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ORIGINAL ARTICLE

Factors that Influence Teenage Antenatal Care Utilization in John Taolo Gaetsewe (JTG) District of Northern Cape Province, South Africa: Underscoring the Need for Tackling Social Determinants of Health

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ABSTRACT

Background and Objectives: In resource-limited settings, the uptake of antenatal care visits among women, especially teenage pregnant women, is disturbingly low. Factors that influence the uptake of ANC services among teenage women is largely understudied and poorly understood in John Taolo Gaetsewe (JTG), a predominantly rural and poor district of South Africa. The aim of this study was to determine the factors that influence uptake of ANC services among teenage mothers in JTG district.

Methods: A cross-sectional health facility-based study utilising mixed method was conducted in all public health facilities (n=44) at JTG district. Mother-infant pairs (n=383) who brought their infants for six-week first DPT immunisation during the study period were enrolled in the study. Structured questionnaires were used to collect data on demographic, socio-economic and uptake of ANC indicators.

Results: Out of 272 respondent mothers, 18.68% were adolescent mothers (13-19 years). The logistic regression analysis shows that mother's age (OR=2.11; 95%CI = 1.04 - 4.27); distance to the nearest health facility (OR=3.38; 95%CI = 1.45-7.87); and client service satisfaction (OR=8.58; 95%CI =2.10-34.95) are significantly associated with poor uptake of ANC services.

Conclusion and Global Health Implications: There is a need to improve the quality of adolescent reproductive health services tailored to their health and developmental needs. Moreover, addressing the social determinants of health that affect individual's healthy life style and health seeking behavior is critical.

Key words: Antenatal Care Visits • Teenage Pregnancy • Social Determinants of Health • John Taolo Gaetsewe

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I. Introduction

Maternal and child health issues take a central stage in global health agenda with the concerted efforts of many players and a number of initiatives. This has been followed by a corresponding commitment on targets, interventions, and guidelines to avert health risks and life threatening dangers to women in pregnancy and childbirth. Despite the efforts of many global health players, data from the World Health Organization (WHO), the Global Health Observatory (GHO) 2015 data, and the United Nations Millennium Development Goals 2015 report show that pregnancy-related complications are still the leading causes of death amongst women in the reproductive age in developing countries.^[1,2] The risk of a woman in developing countries dying from a maternal-related cause during a lifetime is about 33 times higher compared to a woman living in a developed country even though most of these complications are preventable with improved access to quality health care service.^[1]

Globally, 11% of all births occur to adolescents aged 15 to 19 years, and 95% of these births occur in developing countries.^[3] International studies have shown that early child bearing is the biggest challenge to young people, as it is associated with increased vulnerability to poor health as well as a long lasting impact on social, livelihood, education, physical, mental health, including risks of maternal death.^[4,5] Adolescent pregnancy is often not the result of a deliberate choice, but rather the absence of choices which include little or no access to schooling, lack of information that positively influence behavior or quality health services, and lack of empowerment, among others.^[6,7] Studies indicate in some parts of the world, notably in sub-Saharan Africa, 35% of pregnancies among adolescents are unplanned or unwanted during pregnancy that resulted due to unsafe sexual practices and lack of awareness.^[8,9]

To prevent, minimize or treat unfavourable outcomes of pregnancy, WHO recommends that all pregnant women should attend at least four ANC visits as a minimum with skilled attendant throughout pregnancy, commencing as early as possible in the first trimester.^[10] Linked to this, in

South Africa, the National Department of Health has adopted a minimum of four ANC follow-up visits as recommended by the WHO for women without any risk factors. This is guided by following the early booking visit (preferably <12 weeks) to improve maternal and child health outcomes.^[11] Furthermore, maternal and child health program has been considered as a priority program for Government. Free primary healthcare (PHC) services are provided for pregnant women and children in all public health facilities throughout the country to provide quality health service that is equitable and more accessible to everyone.^[12-16] Despite increased health facility coverage, many of the ANC opportunities were missed, particularly by teenage pregnant women.^[17] Late ANC booking is common and there is a concern on how to strengthen the ANC uptake as recommended in the national guidelines. To our knowledge, there are no studies that focused to identify the challenges and overcome the low uptake of ANC utilization in the district. Previous studies elsewhere indicated that late booking and inadequate number of ANC visits were caused by multiple factors and expose pregnant women to higher pregnancy-related risks and complications.^[1,6,18] This study aimed to assess whether teenage pregnancy was one of the risk factor for late attendance of ANC visit among other factors that influence teenage ANC utilization in JTG district, in Northern Cape Province, South Africa.

The district has a 23,162 km² and three local municipalities (Gamagara, GaSegonyana and Joe Morolong) of which the majority (80%) are villages, thus making the district mostly rural. The estimated population in the district in 2014, was 230 938 with the majority (> 75 %) being blacks. The district has the most challenging road infrastructure for the effective delivery of health services compared to the other four districts in the Province. The JTG district economy is based on mining (11 manganese and 3 Iron Ore mines) and mixed farming, but there is a high level (37.7% youth (25-34) official unemployment rate and low level of income opportunities. Close to forty five percent (43.1%) of the households are female-headed. There are 44 health facilities of which five are Community Health Center, 37 clinics

and 2 district hospitals - the two district hospitals are both located in GaSegoyana local municipality. The district has poor and substantial fluctuation in maternal and child health outcomes records between 2009 and 2013. According to the National Committee on Confidential Enquires into Maternal Deaths (NCCEMD) report, in 2009/10, the Maternal Mortality Rate (MMR) was 129.9 per 100,000 live births. In 2010/11 and 2011/12 the MMR was 435.3 and 191 per 100,000 live births respectively. The confidential enquiry report by the committee for 2013/14 reported that the high MMR significantly slowed down to 93.2 per 100,000 live births in 2013/14. These substantial year-to-year fluctuations in MMR outcomes records could partially linked to uptake of ANC services by pregnant mothers. It was against this background that this study was conducted to assess factors that influence the poor uptake of ANC in JTG district, South Africa.

2. Methods

2.1. Study design

A cross-sectional study was conducted at all public health facilities in JTG district between September and November 2014 using mixed method approach. Both qualitative and quantitative data collection techniques were used for collecting primary data. Quantitative data was obtained using a standardized anonymous questionnaire adapted from validated tools^[19,20], which included information on maternal reproductive knowledge, attitude and practice, socio-economic status, utilization of ANC services, delivery and postnatal visits (six-week), facility performances and supply side constraints in provision of maternal and child health services. Health facilities sampled include 2 District Hospitals, 5 Community Health Center (CHCs) and 37 Clinics. Questionnaires were translated from English into two local languages Afrikaans and Setswana languages and back translated into English to ensure accuracy

Qualitative data was collected through semi-structured interviews and Focus Group Discussion (FGD) from purposely-selected participants that included high reproductive health risk groups such as teenage mothers, mother who do not utilise ANC services at health services and traditional births

attendants. The FGDs were captured using a digital recorder. The information then was transcribed for analysis where similar emergent teams were differently categorised. Lay counsellors who were trained for two days on data collection tools and research ethics collected the data. Lay counsellors signed a confidentiality agreement prior to data collection. Observational data and field notes were collected during field visits. Use of ANC services was determined by the participants self-report and was confirmed from clinical records.

2.2. Sampling techniques and sample size for facility based survey

Mothers attending six-week immunization for their infants in all public health facilities in JTG district were the study population from which the sample was drawn. By means of the 2011 census, the study population was estimated to consist of 72,000 women. The six-week immunization and reproductive health services utilization rate data from the 2012/13 District Health Information System (DHIS) was used to quantify the number of mothers expected to attend six-week immunization visit for their infants per facility over the study period. For the facility-based survey, a precision based sample size was calculated taking into account the expected annual utilization of ANC services, a precision level of 2-3%; and 95% confidence level. This provided a sample size of 383 respondent mothers who will be attending six-week immunization services for their infants in all public health facilities within the district. Sample size was allocated for each facility proportionate to their size as determined by the number of six-week immunizations coverage for 2013/14.

2.3. Data analysis

Data analysis was conducted using STATA version 13. Univariate, and multivariate logistic regression models were fitted to identify factors influencing the total number of ANC visits and late ANC booking. Results were expressed using descriptive statistics and where necessary, data was disaggregated by different sociodemographic and economic status of respondents. We used a dichotomous dependent or outcome variable of the study on pregnant women's use of ANC visit, categorized into: - those who

attend at least 4 ANC visits, and those who do not during the time of pregnancy. The literature shows that the relationship between a binary outcome variable of study such as attending at least 4 ANC visits during the time of pregnancy or failure and predictor variables that affect the outcome variable can successfully be explained using the binary logistic regression model.^[21,22] Binary logistic regression analysis was performed to identify predictor variables that influence the number of ANC service utilization. The econometric measure of effect in binary logistic regression analysis is the odds ratio. Odds ratios arising from binary logistic regression analysis are estimated based on the maximum likelihood estimation technique.^[23,24] The logit model is used quite extensively for the estimation of odds ratios in economic studies involving a dichotomous outcome.^[25,26]

Consider a dependent variable Y with 2 possible outcomes (1, 0). The expression $Y=1$ represents the event that a mother has failed to attend 4 ANC visits. The expression $Y=0$ represents the event that a pregnant mother has attended at least 4 ANC visits successfully.

Previous studies revealed that utilization of ANC services is highly influenced by different sociodemographic, economic factors as well as specific individual-level characteristics both at the client and service providers' side. Continuous predictable variables had to be dichotomised in order to perform Pearson's Chi-square tests of association. For instance, the Pearson Chi-square test of association is used to test the null hypothesis that two factors such the dependent variable and independent variable are independent of each other, against the alternative hypothesis that the two factors are significantly associated with each other. The Pearson chi-square test of association is used only for the screening of variables.

Accordingly, we included several theoretically pertinent sociodemographic and economic independent variables (indicators) that influence uptake of pregnant women's ANC services. Respondent women's age was classified into age group of respondents less than 20 years (adolescent

group), and age group older than or equal to 20 years of age (middle and older women). Women's education level was defined in terms of the formal education system of South Africa: School not attended, elementary (grade 1-7), high school (8-12), college or above. Marital status of mothers categorized as married, living together, widowed/separated, and single. Place of residence was categorized as rural versus urban. Distance to health facility for ANC services categorized as more than or equal to one hour or less. Other independent variables include income, level of a mother; individual health seeking behavior and service provider's attitude. Household assets, including ownership of durable goods (such as car, fridge, televisions, stove and washing machine). Dwelling characteristics included were source of drinking water, sanitation facilities, and construction materials and others used as predictor variables for binary logistic regression analysis. The identification of influential predictor variables was done based on odds ratios. In binary logistic regression analysis, influential predictor variables are characterized by odds ratios that are significantly different from 1, 95% confidence intervals of odds ratios that do not contain 1, and P-values that are smaller than 0.05, at the 5% level of significance.

2.4. Ethical consideration

The study was approved by the Northern Cape Provincial Health Research and Ethics Committee (PHREC), reference number NC-PHREC-2014/021.

3. Results

3.1. Descriptive statistics

Of 383 sample mothers approached for study participation, 272 agreed to participate in the study and completed the survey questionnaire which resulted in a 72% of response rate. Out of 272 mother-infant pairs interviewed at 6 weeks immunization visits, 69.37% had secondary education. Only 8.9% have completed college or above. The majority (84.79%) respondent mothers were unemployed or housewives. Regarding the type of employment sector, government and company employment jointly account for only 15.27%. Most of the unemployed mothers depend for their source

of income on child support grant, disability grant, and donations. However, for 54.76% respondent mothers, the total monthly income was less than or equal to one thousand Rand (100 US Dollars).

About one-fifth (18.68%) of the respondents were teenagers younger than 20 years of age, 71.96% were single mothers, Close to half (44.69 %) of mothers reported they had their first baby before the age of 20 years. Out of the 18.68% respondent mothers who were teens in this study, 94%, and 82.35% of them were unemployed and single mothers respectively. Regarding ages of the respondents, 15 years was the youngest age and 45 years was the oldest age. About 16.91% of the respondents were married; 9.56% were living together; 1.84% were separated/divorced; and 1.11% were widowed. About two-third (71.96%) respondents were single mothers.

In this study, only 28.62% respondents own houses, while 6.32% live in rented houses; 57.52% live with their relatives, and 9.67% lived with a spouse/partner. With regards to the main source of water used for drinking, 93.38 % respondents were using tap water either inside the house (16.54%); or yards (15.44%) or (61.76%) public taps. Close to ninety percent (88.97%) of the houses were connected to electricity, and for more than 80.44% of the respondents, electricity was the main type of fuel for cooking in the house. 21.72% households were using flush toilets, 43.82% pit latrines private, and 31.46% ventilated pit latrines. Table 1 presents a summary of the socioeconomic and demographic characteristics of the study respondents (Table 1).

Close to half (49 %) of the teenage pregnant women attended at least four ANC visit during their pregnancy. However, the majority (64.71%) of teenage mothers booked for the first ANC visit after 12 weeks into pregnancy. Only (35.29%) of teenage pregnant women booked for an early ANC first visit before 12 weeks of pregnancy as recommended by the South African Department of Health and WHO guidelines.

More than ninety percent (92%) teenage pregnant mothers attended their first ANC visits at public health facilities, and a few mothers attended private health facilities (6%) or both public and private facilities (2%). Regarding how pregnant women

felt about their pregnancy, 25.49% of respondent teenage mother responded that the pregnancy was wanted, while the majority (74.51%) reported that their pregnancies were unwanted at that time. About 2 percent (1.96%) of teenage pregnant mothers completed college or above whilst the majority (86.27%) were in secondary education. 82.35% of them were single mothers, while 5.88% were married, 9.80% were living together, and 1.96% were separated/divorced. The bulk of them (94%) were unemployed, and for the majority of (58.7 %) respondent teenage mothers their total monthly income was less than or equal to one thousand Rand (or about \$100).

3.2. Logistic regression analysis

A number of predictor variables influencing the use of ANC services were studied for two outcome variables using the multiple binary logistic regression models: (1) number of ANC visits (≥ 4 vs. < 4); and (2) time of attendance of ANC (early vs. late). We estimated the odds ratios (ORs) to assess the strength of the associations for the 95% of confidence intervals (CIs). Regarding the number of ANC visits, in multivariable regression after adjusting for employment status, marital status, relationship with the father of the child, waiting time, fear of HIV test, partner support, and education level, we found that mother's age (OR=2.11; 95%CI = 1.04 - 4.27); distance to the nearest health facility (OR=3.38; 95%CI = 1.45-7.87); and client service satisfaction (OR=8.58; 95%CI =2.10-34.95) are significantly associated with poor uptake of ANC services (Table 2). This suggests that the probability greater number of ANC visits is 2.1 times more likely higher with age group older than or equal to 20 years compared to adolescents. Increased distance (more than or equal to one hour) to ANC services, is 3.3 times more likely to negatively impact uptake of ANC visits. Satisfied mothers with ANC services were 8.58 time more likely to use ANC visits. None of the predictor variable were strongly associated with the outcome variable time of first ANC (early or late) attendance (Table 3). A comparison of Table 2 with Table 3 shows that the independent variables did not affect both number of ANC visits and ANC booking the same way.

Table 1: Sociodemographic characteristics and descriptive analysis of the study respondents

Variable	Variable categories	Respondents	< 19 years of age (%)	>20 years of age (%)
Age in years	n	272	51 (18.68)	221 (81.32)
Marital status	n	272	51 (18.68)	221 (81.32)
	Married	46 (16.91%)	3 (5.88)	43 (19.46)
	Living together	26 (9.56%)	5 (9.8)	21 (9.5)
	Divorced/widowed	5 (1.84%)	1 (1.96)	4 (1.82)
Highest education	Single	195 (71.69%)	42 (82.35)	153 (69.23)
	n	272	51 (18.68)	221 (81.32)
	School not attended	6 (2.21%)	None	6 (2.21)
	Elementary	53 (19.56%)	6 (11.76)	47 (21.35)
Employment status	High school	188 (69.37%)	44 (86.27)	144 (65.45)
	College or above	24 (8.86%)	1 (1.96)	23 (10.45)
	n	263	50 (19.01)	213 (80.98)
	Employed	40 (15.21%)	3 (6)	37 (17.37)
Total monthly income	Unemployed	223 (84.79%)	47 (94)	176 (82.63)
	n	252	46 (18.25)	206 (81.74)
	< R1000	138 (54.76%)	27 (58.7)	111 (53.88)
	≥ R1000 & < R3000	52 (20.63%)	9 (19.57)	43 (20.87)
Housing	≥ R3000 & < R5000	35 (13.89%)	4 (8.7)	31 (15.05)
	≥ R5000	27 (10.71%)	6 (13.04)	21 (10.19)
	n	269	51 (18.95)	218 (81.04)
	Own house	77 (28.62%)	13 (25.49)	64 (29.36)
Main source of water	Rented	17 (6.32%)	4 (7.84)	13 (5.96)
	Living with relative/spouse	175 (65.06%)	34 (66.66)	141 (64.68)
	n	272	51 (18.75)	221 (81.25)
	Tap	254 (93.38%)	47 (92.16)	207 (93.67)
Connected to electricity	Bore hole/well	6 (2.21%)	1 (1.96)	5 (2.26)
	River/other	12 (4.41%)	3 (5.88)	9 (4.07)
	n	272	51 (18.75)	221 (81.25)
	Connected	242 (88.97%)	45 (88.24)	197 (89.14)
Type of toilet	Not connected	30 (11.03%)	6 (11.76)	24 (10.86)
	n	267	50	217
	Flush toilet	58 (21.72%)	13 (26)	45 (20.74)
	Pit latrine	117 (43.82%)	24 (48)	93 (42.86)
	Ventilated pit latrine	84 (31.46%)	12 (24)	72 (33.18)
Service satisfaction	Other	8 (2.99%)	1 (2)	7 (3.23)
	n	272	51 (18.75)	221 (81.25)
	Yes	255 (93.77%)	49 (96)	207 (93.24)
Was the pregnancy planned	No	17 (6.23%)	2 (3.92)	15 (6.76)
	n	272	51 (18.75)	221 (81.25)
	Yes	93 (34.19%)	13 (25.49)	80 (36.2)

(Contd...)

Table 1: (Continued)

Variable	Variable categories	Respondents	< 19 years of age (%)	>20 years of age (%)
	No	179 (63.91%)	87 (74.51)	141 (63.8)
Number of ANC visits	n	272	51 (18.75)	221 (81.25)
	>=4 ANC visits	80 (29.3%)	19 (37.25)	61 (27.52)
	<=3 ANC visits	192 (70.7%)	32 (62.75)	16 (72.52)
Smoke cigarette	n	264	51 (19.31)	213 (80.68)
	Yes	74 (28.03%)	27 (53)	47 (22.07)
	No	190 (71.97%)	24 (47)	166 (77.93)
Alcohol consumption	n	251	48 (19.12)	203 (80.87)
	Yes	70 (27.89%)	11 (22.92)	59 (29.06)
	No	181 (72.11%)	37 (77.08)	143 (71.94)

Table 2: Estimates obtained from binary logistic regression analysis on number of ANC visits

Dependent Variable : Number of ANC visits (1, 0)			
Variables	Odds Ratio	P-value	95% confidence interval
Mother age	2.11	0.038	1.04-4.27
Marital status	0.57	0.097	0.29-1.10
Distance to health facility	3.38	0.005	1.45-7.87
Relationship	0.59	0.569	0.23-1.49
Waiting time	0.85	0.710	0.85-1.92
Service satisfaction	8.58	0.003	2.10-34.95
Fear of HIV test	1.36	0.549	0.49-3.74
Fist ANC booking time	0.95	0.876	0.52-1.72
Employment status	1.44	0.418	0.59-3.55
Education level	0.81	0.693	0.28-2.28
Partner support	0.76	0.397	0.39-1.46
Number of observations	261		
Pseudo R-Square	0.0938		
Prob>chi2	0.0020		
LR chi2 (11)	29.38		

3.3. Focus group discussions

In addition to the surveys questionnaires, we conducted a focus group discussion to reveal a wealth of detailed information and deep insights on the utilization of ANC services and provide recommendations on strategies to tackle the challenges and achieve better health outcomes. For each group 10-15 key participants were selected from the following groups.

(i) women who fully or partially missed reproductive health services; (ii) high risk reproductive health groups which include adolescents, mothers who plan to give birth at home, late presenters to reproductive health, and those women who have unplanned pregnancies; (iii) traditional birth attendants, and (iv) healthcare service providers.

We found that teenage pregnancy was more common in the JTG district and most of it was unplanned pregnancy. According to adolescents' focus group informants, the main reason for unwanted pregnancy among teens was peer pressure from friends and economic dependency. Some of the teens had not completed school, were not married and the support they were getting from the child's father were not consistent. According to one of the teenage pregnant women:

"At the earlier months of my pregnancy, he was there. But recently, I have no communication with the father of my child. Most of the time his cell phone is off and he is not responding to my calls. Because the child's father is no longer able to support us, I will apply for the government child social grant. I will also request my parents to look after my child so that I will be able to look for work."

Another teenage participant responded, *"For me everything is still fine with this child's father and he is still supporting me, although I had one more child from different father."*

Regarding knowledge about benefits of early and adequate number of ANC visits, the majority

Table 3: Estimates obtained from binary logistic regression analysis on time of first ANC visits

Dependent variable: Time of first ANC visits (1, 0)			
Variables	Odds ratio	P-value	95% confidence interval
Mother age	0.077	0.338	0.081-0.023
Marital status	0.005	0.946	0.151-0.141
Distance to health facility	0.095	0.323	0.297-0.098
Relationship	0.008	0.926	0.169-0.186
Waiting time	0.071	0.395	0.093-0.236
Service satisfaction	0.068	0.654	0.217-0.205
Fear of HIV test	0.006	0.955	0.217-0.205
Total ANC visit	0.009	0.894	0.153-0.135
Employment status	0.028	0.755	0.152-0.210
Education level	0.159	0.165	0.065-0.384
Partner support	0.095	0.18	0.046-0.236
Number of observations	261		
Pseudo R-Square	0.035		
Prob>chi2	0.598		
LR chi2 (11)	49.8		

of respondents were aware of the benefits. They mentioned the role played by community healthcare workers. According to one of the respondents:

“The community healthcare workers are helping us to use health care services, remind patients about the date to go to the clinic visits. Sometimes they assist patients to the clinic, they encourage patients to take their pills as well as educate them on government’s policy with regard to their health. I think they are supporting the healthcare system in reaching the communities. However, some other participants suggested, “There is a need to have adequate nurses, and adequate space at the facility as well as priority should be given for pregnant women. The problem is that the clinics use a supermarket approach in providing health services, which means first come first served. This leads to a long waiting time for pregnant women and can be seen by other patients from the community which teen pregnant mother do not want.” In our district there are many facilities operating with only a nurse who has to perform all the services which include antenatal, family planning, chronic and also emergencies. On average

one nurse has to see 35 patients a day but they often see more than that number daily”.

4. Discussion

Findings from this study indicate that many of the opportunities for ANC benefits continue to be missed in the JTG district, particularly among teenagers. There is a need to design innovative strategy and encourage a positive move towards using ANC services among teenagers as recommended by the South Africa Department of Health and WHO guidelines. Our study results showed that out of the 18.68% respondent mothers who were teens in this study, less than half (49%) of them had attended four or more ANC visits during their pregnancy. Only (35.29%) of teenage pregnant women booked for an early ANC first visit before 12 weeks of pregnancy. The study observed that 94%, and 82.35% of them were unemployed and single mothers respectively. Furthermore, results from multiple logistic regression analysis elucidate that mother’s age, distance to health facility and client’s service satisfaction found to be highly influential over the use of ANC services. Our results support findings from several other studies that show teenage pregnancy (mother’s age) linked to increased risks of maternal, and infant mortality and morbidity partially due to lower utilization of ANC services.^[27,29-31]

According to WHO and National Department of Health (NDoH) guidelines, all pregnant women should attend at least four ANC visits during pregnancy and the first visit should happen before 12 weeks of gestation for healthy pregnancy outcomes.^[10,11] ANC provides the opportunity to better clinical management of risk causes through early detection, treatment of anomalies of pregnancy as well as preventive health services.^[11] However, to fully benefit from these interventions, it is vital that pregnant women should start the visit as early in their pregnancy and attend at least four ANC visits. In this study, both the focus group discussions and the logistic regression analysis results showed that the importance of the quality of services at health facility for increased uptake of ANC services. During the focus group discussion, research respondents indicated that teenagers do not want to be seen by

other community members while attending ANC services. Generally, this is due to the expected fear of religious belief, low level of education, cultural factors, ethical and social norms of the society, which do not appreciate teenage pregnancy out of marriage.^[18,29,30] If such perceptions are informed by fear of being judged then this could be a strong predictor for both late ANC attendance and lower utilization of ANC services by teenagers. A recent publication from World Bank research output confirms that there is a widely accepted truth that socio-cultural factors shape perceptions, cognition, and preferences in durable ways.^[32] Previous studies point to a strong causal links between client-friendly quality of services and utilization of health care services.^[33-37]

Adolescent pregnancy is often not the result of a deliberate choice, but rather the absence of choices which include little or no access to school, lack of information that positively influence behavior or good quality health services and lack of empowerment among others.^[6,7,27] Hence pregnancy and ANC use in developing countries could be associated with various inter-related markers of the social determinants of health^[27-29,38] Present study showed that the fact that 74.52% of teenage pregnant mothers did not want to be pregnant during that time, and 86.27 % teenage mothers only had secondary education, and the bulk of them (94%) are unemployed, and for the majority (58.7%) respondent teenage mothers the total monthly income is less than or equal to one thousand Rand (or about \$100) shows the influences of the social determinants of health. Teenagers engage in risky sexual behaviors, not only due to lack of knowledge but also due to unfavorable decisions linked to their socio-demographic and economic conditions.^[8,9,33,39] Lower socio-economic status is a risk factor for both unplanned and unwanted pregnancies and healthy decisions.^[4,35,38,40]

Thus, there is a need to address the social determinant of health factors along with improvement in health systems to provide adolescent friendly services. Following the Millennium Development Goals (MDGs), which was adopted by the international community in 2000, many developing

countries have been able to make significant progress in the reduction of maternal and child mortalities.^[2,41,42] Although undeniably, there have been remarkable gains witnessed, still there is a long way to go with focused approach particularly in low-resource geographic settings and socio-economically disadvantaged population groups.^[2] As many of the root causes of poor health and health seeking behaviors are linked to the social determinants of health,^[39] and empirical evidence shows that there is a strong bi-causal links between poverty and poor health status^[6,43] people at a lower socio-economic conditions are often disproportionately vulnerable to ill-health.^[18,44] Effective implementation of Sustainable Development Goals (SDGs) agenda tailored to country's holistic development need can address many of the health related challenges. Bu this needs everyone to contribute their part: governments, the private sector, civil society and individuals.

4.1. Limitation of the study

The study designed with a particular focus in JTG district. The findings of the study are limited to this district and cannot be generalized to the Northern Cape Province or the country. The study findings may not be representative of all pregnant mothers who do not attend six-week immunization due to child illness or death.

5. Conclusion and Global Health Implications

This study concludes that several factors influence uptake of ANC services by pregnant women in John Taolo Gaetsewe district. Use of ANC was significantly influenced by mother's age, longer distance to health facility, and poor quality of ANC services provided at health facilities among others. We recommend government and nongovernment organizations to create client age friendly ANC services. Furthermore, tackling the social determinants of health are critical to empower women and avoid unwanted pregnancies and the associated risks. Moreover, there is a need for community awareness, particularly in rural areas on the WHO's and South African National Department of Health guidelines regarding the number of ANC visits and booking time to improve maternal and child health outcomes in JTG district.

Compliance with Ethical Standards

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Key Messages

- There is an urgent need to improve the quality of adolescent reproductive health services tailored to their health and developmental needs.
- Collaborative efforts across countries, governments, partners and the UN agencies, are required to tackle the social determinants of health and advance an era of more equitable and healthier people, irrespective of where one lives as aspired by SDG.
- Preventing early pregnancy, through creating opportunities for empowerment, along with individual's healthy life style and health seeking behavior is critical.

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