

## RESEARCH PAPER

# Pattern of utilization of maternal health care services among pregnant women in Basrah during COVID-19 pandemic

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### Abstract

**Background:** During Covid 19 pandemic, the utilization of maternal healthcare services by pregnant women was disrupted mainly due to Covid-19-related factors like curfew and fear of acquiring the infection while visiting the healthcare centers, because of this only a few numbers of pregnant women maintained their visiting schedule so this study aimed to study the sociodemographic and other characteristics of pregnant women who misused health care services during Covid-19 pandemic.

**Method:** This is a cross-sectional record-based study. A form of questionnaire was applied to records, and a sample of pregnant women who defaulted from receiving antenatal & postnatal services were selected randomly during the period from 1<sup>st</sup> of March 2020 to 31<sup>st</sup> of June 2020 in Basrah.

**Results:** 44.3% of the women were between 20 and 29 years old. Thirty-four of the studied women and thirty of their husbands had only primary education, most of those women worked as housewives (91%) and their husbands were self-employed (69%). About 28% of women were of gravida five and above and only 12% were primigravida, while (22%) had only one child. Most of those women (87%) had no chronic or gestational disease and no history of abortion or stillbirth (81%). The highest percentage of the defaulters (59%) had only one visit during their pregnancy with the booking age of first visit at 13-20 weeks (43%) and only (22%) had a postnatal visit, while (32%) had completed their tetanus toxoid doses.

**Conclusion:** There is a significant association between the number of visits during pregnancy with the education and occupation of mothers. Also, Previous history of abortion, parity, and booking age of visit had significant associations with the number of visits during pregnancy.

**Keywords:** Antenatal care, utilization, Covid-19, Basrah

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### Introduction

Coronavirus disease 2019 which is called Covid-19 is defined as a contagious disease involving the respiratory tract and results in severe acute respiratory syndrome.<sup>1</sup> The virus was first discovered in Wuhan City China in Dec 2019.<sup>2</sup> Iraq reported its first case on February 22

in AL-Najaf city, and on the 9<sup>th</sup> of March Basrah reported its first case.<sup>3</sup> In response to Covid 19 pandemic and to force people to remain housebound, Basrah governorate declared a full-day lockdown on the 15<sup>th</sup> of March and continued to April, May till June it became partial and only at night.<sup>4</sup> In addition to that the CDC recommended that, in public places all populations should wear masks even those without symptoms with keep social distance, all these measures were taken to decrease virus spread since there was no active treatment for the

disease, prevention is essential.<sup>5</sup> Maternal health care services refer to the range of medical and health-related services that are provided to women during pregnancy, childbirth, and the postpartum period.<sup>6</sup> These services are designed to ensure the health and well-being of both the mother and the newborn baby and the usage of these services is essential since it result in decreased mother and baby mortality and morbidity.<sup>7</sup> Movement restrictions, unreliable infection control practices, limited infection prevention supplies, and anxiety from being exposed to the coronavirus all prevent women from reaching maternal healthcare services during the pandemic and negatively impact women's health.<sup>8</sup> Many factors play a role in the utilization of healthcare services: in general women in the younger age group of 15-24 years are more likely to have more ANC visits compared to women in the other age groups.<sup>9</sup> Less age has been mentioned as the determinant for three or more ANC visits.<sup>10</sup> Studies have shown that the use of health-care services is related to the educational state of the mother since the higher the educational level the more compliance with taking the medication during pregnancy.<sup>11,12</sup> Also, educated mothers can detect the danger signs of pregnancy and maintain healthier and better nutrition during pregnancy.<sup>13</sup> Increasing the level of a woman's education as well as her husband's level of education increases the use of ANC<sup>14</sup>, while higher parity forms a barrier to adequate use of ANC.<sup>15</sup> Place of residence can also influence the utilization for example long distance from health services causes low use of maternal health services,<sup>16</sup> and the nearest location of PHCCs to the homes, the more utilization of service.<sup>17</sup>

## Objective

To estimate the sociodemographic and obstetric characteristics of the defaulters from the utilization of maternal health care services during the COVID-19 pandemic and to catch up with those women by providing online consultation or regulating household campaigns.

## Methodology

This is a cross-sectional study, conducted in Basrah city for 600 defaulted women for the antenatal and postnatal visits. In Basrah, there are three healthcare sectors available in the center of Basrah city. From each sector, we select two primary healthcare centers by simple random sampling method. The records of pregnant women who defaulted from ANC in those six primary healthcare centers from the period of the 1<sup>st</sup> of March to the 31<sup>st</sup> of June in 2020 were reviewed.

*A special questionnaire was filled out for each defaulter woman with the following:*

1. Sociodemographic characteristics for both the woman and her husband.
2. Obstetric history and medical history.
3. Number of visits to health care centers during and after pregnancy
4. Gestational age of first visit (booking visit)
5. Number of tetanus toxoid doses received by those mothers
6. The causes for not visiting the health care center during this period

A representative number of defaulters were selected from each center and one hundred women were considered as such. Those women were selected from the records of each primary health care center using the simple random sampling method, collectively 600 women's

records were reviewed and involved in the study. The health care center employee contacted the women by telephone asking them about the cause behind their defaulting, the response rate was only 20.5% of the total women (123 women). The defaulters were used in this study to represent the utilization since the number of real users during the period of the pandemic was very small and it would not be representative of the population. Data were coded and analyzed by using SPSS (Statistical Package for the Social Sciences) version 26. The hypothesis was tested by using the Chi-square and Fisher exact test, and the association between the number of visits and other variables was considered statistically significant when P-Value 0.05.

## Results

A total of 600 women were involved in this study, 44.3% of them were between 20-29 years of age. Thirty-four percent of the studied women and thirty percent of their husbands had only primary education, most of those women were

housewives (91%) and their husbands were self-employed (69%). Regarding the Obstetrical characteristics of the studied women. About (28%) of them were of gravida five and above and only 12% were primigravida, most of those women (87%) had no chronic or gestational disease and (81%) of them had no history of abortion or stillbirth. Most of the defaulters (59%) had only one visit during their pregnancy with the booking age of first visit at 13-20 weeks (43%) and only (22%) had a postnatal visit, while (32%) had completed their tetanus toxoid doses. Regarding The association between number of visits and sociodemographic characteristics. There is no significant association between the number of visits during pregnancy and the sociodemographic characteristics of the studied sample (p-value > 0.05) except between the number of visits and education and occupation of mothers there is a significant association (p-value < 0.05). (Table-1)

**Table 1.** The association between number of visits and sociodemographic characteristics of the women.

Variable	Number of visits								p-value	
	One		Two		Three		Four			
	No.	(%)	No.	(%)	No.	(%)	No.	(%)		
Age of mother in years	< 20	56	15.6	33	14.5	0	0	2	28.5	0.606
	20-29	161	44.8	99	43.7	3	42.9	3	42.9	
	30-39	134	37.4	85	37.4	3	42.9	2	28.6	
	40-49	8	2.2	10	4.4	1	14.2	0	0	
Education of mother	illiterate	61	17	18	7.9	0	0	0	0	0.01
	primary school	125	34.8	75	33	2	28.6	2	28.5	
	intermediate	92	25.6	63	27.8	0	0	1	14.3	
	secondary school	29	8.1	21	9.3	2	28.5	1	14.3	
	College	52	14.5	50	22	3	42.9	3	24.9	
Education of father	illiterate	41	11.4	12	5.3	1	14.3	1	14.3	0.176
	primary school	110	30.6	66	29.1	1	14.3	2	28.6	
	intermediate	98	27.3	57	25.1	1	14.3	2	28.6	
	secondary school	35	9.7	24	10.6	0	0	1	14.3	
	College	75	20.9	68	30	4	57.1	1	14.3	
Occupation of mother	housewife	336	93.6	204	89.9	5	71.4	5	71.4	0.01
	employed	23	6.4	23	10.1	2	28.6	2	28.6	
Occupation of father	unemployed	6	1.7	2	0.9	0	0	0	0	0.08
	self-employed	261	72.7	150	66.1	2	28.6	6	85.7	
	governmental	92	25.6	75	33	5	71.4	1	14.3	
	employed									

The relationship between the number of visits and obstetric characteristics of the women is presented in (Table-2). A previous history of abortion had a highly significant association

with the number of visits during pregnancy (p-value = 0.001), parity was also associated with the number of visits (P value 0.01).

**Table-2.** The relationship between number of visits and obstetric characteristics of the women.

Variable		Number of visits								p-value
		One		Two		Three		Four		
		No.	(%)	No.	(%)	No.	(%)	No.	(%)	
Number of pregnancies	One	46	12.8	29	12.8	0	0	1	14.3	0.44
	Two	71	19.8	56	24.7	5	71.4	2	28.4	
	Three	72	20	41	18.1	1	14.3	4	57.3	
	Four	66	18.4	36	15.8	1	14.3	0	0	
	five and above	104	29	65	28.6	0	0	0	0	
Number of children	Zero	56	15.6	41	18.1	0	0	3	42.9	0.01
	One	73	20.3	52	22.9	5	71.4	4	57.1	
	Two	75	20.9	42	18.5	2	28.6	0	0	
	Three	59	16.4	37	16.3	0	0	0	0	
	Four	38	10.6	31	13.7	0	0	0	0	
Chronic or gestational diseases	No	315	87.7	195	85.9	7	100	5	71.4	0.397
	Yes	44	12.3	32	14.1	0	0	2	28.6	
Abortion or stillbirth	No	298	83	182	80.2	6	85.7	1	14.3	0.00
	Yes	61	17	45	19.8	1	14.3	6	85.7	

The relationship between the number of visits and the booking age in (Table-3), shows there is a highly significant relationship between the

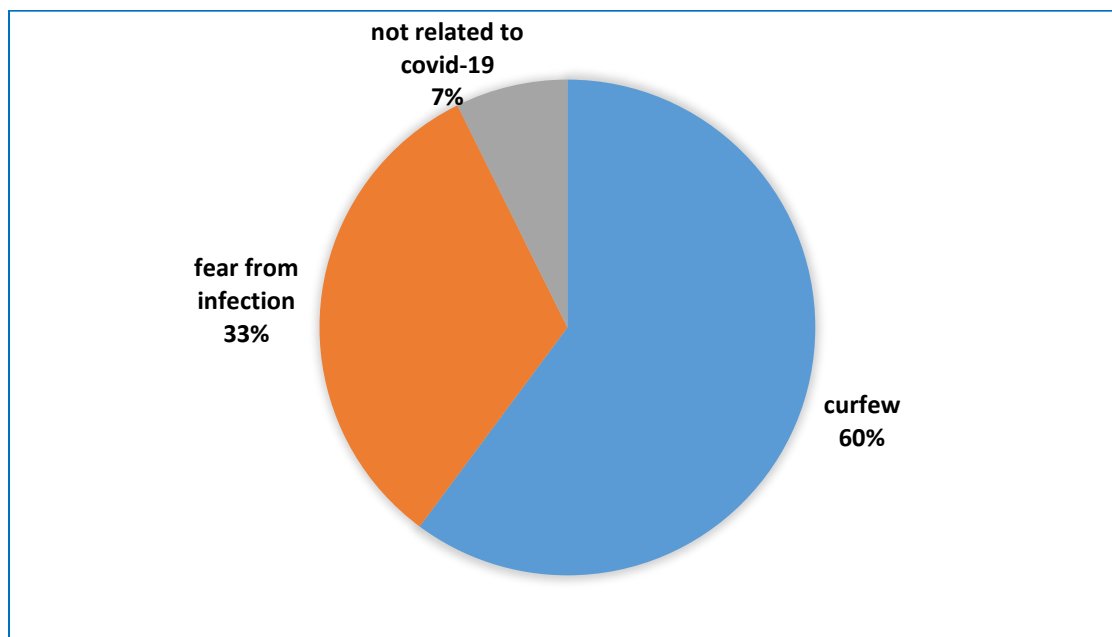
number of visits and the age of the booking visit (P-value less than 0.01).

**Table 3.** The relationship between number of visits and booking age.

Variable		Number of visits								p-value
		One		Two		Three		Four		
		No.	(%)	No.	(%)	No.	(%)	No.	(%)	
Booking age	within 12weeks	130	36.2	118	52.5	0	0	2	28.6	0.001
	13-20 week	162	45.1	90	39.6	3	42.9	3	42.8	
	21-26 week	34	9.5	4	1.6	0	0	0	0	
	27-30 week	18	5.1	8	3.5	4	57.1	2	28.6	
	31-34 week	12	3.3	6	2.4	0	0	0	0	
	35-36 week	3	0.8	1	0.4	0	0	0	0	

One hundred twenty-three women were asked about the causes behind not visiting the healthcare center during the COVID-19 period. Around two-thirds of the causes (60%) are due to lockdown and 33% due to fear of acquiring the

infection, while only a few numbers due to factors not related to Covid 19 (personal). The personal causes include that she is ill, and no person is available to take care of her children (Figure-1)



**Fig 1.** The causes behind not visiting the health care center during the COVID-19 period.

## Discussion

Ante-natal care (ANC) services aim to promote the outcome of the mothers and babies by providing good care before childbirth and the early post-natal period.<sup>18</sup> So despite the pandemic, the use of these services is essential so some pregnant women continue to visit healthcare centers and receive the care and important vaccines, however, many factors influence the utilization of maternal healthcare services, including accessibility and availability of healthcare facilities, Socio-demographic factors include women's education, husband's education, parity, birth order, and interval, intendedness of pregnancy, age of women at marriage or pregnancy, marital status, religion, caste and ethnicity, family size, and knowledge of family planning and ANC.<sup>19</sup> This study showed that most of the defaulted women were aged 20-29 years while women aged 40 and above used these services very few however it

showed that was no significant association between ANC utilization and maternal age, this result agrees with a study done in Erbil<sup>14</sup> and a study conducted in an urban squatter settlement of Karach.<sup>20</sup> but a study in India revealed that increased age is associated with at least three antenatal visits. Because as age increased mothers' awareness increased.<sup>21</sup> This study found that the mother's educational level and occupation affected the utilization significantly while the husband's education and occupation had no effect, this finding is in agreement with a study in Erbil city in Iraq found that there was a significant association between the educational level of women and their husbands and Increasing level of woman's education as well as husband's level of education increases the use of ANC<sup>14</sup>, by rewarding awareness and autonomy to the women.<sup>22</sup> While disagreed with a study in Pakistan which did not show any association with

the utilization of ANC services.<sup>23</sup> Regarding parity, this study is inconsistent with a study in Ethiopia that showed that high-parity women use the service more often than primiparous women.<sup>24</sup> In contrast to that, women with less parity utilized facilities for delivery more compared with those with higher parities.<sup>25</sup> This study revealed that previous bad obstetric history is highly associated with utilization of ANC visits since those women intend to use the ANC services more to improve their outcome, this finding agrees with a study done in Ethiopia.<sup>26</sup> Also, this study shows that the earlier the booking age of the visit the more utilization of the services. We can't study the effect of socioeconomic status because this study is records-based and the income or socioeconomic status (SES) had never been mentioned, but some studies in Turkey<sup>27</sup>, and Pakistan<sup>28</sup> showed that SES plays a very important role in the utilization of ANC services. This study also shows that the main cause for escaping from visiting the health care centers is the full-day lockdown so they found difficulties in reaching these centers, this agrees with studies in Italy<sup>29</sup> and Northeast Ethiopia<sup>30</sup>, but also a large number of women didn't visit the centers because they were afraid from acquiring the infection, especially the centers which have a unit for Covid 19 patient care.<sup>8</sup>

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## نمط استخدام خدمات الرعاية الصحية للأمومة بين الحوامل في البصرة خلال جائحة كوفيد-١٩

**الخلفية:** خلال جائحة كوفيد-١٩، تأثر استخدام خدمات الرعاية الصحية للأمومة من قبل الحوامل بشكل كبير بسبب عوامل مرتبطة بكوفيد-١٩ مثل حظر التجول والخوف من الإصابة بالعدوى أثناء زيارة المراكز الصحية. ونتيجة لذلك، لم تلتزم إلا مجموعة قليلة من الحوامل بجدول زيارتهن. هدفت هذه الدراسة إلى دراسة الخصائص الاجتماعية والديموغرافية وغيرها من الخصائص التي تميز الحوامل اللاتي أساءن استخدام خدمات الرعاية الصحية خلال جائحة كوفيد-١٩.

**الطريقة:** هذه دراسة استعراضية قائمة على السجلات. تم تطبيق استبيان على السجلات، وتم اختيار عينة من الحوامل اللواتي تسرين من تلقي خدمات الرعاية لما قبل الولادة وما بعد الولادة وبشكل عشوائي خلال الفترة من ١ مارس ٢٠٢٠ إلى ٣١ يونيو ٢٠٢٠ في البصرة.

**النتائج:** تشكل النساء اللواتي تتراوح أعمارهن بين ٢٠ و ٢٩ عامًا نسبة ٤٤،٣٪، أربعة وثلاثون بالمئة من النساء في الدراسة وثلاثون بالمئة من أزواجهن حاصلون على الشهادة الابتدائية فقط. كما تعمل معظم النساء ربات بيوت (٩١٪) بينما يعمل أزواجهن لحسابهم الخاص (٦٩٪). حوالي ٢٨٪ من النساء لديهن تاريخ حمل ب ٥ مرات أو أكثر بينما ١٢٪ فقط منهن من ولادات الأول. اثنان وعشرون بالمئة من النساء لديهن طفل واحد فقط. معظم النساء (٨٧٪) لا يعانين من أي أمراض مزمنة أو حملية وليس لديهن تاريخ من الإجهاض أو ولادة جنين ميت (٨١٪). معظم المتخلفات (٥٩٪) لم يكن لهن سوى زيارة واحدة أثناء الحمل وكان موعد التسجيل لأول زيارة ١٣-٢٠ أسبوعًا (٤٣٪) و ٢٢٪ منهن كان لهن زيارات ما بعد الولادة، بينما ٣٢٪ منهن أتممن جرعات لقاح الكزاز.

**الاستنتاج:** هناك ارتباط مهم بين عدد الزيارات أثناء الحمل ومستوى التعليم والمهنة لدى الأمهات. كما كان للتاريخ السابق من الإجهاض، والترتيب الولادي، وموعد التسجيل للزيارة الأولى ارتباطات مهمة مع عدد الزيارات أثناء الحمل.

**الكلمات المفتاحية:** الرعاية السابقة للولادة، الاستخدام، كوفيد-١٩، البصرة.