

## Antenatal Health Care Services and Degree of Clients' Satisfaction in Sharkia Governorate, Egypt

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### Abstract:

**Background:** client's satisfaction is a measure of the extent to which clients are trustworthy with the health care which they received. Pregnant women's satisfaction is considered a performance indicator in antenatal care (ANC) quality evaluation. **Objectives:** To assess clients' satisfaction regarding antenatal health care services provided at the primary health care level in Sharkia governorates, Egypt.

**Methods:** a cross-sectional study was conducted on 765 pregnant women. Through a multistage cluster sampling technique, four health facilities were selected to represent Sharkia governorate. Participants' data regarding socio-demographic characteristics, numbers of their antenatal visits and questions to assess the satisfaction about the quality of antenatal care were collected via semi-structured questionnaire.

**Results:** The study revealed that out of the total participants, overall satisfied with ANC services were 288 (37.6%). The most common specific component of ANC that had good-satisfaction by the respondents was tetanus vaccine availability (100%). Shortage of referral requirements were the commonest causes of dissatisfaction. Clients who were urban residents, who had middle & high social class and who have  $\geq 2$  previous antenatal care visits were more likely to have the satisfaction in ANC services.

**Conclusion:** The results of the study reflect multiple pitfalls in the different components of the ANC services, so special attention must be given for increasing resources to improve the quality of ANC services in the governorate.

**Keywords:** Dissatisfaction, referral, tetanus, women.

### Introduction:

To improve service delivery in primary health care units, there is a need to place a high priority on the clients and their level of satisfaction with the provided services. <sup>(1)</sup>

Patient satisfaction should be taken as a serious measurement by health experts and governments due to: satisfaction is a predictor of patient's compliance with their treatment and health provider's recommendations, assessing the success of delivering information to patients; also patient satisfaction has a great role in quality assurance and continuous quality

improvement systems.<sup>(2)</sup> Lastly improving patient satisfaction associated with higher utilization rate to health services and better health outcome. <sup>(3)</sup>

Population's health can be affected by four headings: heredity, environment, lifestyle, and healthcare service. Public health services are provided through a nation-wide network which is established based on primary health care (PHC) system.<sup>(1)</sup> Primary care is known as the basic level of health care and is the first contact for the patient before further disease management can be done.<sup>(4)</sup>

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Maternal health is related not only to the health of a woman but also has a direct bearing on the health of her newborn. Every day in 2015 about 830 women die from pregnancy- or childbirth-related complications around the world. Most of these deaths occurred in low-resource settings, and most could be prevented. 99% of all maternal deaths occur in developing countries.<sup>(5)</sup>

Attendance at antenatal clinics and receipt of professional perinatal care are associated with a reduction in maternal deaths. Antenatal care (ANC) reduces maternal and perinatal morbidity and mortality directly through the early detection and treatment of pregnancy-related illnesses, and indirectly through the identification of women who are at increased risk of complications during childbirth.<sup>(6)</sup>

The global maternal mortality ratio declined by 2.3% per year between 1990 and 2015;<sup>(5)</sup> and according to the Egyptian demographic and health survey (DHS), maternal mortality ratio declined from 62 per 100000 in 2008 to 45 per 100000 in 2014. The improvement in maternal mortality can be attributed to several factors including access to primary care and increased rates of regular antenatal care (ANC) (83% in 2014) which is the most important factors.<sup>(7)</sup>

The Egyptian DHS, 2015 <sup>(7)</sup> demonstrates that antenatal coverage regarding the source for antenatal care was 80% to private medical sector versus only 14.4% to the public medical sector (including 2.5% to urban health units and 8.1% to rural health units). Lack of use of public health services is questionable?

The study was conducted to assess clients' satisfaction regarding antenatal health care services provided at the primary health care level in Sharkia governorates, Egypt.

#### **Methods:**

##### **Study design and sampling method:**

A cross-sectional study was conducted. The sample was calculated to be 765 pregnant women based on women satisfaction with antenatal health services prevalence in Egypt 53.6%,<sup>(8)</sup> and the total number of married females and in the childbearing period was 1,866,000 according to Egyptian health and demographic survey, 2014, using an online open epi program at 95% confidence interval and 5% confidence limit and design effect of 2. Through a multistage cluster sampling technique, Zagazig and Belbeis health districts were selected due to the highest population number regarding census 2017, <sup>(9)</sup> to represent Sharkia governorate which administratively divided into 19 health districts. <sup>(10)</sup>

Zagazig health district includes only one urban health center and (31) rural health units, two health facilities were selected randomly to represent rural and urban residences. In the same way, two health facilities were selected randomly to represent rural and urban residences in Belbeis health district (which includes one urban health center and (33) rural units). So, four health facilities were selected to represent Sharkia governorate.

Sample units were divided and collected from the selected health facilities by proportional allocation method.

**Study participants and data collection:**

The study included pregnant women attending health facilities asking for full antenatal care or tetanus vaccine only; women were interviewed using a semi-structured questionnaire according to a previous study done in Egypt.<sup>(11)</sup> The questionnaire consisted of socio-demographic assessment questions,<sup>(12)</sup> and questions about duration of pregnancy, number of their antenatal visit and number of their children, others to assess the satisfaction about quality of antenatal care as accessibility, waiting time, referral, cleanness, privacy, performance of physician and the staff.

**Administrative approval:** The study was approved by Sharkia health directorate. An official permission letter was obtained from

the authority and directed to health districts and health facilities included in the study.

**Ethical approval:** Ethical considerations were taken through the whole study including fully informed participants with the purpose and nature of the study and then oral consent was taken from participants. Coded numbers for each participant was used to guarantee privacy. Official approval from the Institutional review board (IRB) was taken (ZU-IRB #5359)

**Statistical analysis:** Data were analyzed using the Statistical Package for Social sciences (SPSS) software (Statistical Package for the Sociable Sciences, version 20, SPSS Inc. Chicago, IL, USA).

Qualitative data were expressed as number and percentage and analyzed by using the Chi-square test ( $X^2$ ) to detect the relation between different qualitative variables. Quantitative data were expressed as mean  $\pm$  SD.

**Results:**

Regarding socio-demographic characteristics, more than half of the pregnant women participated in the current study were urban residents, aged  $\geq 29$  years old, housewives and almost half of them had a medium social class. About (33%) of them had got education below secondary education. More than half of the women interviewed were pregnant for less than

20W and attended for the first visit. About (35%) of them had one child (Table 1).

The study revealed that out of the total clients, overall satisfied with ANC were 288 (37.6%) (Figure 1). Clients who were urban residents were about 6 times more likely (OR=6.81; 95% CI, 4.89-9.46; p-value = 0.000) to be satisfied with ANC services as compared to those were rural residents. Also, who had middle & high social class was about 2 times more likely (OR=6.81; 95% CI, 4.89-9.46; p-value = 0.000) to be satisfied with ANC services as compared to those had low social class. However, the study revealed no significant association between satisfied and not-satisfied groups as regard education and occupation (Table 2).

Women who have  $\geq 2$  previous antenatal care visits were about 7 times more likely (OR=6.81; 95% CI, 4.89-9.46; p-value = 0.000) to be satisfied with ANC services as compared to those with  $\leq 1$  visit (Table 2).

Regarding the degree of satisfaction about the different components of the antenatal care services, Table (3) showed the satisfaction about accessibility; more than half of clients were satisfied with the center's location, the availability of transport methods to reach the center, the waiting time before examination and the waiting time for laboratory results (60.3%,

62.2%, 56.1%, and 59.1% respectively).

However, about half of them (42%) were not satisfied with the hours of work.

About half of females were satisfied by the cleanness of the center (45%) and the waiting place (48.6%). Satisfaction regarding the performance of physician team in the center showed that (71.6 %) of the clients were satisfied as regard explanation of the results of investigations followed by an explanation of the rationale of investigations (69.7%). Nearly equal rates of satisfaction reported for the examination time (61.7%), explanation of their problem (57%), taking a medical history (55.9%), answering questions (52.3%) and trust their doctor (50.7%) (Table 3).

The satisfaction with the performance of nurses and other center staff showed that most of the clients (71.6%) were satisfied with the pattern of staff management (dealing politely and professionally), 56.1% of patients were satisfied with delivering information and providing help. Regarding feeling privacy in the examination room only (23.5%) feel privacy while (46.7%) to some extent (Table 3).

Regarding drug availability and laboratory services, 100% of the clients were satisfied by tetanus vaccine availability and the majority of them were satisfied by iron, folic acid (80.1%) and the chronic diseases' drugs availability

(75.4%). While near half of them were satisfied by essential laboratory investigations (47.2%) and US availability (39.9%). The majority of women were satisfied with the cost of the different provided services (Table 3).

Degree of satisfaction regarding health education sessions, Table (4) showed that about half of the clients (49.2%) were not satisfied with physician explanation of advantages of ANC. Satisfaction of women regarding orientation about pregnancy care showed that the majority of the clients were not satisfied with explanation of physician about teeth care (87.5%) and safe effort (70.1%) during pregnancy, more than half of them were not satisfied with the information they received regarding basics of newborn care (63.9%). Near half of the clients were not satisfied with the information provided about nutrition, explanation of measures of personal hygiene, physician explanation about breast care during pregnancy and the importance of breastfeeding, follow up appointment, allowable medication and fetal movement follow up.

The satisfaction of females towards the knowledge provided by the physician about late pregnancy period showed that about (40.8 %) were not satisfied with the information provided by the physician about signs of labor and

(34.5%) were not satisfied with the explanation of the risks of labor. (Table 4)

Regarding satisfaction about the referral system in the center (Table 4), 100% of the clients were not satisfied by ambulance unavailability, the physician help in admission and the follow-up care. Half of the clients were not satisfied with not giving a referral report. However, about half of the clients were satisfied to some extent with first aid management (55%) and physician explanation of the cause of referral (45%).

The main recommendations were reported by the clients included in the study for improving their satisfaction about ANC services were increase resources (33%) followed by increase working hours (17%) (Figure 2).

#### **Discussion:**

Pregnancy is a very important and special event from both social and medical point of view. Maternal satisfaction to Antenatal Care (ANC) Services has been linked to the quality of the provided services and the extent to which specific maternal needs are met.<sup>(13)</sup>

The result of the current study revealed that 37.6% of women were satisfied with the ANC services they received. This is almost near the results of a previous Egyptian study reported that women satisfaction with antenatal health services prevalence in Egypt is 53.6%.<sup>(8)</sup> A higher finding (68%) was reported by a study

conducted in Oman.<sup>(14)</sup> Many studies revealed that satisfaction of clients to ANC services varied from country to country.<sup>(15)</sup>

Women satisfied with ANC services was significantly associated with frequent (>1times) previous ANC visits that women had. This was directly linked to the results of a study conducted in Oman,<sup>(16)</sup> and a study conducted in Ethiopia,<sup>(13)</sup> in which patient satisfaction was significantly higher among women in the highest visit groups. This positive association could be due to developing awareness on its importance by repeated visiting, increasing client need and effective response to this need by the health care workers.

In this study, having satisfied to ANC services was significantly associated with respondents who had middle and high social class. This disagrees with previous studies, in that better satisfaction observed in groups had lower social class.<sup>(17,18)</sup> One possible explanation for this may be most of the Egyptian women with middle and high social class utilize the public medical sector for tetanus toxoid vaccination only and have no contact with the other components of the ANC services unlike low social class women. This supports the results stated by the Egyptian DHS, 2014 which demonstrates that antenatal coverage

regarding the source for antenatal care was 80% to private medical sector versus only 14.4% to the public medical sector.

Regarding residence, this study reported that urban residents were significantly more satisfied with ANC services. This was in line with the previous study found that utilization and satisfaction with the ANC services are much more in urban residents than in rural residents.<sup>(19)</sup> This gap can be explained by differences between the urban and rural areas in knowledge, attitude and practices of women towards ANC also better resources and equipment in the urban health centers.

The study results show that more than half of the clients were satisfied with the center's location, the availability of transport methods to reach the center (60.3% and 62.2% respectively). This was in concordance with a study conducted in Ethiopia which reported the percentage of satisfaction of about 50%.<sup>(13)</sup>

Regarding waiting time more than half of the women included in the current study were satisfied. Reducing waiting time was an important aspect for improving ANC services and it was more important than increasing consultation time.<sup>(20)</sup>

The current study revealed that near half of the clients were not satisfied with the hours of work

and 17% from them recommended increasing working hours to improve their satisfaction with ANC services. The same finding reported by a study conducted in Ethiopia.<sup>(13)</sup>

Cleanliness and maintenance of hygiene were reported as determinants of satisfaction in many studies in developing countries.<sup>(21)</sup> The current study found that about half of females were satisfied by the cleanness of the center and the waiting place and 7.8% from them recommended improving cleaning to increase their satisfaction.

Communication by providers with the women during ANC visits plays an important role in their satisfaction with care and the perceived neglect in care, including delay in attending to the client, not involving the client in care and mistakes in investigations results adversely affected satisfaction with services.<sup>(22)</sup> The current study found that most of the clients were satisfied by the physicians' performance. This was in concordance with the results of an Egyptian study.<sup>(11)</sup>

Regarding the satisfaction with the performance of nurses and other centers' staff showed that more than half of the clients were satisfied. This agreed with the results of a study conducted in Oman reported that the positive behavior of the health staff and the warm reception of the

clients were the most satisfying parts of the ANC services.<sup>(14)</sup>

Privacy is a key requirement of women utilizing ANC services, for physical examinations. This study reported low satisfaction of the clients towards the privacy in the examination room. This was in concordance with the results of another study found that inadequate privacy during antenatal checkup and counseling was associated with women's poor satisfaction of services.<sup>(23)</sup>

Regarding drug availability the current study found that the majority of the clients were satisfied, however, the half of them were satisfied by essential laboratory investigations and US availability and 33.5% from them recommended increasing these resources to improve their satisfaction. Availability of prescription drugs and essential equipment were reported as significant predictors of satisfaction with ANC services in many developing countries.<sup>(24)</sup>

This study found that the majority of women were satisfied with the cost of the different provided services. Significant associations between cost and maternal satisfaction and the utilization of ANC services were found in a previous Egyptian study.<sup>(25)</sup>

One of the main goals of ANC services is providing adequate information that is important

for improving pregnancy outcomes. The current study revealed a low level of satisfaction towards all components of the health education sessions. These results can be explained by the lack of doctors' training about how to communicate properly with their patients this is a key point to improve the quality of care and the client satisfaction as revealed by a study conducted in Iran which found that one of the key reasons for satisfaction with group ANC was the information provided to the clients through the health education sessions.<sup>(26)</sup>

Regarding satisfaction about the referral system in the center, the current study found a low level of satisfaction towards all components of the referral system and 10.5% from the clients recommended ambulance availability to improve their satisfaction. A study conducted in Nigeria revealed that the absence of prompt referral was a cause for dissatisfaction with ANC services<sup>(27)</sup>

### **Conclusion:**

The most common component of ANC that had good-satisfaction by the respondents was tetanus vaccine availability (100%). The most common health education component during ANC services, which was satisfied by the respondents was "the importance of breastfeeding". Shortage of referral requirements were the commonest causes of

dissatisfaction. Women had  $\geq 2$  previous ANC visits, urban residents and had middle and high social classes were more satisfied.

### **Recommendations:**

Special attention must be given for increasing resources to improve all components of ANC services in the governorate. Providers must re-plan and improve their performances for another highest satisfaction in the future. First time ANC visitors should be given more attention by providers to increase the chance for a return visit.

**Study limitation:** Lack of cooperation from some women but the researchers persuaded them to participate in the study after explanation of the study importance, objectives and methodology.

**Authors' contribution:** YHHH contributed to the planning of the work, drafting of the work, statistical analysis, reporting, revision of the manuscript, approval of the final version of the manuscript, and agreed to all aspects of the work. HSSE contributed to planning of the work, drafting of the work, literature review, data collection, revision of the manuscript, approval of the final version of the manuscript, and agreed to all aspects of the work.

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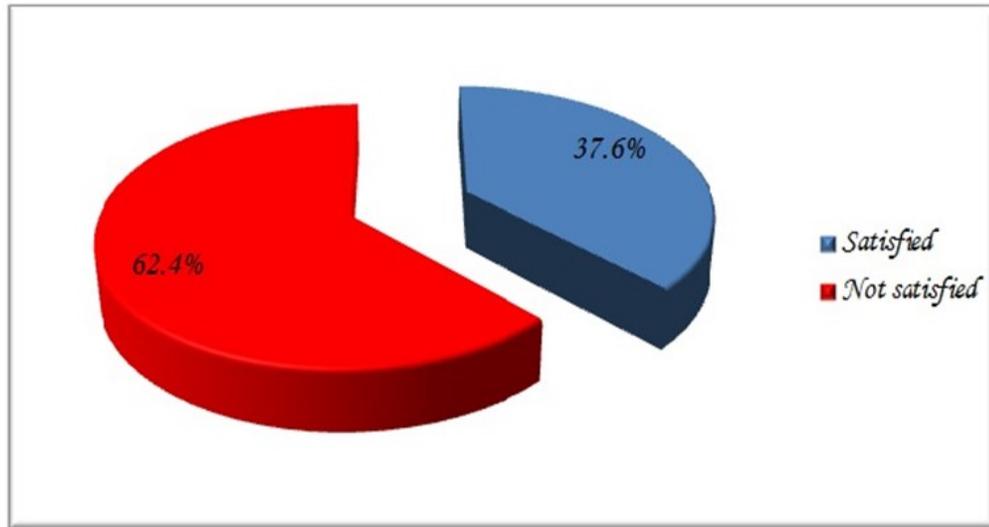
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**Table (1): Characteristics of the studied pregnant women**

characteristics	N (765)	%
<b>women' age</b>		
19-	372	48.6
29-	393	51.4
Range (19 - 40)		
Mean±SD ( 28.65 ± 4.79 )		
<b>Women' Education</b>		
Illiterate	44	5.8
Below secondary	249	32.5
Secondary	228	29.8
Above secondary	244	31.9
<b>Women' Occupation</b>		
Not work (housewives)	573	74.9
Work	192	25.1
<b>Residence</b>		
Rural	364	47.6
Urban	401	52.4
<b>Social class</b>		
Low	257	33.6
Medium	356	46.5
High	152	19.9
<b>Number of children</b>		
0	104	13.6
1	264	34.5
2	256	33.5
>2	141	18.4
<b>Duration of pregnancy</b>		
<20w	397	51.9
≥20w	368	48.1
<b>Number of visits</b>		
1 <sup>st</sup> visit	403	52.7
Repeated visits	362	47.3



**Figure (1):** The studied women's overall satisfaction toward the antenatal care services

**Table (2): Comparison between satisfied and not satisfied groups as regards socio-demographic characteristics**

Variable	Maternal satisfaction				Total		OR* (95%CI)	p**
	Not satisfied		Satisfied		N (765)	%		
	N (477)	%	N (288)	%				
<b>Residence</b>								
Rural	300	82.4	64	17.6	364	47.6	5.93	0.000***
Urban	177	44.1	224	55.9	4.1	52.4	(4.25-8.29)	
<b>Maternal education</b>								
Illiterate	28	63.6	16	36.4	44	5.8	1.06	0.496
Educated	449	62.3	272	37.7	721	94.2	(0.56-1.99)	
<b>Maternal occupation</b>								
Not work	353	61.6	220	38.4	573	74.9	0.88	0.258
Work	124	64.6	68	35.4	192	25.1	(0.63-1.24)	
<b>Social class</b>								
Low	193	75.1	64	24.9	257	33.6	2.38	0.000***
Middle & high	284	55.9	224	44.1	508	66.4	(1.71-3.32)	
<b>Number of visits</b>								
1 <sup>st</sup> visit	331	82.1	72	17.9	403	52.7	6.81	0.000***
Repeated visits	146	40.3	216	59.7	362	47.3	(4.89-9.46)	

\*OR =Odds Ratio, CI=Confidence Interval

\*\* Chi-Square Test

\*\*\*Statistically significant

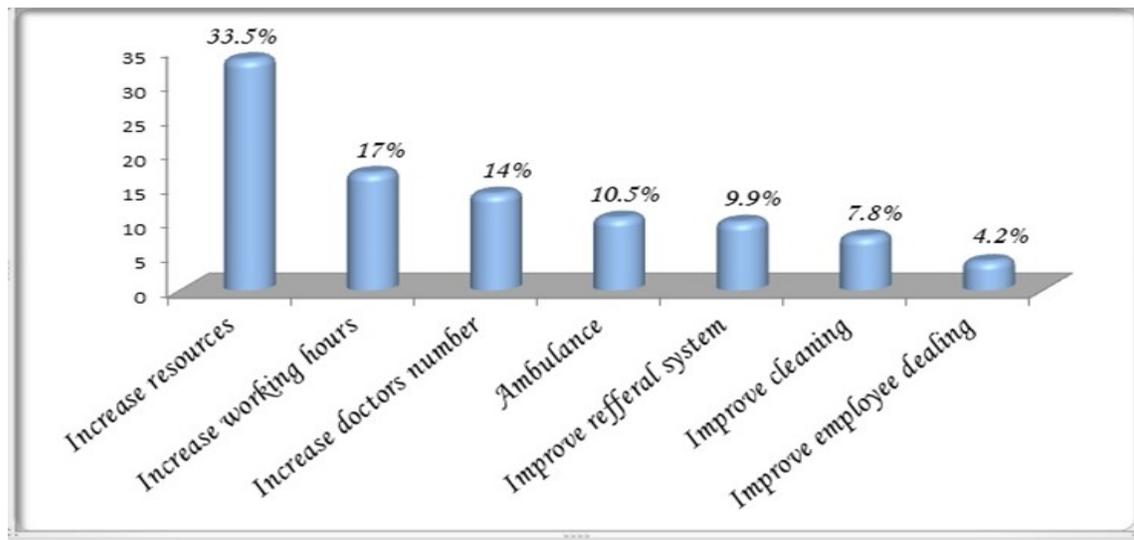
**Table (3): Female satisfaction regarding different components of antenatal care services**

	<i>Satisfied</i>		<i>To some extent</i>		<i>Not satisfied</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<b><i>Accessibility</i></b>						
Location of the center	461	60.3	276	36.1	28	3.7
Access to the center	476	62.2	269	35.2	20	2.6
Hours of work	164	21.4	280	36.6	321	42
Waiting time for examination	429	56.1	292	38.2	44	5.8
Waiting for result	452	59.1	293	38.3	20	2.6
<b><i>Cleanness</i></b>						
Cleanness of the center	344	45	301	39.3	120	15.7
Cleanness of the Toilet	272	35.6	240	31.4	249	32.5
Cleanness of the waiting place	372	48.6	268	35	125	16.3
<b><i>Performance of physician</i></b>						
Number of doctors	317	41.4	244	31.9	204	26.7
Answering questions	400	52.3	337	44.1	28	3.7
Taking history	428	55.9	301	39.3	36	4.7
Explanation of the problem	436	57	301	39.3	28	3.7
Trusting the doctor	388	50.7	285	37.3	92	12
Examination time	472	61.7	277	36.2	16	2.1
Explanation of rationale for investigation	533	69.7	192	25.1	40	5.2
Explanation of results of investigation	548	71.6	189	24.7	28	3.7
<b><i>Performance of staff</i></b>						
Pattern of Dealing	548	71.6	181	23.7	36	4.7
Delivering information	429	56.1	260	34	76	9.9
<b><i>Privacy</i></b>						
Privacy in the examination room	180	23.5	357	46.7	228	29.8
<b><i>Drugs availability &amp; laboratory services</i></b>						
Iron and folic acid availability	613	80.1	132	17.3	20	2.6
Chronic diseases' drugs availability	577	75.4	164	21.4	24	3.1
Essential laboratory investigations availability	361	47.2	336	43.9	68	8.9
Tetanus vaccine availability	765	100	0	0	0	0
US availability	305	39.9	176	23	284	37.1
<b><i>Cost of provided services</i></b>						
Ticket price	557	72.8	176	23	32	4.2
Laboratory investigations cost	628	82.2	132	17.3	4	0.5
US cost	588	76.9	157	20.5	20	2.6

**Table (4): Female satisfaction regarding health education sessions and referral system.**

Health education	<i>Satisfied</i>		To some extent		Not satisfied	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Antenatal care advantages	72	9.4	317	41.4	376	49.2
<i>Pregnancy care</i>						
Physical activity	24	3.1	205	26.8	536	70.1
Nutrition	141	18.4	244	31.9	380	49.7
Teeth care	8	1	88	11.5	669	87.5
Breast care	141	18.4	244	31.9	380	49.7
Fetal movements follow up	269	35.2	240	31.4	256	33.5
Allowable medication	176	32	305	39.9	284	37.1
<i>At late pregnancy</i>						
Signs of labor	286	35	185	24.2	312	40.8
Risks during labor	257	33.6	244	31.9	264	34.5
Referral services *	<i>Satisfied</i>		To some extent		Not satisfied	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Explain the cause of referral	28	35	36	45	16	20
First aid management	16	20	44	55	20	25
Giving full referral report	16	20	24	30	40	50
Ambulance availability	0	0	0	0	L80	100
Help in admission	0	0	0	0	80	100
Follow up care	0	0	0	0	80	100

\*from the studied women only (80) received referral services before.



**Figure (2):** The studied women's recommendations for improving their satisfaction toward the antenatal care service.

### العربي الملخص

#### خدمات الرعاية الصحية أثناء الحمل ودرجة رضا العملاء بمحافظة الشرقية ، مصر

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**الخلفية:** يعتبر رضا العميل مقياس لمدى ثقة العملاء بالرعاية الصحية المقدمة، كما يعتبر رضا السيدات الحوامل مؤشراً أداء لتقييم جودة الرعاية أثناء الحمل. **الهدف:** تقييم رضا العملاء تجاه الرعاية الصحية المقدمة أثناء الحمل من خلال الرعاية الصحية الأولية بمحافظة الشرقية ، مصر. **المنهجية وطرق البحث:** أجريت دراسة مقطعية على 765 سيدة حامل ، ومن خلال تقنية أخذ العينات العنقودية متعددة المراحل ، تم اختيار أربعة منشآت صحية لتمثل محافظة الشرقية . تم جمع بيانات المشاركين فيما يتعلق بالخصائص الاجتماعية والديموغرافية ، وعدد زيارتهم أثناء الحمل وأسئلة لتقييم مدى الرضا عن جودة الرعاية أثناء الحمل عن طريق استبيان. **النتائج:** كشفت الدراسة أنه من بين إجمالي المشاركات ، كان الرضا بشكل عام عن خدمات الرعاية الصحية أثناء الحمل ( 37.6% ) . كان العامل المشترك الذي كان الرضا عنه بشكل جيد من قبل المشاركين تحديداً هو توافر لقاح التيتانوس ( 100 % ) . كما كان النقص في متطلبات الإحالة أكثر أسباب عدم الرضا شيوغاً . العملاء الذين كانوا من سكان الحضر ، والذين كانوا من الطبقة الاجتماعية المتوسطة والعالية ومن كانت عدد زيارتهم أثناء الحمل  $\leq 2$  كانوا الأكثر رضا عن خدمات الرعاية الصحية المقدمة أثناء الحمل. **الخلاصة:** تعكس نتائج الدراسة عيوباً متعددة في المكونات المختلفة لخدمات الرعاية الصحية أثناء الحمل، لذلك يجب اعطاء اهتمام خاص لزيادة الموارد لتحسين جودة خدمات الرعاية الصحية أثناء الحمل في المحافظة.