Utilization of Antenatal Care Services among Pregnant Women in Ismailia City

Howida Attia Mohamed Ahmed¹, Nagat Salah Shalaby Salama² and Zeinab Ali Ali Baraia³

- 1. Nursing Specialist in Hehia Governmental Hospital, Sharkia Governorate.
- 2. Assistant Professor of Maternity, Obstetrics & Gynecology Nursing Faculty of Nursing- Port Said University.
- 3. Lecturer of Maternity, Obstetrics Gynecology Nursing Faculty of Nursing-Suez Canal University.

Abstract

Background: Antenatal care acts as a strategy to prevent or ensure early treatment of pregnancy complications through systematic assessments. **Aimed to** evaluate the utilization of antenatal care services among pregnant women in primary health care centers in Ismailia city. **Design:** A design descriptive was used. **Setting:** the study was conducted at four governmental primary health care (PHC) centers in Ismailia city. **Sample:** A convenience sample consisted of 200 pregnant women. **Tools:** Structured interview form it was composed of four parts. **Results:** About two third of pregnant women had regular antenatal visits, near to two third had first visit at second trimester ,58.0% of pregnant women had knowledge about definition of Antenatal care, 40.0% merely satisfied about place hygiene. **Conclusion:** near than two third of pregnant women had utilization of ante natal care at second trimesters of pregnancy. **Recommendations:** Provide training programs to nursing staff to enhance their knowledge and performance regarding antenatal care, providing posters and prints for mothers to increase their awareness about antenatal care.

Key words: Utilization, Antenatal care, maternal health care centers, pregnant women.

Introduction

Antenatal (ANC) defined care according to the World Health Organization (WHO) as routine health care provided by skilled health professionals to pregnant women without symptoms to provide information about pregnancy and delivery to ensure the best health conditions for both mother and baby during pregnancy. In order diagnose complicated diseases to or obstetric conditions (Organization, 2016 and Hassan et al., 2016). The importance of antenatal care is to provide correct assessment of gestational age to allow for accurate treatment preterm labor. for genetic and congenital screening

disorders, enables health professionals to identify potential risks for the pregnancy or for the delivery and to provide suitable treatment for women facing health problems during pregnancy, It is one of the key strategies for decreasing maternal and neonatal morbidity and mortality directly through finding and treating pregnancy related illness. or indirectly through discovery of women at risk of delivery complications and ensuring that they deliver in adequate equipped facility (Titaley et al., 2010; Banda et al., 2012 and Moller et al., 2017)

The World Health Organization recommends a focused antenatal care of four

visit: the First visit at the first trimester between the 10th—20th week of pregnancy, the Second visit at the second trimester around 20th week—28th week of pregnancy, the Third visit at third trimester around week 28—36 of pregnancy, and lastly the Fourth visit which is the final one and taking place between weeks 36 and 38 of pregnancy (Kawungezi et al., 2015; Khanal et al., 2015 and Organization, 2016).

Several factors have been suggested as possible risk factors for poor utilization of ANC services. Like socio-demographic and psychosocial factors, place of residence, age, education. employment status, parity, intention pregnant, of to get use contraceptive methods, economic status, health insurance. Other factors include cultural norms, gender discrimination and lack of a right's based approach which emphasizes human dignity and attention to the needs of women in planning and delivering health services, inadequate knowledge of signs and symptoms of illness and services available, cost of services, lack of transport options and poor quality of care(Rurangirwa al.. 2017 and Mannava et al., 2015).

Role of health care provider in primary health care center clinics are history taking, requesting ultrasound examination, speculum examinations, vaginal examinations and swab taking. Nurse consenting for surgical management of miscarriage (SMM). Most of these skills are obtained and assessed through in-house teaching, alongside stand-alone courses specific to gynecology and early pregnancy. Progression to a more advanced level requires formal training is usually at masters level, such as ultrasound scanning, non-medical prescribing and preforming manual vacuum aspiration (Phillips and Saxby, 2019).

This study was done in Ismailia city to evaluate factors that effect on utilization of antenatal care like (poor knowledge about ANC, psychosocial factors). All these factors leading to negative outcomes on pregnancy results. Antenatal care has been linked to a higher likelihood of retention in care and of giving birth in a health facility, which might further improve maternal and newborn outcomes. The study aimed to orientation increase between pregnant about importance of regular women antenatal follow up to get positive outcomes on pregnancy results (Deo et al., 2015 and Bhutta et al., 2015).

This study aimed to evaluate the utilization of antenatal care services among pregnant women in Ismailia city.

2. Subjects and Methods

2.1. Research Design

Descriptive design was used in this study.

2.2. Study Setting

The study was conducted at four governmental primary health care centers in Ismailia city (El Shik Zaid, El-Sabaa Banat, Hay-El Salam and El-Shohada).

2.3. Study Sample

Convenience sample of 200 pregnant women were recruited in this study.

The inclusion criteria included pregnant women at age (20-35) years and gestational age (10-38) weeks. Exclusion criteria included pregnant women with medical condition need to specific care in hospitals like congenital heart abnormalities and renal failure.

The Sample size was calculated according to the following formula: (Dawson and Trapp, 2004)

$$n = \left[\frac{z_{\infty/2}}{E}\right] * P(1-P)$$

2.4. Tool of Data collection

2.4.1. Structured interviewing form:

It was consisted of the following four parts:

1-The first part covered women socio-

demographic data such as age, residence, occupation and economic status as well as the age, level of education, and occupation of husbands.

2-The second part covered obstetrical and gynecological History: Which includes data about; pregnancies including miscarriages, abortions, child spacing, and previous family planning use, hormones problems ... etc.), number of children, antenatal care services provided during the last pregnancy like number of visits, laboratory investigations and toxoid tetanus vaccination.

3-The third part covered the woman's knowledge related about antenatal care: consisted of 10 questions covering definition of ante natal care, number of visits the women should have during her pregnancy, importance of antenatal care, pregnancy follow-up schedule, dose of tetanus vaccination and its time, and the danger signs of pregnancy.

4-The fourth part covered the practices and utilization of pregnant women for antenatal care through 10 questions covering the regulatory of her ante natal visits, reason for visit and the reasons for irregular visit as financial problems, transportation difficulty.

2.5. Field of work

The study was conducted at Ismailia primary health care centers. Data were collected from the beginning of December 2018 till the end of April 2019. The researchers visit the previous setting 3 days per week from 9.30 A.m. to 1.30 P.M and each day approximately 1-5 pregnant at rang 15-20 minute for each women. Interviewed women after taking their consent, aim of study and ethical considerations were explained.

2.6. Administrative design:

An official permission was obtained from the director of health care centers through a formal letter from the dean of the faculty of Nursing, Suez Canal University to sustain their cooperation to implement the study.

2.7. Ethical Considerations:

Informed consent was taken from participants after describing the objectives of the research and ensuring confidentiality of data and an approval was taken from the center administration .All ethical issues were considered, participants were given explanations about the purpose of the study, and they were also informed that they could withdraw from the study at any time before the completion of the study.

2.8. Statistical Design:

The data were collected, organized, coded, computerized and analyzed by using appropriate statistical methods and "tests" clarify were used, data presented in suitable tables and figures using appropriate statistical techniques & tests of significance. Statistical Package for Social Science Programs (SPSS).

3. Results

Table (1): Revealed that, the age of the women ranged from 20 – 32 year old and the age of their partner ranged from 22 – 41 years old with mean±SD was 25.37±3.53, 31.39±4.17 respectively. Regarding education 45.0% of women and 40.0% and their husband had secondary education, slightly less than half of women working while slightly less than half of husband not working.

Table (2): Demonstrates that majority of pregnant women had natural pregnancy. About two third of them (65.0%) had regular antenatal visits, near than two third had first visit at second trimester (62.0%), less than half arrived the health center for antenatal care by walking, one quarter by car and one third by other. The longest time of transportation was 30 min and the shortest was 15 min.

Table (3): Describes that more than half of pregnant women had correct knowledge regarding definition of antenatal care (58.0%), importance of antenatal care (53.0%) and time of first follow up (53.0%), tetanus vaccine (41.5%) and pregnancy danger signs (51.5%).

Table (4): Shows that about two third of pregnant women had regular visits with 65.0%. Near than half of them had not received Iron & folic acid. They had adequate sleep with 58.5% and had not practice sport during pregnancy.

Table (5): Shows that all of pregnant women had received greeting from medical team, measuring vital signs with. The majority of them had file formation and calculated expected date for delivery with 98.0 %. The great majority of pregnant women had ultrasound examination and had health diet education.

Table (6): Shows there was significant relation between mother age, father age, marital status, mother education, husband education, mother occupation, husband occupation and adequate practice of antenatal care.

Table (7): Reveals that total practice score and total satisfaction score were significantly correlated negatively with total knowledge score, but satisfaction score was

correlated positively with total practice score.

4. Discussion

Antenatal care (ANC) is an important health service, which detects and sometimes reduces the risk of complications among pregnant women. ANC is a combination of monitoring for problems in mother and fetus, treatments and preventive care, health education, support, and advice for pregnant women. The quality of care is likely to influence effective utilization and compliance with interventions (Elmohimen et al., 2011 and Nwaeze et al., 2013).

The aim of this study was to evaluate the utilization of antenatal care among pregnant women in Ismailia city. This aim will achieve through answering two questions. The first questions were "What is the pattern of use of antenatal care services among pregnant women in Ismailia city", the second questions were "What are the factors that influence utilization of antenatal care among pregnant women in Ismailia city".

This study was conducted at four governmental primary health care centers in Ismailia city "El Sheik Zaid, El-Saba Banat, Hay-El Salam and El- Shohada. The study was conducted on 200 pregnant women, their age ranged from 20-32 years, less than half of them had secondary education,

residence in rural area and had moderate family income.

Regarding answering the first research question "What is the pattern of use of antenatal care services among pregnant women in Ismailia city. As documented in Ministry of Health and Population (MOHP) in physician guidelines woman is considered having adequate ANC if she had four or more ANC visits during her pregnancy (MOHP, 2011).

Preferably, prenatal visits should start once the mother misses her first menstrual period. Many women suspect that they are pregnant and visit a care provider after missing a menstrual cycle. Others will not seek prenatal treatment until after taking a home pregnancy test.

The present study findings (table5) revealed that about two third of pregnant women had regular antenatal visits. Most of them had their visit at second trimester of pregnancy. This May be due to the pregnant woman want to know the type of fetus or to identify its development and to sure the absence of disabilities. In addition, most women come to antenatal clinic in primary health care services to take tetanus vaccination in 4th month of pregnancy because this vaccination is only available in such clinics.

This is similar to the study done by Awasthi & Awasthi (2018) who reported that more than half of the mothers utilized the existing ANC care services well whereas the remaining one third of the respondents showed poor utilization of antenatal care services. Also, the study done in El Omranya, Egypt by Attia et al., (2013), founded that near than two third of mothers had their first ANC visit in their second trimester. In the other hand, the current findings are not in harmony with Tiruayne & Muchie (2019) who found that only more than one third of women in fertile age group in the region received ANC services at least once from skilled health personnel.

It was noted that less than half of mothers became pregnant at the age of 20 years. These may be due to the habits motivate the society to encourage most women to marry in early age (Sabir et al., 2010) .This result pinpoints the fact that majority of women get married at the legal age of marriage and become pregnant at the age of reproductive maturity, age plays a significant role in reproductive health and utilization of maternal health care practices. Studies have proven that pregnancy at an early age could lead to miscarriage and even bring about unwanted complications during and after pregnancy (Sharma & Sharma, 2012).

The present study findings (table4) revealed this point that, majority respondents had no complications with pregnancy. In the same line with the study of **Yaser et al., (2015)** which showed that

the majority of the study sample with percentage of two third did not have any complications. Similar finding was also reported in a study of **Lund et al., (2014)** which indicated that most of pregnancies were without complications. The reason for these results may be due to regular antenatal visit.

Also, the present study found that the utilization of ANC is higher among women who residence in urban and those with higher socioeconomic status. This can be explained because services are widely distributed in urban areas and are easily accessible, some services like immunization are only available in urban. These result in the same line with **Hussein et al.**, (2020) which found that more than half of the pregnant women were urban residents. Also, **Shabila et al.**, (2014) indicated that most of participants were residence in urban area.

According to **Bredesen et al., (2013)** who reported that at each antenatal visit, nurses and doctors should offer information, consistent advice, clear explanations, and provide pregnant women an opportunity to ask questions. The result of current study found that two third of pregnant women had their information from doctors. While only 10 percent acquire their information from nurses. So, the role of nurses in antenatal care should be expanded.

While the Egyptian demographic and health survey **EDHS.**, (2014) demonstrated

that two third of women had health care at private medical sector. This is due to care that offer different means of awareness, better pregnant-provider interactions regarding advices during ANC and time schedule of visits.

EDHS., 2014 reported that three quarter of Egyptian mothers had received at least one tetanus toxoid dose during their last pregnancy. Among the participants, it was observed that the majority received tetanus toxoid dose while more than half of the mothers had not consumed Iron and folic acid. This could be attributed to the lack of knowledge regarding the importance of iron and folic acid during pregnancy.

Getting tetanus vaccination doses during pregnancy is an important factor in preventing any infection that may occur during childbirth. Also daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron and 400 µg (0.4 mg) folic acid is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and preterm birth. (WHO, 2012) so the importance of vaccination, Iron and folic acid supplementation should be identified.

The current study findings (table 8) illustrated that, the most majority of pregnant women had received greeting from medical team and slightly near all of them had file formation and calculated expected date for delivery. Not all pregnant women

had measure uterine level while all of them were measuring the vital signs and observed for weight & height.

Good nutrition is the foundation of a healthy and balanced life. Good nutrition is particularly important during pregnancy, as the body prepares for fetal growth and development and lactation, uterine and placental tissues develop, and blood supply is enhanced. Proper weight gain benefits women's health and fetal health reduces the risk of complications and contributes to the health of the baby. Anamia can be prevented by healthy, balanced and integrated diet (Gernand et al., 2016). The finding of this study revealed that diet and nutrition was the most discussed topics. More than three quarter of pregnant women's received health education about nutrition and healthy diet. In agreement with Khanal et al., (2015) which reported that more than two third of stuieded women informed about imoprtance of healty diet during pregnancy.

Regarding the second research question "What are the factors that influence utilization of antenatal care among pregnant women in Ismailia city". Singh et al, (2013), reported that education, parity, age, marital status, psychological statues, occupation and family size, also women's knowledge, attitudes, beliefs, and culture are determinants related to utilization of health

service in addition availability, accessibility and affordability of health care.

In line with these above mentioned determinants. current showed study relation between significant maternal education and adequate use of ANC. also Laishram et al., (2013) and Efendi et al., (2017) indicated a significant relation between maternal education and adequate use of ANC. This may be because women who have higher educational attainment may have acquired more knowledge about maternal and child health and the potential benefits of ANC, thus resulting in a higher level of ANC use.

In congruence with the present study results which showed that most of pregnant women had knowledge about the first visit and most of them received adequate numbers of visits, a study in Assiut University by Elmohimen et al., (2011) demonstrated that less than half of women had knowledge about the first visit and attended less than 4 visits.

On the same line study done in Zimbabwe by vanden et al., (2011) clarified that majority of pregnant women had knowledge about the first visit. This is because the time of first visit is one of the most important visits during pregnancy because it is the main factor in knowing everything about the fetus so most pregnant women care about it.

Recent study showed that less than one quarter of pregnant women had divorced or widow. Similar findings were also reported in a study done by **Hassan et al.**, (2015) revealed that the percentage of divorced or widow mothers was lower among females with history of ANC and this may be attributed to absence of the husband which leads to increased burden of responsibilities on the mother and causes more financial problems. This is a cause of the irregular follow-up of the pregnant woman due to the absence of the husband in a state of psychological instability.

Concerning present study parity, illustrated that half of pregnant women were nulliparous, women with their first child are more cautious about their pregnancies. Multi para women on the other hand, tend to believe that maternal health care services are not necessarily due to their experiences from previous pregnancies and therefore have more confidence about pregnancy and childbirth and thus may give less importance obtaining ANC. These results are in same line with results of the study done in Hospital of Assiut University for evaluation of ANC services and women's perception by Elmohimen et al., (2011) which found that the younger women had more regular attendance to ANC than the older women (Hassan et al., 2015).

Concerning general satisfaction degree about the health care service, it was noticed that near than two third of pregnant women were satisfied, this is agree with another Egyptian study of **Soliman et al., (2018)** who reported that women satisfaction with antenatal health services prevalence in Egypt is more than half .Also the majority was satisfied about doctors, nurses, technician, and system.

Moreover, a study done in Nigeria showed that the healthcare providers' attitudes were perceived to be good by more than half of respondents, while quarter of clients felt providers' attitudes were fair, whereas 8.0% felt healthcare providers had poor attitudes.

Although the overall satisfaction of pregnant women toward the services in antennal care clinics. Near than half of pregnant women were merely satisfied about the availability of resources in recent study. The difference of opinions about satisfaction level is due to the way that the health service is provided and the commitment of the staff in the place and the availability of possibilities as well as the style of the medical staff in the treatment (Shuteye et al., 2013 and Arsenault et al., 2018).

According to the present study results (table13), Age of mother and husband were significantly associated with proper practice also high educated mother and husband, housewife and worker husband were significantly associated with adequate practice. Total Practice score was

significantly positive correlated with total knowledge score, but satisfaction score was significantly negative correlated with total knowledge score.

Regarding relation between knowledge and demographic data, the study results revealed that there are significant relation between knowledge and demographic data this like the results of Pahwa et al., (2013) indicated that there was significant association between the knowledge and demographic data of pregnant women's and that ANC services of pregnancy have been influenced by their residency, level of education. On the other side, Sa'adoon et al., (2011) found that there was a nonsignificant association between the knowledge with demographic data and occupation.

Other factors influencing women utilization of antenatal care, the bivariate analyses showed significant association with education and total knowledge. However, in multivariate analysis total knowledge had positive association with total practice, while total knowledge had negative correlation with satisfaction. The finding may be explained by more awareness about the importance of antenatal care increase demand of women and need more care. In congruence with these present study results, a study done by Aziz et al., (2020) concluded that, nulliparous women, having knowledge of ANC living wellconstructed houses were found to be utilizers of ANC services.

Finally, we must assume that maternal and health education and antenatal visits services need regular assessment to ensure a normal pregnancy with delivery of a healthy baby from a healthy mother.

On the contrary, insufficient maternal care during pregnancy and delivery are largely responsible for increasing the incidence of mortality and morbidity among the babies and mothers. The services provided in ANC centres could be available for all pregnant women whatever difference with their demographic characteristics.

5. Conclusion

Based on the result of the present study and research question, the study concluded that: Near than two third of pregnant women had utilization of ante natal care at second trimesters of pregnancy. Additionally, less than half of them had inadequate knowledge and healthy practices regarding antenatal care. Also, one third had about unsatisfaction availability of resources.

6. Recommendations

For nurse

- -Provide training programs to nursing staff to enhance their knowledge and performance regarding antenatal care
- -Increase the awareness of nursing staff about their role in health education and counseling of pregnant women.

For pregnant women

- -Providing posters and prints for mothers to increase their awareness about antenatal care.
- Counseling program to the pregnant women about antenatal visits schedule and the importance of healthy practices

Further studies:

Research is proposed to investigate of nurse's performance in ante –natal care unit.

Table (1): Distribution of personal characteristics among pregnant women and their husband attending antenatal clinics in Ismailia city (n=200).

Items	Women		husband		
Items	No	%	No	0/0	
Age					
<25	85	42.5%	15	7.5%	
25-30	90	45.0%	142	71.0%	
>30	25	12.5%	43	21.5%	
Mean ±SD	25.3	37±3.53	31.39±4.17		
Min-Max	20-32		22-41		
Education					
Read& write	50	25.0%	40	20.0%	
Secondary	91	45.5%	81	40.5%	
High	59	29.5%	79	39.5%	
Occupation					
Employee	89	44.5%	111	55.5%	
Housewife	111	55.5%	-	-	
Workers	-	-	89	44.5%	

Table (2): Distribution of history of current pregnancy among pregnant women attending antenatal clinics in Ismailia city (n= 200).

Present history Items	No	%
Recent pregnancy		
Natural	179	89.5%
Artificial (IVF)	21	10.5%
Regularity of antenatal visits		
Regular	130	65.0%
Not regular	30	15.0%
Merely regular	40	20.0%
Trimesters visit		
First	36	18.0%
Second	124	62.0%
Third	40	20.0%
Mode of transportation		
Walking	81	40.5%
Car	50	25.0%
Other	69	34.5%
Time spent in transportation		
15 min	81	40.5%
30 min	99	49.5%
More	20	10.0%

Table (3): Distribution of Knowledge regarding antenatal care among pregnant women attending antenatal clinics in Ismailia city (n= 200).

	C	orrect	Not correct		
Items	No	%	No	%	
Definition of antenatal care	116	58.0%	84	42.0%	
Importance of antenatal care	106	53.0%	94	47.0%	
Time of first follow up	106	53.0%	94	47.0%	
Numbers of follow up	89	44.5%	111	55.5%	
Tetanus vaccine	83	41.5%	117	58.5%	
Vaccine dose	96	48.0%	104	52.0%	
Smoking hazards	101	50.5%	99	49.5%	
Drugs harmed	112	56.0%	88	44.0%	
Pregnancy danger signs	103	51.5%	97	48.5%	
Mean of total knowledge score (rang from1-8)		5.04	±1.79		

Table (4): Distribution of healthy practices among pregnant women attending antenatal clinics in Ismailia city (n= 200).

	D	one	Not done		
Practice assessment	No	%	No	%	
Right time of first visits	162	81.0%	38	19.0%	
Regularity of visits	130	65.0%	70	35.0%	
Receiving tetanus vaccine	147	73.5%	53	26.5%	
Receiving iron & folic acid	96	48.0%	104	52.0%	
Take adequate sleep	117	58.5%	83	41.5%	
Take nap	130	65.0%	70	35.0%	
Practice sport during pregnancy	60	30.0%	140	70.0%	
Drug compliance	179	89.5%	21	10.5%	
Practice score (4-11)	6.11±1.53				

Table (5): Care provided for pregnant women at antenatal clinics in Ismailia city (n= 200).

A 1	Г	one	Not done		
Antenatal care	No	%	No	%	
Greeting	200	100.0%	0	0.0%	
File formation	192	96.0%	8	4.0%	
Expected date calculated	196	98.0%	4	2.0%	
Past surgical history taken	151	75.5%	49	24.5%	
Gynecological history taking	192	96.0%	8	4.0%	
Vital signs	200	100.0%	0	0.0%	
Weight & height	119	59.5%	81	40.5%	
Ultra sound	196	98.0%	4	2.0%	
Baby follow up	192	96.0%	8	4.0%	
Healthy diet education	161	80.5%	39	19.5%	
Measure uterine level	160	80.0%	40	20.0%	

Table (6): The association between received antenatal care and demographic characters among pregnant women was attending antenatal clinics in Ismailia city (n=200).

	Received care					
Personnel characteristics	Inadequate		Adequate		t/X ²	P value
	N	%	N	%		
Mother age Mean ±SD	23.98±2.96		27.9±3.05		-8.865	0.00**
Father age Mean ±SD	30.22±3.8	39	33.51±3.83		-5.735	0.00**
Marital status						
Married	109	54.5%	61	30.5%	7.35	0.025*
Widow	10	5.0%	10	5.0%	1.33	0.025*
Divorced	10	5.0%	0	0.0%		
Residence						
Urban	65	32.5%	45	22.5%	3.12	0.07
Rural	64	32.0%	26	13.0%		
Mother education						
Read & write	50	25.0%	0	0.0%	26.60	0.00**
Secondary	48	24.0%	43	21.5%	36.69	
High	31	15.5%	28	14.0%		
Husband education						
Read & write	40	20.0%	0	0.0%	32.95	0.00**
Secondary	38	19.0%	43	21.5%	32.93	
High	51	25.5%	28	14.0%		
Mother occupation						
Housewife	63	31.5%	48	24.0%	6.53	0.011*
Working	66	33.0%	23	11.5%		
Husband occupation						
Worker	63	31.5%	48	24.0%	6.53	0.011*
Employee	66	33.0%	23	11.5%		
Family income						
Low	59	29.5%	27	13.5%	1 41	0.40
Moderate	57	28.5%	34	17.0%	1.41	0.49
High	13	6.5%	10	5.0%		

t is independent t test, X^2 is chi-square test,* Significant p< 0.05 ** Highly significant p<0.001

Table (7): Correlations between knowledge, practice and satisfaction among Participated pregnant women (n= 200).

Items		TOTAL Practice	Satisfaction	
Total Knowledge	r	0.210	-0.409	
	P value	0.003*	0.000**	
Total Practice	r	-	-0.038	
	P value	-	0.595	

r is Pearson correlation, * Significant p< 0.05 ** Highly significant p<0.001

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