



ORIGINAL ARTICLE

## Barriers to utilization of focused Antenatal care services among pregnant women in Basrah governorate

ALRamdhan Jinan<sup>1\*</sup>, ALABRAHIM Maisaa<sup>1</sup>, Al-Hilfi Azha<sup>2</sup>, Al-Abboodi Huda<sup>3</sup>

<sup>1</sup>Department of Public Health, University of Basrah, Basrah, Iraq.

<sup>2</sup>University of Basrah, Alentifadha Primary Health Center, Basrah, Iraq.

<sup>3</sup>University of Basrah, Basrah Directorate of Health, Basrah, Iraq.

### ARTICLE INFORMATION

#### Article history:

Received: 00 Month 2022

Revised: 00 Month 2022

Accepted: 00 Month 2022

Published: 25 March 2022

#### Keywords:

Focused antenatal care, Knowledge, Benefit, ANC utilization, Quality of services, Maternal mortality.

#### Corresponding author:

ALRamdhan Jinan

Email: [jabdulrazz@gmail.com](mailto:jabdulrazz@gmail.com)

Department of Public Health,  
University of Basrah, Basrah, Iraq.

#### ABSTRACT

**Introduction:** Along with family planning, skilled delivery services, and emergency obstetric care, focused antenatal care (FANC) is a crucial component of a package of initiatives aimed at improving maternal and newborn well-being.

**Objective:** The present study was conducted to identify demographic, as well as social and cultural factors that may contribute to low utilization of FANC services in Basrah among pregnant and post-natal women.

**Methodology:** This research is a cross-sectional study to find out obstacles to the use of centered prenatal care services among pregnant women in the governorate of Basrah.

**Result:** About 116 (34.6%) were in the age group 21 to 25 years. The majority 147 (43.9%) of women had finished primary or intermediate school. Most of the women under study, 318 (94.9 %) were not employed. A high percentage of husbands (49%) had finished primary or intermediate school and (39.7%) of husbands had been government employees. 28.0% of the women under study had only one baby, and most of the study population, 290 (86.3%), had accepted socioeconomic status.

**Conclusion:** The study identified a statistical significance between low utilization and parity, being too busy, living away from antenatal care services and cost of transportation, long waiting time, and also identified a statistical significance between knowledge, attitude of the participants and low utilization of focused antenatal care.

### INTRODUCTION

In Basrah, Iraq's maternal, neonatal, and under-5 mortality rates stood at 31 per 100,000 live births, 13.6 per 1,000 live births, and 23.1 per 1,000 live births, respectively. The maternal mortality rate is 26.9 per 100,000 live births, the neonatal mortality rate is 16.9 per 1,000 live births, and the mortality rate for children under the age of five is 27.8 per 1,000 live

births.<sup>1</sup> Percentage of First visits 64%, the percentage of fourth visits and more than 38%, 116 (34.6 %) were in the age group 21 to 25 years, the majority 147 (43.9%) of women had finished primary or intermediate school. Most of the women under study 318 (94.9 %), were not employed.

A high percentage of husbands (49%) had finished primary or intermediate school and (39.7%) of husbands had been

**Copyright©2024, Authors.** This open access article is distributed under the Creative Common Attribution-Non Commercial 4.0 International (CC BY-NC-SA 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**CITATION:** Jinan A, Maisaa A, Azha A, Huda A. Barriers to utilization of focused Antenatal care services among pregnant women in Basrah governorate. *Sci. J. Med. Res.* 2024;8(29):10-17. DOI: 10.37623/sjomr.v08i29.02

government employees. About 94 (28.0%) of the women under study had only one baby, most of the study population 290 (86.3%) had accepted socioeconomic status, post-natal visits 53% in Basrah, and total abortion rate per (100) woman patients in the gynecological obstetric ward 13.5%.

“Ensure safe lives and encourage well-being for everyone at all ages,” says goal 3 of the sustainable development goals (SDGs): “good health and well-being for people of all ages.”<sup>2,3</sup>

By 2030, the global maternal mortality rate will be less than 70 per 100,000 live births, with all countries aiming to reduce neonatal mortality to at least 12 per 1,000 live births and to at least 25 per 1,000 live births below the age of five.

Many of these harmful consequences can be avoided with proper healthcare during pregnancy and childbirth.

Along with family planning, skilled delivery services, and emergency obstetric care, focused antenatal care (FANC) is a crucial component of a package of initiatives aimed at improving maternal and newborn well-being.<sup>4</sup>

Studies have linked poor pregnancy outcomes to low utilization of FANC. In the end, this leads to greater maternal and neonatal morbidity and mortality.<sup>5</sup> To improve maternal health, obstacles to quality maternal health services must be recognized and addressed at all levels of the health system.<sup>6</sup>

Iraq has significantly improved the national health quality of services. Antenatal Care (ANC) and Post-natal Care (PNC) have the ability to lead to reducing the morbidity and mortality of mothers and infants, so attempts are being made to emphasize different aspects of ANC and PNC care that are most likely to influence the outcome of pregnancy. It is necessary for pregnant women to receive high-quality prenatal and post-natal care.<sup>7,8</sup>

The previous model of WHO depends on four visits for ANC.<sup>9</sup> while the new WHO ANC model In order to minimize perinatal mortality and boost the experience of women in treatment, at least eight contacts are recommended.<sup>10</sup>

## Aims

The present study was conducted to identify demographic, as well as social and cultural factors that may contribute to a low utilization of FANC services in Basrah among pregnant and post-natal women.

## MATERIALS AND METHODS

The research was performed in the governorate of Basrah, which is the southernmost governorate in Iraq. It shares borders with Kuwait, Iran and Saudi Arabia. Vast desert plains and the Shatt al-Arab waterway flowing from Al-Qurnah through Basrah city and onto the Arab Gulf dominate the geographical landscape of the governorate. It has a total surface area of 19070 square meters, about 450 kilometers to the south of the capital, Baghdad. It has a population of 2908491, women in reproductive age 683340 (23.4%) and pregnant women 100244 (3.4%) in 2018.

The main health services are provided by the public sector, where all forms of curative and preventive services are

provided by a large network of health facilities spread across the governorate. There are 120 main primary health care centers, which are managed by 10 health districts in both urban and rural areas, providing antenatal care services free of fees.

The current study's data came from a number of sources 22 (19%) of primary health care centers were selected by stratified random sampling from these 10 health districts, these primary health care centers are AL-Seif and AL-Qibla from 1st health district, AL-Maqal and AL- Junainah from 2<sup>nd</sup> health district, AL-Khaleig and street 60 from 3<sup>rd</sup> health district, Abu AL-Khasseib and Hamdan from Abu AL- Khasseib health district, AL- Aqeel, AL-khatoah, AL- haj khuthair ,AL-baten, AL-Hassan al basry and safwan from AL-Zubair health district, Shat AL-Arab from Shatt AL-Arab health district, AL-Hartha from AL-Hartha health district, AL-Dair and AL-shafee from AL- Dair health district, AL-Qurna and AL-Sharsh from AL-Qurna health district, AL-Medainah and AL-Medainah typical center from AL-Medainah health district.

The reason for selecting these centers was that they serve a population of different socioeconomic classes so they may be representative of all other health centers in Basra city.

## Study subject

The research period was from 2<sup>nd</sup> January to end of September 2019, 4 researchers did the study. The interviewing doctors were qualified to administer the questionnaires. The study involved (335) pregnant women and women in the post-natal period (their babies age less than 6 weeks) who had come to the 22 selected primary health care centers they were enrolled in the study for immunization of their children over 3 months period extending from 2<sup>nd</sup> January to 31<sup>st</sup> March, 2019. Accordingly, 246 (73.4%) pregnant women and 89 (26.6%) women in the post-natal period were interviewed after consenting.

## Study design

The study was a cross-sectional, descriptive study in which quantitative data was collected using questionnaires and a deductive approach.

For the purposes of the study prepared by the researchers, a special form of questionnaire was prepared. Included in the questionnaire are:

- Sociodemographic data relating to the population of the sample.
- Past obstetrical history.
- Women's knowledge about FANC services.

All of these variables can lead to the low use of focused prenatal care.

Each healthcare center was visited prior to the proper phase of data collection. The health care center managers were briefed about the objective nature and requirement of the data collection process after which each center was visited twice to complete the data. The data were collected through direct interview of women who were qualified for the study by the researchers. Each interview took (15–20) minutes to be completed.

## Sample size

The sample size was calculated using Kirsh and Leslie's formula.

## Definition of variables

The variables used in this analysis were chosen to answer particular research objectives; the following is a general description of the types of variables on the questionnaire:

- Demographic, social and cultural variables of the respondents
- Low utilization, in this study, refers to the number of visits made at the initial FANC visit by pregnant women as well as the gestational age. Based on suggested World Health Organization (WHO) FANC visits. The number of visits was rated as either low or adequate. Low use, which was the study's outcome predictor, applied to less than four FANC visits during the pregnancy.
- Women's knowledge of the importance of FANC: Participants were asked about the number of ANC visits they had during their pregnancy, both when there was a problem and when there was no problem, as well as the sources of FANC care information.

### Ethical consideration

The mothers who took part in the study gave their verbal consent.

## Data analysis and statistical methods

Using SPSS statistical tools for Windows version 22, data was entered and analyzed. To generate output on all variables, Frequencies and cross tabulations were used in the descriptive statistics. The FANC's number of visits was classified as

In dichotomous variables, FANC visits < 4 indicate low or poor utilization and FANC visits > 4 indicate adequate or sufficient utilization. The identification of demographic and sociocultural variables associated with low usage was done using cross-tabulations. When the P value was less than 0.05, the relationship was considered significant.

### Ethical clearance

This research project has been approved by the research committee of Basrah University. After approval, a formal letter was written to the respective study site then permission was obtained to conduct the study.

## RESULT

This research included a total of 335 women: 116 (34.6%) were in the age group 21 to 25 years. The majority 147 (43.9 %) of women had finished primary or intermediate school, 318 (94.9%) were not employed. A high percentage of husbands (49%) had finished primary or intermediate school and (39.7%) of them had been government employees (Table 1).

About 94 (28.0%) had only one baby, and most of the study population 290 (86.3%) had accepted socioeconomic status. Also, we noticed from the study that more than two third of the participants 235 (69.9%) get their information on FANC from their relatives, 53(15.8%) get their information from

**Table 1:** Characteristics of pregnant women and post-natal mothers (n = 335) who participate in the study

| Characteristic                 | N (%)        |
|--------------------------------|--------------|
| <i>a-Age</i>                   |              |
| ≤ 15                           | 7 (2.1)      |
| 16–20                          | 87 (26.0)    |
| 21–25                          | 116 (34.6)   |
| 26–30                          | 67 (20.0)    |
| 31–35                          | 34 (10.1)    |
| 36–40                          | 24 (7.2)     |
| Total (335)                    | 100.0        |
| <i>b-Respondent education</i>  |              |
| Illiterate.                    | 47 (14.0)    |
| Just read and write            | 74 (22.1)    |
| Primary + intermediate school  | 147 (43.9)   |
| Secondary school               | 32 (9.6)     |
| Higher education               | 35 (10.4)    |
| Total                          | 335 (100.0%) |
| <i>c-Respondent occupation</i> |              |
| Governmental                   | 15 (4.5%)    |
| Non-governmental               | 2 (0.6%)     |
| Not employed                   | 318 (94.9%)  |
| Total                          | 335 (100.0)  |
| <i>d-Husband education</i>     |              |
| Illiterate.                    | 33 (9.9)     |
| Just read and write            | 59 (17.6)    |
| Primary + intermediate school  | 164 (49)     |
| Secondary school               | 32 (9.5)     |
| Higher education               | 47 (14.0)    |
| Total                          | 335 (100.0)  |
| <i>e-Husband occupation</i>    |              |
| Governmental                   | 133 (39.7)   |
| Non-governmental               | 98 (29.3)    |
| Not employed                   | 104 (31)     |
| Total                          | 335 (100.0%) |

health workers, 6(1.85) from radio, 5 (1.5) from traditional birth attendant and 37 (11%) from others (TV, neighbor, friends). Most of the women under study 197 (58.9%) knew that pregnant women must attend ANC services more than four visits when there is no problem and 227 (67.8%) knew that pregnant women must attend ANC services more than four visits when there is a problem. Of the women under the study when they asked about the benefits of ANC, about 317 (94.6) of them agreed with receive preventive interventions such as Tetanus toxoid vaccine immunizations and iron, 265 (79.1) agreed with the point Assist the provider in providing individualized education, knowledge, and communication, 242 (72.2%) were agreed with early detection of risk conditions associated with pregnancy, while 186 (55.5%) were agree with the point of Establishing rapport between pregnant mother and ANC provider (Table 2).

## FANC utilization Barriers

**Table 2:** Participating mothers' sources of information and knowledge on FANC

| a- Information sources   | n (%)      |
|--|------------|
| worker in the medical field (health worker)  | 53 (15.8)  |
| Radio station  | 6 (1.8)    |
| Traditional Birth Attendants   | 5 (1.5)    |
| relative   | 235 (69.9) |
| other  | 37 (11)    |
| b-Number of visits when there is no problem  |            |
| Less than 4 visits   | 85 (25.3)  |
| 4 visits   | 53 (15.8)  |
| More than 4 visits   | 197 (58.9) |
| c-Number of visits when there are problems   |            |
| Less than 4 visits   | 90 (26.8)  |
| 4 visits   | 18 (5.4)   |
| More than 4 visits   | 227 (67.8) |
| d-Benefits of FANC   |            |
| A Establishing rapport   | 186 (55.5) |
| B Early detection of pregnancy associated risks  | 242 (72.2) |
| C Assist the provider in providing individualized education, knowledge, and communication. | 265 (79.1) |
| D Reception of pregnancy-related vaccines and supplements                                  | 317 (94.6) |

**Table 3:** Low utilization of FANC is linked to sociocultural factors

| variable                    | Less than 4 visits N (%) | Equal and more than 4 visits N (%) | p-value |
|-----------------------------|--------------------------|------------------------------------|---------|
| Not satisfied               | 18 (13.3)                | 11 (8.4)                           | 0.197   |
| Too buzzy                   | 57 (42.2)                | 5 (3.8)                            | 0.001   |
| Not necessary               | 10 (7.40)                | 2 (1.50)                           | 0.21    |
| Feel embarrassed            | 20 (14.8)                | 5 (3.8)                            | 0.01    |
| Live away from              | 18 (13.3)                | 4 (3.00)                           | 0.01    |
| Public transportation       | 12 (8.9)                 | 3 (2.3)                            | 0.02    |
| Cost of transportation      | 11 (8.1)                 | 2 (1.50)                           | 0.02    |
| Pregnancy is ordinary issue | 10 (7.4)                 | 2 (1.5)                            | 0.02    |
| Long waiting time           | 33 (22.2)                | 4 (3.00)                           | 0.01    |
| poor                        | 2 (1.5)                  | 1 (0.7)                            | 0.7     |
| Accompanied by husband      | 45 (33.3)                | 50 (38.2)                          | 0.748   |
| Forced to conceive          | 12 (8.9)                 | 15 (11.5)                          | 0.878   |

**Table 4:** Obstetric history associated with low utilization of FANC

| variable       | Less than 4 visits N (%) | Equal and more than 4 visits N (%) | p-value |
|----------------|--------------------------|------------------------------------|---------|
| Dead child     | 9 (6.7)                  | 11 (8.4)                           | 0.512   |
| abortion       | 28 (20.7)                | 34 (26.0)                          | 0.315   |
| Abortion no.   |                          |                                    |         |
| One            | 21 (15.6)                | 21 (16.0)                          | 0.513   |
| More           | 7 (5.1)                  | 13 (9.9)                           |         |
| cs             | 31 (23)                  | 22 (16.8)                          | 0.208   |
| Cs obstr labor | 22 (16.3)                | 16 (12.2)                          | 0.191   |
| Cs no.         |                          |                                    |         |
| One            | 32 (17.0)                | 12 (9.2)                           | 0.249   |
| more           | 8 (5.9)                  | 10 (7.0)                           |         |

**Table 5:** Knowledge and attitudes of participants associated with low utilization of FANC

| variable             | Less than 4 visits N (%) | Equal and more 4 visits N (%) | p-value |
|----------------------|--------------------------|-------------------------------|---------|
| ANC site             |                          |                               |         |
| PHC                  | 60 (44.40)               | 79 (60.30)                    | 0.03    |
| Private              | 7 (5.20)                 | 4 (3.10)                      |         |
| Both                 | 68 (50.40)               | 48 (36.60)                    |         |
| ANC provider         |                          |                               |         |
| Doctor               | 93 (68.90)               | 95 (72.50)                    | 0.666   |
| Medical assistant    | 11 (8.10)                | 12 (9.200)                    |         |
| Both                 | 31 (22.90)               | 25 (17.30)                    |         |
| Which trimester      |                          |                               |         |
| 1 <sup>st</sup>      | 21 (15.60)               | 49 (37.40)                    | 0.001   |
| 2 <sup>nd</sup>      | 105 (77.80)              | 80 (61.10)                    |         |
| 3 <sup>rd</sup>      | 9 (6.70)                 | 2 (1.50)                      |         |
| Antenatal card       | 111 (82.20)              | 121 (92.4)                    | 0.31    |
| Most like about FANC |                          |                               |         |
| Available staff      | 15 (11.100)              | 13 (9.90)                     | 0.155   |
| Flexibility          | 8 (5.90)                 | 15 (11.50)                    |         |
| Good HW attitude     | 67 (49.60)               | 74 (56.50)                    |         |
| Short waiting hours. | 22 (16.30)               | 17 (13.00)                    |         |
| Vaccine              | 23 (17.00)               | 12 (9.20)                     |         |

There were statistical significances between parity and low utilization of FANC, also between many sociocultural factors with low utilization of FANC as being too buzzy, feeling healthy and not necessary to have antenatal care, pregnancy is ordinary issue, feeling embarrassed, living away from antenatal care services and the cost of transportation, long waiting time, while other factors showed no significant relation with low utilization of FANC as satisfaction, being accompanied by husband or being forced to conceive (Table 3).

There was no statistical significance between bad Obstetric history with low utilization of FANC (Table 4).

There was statistical significance between the knowledge and attitudes of participants with low utilization of FANC, like the site of ANC, at which trimester they started ANC and if they had antenatal cards for the previous pregnancy.

In addition, when they were asked about what they like most with antenatal services at the current facility, most of them answered the good health worker attitude but with no statistical significance with low utilization of FANC (Table 5).

## DISCUSSION

Our research has shown that the participating women had different sources of FANC knowledge. More than two-thirds get their information from their relatives, followed by health workers. While studies in Malawi show that radio is the most common source of knowledge.<sup>11</sup>

More than 90% mention that the benefit of FANC is for the reception of pregnancy-related vaccines and supplements, more than 70% early detection of pregnancy-related risks and assist the provider in providing individualized information, training and communication, and half of them agree with establishing rapport.

Other studies showed that providing pregnant women with opportunities for dialogue and health talks during visits played a key role in improving their ability to participate fully in the ANC.<sup>12, 13</sup>

In our study age did not affect FANC utilization, which is similar to the finding in studies that have been conducted Erbil,<sup>14</sup> Karachi.<sup>15</sup> In Sana'a City, Yemen<sup>16</sup>, However, In other research, as in Sudan, there is a significant association between ANC attendance and maternal age.<sup>17</sup>

Education has not affected the use of FANC in this study, which is consistent with studies in Sana'a City in Yemen<sup>16</sup> and in Ntchisi district in Malawi.<sup>11</sup> In contrast, several studies conducted in Erbil,<sup>13</sup> Diyala,<sup>18</sup> Egypt,<sup>19</sup> Vietnam,<sup>20</sup> and Uganda<sup>21</sup> show a statistically significant association between women's educational levels and ANC visits. The lack of impact of education on the use of FANC in our study may be due to the women surveyed having a low level of education, making it difficult to show a difference.

The occupational status of the respondent mothers and their husbands was not associated with low utilization of FANC services. ; which is in line with studies conducted in Sana'a City, Yemen,<sup>16</sup> Ntchisi district in Malawi,<sup>11</sup> karoshi.<sup>15</sup> This is different from other studies conducted in Erbil city,<sup>14</sup> and Indonesia<sup>22</sup> that showed a significant association between ANC attendance and occupation of the respondent mother.

Our study showed statistical significance between many sociocultural factors and low utilization of FANC as being too busy, feeling healthy and not necessary to have antenatal care, pregnancy is an ordinary issue, living away from antenatal care services and cost of transportation, long waiting time, while other factors showed no significant relation with low utilization of FANC as satisfaction, being accompanied by husband or being forced to conceive.

In other research, pregnancy has been associated with a higher likelihood of early initiation and appropriate antenatal care attendance as compared to an unintended pregnancy. Another study in Holeta, central Ethiopia,<sup>23</sup> discovered that women who had an unplanned pregnancy were 67% less likely to attend ANC than those who had a planned pregnancy.

Our study showed statistical significance between low utilization of FANC and living away from ANC, And this is close to the results from (Malawi and Kenya)<sup>11,24</sup> suggesting that delayed initiation of ANC usage and low attendance frequency were correlated with a long distance to reach a healthy facility.

Also, this study showed statistical significance between long waiting times and low utilization of FANC and this is also in agreement with those of Egypt.<sup>19</sup>

In our study, there is no statistical significance between bad obstetric history and low utilization of FANC. Studies in Ethiopia show that women who had health problems were twice as likely to attend FANC as opposed to those who did not have such problems.<sup>25, 26</sup> Mothers with a history of abortion were four times more likely than those who did not experience such a history to attend FANC.<sup>25</sup>

Our research has shown that multiparous women make substantially more visits to FANC than nulliparous women, statistically significant between parity and FANC usage. This may mean that women were inspired to continue their ANC screening, and this is consistent with the Al-Hilla City Descriptive Study<sup>27</sup> and the Sudanese study.<sup>18</sup> While other studies in Malawi have shown an inverse association between parity and the use of FANC,<sup>11</sup> a study in rural areas of India has also found that the proportion of women providing ANC services with a growing number of living children has been statistically significantly reduced.<sup>28</sup>

This study shows a statistical significance between knowledge, attitude of the participants and low utilization of FANC like the site of ANC and the proper time of registration for ANC. In addition, when they were asked about what they like most with ANC services at the current facility most of them mentioned good health worker attitude but without statistical significance with low utilization of FANC.

The preference of the study women to utilize both PHC and private clinics for ANC is due to their perception of good ANC in PHC and private clinics. Unlike to study in Egypt they utilize the private clinics for ANC due to their perception that high-quality antenatal care in private clinics as compared to PHC.<sup>19</sup>

The proper time of registration for ANC (time of booking visit) was in the second trimester, and this is why more than 90% mention that the benefit of FANC Is for the reception of pregnancy-related vaccines and supplements. While in Sana'a city, Yemen, Egypt<sup>16,19</sup> attended within the first trimester.

Most of our study participants, when they were asked about what they like most about ANC services at the current facility, mentioned a good health worker attitude but without statistical significance with low utilization of FANC. While other research shows that

developing a good rapport with pregnant women will lead to their achieving the recommended number of antenatal visits. Researchers, on the other hand, have found that low-quality care may have a negative effect on ANC attendance due to the weak communication skills of providers (which may include a negative attitude on the part of staff.<sup>23</sup> In our study, one of the factors contributing to the absence of statistical significance with low utilization of FANC, even if they are satisfied with the health worker attitude, may be due to inadequate knowledge or misunderstanding of pregnant women on ANC benefits, so they not attend FANC. Also, cultural situations might affect a woman not to decide by themselves, but they do not mention that when we ask if she feels embarrassed.

## CONCLUSION

The current study identified a statistical significance between low utilization and parity, being too busy, feeling healthy and not necessary to have ANC, pregnancy is an ordinary issue, living away from ANC services and cost of transportation, and long waiting time, also identified a statistical significance between knowledge, attitude of the participants and low utilization of FANC like the site of ANC and the proper time of

registration for ANC while other factors showed no significant relation with low utilization of FANC.

More than two-thirds get their information on FANC from their relatives followed by health workers.

More than 90% indicate that the advantage of FANC is to obtain vaccines and supplements related to pregnancy, more than 70% identify pregnancy-related risks early and help providers provide individualized information, education and communication, and half of them agree to develop rapport.

## ACKNOWLEDGMENT

We would like to express our thanks to all healthcare center managers, staff, and people for their cooperation and patience.

## CONFLICT OF INTEREST

*Nil*

## SOURCE OF FUNDING

*Nil*

## AUTHOR'S CONTRIBUTION

ALRamdhan Jinan conceived and designed the study. ALRamdhan Jinan and ALABRAHIM Maisaa performed data collection. Al-Abboodi Huda analyzed the data. Al-Abboodi Huda and Al-Hilfi Azhar interpreted the data. ALRamdhan Jinan and ALABRAHIM Maisaa wrote and revised the manuscript. All authors read and approved the final manuscript.

## REFERENCES

1. Ministry of Health, Environment. Annual statistical report 2016. Iraq .
2. Haines A, Cassels A. Can the Millennium Development Goals be attained? *BMJ*. 2004 Aug 14;329(7462):394-7.
3. Shashank KJ, Angadi MM, Masali KA, Wajantri P, Bhat S, Jose AP. A study to evaluate working profile of Accredited Social Health Activist (ASHA) and to assess their knowledge about infant health care. *Int J Curr Res Rev*. 2013;5(12):97-103.
4. Gross K, Armstrong Schellenberg J, Kessy F, Pfeiffer C, Obrist B. Antenatal care in practice: an exploratory study in antenatal care clinics in the Kilombero Valley, south-eastern Tanzania. *BMC Pregnancy Childbirth*. 2011;11:36.
5. Gupta S, Yamada G, Mpembeni R, Frumence G. Factors associated with four or more antenatal care visits and its decline among pregnant women in Tanzania between 1999 and 2010. *PLoS One*. 2014;9(7):e101893.
6. Elmusharaf K, Byrne E, O'Donovan D. Strategies to increase demand for maternal health services in resource-limited settings: challenges to be addressed. *BMC Public Health*. 2015;15:870.
7. Hogan MC, Foreman K, Naghavi M, et al. Maternal mortality for 181 countries, 1980-2008: systematic analysis of progress towards Millennium Development Goal 5. *Lancet*. 2010;375(9726):1609-23.
8. Shabila NP, Ahmed HM, Yasin MY. Women's views and experiences of antenatal care in Iraq: a Q methodology study. *BMC Pregnancy Childbirth*. 2014;14:43.
9. Beyamo A, Facha W, Lire A. Focused antenatal care service utilization and associated factors in Damot Sore District, Southern Ethiopia: community-based cross-sectional study. *Am J Health Res*. 2017;5:167-72.
10. Abalos E, Chamillard M, Diaz V. Antenatal care for healthy pregnant women: a mapping of interventions from existing guidelines to inform the development of new WHO guidance on antenatal care. *BJOG*. 2016;123:519-28.
11. Villar J, Ba'aqel H, Piaggio G, Lumbiganon P, Belizán JM, Farnot U, et al. WHO antenatal care randomised trial for the evaluation of a new model of routine antenatal care. *Lancet*. 2001;357(9268):1551-64.
12. Hijazi H, Alyahya M, Sindiani A, Saqan R. Determinants of antenatal care attendance among women residing in highly disadvantaged communities in northern Jordan: a cross-sectional study. *Reprod Health*. 2018;15:106.
13. Adegbola OA. Gestational age at antenatal booking at Lagos University Teaching Hospital. *Niger Q J Hosp Med*. 2008;18(2):79-82.
14. Dhahir A, Zangana J. Determinants of utilization of antenatal care services in Erbil city. *Zanco J Med Sci*. 2015;19(2).
15. Nisar N, White F. Factors affecting utilization of antenatal care among reproductive age group women (15-49 years) in an urban squatter settlement of Karachi. *Pan Afr Med J*. 2015;21:321.
16. Othman S, Almahbashi T, Ali A, Abdulwahed A. Factors affecting utilization of antenatal care services in Sana'a City, Yemen. *Malays J Public Health Med*. 2017;12:42.
17. Mustafa MH, Mukhtar AM. Factors associated with antenatal and delivery care in Sudan: analysis of the 2010 Sudan household survey. *BMC Health Serv Res*. 2015;15:452.
18. Abdul Latif BI. The pattern of morbidity and mortality of neonates admitted to neonatal intensive care units in Saddam Maternity and Pediatric Hospital in Diyala governorate 1999-2000. [thesis]. Baghdad: University of Baghdad; 2001.
19. AbuHashima F, Abu Zeina H, El Sherbiny, Hamed N. Utilization pattern of antenatal care services; an example from South Egypt. *Austin J Womens Health*. 2018;5:1026.
20. Swenson I, Thang N, Nhan V, Tieu P. Factors related to the utilization of prenatal care in Vietnam. *J Trop Med Hyg*. 1993;96:76-85.
21. Bbaale E. Factors influencing timing and frequency of antenatal care in Uganda. Visiting Fellow, Centre for Global Development, Washington DC, USA. *Australas Med J*. 2011;4:431-8.
22. Erlindawati, Chomiku J, Isaranurug S. Factors related to the utilization of antenatal care services among pregnant women at health centers in Aceh Besar District, Nanggroe Aceh Darussalam Province, Indonesia. *J Public Health Dev*. 2008;6:99-108.
23. Birmeta K, Dibaba Y, Woldeyohannes D. Determinants of maternal health care utilization in Holeta town, Central Ethiopia. *BMC Health Serv Res*. 2013;13:256
24. Pell C, Meñaca A, Were F, Afrah N, Chatio S. Factors affecting antenatal care attendance: results from qualitative studies in Ghana, Kenya and Malawi. *PLoS One*. 2013;8:e53747.
25. Getachew, Abajobir, Aychiluhim. Focused antenatal care service utilization and associated factors in Dejen and Aneded Districts, Northwest Ethiopia. *J Prim Health Care*. 2014;4:170.
26. Ashebir G, Jim R, David C, Barbara R, Heath R. A study of Ethiopian hospitals, quality of care for prevention and management of common maternal and newborn complications. 2011.
27. Abdul Hussein A, Yaser A. Assessment of antenatal care services among pregnant women in Al-Hilla City. *Kufa J Nurs Sci*. 2015;5(3).
28. Chandhiok N, Dhillon B, Kambo I, Saxena N. Determinants of antenatal care utilization in rural areas of India. *J Obstet Gynaecol India*. 2006;56:47-52.

## APPENDIX

Questionnaire for women

### Factors Contributing To Low Utilisation Of Focused Antenatal Care Services In Basrah

Questionnaire No:.....

Date :.....

Village :.....

Name of interviewer :.....

Name of health facility.....Urban/Rural.....

#### Instructions

explain the purpose of the interview to the mother,  
Ask for consent before proceeding with the interview  
Make sure all questions are answered  
Tick as appropriate

#### Part a: respondents personal characteristics

1. Age
2. Level of education?
  1. Illiterate.
  2. Just read and write
  3. Primary + intermediate school
  4. Secondary school
  5. Higher education
3. Occupation
  1. Employee
    - governmental
    - non governmental
  2. Not employee
4. Husband education
  1. Illiterate.
  2. Just read and write
  3. Primary + intermediate school
  4. Secondary school
  5. Higher education
5. Husband occupation
  1. Employee
    - governmental
    - non governmental
  2. Not employee

6. Income

#### Past obstetric history

7. How many deliveries have you ever had? Number .....
8. Have you had history of dead child?
  - a) yes
  - b) No

If yes

Age at death.....

Causes of death.....

9. Have you had history of abortion?

- a) yes
- b) No

If yes

Which month.....

Number of abortion.....

10. Have you had history of previous c/s?

- a) yes
- b) No

If yes

Number.....

Causes of C/S.....

#### Part B: Questions About Focused Antenatal Care (Fanc)

11. With regard to your previous pregnancy, did you attend Antenatal care clinics?

- a) Yes
- b) No

If yes

12. Number of visits.....

If no

13. Reason for no ANC visits

- a) Too busy
- b) Healthy not necessary
- c) Fell embarrassed
- d) Live away from ANC service
  - distance to nearest ANC services
  - Public transportation a) sometime b) every day
  - cost of transportation a) expensive b) not expensive
- e) Pregnancy is ordinary issue
- f) Poor
- g) Waiting time in minutes a)  $\leq 30$  b)  $\geq 30$
- h) Waiting room a) suitable b) not suitable
- i) Other (social barrier e.g. get permission)

14. Are satisfied with the services offered at this facility regarding FANC?

- a) yes
- b) no

15. At which month of the pregnancy did you start antenatal care?

- a) 1<sup>st</sup> trimester 0 – 3 months (0-12 Weeks)
- b) 2<sup>nd</sup> trimester 4 – 6 months (13-24 Weeks)
- c) 3<sup>rd</sup> trimester 7 – 9 months (25-36weeks)
- d) Don't Know

16. ANC site visit

- a) Health Centre
- b) Hospital
- c) Private clinic
- d) Other

FANC utilization Barriers

17. ANC provider

- a) Doctor
- b) Medical assistant
- c) Midwife
- d) Nurses

18. Do you have your antenatal care card for the previous pregnancy?

- a) Yes
- b) No

19. Who accompany you to antenatal clinics ?

- a) Husband
- b) Uncle
- c) Mother
- d) Mother in – law
- e) Other (specify)

20. What influenced you to be pregnant?

- a) Wanted to have a child
- b) Husband forced me
- c) It was accidentally conceived
- d) Grandmother wanted many grandchildren

**Knowledge about focused antenatal care**

21. How many antenatal care visits is a pregnant woman supposed to make during the whole pregnancy period? Enter Number

- a) When there is no problem \_\_\_\_\_
- b) When there are problems \_\_\_\_\_

22. What are the benefits of antenatal care? For benefits not mentioned probe further

| <i>Benefit</i>   | <i>Strongly agree</i> | <i>Agree</i> | <i>Not agree</i> | <i>Not sure</i> |
|--|-----------------------|--------------|------------------|-----------------|
| A Establishing rapport between pregnant mother and antenatal care provider               |                       |              |                  |                 |
| B For early detection of risk conditions associated with pregnancy                       |                       |              |                  |                 |
| C Assist the provider to give individualized health education on importance of FANC      |                       |              |                  |                 |
| D For pregnant women to receive preventive interventions such as TTV immunizations, Iron |                       |              |                  |                 |

23. From where did you receive information about importance of utilising focused antenatal care? Source of information

- a) Health worker
- b) Radio
- c) Traditional Birth Attendants
- d) Relatives
- e) Others (Specify).....

24. What made you start utilising focused antenatal care today/ If in the first trimester?

- a) It is time to start antenatal
- b) Sickness
- c) Told by others (Friends/relatives/neighbours)
- d) Previous pregnancy complications
- e) Previous fetal loss
- f) For TT vaccination.

25. What would you like most about focused antenatal care services at this facility?

- a) Good health worker attitude
- b) Short waiting hours
- c) Availability of staff
- d) Flexibility of clinic schedules