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CP 12

Antenatal care service utilization in public and private sectors among women delivering at a public tertiary care centre in Northern Sri Lanka

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Background and objective: Maternity care is provided free-of-charge through Sri Lanka's public healthcare system. However, pregnant women who rely on the public system also access private antenatal care (ANC) on a fee-levying basis. This study describes ANC service utilization in public and private sectors among pregnant women awaiting delivery at a public tertiary hospital in Jaffna.

Methods: This descriptive cross-sectional study was conducted at Teaching Hospital Jaffna (THJ). Pregnant women ≥ 18 years awaiting delivery after 33 weeks of gestation were recruited over a 12-week period (20/06/2022 to 09/09/2022). An interviewer-administered questionnaire was administered at the bedside and medical records reviewed to elicit sociodemographic data and details of ANC use. Data were analysed with SPSS (v21). Standard descriptive statistics and chi-square test were used in the analysis (significance level 0.05).

Results: In total, 251 pregnant women participated (response rate 97.6%). The majority (80.5%, n=202) combined public ANC with private services. All participants accessed public ANC at medical officer of health clinics and 96.8% were visited at home by a public health midwife. The majority had visited public hospital clinics (76.9%) and used public laboratory services (64.9%); 35.5% had used inpatient ANC. The use of private sector services was comparatively lower; most accessed private pharmacies (60.6%), followed by channeling centres (48.2%) and laboratories (45%); only two participants reporting using private inpatient care. Median number of contacts with skilled ANC providers was 20 [IQR 17-23; public 17 (IQR 14-21); private 1 (IQR 0-5)]. Women with O/L qualifications (or higher) and those employed were 1.4 and 1.2 times more likely, respectively, to use private ANC. Both these associations were significant at the 0.05 level.

Conclusions: A large proportion of pregnant women delivering at THJ use private ANC. Contacts with ANC providers in the public sector exceeded Ministry of Health and WHO guidance even in the post-COVID setting. Socioeconomic status appears to be associated with private ANC use.

Keywords: Antenatal care, Access to healthcare, Private healthcare, Maternal health, Jaffna

Introduction

Antenatal care (ANC) contributes significantly to reducing preventable maternal and perinatal mortality [1]. The World Health Organization (WHO) recommends eight contacts with skilled providers during pregnancy [1]. However, wide disparities exist in ANC use, influenced by the accessibility and quality of ANC and various sociodemographic factors [2,3].

Sri Lanka's public healthcare system offers comprehensive ANC, comprising clinical assessment, screening, monitoring maternal and foetal wellbeing, optimizing nutritional status and health promotion [4]. Public ANC services are delivered via medical officers of health (MOH), municipal authorities and at hospitals. The Ministry of Health recommends a pregnant woman at 'low risk' be seen at least three times at home and nine times at ANC clinics [5].

The public system delivers the greater share of ANC services with no charges at points of delivery. However, pregnant women who rely on the public system also access private ANC services, including consultations, diagnostics, and pharmaceuticals, on a fee-levying basis. While the Ministry of Health does not routinely report statistics on private ANC, studies from the Western and North Central Provinces of Sri Lanka indicate that the majority of women access some form of private ANC [6,7,8].

The private sector in the North has seen rapid expansion since the end of the civil war. Anecdotal evidence suggests that many pregnant women in Jaffna also access private ANC. Increasing utilization of fee-levying private healthcare has implications for equity of access [9,10]. This study describes ANC service utilization in public and private sectors and associated factors among pregnant women delivering at a public tertiary care centre in Jaffna.

Methods

This descriptive cross-sectional study was carried out at Teaching Hospital Jaffna (THJ)—the only tertiary care centre in Jaffna district. Pregnant women ≥ 18 years of age, residing in Jaffna district, awaiting delivery after completing 33 weeks of gestation, having primarily accessed specialist ANC in the public sector, were recruited. Women with medical conditions diagnosed prior to the current pregnancy, women in labour, and those who were critically ill, were excluded.

Data were collected over a 12-week period (20/06/2022 to 09/09/2022) using an interviewer-administered questionnaire to elicit sociodemographic data and details of ANC use. All four obstetric units were visited daily. Within each unit, all antenatal bed head tickets (BHT) were reviewed and a list of women awaiting delivery was compiled. All women who fit the study criteria were invited to participate and interviewed at the bedside. Data were extracted from medical records, including the pregnancy record (H-512), BHT, hospital clinic record, investigation reports, and private sector medical records (if any). Data were analysed with SPSS (v21). Standard descriptive statistics were used to describe ANC use. Associations between private ANC use and selected sociodemographic factors were tested using chi-square tests. The Ethics Review Committee, Faculty of Medicine, University of Jaffna, granted approval for the study (J/ERC/21/127/NDR/0258).

Results

In total, 251 pregnant women participated (response rate 97.6%). Mean age was 29 (SD 5.4) years. See Table 1 for a breakdown of the sample by age, ethnicity, education level, household income, employment status and period of gestation.

Table 1. Sample characteristics (n=251)

	n	%
Age (years)		
<35	211	84.1
≥35	40	15.9
Ethnicity		
Tamil	250	99.6
Muslim	1	0.4
Highest educational qualification		
≤Grade 5	1	0.4
Grade 6-11	35	13.9
O/L qualified	92	36.7
A/L qualified ± diploma	99	39.4
Degree holders	24	9.6
Monthly household income (Rs.)		
≤50,000	209	83.2
>50,000	42	16.8
Employment status		
Employed	52	29.7
Unemployed homemakers	199	79.3
Period of gestation (weeks)		
<37	49	19.5
≥37	202	80.5
Total	251	100.0

In the sample, 183 (72.9%) had at least one antenatal risk factor documented in the H-512. The most prevalent risk factor was anaemia (25.5%) followed by high body mass index (BMI, 17.1%), advanced maternal age (15.9%), past caesarean section (15.5%) and gestational diabetes mellitus (GDM, 12.7%) (Table 2).

Table 2. Antenatal risk factors identified in the sample (n=251)

Antenatal risk factors	n	%
Anaemia	64	25.5
High BMI (>24.5 kgm ⁻²)	43	17.1
Advanced maternal age (35 years)	40	15.9
Past caesarean section	39	15.5
Gestational diabetes mellitus	32	12.7
Low BMI (<18.5kgm ⁻²)	23	9.2
PIH/preeclampsia	18	7.2
Bad obstetric history	16	6.4
Rh negative	13	5.2
Small for gestational age/IUGR	13	5.2
Subfertility	11	4.4
Breech	4	1.6
Twin pregnancy	3	1.2
Placenta previa	2	0.8
Teenage pregnancy	1	0.4
Other	8	3.2

*IUGR – Intrauterine growth retardation

Of 251 participants, 202 (80.5%) had accessed private ANC services (family doctor/general practitioner (GP), channeling centre, laboratory, pharmacy or inpatient care) at least once during the current pregnancy. In the public sector, all participants had visited an MOH clinic and 96.8% had received domiciliary care, while 76.9% had visited a specialist clinic, and 35.5% had a prior admission to a public hospital during the current pregnancy. Notably, only 41.8% had attended a health education session delivered by the MOH team. Private ANC use was lower with most accessing private pharmacies (60.6%), consulting specialists (48.2%) and using private laboratories (45%); 12.4% visited a family doctor/GP and only 2 participants had a private hospital admission (both for cervical cerclage) during the current pregnancy (Table 3).

Table 3. Type of ANC provider by sector (n=251)

	n	%
Public sector - field		
MOH clinic	251	100
Home visits by PHM	243	96.8
Health education sessions	105	41.8
Public sector - hospital		
Clinic	193	76.9
Laboratories	163	64.9
Inpatient care	89	35.5
OPD	3	1.2
Private sector		
Pharmacies	152	60.6
Specialists	121	48.2
Laboratories	113	45.0
FD/GP	31	12.4
Inpatient care	2	0.8

*MOH – Medical officer of health; PHM – Public health midwife; OPD – Outpatient department; FD/GP – Family doctor/general practitioner

Participants recorded a median of 20 (IQR 17-23) contacts with skilled ANC providers, including public health midwives (PHM), public health nurses, medical officers of health, family doctors/GPs, other medical officers and specialists. Median number of antenatal visits

in the public sector was 17 (IQR=14-21) and in the private sector 1 (IQR 0-5). The most frequently accessed ANC provider in the public sector was MOH clinics (median 7, IQR 6-8). The median number of visits to channeling centres and family doctors/general practitioners was 0 (Table 4).

Table 4. Contacts with outpatient ANC providers by facility and sector (n=251)

	Mean	SD	Median	IQR	Range
Public sector	17.3	4.4	17	14-21	6-32
MOH clinic	7.2	1.7	7	6-8	1-11
Hospital clinic	4.3	2.9	5	2-6	0-12
PHM (at home)	5.2	2.5	6	4-7	0-14
Health education sessions	0.6	0.9	0	0-1	0-3
Private sector	2.9	3.9	1	0-5	0-21
Channelling centre	2.6	3.6	0	0-5	0-16
FD/GP clinic	0.3	1.5	0	0	0-15
Total	20.3	4.4	20	17-23	8-42

*MOH – Medical officer of health; PHM – Public health midwife; FD/GP – Family doctor/General practitioner

We analysed the number of visits within the subgroups who used specific services. Median number of visits to MOH clinics, hospital clinics, and home visits, were more or less the same given the high proportions using these services. However, the median number of visits was 6 (IQR 2-8) among those who visited channeling centres.

We assessed the association between selected sociodemographic factors and private ANC use. Women with O/L qualifications (or higher) and the employed were 1.4 and 1.2 times more likely, respectively, to use private ANC. Both these associations were significant at the 0.05 level (Table 5).

Table 5. Use of private ANC services by sociodemographic factors (n=251)

	Private ANC		Prevalence ratio	95% CI	X ² , df	p-value
	Yes n (%)	No n (%)				
Education level						
≥O/L	181 (84.2)	34 (15.8)	1.4	1.1-1.9	13.118, 1	<0.001*
<O/L	21 (58.3)	15 (41.7)	1			
Employment status						
Employed	47 (90.4)	5 (9.6)	1.2	1.0-1.3	4.097, 1	0.043*
Unemployed	155 (77.9)	44 (22.1)	1			
Monthly household income (Rs.)						
>50,000	38 (90.5)	4 (9.5)	1.2	1.0-1.3	3.209, 1	0.073
≤50,000	164 (78.5)	45 (21.5)	1			

*Significant at 0.05 level.

Discussion

The study findings indicate that a large proportion (80.5%) of women delivering at THJ use private ANC. However, it is lower than the proportions reported by two hospital-based studies conducted in Kalutara (96%) and Colombo (95%)[6,7]. The latter studies found a very high proportion accessed private laboratory services (90% and over) as compared to 45% in the present study. Further analysis of our data showed that many women had their screening tests

done at public facilities, including secondary care institutions in Jaffna district, which may explain the difference.

Use of MOH clinics was high at 100% and 97% had visits from a PHM—not surprising as the sample was recruited from the public sector. Among private services, the use of pharmacies (60.6%) was highest, followed by specialists (48.2%) and private laboratories (45%). It is noteworthy that the proportion accessing private sector ANC consultations was less than half the proportion accessing ANC clinics delivered by the MOH and public hospitals. While a study conducted at a tertiary hospital in Mangalore, India, reported a higher proportion of women accessing private ANC (69.5%) [2], the researchers did not differentiate between general and specialist care, making comparisons difficult. Less than 1% of women in the present study used private inpatient maternity care, consistent with national data [12].

The median number of contacts with ANC providers was 20 (IQR 17-23), much higher than reported in other LMICs [13-15] and more than double the WHO recommendation of eight visits [1]. As compared to the Ministry of Health guideline [5] of nine clinic and three home visits for ‘low risk’ pregnancies, in the present study, the median number of clinic visits and home visits was 12 (IQR 9-14) and 6 (IQR 4-7), respectively. These findings need to be interpreted with caution as our sample was not limited to ‘low risk’ pregnancies. In the sample, 12.7% and 7.2% had GDM and pre-eclampsia, respectively, both of which require close monitoring. However, as shown in Table 2, the sample does not appear to be overrepresented by complicated pregnancies; 25.5% and 17.1% had anaemia and high BMI, respectively, compared with 29.4% and 32.2% recorded in Jaffna district in 2021 [4]. A second notable finding is that the number of contacts in the private sector (median 1, IQR 0-5) was much lower than in the public sector (median 17, IQR 14-21), suggesting that ANC contacts continue to take place primarily in the public sector.

Almost half our sample used private specialist services (48.2%), similar to a study conducted at De Soysa Hospital for Women in Colombo (49.1%) [7]. Among those who used private ANC, median number of visits was 6 (IQR 2-8) compared to 3 (IQR 1-5) in the De Soysa Hospital study. Despite being located in the city of Colombo, the De Soysa Hospital, like THJ, serves a wide social spectrum, including low-income communities residing in the vicinity of the hospital. The reasons for the higher number of specialist consultations in Jaffna needs further investigation. Women with a higher education level and employment were more likely to use private ANC, consistent with other studies that show that socioeconomic status is associated with private ANC use [9,15].

This study has some limitations. We were unable to achieve the required sample size (n=400) during the data collection period as the number of deliveries was much lower than anticipated in the post-COVID setting. While the results of a hospital-based study cannot be generalized, a nine-month recall period, although widely used in studies on ANC [16,17], can introduce bias.

Conclusion

A substantial proportion of pregnant women who rely on the public sector also use private ANC in Jaffna. As private ANC use involves out-of-pocket expenses, mixing public with private services could widen inequities in access, as suggested by its association with socioeconomic status. The number of contacts with ANC providers was over double the WHO and Ministry of Health recommendations in the post-COVID setting. Further research is needed to better understand these findings in view of streamlining service delivery and minimizing duplication.

Acknowledgements

We thank the nurses at the obstetric units of THJ for their support with data collection. We are grateful to the participants who generously gave their time to participate in the study.

Conflicts of interest

The authors have no conflicts of interest to declare.

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CP 13

Effectiveness of a future substance use risk reduction intervention among secondary school students in the Jaffna district; A quasi-experimental study

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Abstract

Background and objective: Substance use among school-going adolescents is a major public health issue that has grave health impacts and wide-ranging socio-cultural and economic implications. Appropriate preventive measures are imperative to prevent substance use. This study assessed the effectiveness of a school-based life skills intervention to reduce future risk of substance use among secondary school students in the Jaffna District

Methods: A quasi-experimental study was conducted to assess the effectiveness of a life skills-based intervention among Grade 7 and 8 students from four selected national schools, who were assigned to the intervention (n=123) and control (n=131) arms. A constructively/factorially validated Substance Use Risk Profile Scale (SURPS) was used parallelly among control and intervention groups to assess baseline and post-intervention