

Factors associated with puerperal women's adherence to the utilization of post-natal care services in Moshi Municipality, Tanzania.

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Abstract:

Background: Postnatal care service is a key to achieving the Sustainable Development Goals (SDGs), especially goal number three and its targets to reduce maternal mortality rate and ending preventable deaths of newborns. Nevertheless, its utilization and adherence have been unsatisfactory and subjected to a wide range of factors, that have a substantial impact on the thrives of maternal and neonatal mortality as well as morbidity, which remains a challenge to overcome. **Objective:** This study aimed to determine the factors associated with puerperal women's adherence to the utilization of post-natal care services in Moshi Municipality, Tanzania. **Materials and methods:** An exploratory descriptive research design was used at the outpatient infant immunization clinics of four selected health facilities representing Moshi municipality. A convenient sample of 360 women attending the selected settings were proportionally recruited according to the inclusion criteria. **Results:** Adherence to the utilization of postnatal care services was found to be 25.3%. Factors like receiving information about puerperium ($p=0.000$), place of delivery ($p=0.023$), receiving health education on postnatal visits ($p=0.000$), availability of transportation ($p<0.00001$), receiving information about postnatal visit schedules from health personnel ($p=0.001$), waiting time at a health facility ($p=0.001$), methods of payment for hospital bills ($p=0.004$), initiation of seeking postnatal services ($p=0.024$), and provision of postnatal care by health personnel ($p=0.007$) were significantly associated with adherence to the utilization of postnatal care services among puerperal women. **Conclusion:** Adherence to the utilization of postnatal care services in Moshi municipality was very low and significantly associated with some reproductive, and health services utilization-related factors. **Recommendations:** The responsible authority should encourage continuing health services throughout the maternity cycle and using postnatal care services based on the recommended schedule.

Keywords: Puerperal women, Adherence, Postnatal care services.

Received 16 May 2024; Accepted 23 May 2024; Published December 2024

Introduction.

Postnatal care service is a fundamental maternal and child health service, which includes the promotion of healthy practices, disease detection, and prevention as well as management of health problems during the first six weeks postpartum. Global utilization of postnatal care services has improved over the past 20 years, where 69 percent of mothers and only 66 percent of newborns received the recommended post-natal checkups (UNICEF, 2023; WHO, 2022). However, there are tremendous disparities in timing and content utilization across regions, the vast majority (90%) of women in developed regions, adhered to WHO recommendations,

while only 37% were evident in developing countries, and expectedly, less than one-fifth (13%) sub-Saharan African mothers were able to adhere to complete postnatal care as per WHO recommendations (Habte et al, 2021; Say et al., 2014; WHO, 2022).

Importantly, postnatal care service is a key to achieving the Sustainable Development Goals (SDGs), especially goal number three and its targets to reduce maternal mortality rate and ending newborns preventable deaths. Besides, more than three-fifths (60%) of global maternal deaths occur within 48 hours post-delivery as the result of postnatal complications. These early postnatal hours are dangerous yet vital times to

prevent complications arising during the puerperium (Limenih et al., 2016; WHO, 2022; WHO, 2014).

Current data shows a drop in global maternal mortality by 34% from 2000 when an estimated 446,000 maternal deaths occurred. Despite a drop in global maternal mortality, in 2020 about 287,000 deaths occurred from maternal causes, this is virtually 800 maternal deaths every 24 hours and nearly one in every 120 seconds. Of the entire deaths, 95% were recorded in developing countries with Tanzania exhibiting a decline of maternal mortality ratio by 9.16% in the year 2019 to 2020 which was recorded to be 262.00 to 238.00 per 100, 000 live births respectively (UNICEF, 2023; WHO, 2023).

Notably, postnatal care service utilization and adherence have been unsatisfactory and subjected to a wide range of factors, including socioeconomic, demographic, cultural, as well as associated health service utilization factors which comprise the availability of services, cost of service, accessibility, and satisfaction with the quality of service (Jat et al., 2011; Zelalem Ayele et al., 2014).

These factors determine the extent of utilization and adherence to all recommended postnatal visits and services which have been a significant challenge to overcome. Additionally, adherence to postnatal care services utilization enhances and maintains the health of the mother and newborn by providing a platform for the surveillance of postnatal-related complications (Habte et al, 2021). Hence, identifying, examining, and exploring these factors is the first step in determining strategies to reduce as well as prevent maternal and newborn-related complications. Plus, understanding these factors will add information to the existing body of knowledge on how to promote the utilization of postnatal care service, which is poorly utilized in Tanzania in comparison to other components of maternal health care.

Aim of the study.

This study aims to determine the factors associated with puerperal women's adherence to the utilization of post-natal care services.

Research question.

What are the factors associated with puerperal women's adherence to the utilization of post-natal care services?

Materials and method.

Materials.

Research design.

An exploratory descriptive research design was used to carry out this study.

Study settings.

This study was conducted at the outpatient infant immunization clinics of four health facilities in Moshi municipality namely: Kcmc Hospital, Saint. Joseph Hospital, Pasua Health Center, and Majengo Health Center.

Subjects.

The sample size was estimated using a statistical program (Epi info program v 7.0) using the following parameters; population size of puerperal women in Moshi municipality who utilized postnatal care services in the previously mentioned health facilities from October to December 2022 was 5353, confidence level 95%, the prevalence of the problem, and with 5% margin of error. The minimum sample size was estimated to be 360 women.

Tools.

Three tools were used for data collection.

Tool one: Puerperal women's sociodemographic and reproductive history structured interview schedule. This tool was developed by a researcher.

Tool two: Women's satisfaction with postnatal care structured interview schedule. This tool was adapted.

Tool three: Puerperal women's utilization and adherence to postnatal care services assessment sheet. This tool was developed by a researcher.

Method.

- Approval to carry out the study was obtained from the Research Ethics Committee, Faculty of Nursing, Alexandria University.
- An official letter from the Faculty of Nursing Alexandria University was directed to the responsible authority in Moshi municipality in Tanzania to inform them about the study's aim and to get their permission to conduct the study.

- Tools one & three were developed by the researcher after a thorough review of the literature, while tool two was adapted.
- Five experts in the Obstetrics and Gynecologic Nursing field tested the tools for content validity.
- The reliability of tool two was accomplished by measuring the internal consistency of their items by using Cronbach's Alpha test and the result was reliable (0.718).
- A pilot study was carried out on 10% (36 women) of the study subjects to ascertain the clarity, practicability, and applicability of the study tools and to identify the obstacles that may be faced during data collection. Those subjects were excluded from the study sample. No modifications to the tools were made.
- Each woman in the study was individually interviewed by the researcher (during their presence at the health facility to vaccinate their infants) to collect the necessary data and an interview lasted 25-30 minutes per each woman.
- Data collection covered 3 months starting from the beginning of June 2023 till the end of August 2023, 5 days of working hours/week; 6 women /day.
- After the completion of data collection, factors associated with puerperal women's adherence to the utilization of postnatal care were identified

Data analysis.

- The collected data were categorized, coded, computerized, tabulated, and analyzed using the Statistical Package for Social Sciences (SPSS) version 23 program.
- Descriptive and analytical statistics were used such as percentages, Mean & Standard deviation.
- Cross tabulation was carried out to explore the relationships between variables, where Chi-Square and Fisher exact tests were used at $P \leq 0.05$ of significance.

Ethical considerations.

- Written informed consent to participate in the study was obtained from the subjects after explaining the aim of the study, and before data collection.
- Women's (study subjects) anonymity was maintained during the execution of the study.
- Confidentiality of the collected data was entirely maintained during the execution of the study.
- The researcher emphasized that participation in the study is entirely voluntary and study subjects have the right to withdraw from the study at any time.

Results.

Table (I) shows the number and percent distribution of puerperal women according to their socio-demographic characteristics. The majority of puerperal women (84.2%) were aged 20 to less than 35 years old, with a mean age and standard deviation of 27.99 ± 5.69 . A sizeable proportion of puerperal women (71.1% & 77.9%) were married at the age of 20 to less than 35 years respectively. More than one-third (37.5% & 35.5%) of puerperal women had primary as well as ordinary and advanced education levels respectively. More than three-fifths (63.3%) of puerperal women were working; they were mainly workers (41.2%) and merchants (33.8%). Two-thirds (69.2%) of puerperal women were Christians and urban residents.

Table (II) illuminates the number and percent distribution of puerperal women according to their adherence to the recommended postnatal services. Postnatal checkup was received within 24 hours by the vast majority of puerperal women (86.9%). At the same time, all (100%) of them attended postnatal visits. Whereby 49.4% of puerperal women attended one visit and 32.2% of them attended two visits. Additionally, puerperal women who attended postnatal visits on the 42nd day were more than double those who attended on the 7th -14th days (99.4% & 47.8%) respectively. Moreover, neonatal/infant immunization was the main reason for attending postnatal visits as stated by almost one-half (50.3%) of puerperal women. However, the place of postnatal checkup was mainly a health center

(63.3%), followed by a hospital (36.1%), whereas this checkup was provided by nurses or midwives (77.2%).

Figure (1) illustrates the percent distribution of puerperal women according to their total score of satisfaction with postnatal care services. It was indicated that a sizeable proportion of puerperal women (72.2%) were highly satisfied, while a small proportion of them were moderately satisfied (27.8%).

Figure (2) presents the percent distribution of puerperal women according to their total score of adherence to recommended postnatal services. It was demonstrated that approximately three-quarters (74.7%) of puerperal women were not adherent, while almost one-quarter (25.3%) of them were adherent.

Table (III) represents factors significantly associated with puerperal women's total score of adherence to the recommended postnatal services utilization.

Referring to reproductive characteristics, puerperal women who received information about puerperium showed more adherence (31%) than those who did not receive information about it (13%). Place of delivery also exhibited that puerperal women who delivered at home had better adherence (50%) than those who delivered at health centers, governmental and private hospitals (32.7%, 23.4% & 17%) respectively. Moreover, puerperal women who received health education on postnatal visits were more adherent (30.7%) than those who didn't receive information (7.2%). Yet, no statistically significant differences were found between puerperal women's total score of adherence and other reproductive characteristics, except for receiving information about puerperium, which was highly statistically significant ($P=0.000$), places of delivery ($P=0.023$), and receiving health education on postnatal visits ($P=0.000$), which was also highly statistically significant.

Regarding the utilization of health services-related characteristics. More adherence was presented by puerperal women who reported being aware of the provision of postnatal care by health personnel (28%) than those who didn't know (7.5%). Moreover, puerperal women who reported free payment of hospital bills

showed more adherence (35.8%) than those with health insurance and cash payment (20.8% & 19.6%) respectively. Furthermore, puerperal women who received information about postnatal visit schedules expressed more adherence (30.2%) than those who didn't receive it (12.2%). Likewise, puerperal women who sought postnatal service on self-demand were more adherent (37.7%) than those who sought it based on medical recommendation (23.1%). Despite the availability of transportation, only one-quarter (25.3%) of puerperal women who reported, adhered. Lastly, puerperal women who waited for more than 60 minutes at the health facility showed more adherence (40.3%) than those who waited 60 minutes and less than 30 minutes (27.4% & 20%) respectively. Nonetheless, no statistically significant differences were found between puerperal women's total score of adherence and other health service utilization-related characteristics except for the availability of transportation which was highly significant ($P<0.00001$). Statistically significant differences were also found concerning receiving information about postnatal visit schedules from health personnel ($P=0.001$), waiting time at a health facility ($P=0.002$), methods of payment for hospital bills ($P=0.004$), initiation of seeking postnatal services ($P=0.024$), and provision of postnatal care by health personnel ($P=0.007$).

Discussion.

On ascertaining the adherence to postnatal care services utilization, the present study manifests that, to some extent, puerperal women adhered to the recommended postnatal care services (figure 2). The low proportion of adherence can be expounded by the fact that the health care personnel do not emphasize the uptake of complete recommendations, and most puerperal women have a low perceived need to utilize complete recommended postnatal care services. This is supported by the current study, which has observed that much effort is given to the utilization of at least one postnatal visit, and infant immunization service is given much priority while other postnatal care services are neglected (table II). Seemingly, much attention is given only when a newborn or a puerperal woman faces complications during the postnatal period,

where at this point they are advised to seek medical attention.

The current finding is in harmony with a study carried out in southern Ethiopia, which found low adherence to recommended post-natal care services (Habte et al., 2021). The low education status among study participants can explain the alignment of the results as the majority of the participants had primary education in both studies. Contrary, this finding does not correspond with the study conducted in the Belgaum district, Karnataka, India, which displayed that a high proportion of postnatal women adhered to postnatal services during a postnatal period (Paudel et al., 2014). The inconsistency of the findings can be attributed to the differences in the study setting, sample size, sampling technique used, gap in the study period, operational definition, and socioeconomic differences.

With regard to receiving information about puerperium, the present study expresses that somewhat puerperal women who were interviewed and responded to receive information about puerperium during their latest pregnancy significantly adhered to postnatal care services utilization (Table III). This fact explains that the provision of health information earlier during the maternity cycle creates a sense of awareness and the importance of maternal health services utilization, particularly postnatal care services. Not only that, but it also motivates women to engage in different maternal health services based on the fact that they are being exposed to relevant information and knowledge (Dona et al., 2022).

The current finding aligns with a study conducted at selected villages in the Magway Region, Myanmar, which reported that substantial postnatal care services utilization was found in mothers who received information on puerperium and were aware of postnatal danger signs (Mon et al., 2018). The resemblance of the results can be secondary to the same study population used, the same age group, and the low level of education status for the majority of participants in both studies.

Referring to the place of delivery, the current study conveys a significant association between postnatal care services utilization and

place of delivery, in which to a certain degree, puerperal women who delivered at home during their latest labor significantly adhered to postnatal care services utilization compared to those who delivered at health centers, dispensaries, private and government hospital (table III). This describes the fact that women who give birth at a place other than health facilities are terrified of the outcome of birth and need the missed maternity health care required during and after delivery hence they rush to health facilities to receive and comply with the relevant care at the moment. This is supported by the current findings, which discover almost all puerperal women who gave birth at home received postnatal checkups within 24 hours at a health facility.

The present finding is compatible with a study done in the Pwani and Morogoro regions in Tanzania, which stated that women who delivered at home significantly received postnatal care services more than those who delivered at health facilities (Kanté et al., 2015). The similitude of the results can be expounded by the fact that both studies were done in the same geographical area and the majority of puerperium women were in the same age group.

Contradictory, the present finding does not match with the study fulfilled in the Dolo Addo district, Ethiopia, which exhibited that mothers who delivered at home received substantially lower postnatal care services than those who delivered at a health institution. (Kedir Roble et al., 2020). The disparity of the results can be explained by the sociocultural, differences, geographical location, maternal health services initiative differences, and sample size.

With respect to receiving health education about postnatal visits, the present study declares a significant association with postnatal care services utilization, in which to some extent puerperal women who received education about postnatal visits during their current postnatal period highly significantly adhered to postnatal care services compared to those who did not receive it (table III). This suggests the fact that education is key to information, it creates awareness, a good attitude, and belief in the

important aspects of life. Puerperal women who are exposed to health education concerns postnatal care and visits find the importance of it and believe in its utilization, hence enhancing the practice of healthy service-seeking behavior (Berhanu et al., 2016).

The current finding supports the result of a study carried out in southwest Ethiopia, which set forth that the uptake of postnatal care services was more evident to those women who received health talks and bookings for postnatal care services (Dibaba Degefa et al., 2023). The consistency of the results is linked to the same study population and setting used in both studies.

The present finding also indicates that the significant provision of postnatal care by health personnel associated with postnatal care services utilization, in which to a limited degree, puerperal women who responded to know on the provision of the services, significantly adhered to postnatal care services compared to those who responded otherwise (Table III). This portrays the fact that awareness promotes health service-seeking behavior by enhancing belief and good attitudes toward health services utilization, particularly postnatal care services. Also, awareness creates a sense of importance of health services which in turn helps to develop health service-seeking behavior (Seifu et al., 2018).

The current finding corresponds with the study done in Enugu Nigeria, which showed that the likelihood of postnatal care utilization was higher for women with awareness of the service itself (Onwuka et al., 2023). The resemblance of the results can be because of the same study setting and population used, as well as the majority of study participants were multipara in both studies.

In addition, the present study expresses that a significant method of payment for hospital bills associated with postnatal care services utilization, in which a modest number of puerperal women who freely utilized the service, significantly adhered to postnatal care services compared to those who utilized otherwise (Table III). This explains the fact that health services that do not include direct cost or indirect costs promote health service-seeking behavior that

upgrades utilization and compliance with the services (Öjendal et al., 2023).

The current finding is compatible with the study held in Nepal, which publicized that free maternal care services facilitate PNC utilization (Ali et al., 2023). The similitude of the results describes the fact that the majority of the study participants were from poor wealth quantile in both studies. In contrast, the current finding does not correspond with a review conducted in Kenya, which reported that free maternal health service is not significantly associated with the uptake of postnatal care but only other maternal care (Masaba & Mmusi-Phetoe, 2020). The dissimilarity of the results can be explained by the low perceived need for the services, less attention invested in postnatal care services sociocultural differences, and accessibility aspects of the service like acceptability and approachability of the service.

Moreover, the present study conveys that a significant initiation of seeking postnatal service associated with postnatal care services utilization, in which to some extent puerperal women who sought the service based on self-demand (perceived need), significantly adhered to postnatal care services compared to those who sought based on medical recommendation (Table III). This clarifies the fact that women tend to utilize and adhere to maternal health services particularly postnatal care only when they perceive the importance of the service and not according to medical recommendations. The self-perception promotes health service-seeking behavior and in turn, enhances utilization and compliance with the services. This fact is supported by the current findings, which revealed that most of the study participants attended antenatal visits four or more times, delivered their latest pregnancy at health facilities, and attended postnatal visits. However, half of them were only for neonatal/infant immunization services. This finding harmonizes with a study conducted in Mexico, which reported that perceived danger signs and newborn illness were factors that contributed mothers to seek postnatal care (Bancalari et al., 2022). The analogy of the results can be explained by the same age group of the majority of study participants.

Furthermore, the current study demonstrates a significant availability of transportation associated with postnatal care services utilization, in which to a limited extent those puerperal women who responded yes to the availability of transportation, were highly significantly adhered to postnatal care services (Table III). This explains the fact that regardless of the distance, places where there are ready, reliable, and affordable means of transportation, it makes easier to access health services since transportation promotes health service-seeking behavior and enhances utilization as well as adherence with the services (Igboanusi et al, 2019). This finding matches with a study carried out in Zambia, which stated that unreliable transportation determines postnatal care service utilization (Mweemba et al., 2021). The similarity of the results can be because of the sample size and source of the study population used in both studies.

Lastly, the present study exhibits a significant waiting time at a health facility associated with postnatal care services utilization, in which somewhat puerperal women who spent more than sixty minutes waiting for service at a health facility, significantly adhered to postnatal care services (Table III). This describes the fact that puerperal women who waited more than sixty minutes at health facilities must have a high perceived need for post-delivery care services and understand the importance of the services so that they can't miss an opportunity to utilize the service, this motivated them to adhere to postnatal care services regardless of the waiting time (Khadka et al. 2017).

The current finding accords with a study carried out in central Uganda, which disclosed that the long waiting time to receive services at health facilities is positively associated with postnatal care service uptake (Asingo & Namukasa, 2021). The consistency of the results describes the fact that a large number of women reported receiving information about postnatal care during antenatal visits. In contrast, this finding does not tally with a study carried out in Kaduna State, North-western Nigeria, which reported that a short hospital waiting time of less or equal to thirty minutes predicted the use of

PNC (Igboanusi et al., 2019). The mismatch in the results can be explained by sociocultural differences, a perceived need for the services, sample size, and data analysis.

Conclusion.

This study shows a low adherence to postnatal care services utilization associated with some reproductive, and health services utilization-related factors. The study also shows the significance of health information and utilization of maternal health services at health facilities, since the present findings related to these aspects were highly significant and adhered to postnatal care services utilization.

Recommendations.

To Moshi municipality.

- Greater efforts should be made to strengthen the continuation of health services throughout the maternity cycle. High-quality services of health personnel should be promoted in approved health facilities.
- Policymakers should prepare guidelines on a package of recommended PNC services and distribute them to all health facilities. They should conduct seminars or workshops to emphasize the PNC services.
- Policymakers should integrate PNC services with other health services to promote utilization and adherence to the service, for example, integration of postnatal care services and immunization services for under-five children.

To Health Facilities.

- Health personnel should encourage the use of PNC services based on the recommended schedule. They should provide health education/information concerning PNC.
- Healthcare providers should counsel puerperal women about the importance of dangerous conditions during the postnatal period. They should show a

good attitude towards the provision of PNC services.

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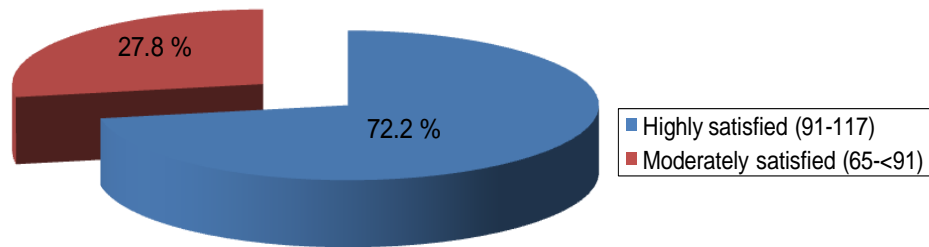
Table (I): Number and percent distribution of puerperal women according to their socio-demographic characteristics

Socio-demographic characteristics	No (360)	%
Age (years):		
18 -	6	01.6
20 -	303	84.2
35 – 48	51	14.2
Mean age and standard deviation	27.99 ± 5.69	
Marital status:		
- Married	256	71.1
- Co-habiting	66	18.3
- Single mother	35	09.7
- Separated	3	00.8
Age at marriage/ co-habiting (years):	(n=325)	
12 -	70	21.5
20 -	253	77.9
35 – 48	2	00.6
Women's educational level:		
- No education	2	00.6
- Primary	135	37.5
- Ordinary & Advanced	128	35.5
- Technical	51	14.2
- University & more	44	12.2
Women's occupation:		
- Working	228	63.3
- Housewife	132	36.7
Type of work:	(n=228)	
- Worker	94	41.2
- Merchant	77	33.8
- Professional	27	11.8
- Employee	19	08.3
- Farmer	11	04.8
Religion:		
- Christian	249	69.2
- Moslem	111	30.8
Residence:		
- Urban	249	69.2
- Rural	111	30.8

Table (II): Number and percent distribution of puerperal women according to their adherence to recommended postnatal services.

Adherence to recommended postnatal services	No (360)	%
Receiving check-up within 24 hrs:		
- Yes	313	86.9
- No	47	13.1
Attending postnatal visits:		
- Yes	360	100
Numbers of postnatal visits:		
1	178	49.4
2	116	32.2
3	58	16.1
4	6	01.7
>4	2	00.6
Schedule of postnatal visits: #		
- On the 3 rd day	15	04.2
- 7-14 days	172	47.8
- 21-28 days	63	17.5
- On the 42 nd day	358	99.4
Reasons for attending postnatal visits:		
- Neonatal/ infant immunization	181	50.3
- Maternal check-up, neonatal/ infant check-up & immunization	119	33.1
- Neonatal/ infant check-up & immunization	60	16.6
Place of postnatal checkup:		
- Health center	228	63.3
- Hospital	130	36.1
- Dispensary	2	00.6
Postnatal health care provider:		
- Doctor	82	22.8
- Nurse/midwife	278	77.2

More than one response



Total score of satisfaction

Figure (1): Percent distribution of puerperal women according to their total score of satisfaction with postnatal care services.

Table (III): Factors significantly associated with puerperal women’s total score of adherence to the recommended postnatal services utilization

Factors	Total score of adherence						F / χ^2 (P)
	Adherent (91)		Not adherent (269)		Total (360)		
	No	%	No	%	No	%	
Receiving information about puerperium:							
- Yes	76	31.0	169	69.0	245	100.0	13.391 (0.000)**
- No	15	13.0	100	87.0	115	100.0	
Place of delivery:							
- Health center	55	32.7	113	67.3	168	100.0	11.298 (0.023)*
- Private hospital	24	17.0	118	83.0	142	100.0	
- Government hospital	11	23.4	36	76.6	47	100.0	
- Home	1	50.0	1	50.0	2	100.0	
- Dispensary	0	00.0	1	100.0	1	100.0	
Receiving health education about postnatal visits:							
- Yes	85	30.7	192	69.3	277	100.0	18.604 (0.000)**
- No	6	07.2	77	92.8	83	100.0	
Provision of postnatal care by health personnel:							
- Yes	88	28.0	226	72.0	314	100.0	9.978 (0.007)*
- No	0	00.0	6	100.0	6	100.0	
- I don't know	3	07.5	37	92.5	40	100.0	
Method of payment for hospital bill:							
- Free	44	35.8	79	64.2	123	100.0	10.926 (0.004)*
- Health insurance	10	20.8	38	79.2	48	100.0	
- Full paid (cash)	37	19.6	152	80.4	189	100.0	
Receiving information about postnatal visits scheduled from health personnel:							
- Yes	79	30.2	183	69.8	262	100.0	12.109 (0.001)*
- No	12	12.2	86	87.8	98	100.0	
Initiation of seeking postnatal services:							
- Self demand	20	37.7	33	62.3	53	100.0	5.107 (0.024)*
- Medical recommendation	71	23.1	236	76.9	307	100.0	

Table (III): Cont.

Factors	Total score of adherence						F / χ^2 (P)
	Adherent (91)		Not adherent (269)		Total (360)		
	No	%	No	%	No	%	
Availability of transportation: - Yes	91	25.3	269	74.7	360	100.0	88.011 (<0.00001)*
Waiting time: <30 min 60 min >60 min	45 17 29	20.0 27.4 40.3	181 45 43	80.0 72.6 59.7	226 62 72	100.0 100.0 100.0	12.173 (0.002)*

χ^2 (P): Chi-Square Test & P for χ^2 Test

F (P): Fisher Exact test & P for F Test

*: Significant at $P \leq 0.05$

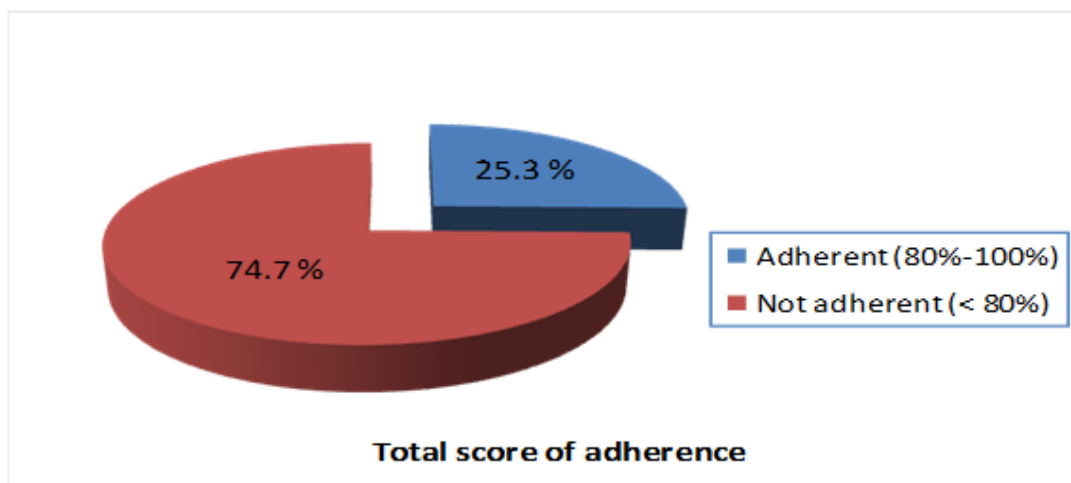


Figure (2): Percent distribution of puerperal women according to their total score of adherence to recommended postnatal services.