate fast food regularly. More than two thirds of the studied women rarely ate more than three side additional dishes per meal.

These findings were supported by *Husain& Ashkanani. (2020)* who assessed dietary habits and life style changes in Kuwait during covid-19 pandemic and found that more than half of pregnant women maintained eating of freshly made food and there was a rise in home cooking during COVID-19 pandemic; this can be explained as long period of quarantine allow pregnant women to maintain cooking at home as well as the fear from infection caused by fast food. Also the previous study detected unhealthy eating practices during the pandemic, such as skipping breakfast and late and night snacking. Both behaviors are likely associated with overweight and obesity.

While, the present study results were contradicted with *Kumari. (2021)* who studied COVID-19 impact on pregnant women psychosocial functioning and found that pregnant women felt that the pandemic had affected their nutrition. Lockdown restrictions prevented their family members from arranging fresh fruits and vegetables and milk and milk products daily. Most of them also avoided a non-vegetarian diet due to fear of

contracting the corona infection by its consumption.

As regards to physical activity and sports practice among the studied pregnant women, the current study described that about one third of the studied women performed regular exercise during pregnancy and most of them listened to the radio and watched T.V as a form of recreational activities. The study results were supported by *Yu, He & Szumilewicz. (2022)* who carried out a study to assess pregnant women activity levels and impediments during COVID-19 pandemic and reported that most pregnant women in China did not perform moderate-intensity exercise (e.g., swimming, running, and climbing) during pregnancy.

Meanwhile, social isolation is essential to prevent the spread of the novel coronavirus. Many types of social engagement, including sports, have been halted; people avoid engaging in these activities because of the current scenario. Pregnant women with weak immune systems are advised to avoid public places as much as possible to minimize the risk of infection.

Also, the study results were in an agreement with *Biviá-Roig et al. (2020)* who assessed the impact of COVID-19 on Spanish pregnant women life style and psychological well-being and revealed that there was a significant decrease in engagement in physical activity by the participants during the pandemic, compared to their lifestyle habits during pregnancy from before the pandemic. only a third of those surveyed indicated that they had continued with their physical exercise routine, compared to a large percentage that had encountered some obstacles to exercising during pandemic. This can be explained due to lack of space, fatigue due to the pregnancy, and not considering exercise as a priority. A small percentage of the participants did not engage in physical exercise out of fear to harm the fetus, a medical contraindication (risk of preterm birth), or another unspecified cause. This decrease in general physical activity was

also associated with an increase in the number of hours spent sitting at home, which doubled.

Furthermore, the study results were in agreement with *Kumari et al. (2021)* who studied COVID-19 impact on pregnant women psychosocial functioning and found that most of pregnant women prefer to move to their own parents' home as they feel comfortable there.

While the present study finding was contradicted with *Güner& Öztürk. (2021)* who assessed the impact of COVID-19 pandemic on pregnant women social impact and lifestyle changes and reported that pregnant women had changed their daily healthy life routines and social lives that may result in isolation and insufficient social support. Due to travel restrictions and social distancing precautions, pregnant women could not meet with their families, and their social interactions decreased, they spent most of their time watching T.V; so, they felt lonely. Thus, the measures taken to protect health caused them to experience a difficult period.

Considering personal hygienic practices among the studied pregnant women the current study revealed that most of the studied women always washed their hands before and after they used toilet, took daily shower and maintained keeping genital area clean and dry. More than half of them sometimes brushed their teeth at least twice daily and less than half of them sometimes used antiseptics in water during perineal care. more than two fifth of the studied women always performed breast care in the third trimester of pregnancy.

This was in the same line with *Kunno et al. (2022)* who assessed practices of pregnant women in Bangkok, Thailand during covid-19 pandemic and reported that majority of women maintain wearing mask every time they leave the house, frequently washed their hands or clean them with alcohol, covered their mouth and nose with elbow or tissue when they cough or sneeze and avoided crowds and public places; This can be explained as following personal protective measures during COVID-19 is very essential to prevent infection especially lower immune system response during pregnancy, Also the study

findings was supported by *Naqvi et al. 2022* who studied the effect of COVID-19 pandemic on pregnant women knowledge and attitude in Bangkok, Thailand and reported that three quarters of women frequently practiced hand hygiene, majority of women reported wearing a mask when leaving homes and planned to stay at home to reduce COVID-19 exposure risk.

As regards to burden of work among the studied pregnant women, the current study revealed that more than one half of the studied women were always performed their daily activity easily and were able to took care for their children. Less than half of them sometimes were able to clean their house regularly. More than three quarters of them rarely took care for extended family and less than half of them rarely needed assistance during performing their daily activity.

These results were in consistent with *Astuti & Afsah. (2019)* who assessed pregnant women's physical activity during COVID-19 pandemic in Yogyakarta and reported that most pregnant women done their household activities including cleaning such as making beds and laundering,) by themselves this can be explained as most pregnant women in this study were housewives and pregnant women who were housewives was significantly associated with physical activity; the pregnant women may be feeling more comfortable doing household activities than engaging in exercise during pregnancy and most pregnant women tried to maintain their unique role doing house chores.

While the present study were in disagreement with *Sahin& Kabakci. (2021)* who conducted a study to assess pregnant women experience during COVID-19 pandemic in turkey and revealed that the daily routine activities of the interviewed pregnant women at home and outside were blocked or changed. While pregnant women were not able to perform their daily walking activities, which they thought was important for their health, as they could not go out, their cleaning routines at home were increased due to fear of infection with the virus. Due to "the doubling of their health responsibilities" as pregnant women

think of the health of both themselves and their babies, personal protection measures such as hygiene practices they use to avoid infection may increase; this can be explained as about two thirds of the studied women were house wives and their daily routine wasn't significantly changed during the pandemic.

Inversely, a study conducted by **Olhaberry et al. (2022)** to assess COVID-19 impact on pregnancy experiences on Chile city (U.S.A) and revealed that more than two thirds of the sample acknowledged that their ability to care for their children had been impacted by the pandemic, and there was a significant rise in parents' sadness and irritability as well as a decrease in feelings of happiness.

Concerning to rest and sleep practices among the studied pregnant women. The current study revealed that more than half of the studied women slept well at night (6-8hours) and they took naps during the day. Most of them took shower as a practice to improve their sleeping. The previous findings were in the same line with **Alimoradi et al. (2022)** who carried a research to evaluate the effect of COVID-19 pandemic on sleep problems among pregnant women and reported that sleep problems are prevalent among pregnant women during the COVID-19 pandemic, but not more than the prevalence found in the general population and pregnant women sleep not affected by the pandemic.

While the present study results were contradicted with **Gupta et al. (2020)** who assessed sleep pattern and sleep quality changes during COVID-19 pandemic and reported that sleep pattern was changed during pandemic. A shift to later bedtime, delayed sleep onset, reduction in sleeping hours at night and increased daytime napping was observed. In addition, worsening sleep quality. this, can be explained as; First, a decision to become pregnant is usually taken during a period of better mental health and more secure financial situation. Therefore, pregnant women may have improved and more stable mental health condition than non-pregnant women. Second, pregnant women receive the focus of family attention at all times, and such unique support mechanisms may be especially

implemented by family members during the COVID-19 epidemic. Third, increased contact with medical workers for their prenatal care either at the health care setting or on-line classes can provide support and decrease stress symptoms. therefore, these factors might lead to less insomnia in the pregnant women group.

As regards to pregnant women ability to follow up their primary health care services, the current study revealed that most of the studied women always attended ante natal visits regularly, performed local abdominal examination and received counseling from health care center. Less than one third of them sometimes performed ultra sound examination and more than one quarter of them sometimes received counseling on line. Most of the studied women received tetanus vaccination during pregnancy. Also, majority of them didn't follow up teeth and oral hygiene.

The previous study results were in adherence with **Biviá-Roig et al. (2020)** who studied the impact of COVID-19 on Spanish pregnant women life style and psychological well-being and reported that only 25% of the studied women indicated that they had received their counseling online and the rest of the women attended ante natal care visits in the recommended time. While current study finding were contradicted with **Biviá-Roig et al. (2020)** who reported that, half of the participants could not attend childbirth preparation classes because they had been canceled due to the pandemic and fear of contagion with SARS-CoV-2. Finally, it was evident that corona virus affect lifestyle of studied pregnant women that appear in self-reported about their self-care practices.

Conclusion

The current study concluded that, most of the studied women always wash their hands before and after preparing meals and took sufficient time for cooking. less than one third of women performed regular exercise during pregnancy most of the studied, attended ante natal visits regularly, received counseling from health care center and received tetanus vaccination during pregnancy.

Recommendations:

Based on the study finding, the current study recommended the following:

- Educational platforms, virtual learning and consultations and mobile applications, are crucial to enhance self-care practices during pregnancy in a time of crisis.
- Simple designed brochures should be provided to pregnant women to explain the importance of maintaining self-care practice either through on-line classes or by attendance.
- Increase awareness of pregnant women regard psychological adaptation and relaxation techniques during COVID-19 pandemic.

Further researches should be recommended to

- Applying preventive measures during any pandemic affect fetal and maternal health.
- Qualitative research to explore women experience during COVID-19 pandemic.

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Conflict of Interest

The author declared no conflict of interest.

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