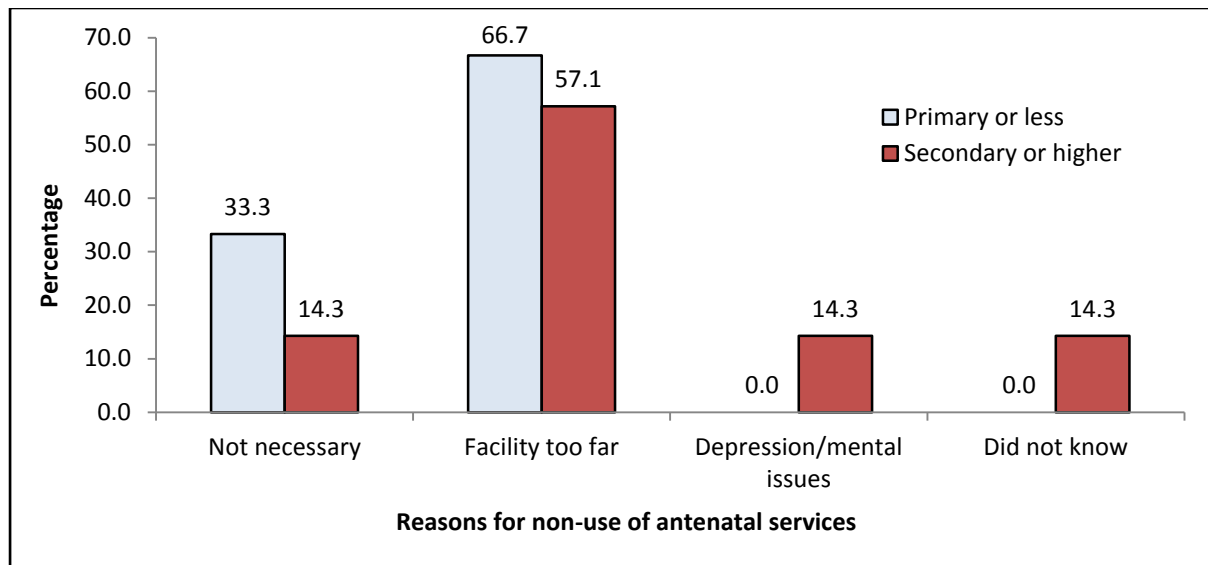


Figure 7: Reasons for non-use of antenatal services by maternal education



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

4.2.2. Delivery care

4.2.2.1. Utilization of delivery services

Table 6 shows a statistically significant association between delivery care and the following independent variables: maternal age ($P < 0.01$), maternal education ($P < 0.001$), parity ($P < 0.05$) and place of residence ($P < 0.01$). Non-facility deliveries were not reported among women aged 15-24 years. The results indicate that use of facility deliveries decreased with maternal age. Women aged 15-24 years used more health facility deliveries than those aged 35-49 years. Likewise, the use of facility deliveries increased with maternal education – where 97.4% of women with secondary or higher education reported that they used facility deliveries and 83.8% of those with primary education or less reported use of facility deliveries. Women who reported that they: were not married, had one child, were from Qumbu, were unemployed, had a monthly income of R801 or more, had higher rates of facility delivery utilization. Regarding access factors to delivery services, the majority of women reported that they walked and did not make any payment to get to the health care facilities. About 96.2% reported that they travelled distances between six to eight kilometres to reach the health facility. **Appendix D** shows that the majority (77.1%) of the women reported that they were assisted by a nurse when giving birth followed by (17.4%) of those

assisted by a doctor. Only 4.1% and 1.2% said they were assisted by a parent (or relative) and by a traditional midwife, respectively. Finally, a minority (0.3%) of women reported that they had no one to assist them when giving birth, which resulted in self-assisted birth.

Table 6: Distribution of delivery services by background characteristics

Variables	Delivery care (N)			Delivery care (%)		
	Non-facility	Facility	Total	Non-facility	Facility	Total
Predisposing Factors						
Maternal age				**		
15-24	0	83	83	0.0	100.0	100.0
25-34	8	137	145	5.5	94.5	100.0
35-49	12	105	117	10.3	89.7	100.0
<i>Total</i>	20	325	345	5.8	94.2	100.0
Maternal education				***		
Primary or less	13	67	80	16.3	83.8	100.0
Secondary or higher	7	258	265	2.6	97.4	100.0
<i>Total</i>	20	325	345	5.8	94.2	100.0
Marital status						
Not married	10	227	237	4.2	95.8	100.0
Married	10	97	107	9.3	90.7	100.0
<i>Total</i>	20	324	344	5.8	94.2	100.0
Parity				*		
1 child	5	118	123	4.1	95.9	100.0
2 - 3 children	7	154	161	4.3	95.7	100.0
4 or more children	8	51	59	13.6	86.4	100.0
<i>Total</i>	20	323	343	5.8	94.2	100.0
Enabling Factors						
Place of residence				**		
Tsolo	11	135	146	7.5	92.5	100.0
Qumbu	0	100	100	0.0	100.0	100.0
Mqanduli	9	90	99	9.1	90.9	100.0
<i>Total</i>	20	325	345	5.8	94.2	100.0
Employment status						
Employed	3	36	39	7.7	92.3	100.0
Unemployed	17	289	306	5.6	94.4	100.0
<i>Total</i>	20	325	345	5.8	94.2	100.0
Monthly income						
No income	4	64	68	5.9	94.1	100.0
R1 - R800	14	216	230	6.1	93.9	100.0
R801 and more	2	43	45	4.4	95.6	100.0
<i>Total</i>	20	323	343	5.8	94.2	100.0
Transport to health facility						
Walking	1	99	100	1.0	99.0	100.0
Public transport	11	162	173	6.4	93.6	100.0
Private transport	3	63	66	4.5	95.5	100.0
<i>Total</i>	15	324	339	4.4	95.6	100.0
Payment to health facility						
Nothing	2	100	102	2.0	98.0	100.0
R1 - R15	6	70	76	7.9	92.1	100.0

R16 or more	7	149	156	4.5	95.5	100.0
<i>Total</i>	15	319	334	4.5	95.5	100.0
Distance to health facility						
0 - 5km	5	118	123	4.1	95.9	100.0
6 - 8km	2	50	52	3.8	96.2	100.0
9 or more	8	154	162	4.9	95.1	100.0
<i>Total</i>	15	322	337	4.5	95.5	100.0

Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

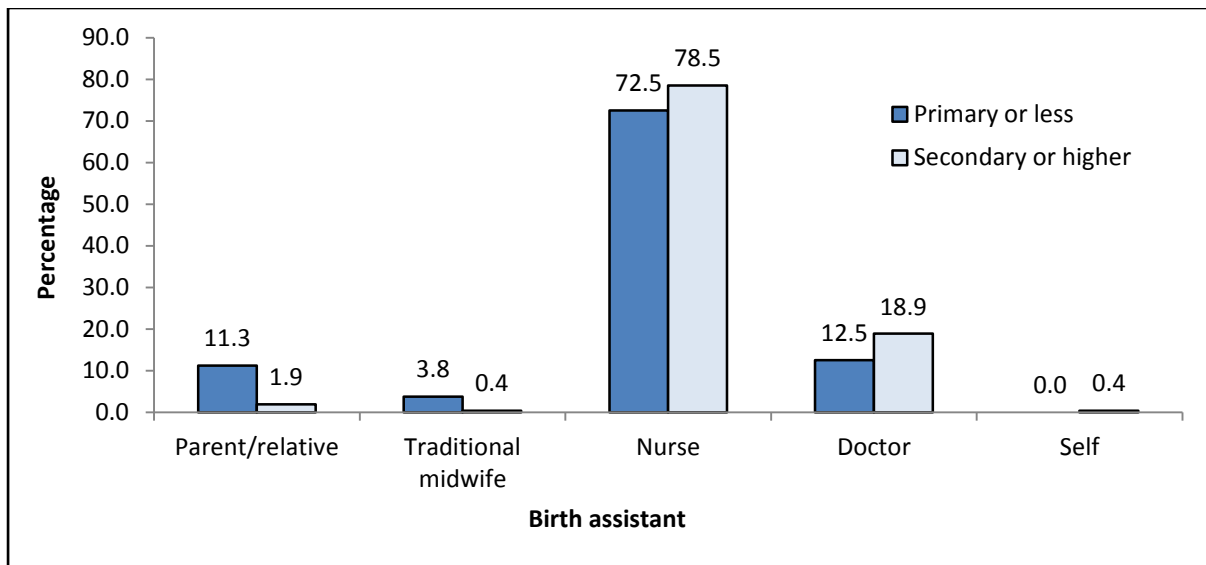
Significance level: * = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$

Note: Some of the variables do not equal to a total of 345 cases due to missing data

4.2.2.2. Maternal education and facility deliveries

Figure 8 shows type of birth assistant present during the woman's delivery as well as how maternal education was a factor. The results indicate that the majority of women with secondary or higher levels of education were assisted by a nurse and a doctor (i.e. 78.5% and 18.9% respectively), compared to those with primary education or less. The majority of women with primary education or less (72.5%), as well as those with secondary or higher education (78.5%) were assisted by a nurse at delivery. Among women who were assisted by a doctor, 18.9% reported that they had secondary or higher levels of education and 12.5% reported that they had primary education or less. About 11.3% of women with primary education or less were assisted by a parent (or relative), while 3.8% were assisted by a traditional midwife during delivery.

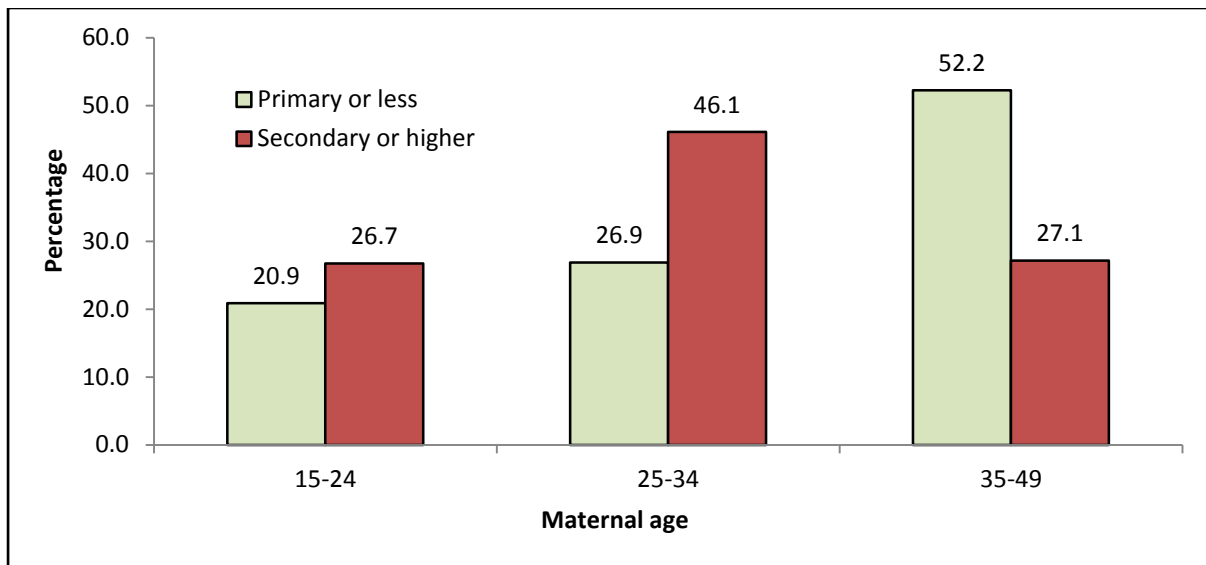
Figure 8: Utilization of facility deliveries by birth assistant and maternal education



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

Figure 9 shows the utilization of health facilities during birth by maternal education and maternal age. The results indicate that 52.2% of women aged 35-49 years with primary education or less, used facility deliveries higher than women in the other age cohorts. This was followed by 46.1% of women aged 25-34 years with secondary or higher educational levels. Comparing all age cohorts, the use of facility deliveries was lower among women aged 15-24 years with both primary education or less and secondary or higher education. Therefore, one can deduce that there is a positive relationship between age and use of facility deliveries, particularly among women with primary or lower levels of education.

Figure 9: Utilization of facility deliveries by maternal education and age

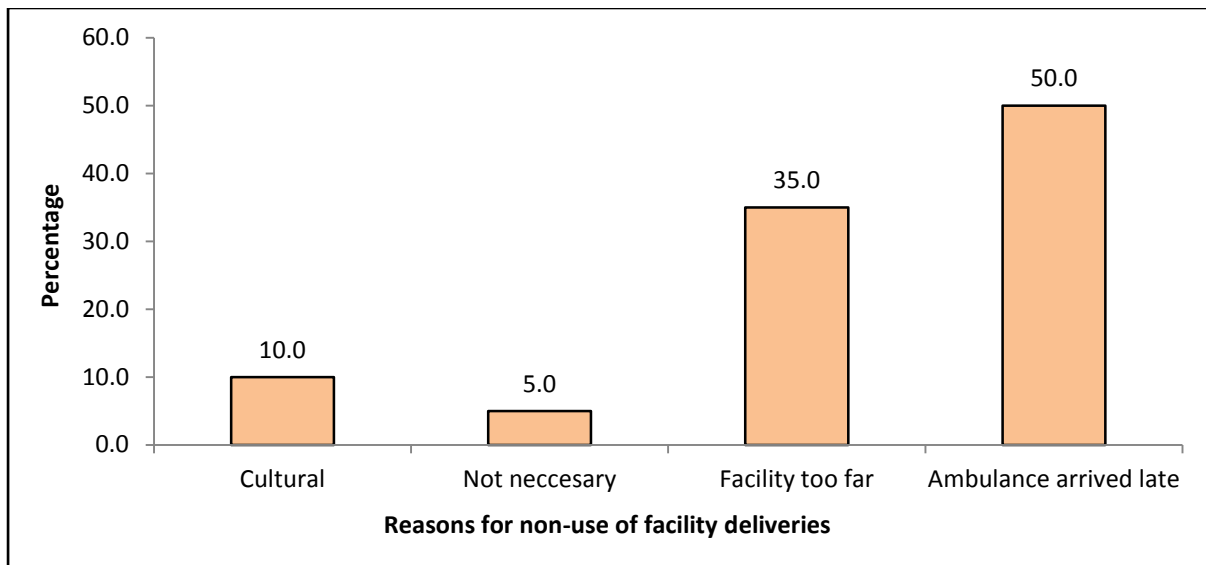


Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

4.2.2.3. Reasons for non-use of facility deliveries

Figure 10 shows the reasons for non-use of facility deliveries. The majority (50.0%) of the women reported that the reason they did not use facility deliveries was that the ambulance arrived late. More than one-third (35.0%) indicated that the reason they did not use facility deliveries was due to the facility being too far. However, about 10.0% of the women reported that cultural reasons hindered them from utilizing facility deliveries, while 5.0% felt it was not necessary for them to use facility deliveries.

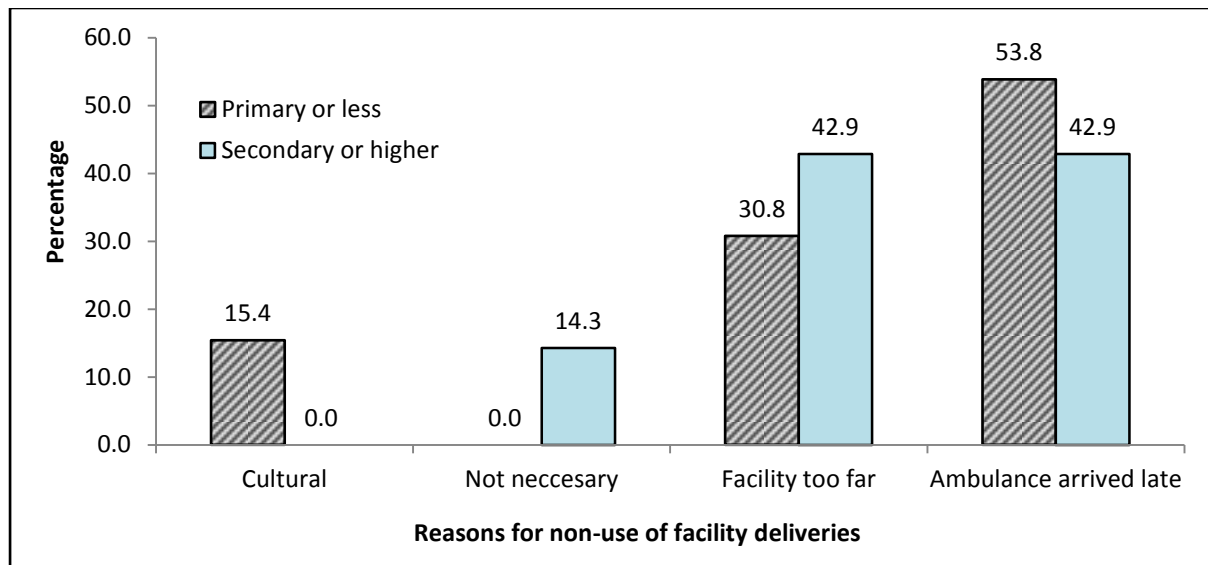
Figure 10: Reasons for non-use of facility deliveries



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

Figure 11 shows that the majority (53.8%) of women with primary education or less reported that the reason they did not use facility deliveries was that the ambulance arrived late, and 15.4% of the women indicated that they did not use facility deliveries due to cultural reasons. Moreover, a considerable percentage (30.8%) of women with primary education or less reported that they did not use facility deliveries due to the facility being too far. For women with secondary or higher educational levels, the highest reason for non-use of facility deliveries was that the ambulance arrived late (42.9%) and that the facility was too far (42.9%); just 14.3% of women with secondary or higher educational levels reported that they felt it was not necessary for them to deliver their babies in health care facilities.

Figure 11: Reasons for non-use of facility deliveries by maternal education



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014



4.2.3. Postnatal care

4.2.3.1. Postnatal care utilization

Table 7 shows the results regarding postnatal services. The results show that marital status ($P < 0.001$), place of residence ($P < 0.001$), transport to health facility ($P < 0.01$), payment to health facility ($P < 0.05$), and distance to health facility ($P < 0.05$), were factors that were significantly associated with postnatal services. The use of postnatal services was more prevalent among women aged 25-34 years (49.7%), followed by those aged 35-49 years (49.6%). This shows that the rate of postnatal services utilization was high among women aged 25-49 years compared to those aged less than 25 years. Regarding maternal education, women with primary education or less reported higher rates (51.3%) of postnatal care utilization compared to women with secondary or higher levels of education (48.3%). Married women reported higher rates of postnatal care utilization than those who were not married. The results further indicate that use of postnatal services increased with parity. This means that women with four or more children had higher rates of postnatal care utilization than women with less than four children. Women from Mqanduli had the highest rates of postnatal service utilization (66.7%), followed by women from Tsolo (58.9%) – the lowest was reported among women from Qumbu at only 17.0%. The results indicated that income

was an important factor in the utilization of postnatal services, where women who reported that their monthly income was from R801 or more had higher rates of postnatal service utilization. The analysis of access variables indicated that use of postnatal services was high among women who reported that they used private transport, paid from R1 to R15, and travelled for nine kilometres or more to get to the health facility.

Appendix E shows the percentage distribution of the number of postnatal check-ups. The majority (70.5%) of the women reported that they had one to two postnatal check-ups, followed by women who went for three to four postnatal check-ups (19.3%). However, only 10.2% reported that they went for five or more postnatal check-ups. Also noticeable from **Appendix E** is that the use of postnatal services decreased with number of postnatal check-ups – whereby the majority of women tended to go for at least two check-ups compared to four or more. **Appendix F** shows that the majority of women reported that they were assisted by a nurse when they attended postnatal services, and only 20.1% of women reported that they were assisted by a doctor.

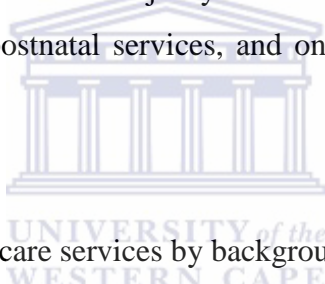


Table 7: Distribution of postnatal care services by background characteristics

Variables	Postnatal check-up (N)			Postnatal check-up (%)		
	None	Checked	Total	None	Checked	Total
Predisposing Factors						
Maternal age						
15-24	44	39	83	53.0	47.0	100.0
25-34	73	72	145	50.3	49.7	100.0
35-49	59	58	117	50.4	49.6	100.0
<i>Total</i>	176	169	345	51.0	49.0	100.0
Maternal education						
Primary or less	39	41	80	48.8	51.3	100.0
Secondary or higher	137	128	265	51.7	48.3	100.0
<i>Total</i>	176	169	345	51.0	49.0	100.0
Marital status						
Not married	133	104	237	56.1	43.9	100.0
Married	42	65	107	39.3	60.7	100.0
<i>Total</i>	175	169	344	50.9	49.1	100.0
Parity						
1 child	67	56	123	54.5	45.5	100.0
2 - 3 children	82	79	161	50.9	49.1	100.0
4 or more children	27	32	59	45.8	54.2	100.0
<i>Total</i>	176	167	343	51.3	48.7	100.0
Enabling Factors						
Place of residence						
Tsolo	60	86	146	41.1	58.9	100.0
Qumbu	83	17	100	83.0	17.0	100.0

Mqanduli	33	66	99	33.3	66.7	100.0
<i>Total</i>	176	169	345	51.0	49.0	100.0
Employment status						
Employed	18	21	39	46.2	53.8	100.0
Unemployed	158	148	306	51.6	48.4	100.0
<i>Total</i>	176	169	345	51.0	49.0	100.0
Monthly income						
No income	39	29	68	57.4	42.6	100.0
R1 - R800	115	115	230	50.0	50.0	100.0
R801 and more	21	24	45	46.7	53.3	100.0
<i>Total</i>	175	168	343	51.0	49.0	100.0
Transport to health facility					**	
Walking	63	37	100	63.0	37.0	100.0
Public transport	78	95	173	45.1	54.9	100.0
Private transport	29	37	66	43.9	56.1	100.0
<i>Total</i>	170	169	339	50.1	49.9	100.0
Payment to health facility					*	
Nothing	63	39	102	61.8	38.2	100.0
R1 - R15	33	43	76	43.4	56.6	100.0
R16 or more	72	84	156	46.2	53.8	100.0
<i>Total</i>	168	166	334	50.3	49.7	100.0
Distance to health facility					*	
0 - 5km	74	49	123	60.2	39.8	100.0
6 - 8km	23	29	52	44.2	55.8	100.0
9 or more	72	90	162	44.4	55.6	100.0
<i>Total</i>	169	168	337	50.1	49.9	100.0

Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

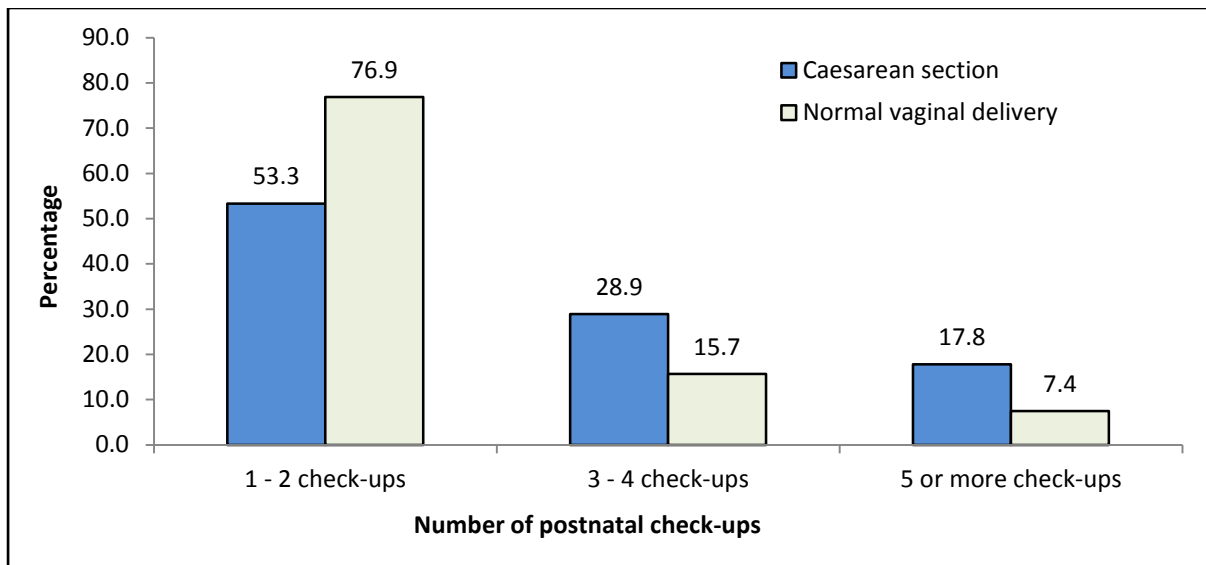
*Significance level: * = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$*

Note: Some of the variables do not equal to a total of 345 cases due to missing data

UNIVERSITY of the
WESTERN CAPE

The aim of **Figure 12** is to examine whether the birth method used had a relationship with the number of postnatal check-ups. Most women who went for at least two postnatal check-ups had delivered through normal vaginal delivery. The results indicated that the majority (53.3%) of women who delivered through a Caesarean section went for one to two postnatal check-ups. Likewise, the majority (76.9%) of women who delivered through normal vaginal delivery went for one to two check-ups. The majority of women who reported that they delivered through a Caesarean section went for three or more postnatal check-ups, while the use of three or more postnatal check-ups was low among women who had a normal vaginal delivery.

Figure 12: Percentage distribution of postnatal check-ups by birth method

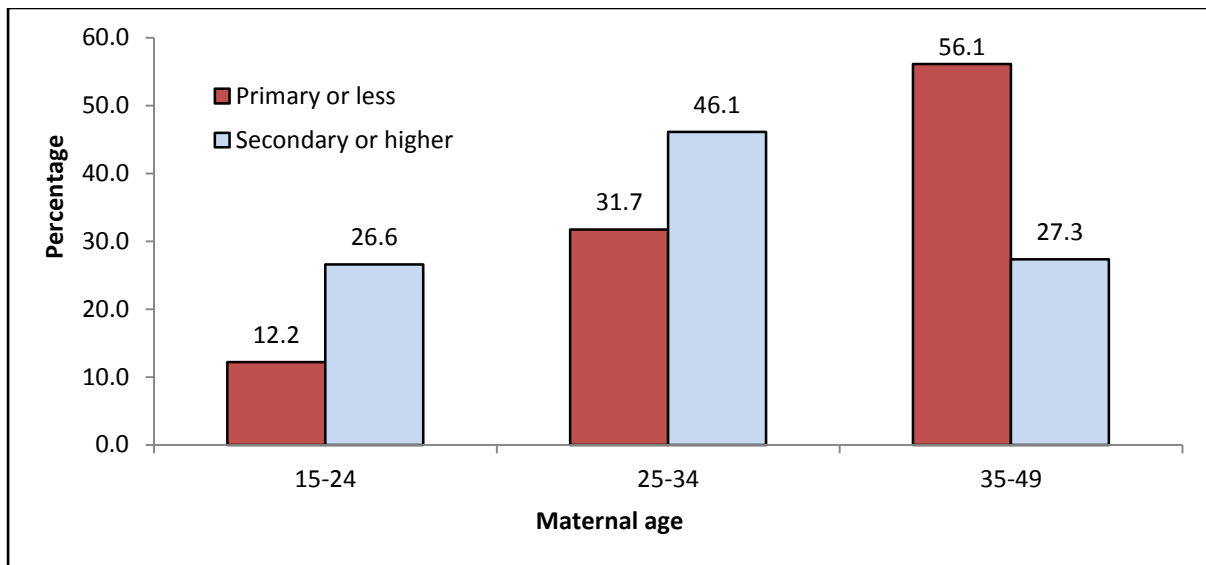


Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

4.2.3.2. Maternal education and postnatal care

Figure 13 shows the utilization of postnatal care by maternal education and maternal age. The results indicate a higher use of postnatal services among women aged 35-49 years with primary education or less (56.1%). However, the proportions are lower among those aged 15-24 years, who reported having primary education or less, with the proportions of 12.2%. On the contrary, for women with secondary or higher educational levels, the use of postnatal services was high among those aged 25-34 years, and lower among those aged 15-24 years. The results indicated that use of postnatal services among women with primary education or less increased with age.

Figure 13: Utilization of postnatal services by maternal education and age

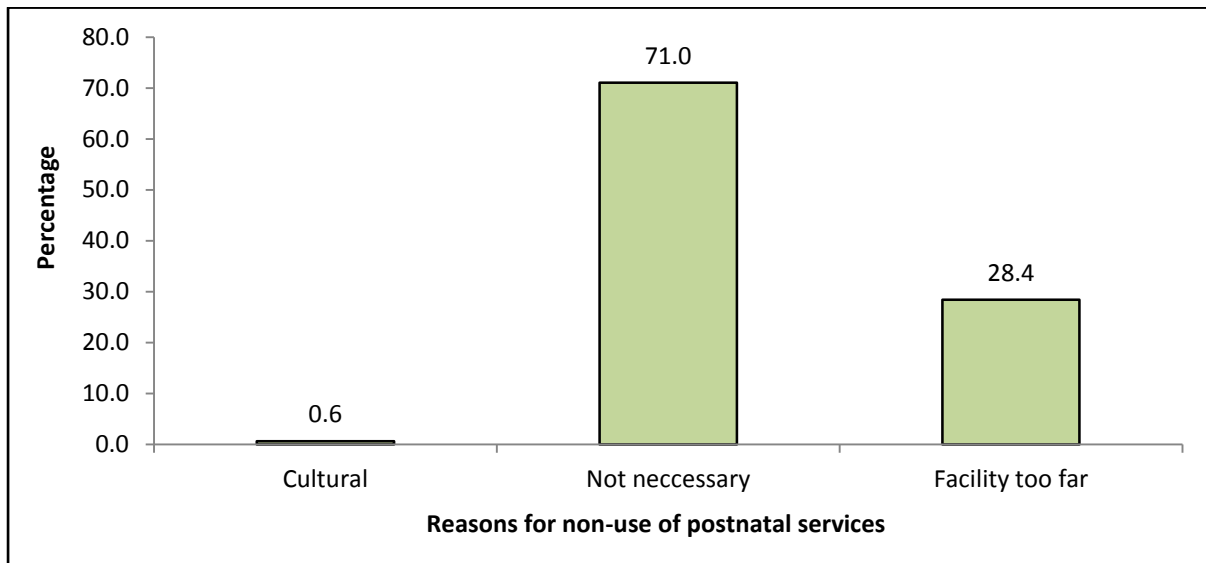


Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

4.2.3.3. Reasons for non-use of postnatal services

Figure 14 shows the results pertaining to reasons for non-use of postnatal services by women of child-bearing age. About 71.0% of women reported that they did not use postnatal services because they felt it was not necessary. More than a quarter (28.4%) of the women reported that they did not use postnatal services due to the facility being too far.

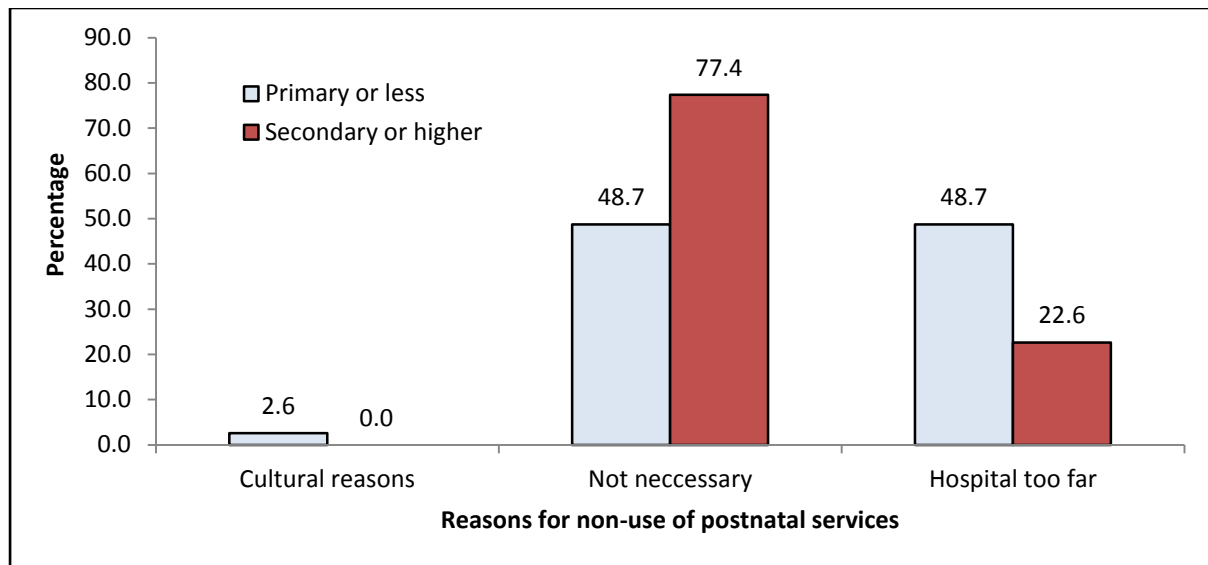
Figure 14: Reasons for non-use of postnatal services



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

Figures 15 shows the results pertaining to reasons for not using postnatal services by maternal education. About 77.4% of women with secondary or higher educational levels reported that they did not use postnatal services because it was not necessary. Similar results are seen among women with primary education or less. About 48.7% said it was not necessary to use postnatal services and another 48.7% said the hospital was too far. Only 2.6% of women with primary education or less reported that cultural factors were the reason that they did not use postnatal services.

Figure 15: Reasons for non-use of postnatal services by maternal education



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

4.3. Multivariate analysis

4.3.1. Antenatal care



Table 8 shows the odds ratios of antenatal care utilization in the study area. The predictor variables are not statistically significant (as shown by their respective *p-values*) and this implies that they have no strong effect on the use of antenatal services in the study area. The results show that women who reported that they had secondary or higher educational levels were 1.85 times more likely to use antenatal services than women with primary education or less. Use of antenatal services decreased with maternal age, where women aged 35-49 years were 0.71 times less likely to use antenatal services than women aged 15-24 years. Similarly, use of antenatal services also decreased with parity, where women who reported that they had four or more children were 0.57 times less likely to use antenatal services than women who had one child. Married women were 1.93 times more likely to use antenatal services than women who were not married.

The enabling factors indicated that women from Qumbu were 3.15 times more likely to use antenatal service than women from Tsolo. Interestingly, women who were unemployed were 6.23 times more likely to use antenatal services than women who were employed. The access

characteristics indicated that women who reported that their monthly income was R801 or more were 13.12 times more likely to use antenatal services than those who reported that they had no income. Women who reported that they used private transport to access the health care facility, were 1.12 times more likely to use antenatal services than those who walked to the health care facility. Moreover, women who reported that they travelled distances of 6 - 8kilometres to access the health care facility were 3.84 times more likely to use antenatal services than women who travelled distances of up to five kilometres.

Table 8: Binary logistic regression model (odds ratios) for antenatal care utilization

Variables	β	P-value	Odds ratio	95% C.I.	
				Lower	Upper
Predisposing Factors					
<i>Maternal education</i>					
Primary or less [®]			1.00		
Secondary or higher	0.6	0.39	1.85	0.5	7.5
<i>Maternal age</i>					
15-24 [®]		0.95	1.00		
25-34	-0.1	0.92	0.90	0.1	6.6
35-49	-0.3	0.78	0.71	0.1	7.6
<i>Marital status</i>					
Not married [®]			1.00		
Married	0.7	0.38	1.93	0.4	8.5
<i>Parity</i>					
1 child [®]		0.90	1.00		
2-3 children	-0.2	0.79	0.79	0.1	4.4
4 or more children	-0.6	0.65	0.57	0.1	6.3
Enabling Factors					
<i>Place of residence</i>					
Tsolo [®]		0.64	1.00		
Qumbu	1.1	0.38	3.15	0.2	40.1
Mqanduli	0.1	0.94	1.07	0.2	6.9
<i>Employment status</i>					
Employed [®]			1.00		
Unemployed	1.8	0.12	6.23	0.6	62.3
<i>Monthly income</i>					
No income [®]		0.34	1.00		
R1 - R800	0.7	0.43	2.02	0.4	11.6
R801 or more	2.6	0.14	13.12	0.4	409.5
<i>Transport to health facility</i>					
Walking [®]		0.46	1.00		
Public transport	-0.9	0.36	0.41	0.1	2.8
Private transport	0.1	0.92	1.12	0.1	11.8
<i>Distance to facility</i>					
0 - 5km [®]		0.54	1.00		
6 - 8km	1.3	0.28	3.84	0.3	42.9
9km or more	0.6	0.52	1.83	0.3	11.3
Constant	0.6	0.72	1.88		

Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

® = Reference category

4.3.2. Delivery care

Table 9 shows the binary logistic regression model (odds ratios) for utilization of facility deliveries by women in the study area. As with the antenatal care analysis, some of the predictor variables are not statistically significant which means that they have no strong effect on the use of deliveries in health care facilities. Regarding the predisposing factors, the results indicated that women with secondary or higher educational levels were 6.34 times more likely to deliver their babies in health care facilities than women with primary education or less. Moreover, secondary or higher educational levels were significantly associated with delivery care utilization. Married women were 0.43 times less likely to deliver their babies in health care facilities than women who were not married. Furthermore, women who had two to three children were 1.34 times more likely to deliver their babies in health care facilities than those who had only one child. Also, women who had four or more children were 0.47 times less likely to deliver their babies in health care facilities than women who had one child.

The enabling factors show that women who reported that they were unemployed were 7.20 times more likely to deliver their babies in health care facilities than those who were employed. The results show that for women in the study area, income was a factor in the use of facility deliveries, where women who reported that their monthly income was R801 or more were 1.13 times more likely to deliver their babies in health care facilities than those who had no income. The access characteristics indicated that women who reported that they used public transport to access the health care facility were more likely to deliver their babies in health care facilities than those who walked. Also, women who paid R16 or more to access the health facility were 7.99 times more likely to deliver their babies in health care facilities than those who did not pay. Moreover, women who travelled distances of six to eight kilometres were 3.01 times more likely to deliver their babies in health care facilities than those who travelled up to five kilometres.

Table 9: Binary logistic regression model (odds ratios) for delivery in health care facilities

Variables	β	P-value	Odds ratio	95% C.I.	
				Lower	Upper
Predisposing Factors					
<i>Maternal education</i>					
Primary or less [®]			1.00		
Secondary or higher	1.8	0.01**	6.34	1.7	24.2
<i>Marital status</i>					
Not married [®]			1.00		
Married	-0.8	0.19	0.43	0.1	1.5
<i>Parity</i>					
1 child [®]		0.41	1.00		
2-3 children	0.3	0.70	1.34	0.3	6.0
4 or more children	-0.8	0.38	0.47	0.1	2.5
Enabling Factors					
<i>Employment status</i>					
Employed [®]			1.00		
Unemployed	2.0	0.10	7.20	0.7	75.9
<i>Monthly income</i>					
No income [®]		0.32	1.00		
R1 - R800	-1.3	0.30	0.27	0.0	3.2
R801 or more	0.1	0.95	1.13	0.0	38.3
<i>Transport to health facility</i>					
Walking [®]		0.16	1.00		
Public transport	-3.7	0.06	0.03	0.0	1.1
Private transport	-3.3	0.08	0.04	0.0	1.5
<i>Payment to health facility</i>					
None [®]		0.24	1.00		
R1 - R15	1.3	0.42	3.62	0.2	82.1
R16 or more	2.1	0.14	7.99	0.5	122.3
<i>Distance to health facility</i>					
0 - 5km [®]		0.53	1.00		
6 - 8km	1.1	0.27	3.01	0.4	21.7
9km or more	0.7	0.44	2.06	0.3	12.9
Constant	2.8	0.20	16.20		

Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

[®] = Reference category

Significance level: ** = $P < 0.01$

4.3.3. Postnatal care

The binary logistic regression model for postnatal care utilization (**Table 10**) indicated that place of residence ($P < 0.001$) and monthly income ($P < 0.05$) were factors that were significantly associated with utilization of postnatal services. Use of postnatal services decreased with maternal age, where women aged 35-49 years were 0.53 times less likely to use postnatal services than women aged 15-24 years. Women with secondary or higher levels of education were 1.44 times more likely to use postnatal services than women with primary education or less. Married women were 1.31 times more likely to use postnatal services than

those who were not married. The results show that use of postnatal services increased with parity, where women who reported that they had four or more children reported were 1.35 times more likely to use postnatal services than women with one child.

The enabling factors indicated that women from Qumbu (odds ratio = 0.07) were significantly ($P < 0.001$) less likely to use postnatal services than women from Tsolo (odds ratio = 1.00). Women from Mqanduli were 1.07 times more likely to use postnatal services than women from Tsolo. Also, women who reported that their monthly income was from R1 to R800 (odds ratio = 2.74 and $P < 0.01$) and those who had a monthly income of R801 or more (odds ratio = 4.73 and $P < 0.05$) were significantly more likely to use postnatal services than women who had no income. Furthermore, women who reported that they were unemployed were 2.10 times more likely to use postnatal services than those who were employed. The access characteristics indicated that women who reported that they travel six to eight kilometres to access their health care facility were significantly more likely (odds ratio = 2.50 and $P < 0.05$) to use postnatal services than those who travelled up to five kilometres. Women who used public transport to access the health facility were 2.93 times more likely to use postnatal services than those who walked to hospital. The results also revealed that use of postnatal services decreased with the amount of money women had to pay in order to access the health facility. Women who reported that they paid R16 or more to access the health facility were less likely to use postnatal services than women who did not make any payment.

Table 10: Binary logistic regression model (odds ratios) for postnatal care utilization

Variables	β	P-value	Odds ratio	95% C.I.	
				Lower	Upper
Predisposing Factors					
<i>Maternal age</i>					
15-24 [®]		0.32	1.00		
25-34	-0.2	0.65	0.85	0.4	1.8
35-49	-0.6	0.17	0.53	0.2	1.3
<i>Maternal education</i>					
Primary or less [®]			1.00		
Secondary or higher	0.4	0.26	1.44	0.8	2.7
<i>Marital status</i>					
Not married [®]			1.00		
Married	0.3	0.35	1.31	0.7	2.3
<i>Parity</i>					
1 child [®]		0.80	1.00		
2-3 children	0.2	0.57	1.21	0.6	2.3
4 or more children	0.3	0.55	1.35	0.5	3.6
Enabling Factors					
<i>Place of residence</i>					
Tsolo [®]		0.00***	1.00		
Qumbu	-2.7	0.00***	0.07	0.0	0.2
Mqanduli	-0.1	0.86	1.07	0.5	2.4
<i>Employment status</i>					
Employed [®]			1.00		
Unemployed	0.7	0.21	2.10	0.7	6.6
<i>Monthly income</i>					
No income [®]		0.02*	1.00		
R1 - R800	1.0	0.01**	2.74	1.3	5.8
R801 or more	1.6	0.02*	4.73	1.3	17.3
<i>Transport to health facility</i>					
Walking [®]		0.73	1.00		
Public transport	1.1	0.44	2.93	0.2	43.5
Private transport	1.0	0.44	2.81	0.2	38.3
<i>Payment to health facility</i>					
None [®]		0.29	1.00		
R1 - R15	-1.6	0.23	0.20	0.0	2.8
R16 or more	-1.9	0.15	0.15	0.0	1.9
<i>Distance to health facility</i>					
0 - 5km [®]		0.13	1.00		
6 - 8km	0.9	0.05*	2.50	1.0	6.3
9km or more	0.7	0.12	2.06	0.8	5.0
Constant	-1.0	0.21	0.35		

Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

[®] = Reference category

Significance level: * = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$

Chapter V

Discussion

5.1 Introduction

The main aim of the study was to investigate whether a relationship exists between maternal education and utilization of maternal health care services in the study area. Another aim was to investigate the rates of maternal health care utilization and the reasons for non-use of these services. It is important to understand the rates of maternal health care use among women in rural areas. As noted in chapter one, when health care provision and utilization is investigated at national (and provincial) level, things tend to seem okay, but if one goes deeper and looks at it from the district or municipal level, one will notice a lot of shortcomings. The following is a discussion of the findings from this study, as well as possible explanations of factors associated with the current state of maternal health care services in the study area.

5.2. Maternal health care services and access

One of the principal findings from the descriptive analysis is that the utilization of antenatal and delivery services was high, but use of postnatal services was low. Higher rates of antenatal and delivery services have been found by several researchers studying maternal health care use among women from rural areas in developing countries (Beksinska *et al*, 2006). Even though postnatal services are as important as the other dimensions of maternal health care services, there is generally not much focus on the postnatal phase (Beksinska *et al*, 2006). Several studies have found that the utilization rates of postnatal services fall below 50%, which is unacceptable, more so in countries with high maternal mortality ratios (Dhaka *et al*, 2007; Chimankar and Sahoo, 2011; Regassa, 2011; Do & Hotchkiss, 2013).

The descriptive analysis of the access factors highlighted that the majority of women surveyed did not live in close proximity to health care facilities. The situation in rural areas is quite different from that of urban settings. Rural areas are spread-out and health care facilities are generally located far away from the people they are meant to serve. In turn, this makes it

difficult for women to access essential health care services due to financial problems. The study found that women have to travel nine kilometres or more in order to access maternal health care services. This is a double-burden for these women, who already do not have much financial means to access these facilities. Women who are located very far from health facilities have to pay large amounts of money to get to those facilities. This is due to that these women have to take several taxi's to get to the health facility. For instance, women from the rural areas of Tsolo have to take a taxi to town, and then another taxi which will drop them at Dr Malizo Mpehle Memorial Hospital. Therefore, distance has serious implications on the use of maternal health services, where women who travel long distances tend to find it difficult to use the available maternal health care services. Studies have found that distance is a barrier to utilization of maternal health care services (Tsoka *et al*, 2003; Ensor and Cooper, 2004, Gage, 2007; Harris *et al*, 2011; Silal *et al*, 2012).

5.3. Explanations for non-use of maternal health services

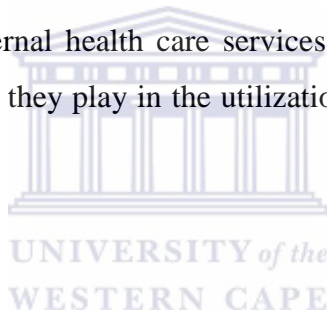
The highest rate of non-use of maternal health care services was recorded among women who reported that they were not using postnatal services. Among the reasons given for non-use of maternal health care services, the majority of women reported that: (a) it was not necessary to use maternal health services; (b) the facilities were too far; and (c) the ambulance arrived late. These findings point to the fact that distance is a barrier to maternal health care utilization by pregnant women in the study area. These results are echoed by the literature. A study in Malawi by Kambala *et al* (2011) found that women did not make full use of maternal health care services because of problems experienced, such as: walking long distances to get to health facility, having to deal with rude health personnel, as well as other barriers.

Moreover, it should be noted that distance is not the only reason women do not utilize maternal health care services. The attitudes women have towards the health care system and the services offered within this system can also be a factor in the low use of maternal health services. For instance, one might find that even if women are not located far away from the health care facility, they might not see the need to use the services offered. Over seven in ten women felt that it was not necessary to use postnatal services. As noted above, the current state with regard to postnatal care may be attributed to that health care institutions as well as

women themselves do not give much attention to the postnatal period. The only time women go for postnatal check-ups is when complications arise, either with the baby or the mother. A study by Tsawe and Sathiya Susuman (2014) found that women are often not referred for [or told about] postnatal services by health care professionals, and this leads to lowered use rates of postnatal services.

5.4. Determinants of maternal health care utilization

As noted in chapter three, the predisposing factors are demographic factors which drive the use of maternal health care services (Young *et al*, 2005). Among the demographic factors, maternal age and maternal education are among the essential factors that are often linked to maternal health care utilization (Ibnouf *et al*, 2007; Simkhada *et al*, 2008; Regassa, 2011). One of the aims of the study was to examine the factors (*predisposing* and *enabling*) that determine the utilization of maternal health care services. What follows is a discussion of each of these factors and the role they play in the utilization of maternal health care services within the study area.



5.4.1. Predisposing factors

5.4.1.1. Maternal education

The multivariate analysis showed that even though maternal education is not statistically significant with antenatal care, the results indicated that use of antenatal services increase with maternal education. Women with secondary or higher levels of education were more likely to use antenatal services compared to those with primary education or less. Regarding delivery care, women with secondary or higher levels of education were significantly more likely to use facility deliveries compared to women with primary education or less. The use of delivery care increased with maternal education, where women with secondary or higher levels of education had higher percentages of maternal health care use. This is an important finding which supports the literature in that higher levels of maternal education are directly linked to use of maternal health care services (Babalola and Fatusi, 2009; Saxena *et al*, 2013). Moreover, these results are further supported by the descriptive analysis where it was found that a higher percentage of women in the study area had secondary or higher levels of

education. Women with higher levels of education are often more willing to adopt modern health care services and are more likely to be concerned about their health compared with women who have lower levels of education who often tend to stick to traditional methods of health (Chimankar and Sahoo, 2011).

The low utilization of postnatal services in the study area is a concern, because postnatal services are an important phase in maternal health care and should be taken seriously. Unlike the other dimensions of maternal health care services (i.e. *antenatal care* and *delivery care*) the use of postnatal services was higher among women with primary education or less. This low rate of postnatal services use could be explained by the attitudes women have towards postnatal care. As noted above, women often don't feel the need to use postnatal services unless complications arise after childbirth. Interestingly, women who gave birth through a Caesarean section had higher percentages of postnatal check-ups compared to those who gave birth through vaginal delivery. These findings suggest that women who have given birth through a Caesarean section are expected to have more postnatal complications than women who have given birth through vaginal delivery. On the contrary, the multivariate analysis indicated that women with secondary or higher levels were more likely to use postnatal services than those with primary education or less – which confirms what has been noted in the literature (Chimankar and Sahoo, 2011; Regassa, 2011).

5.4.1.2. Maternal age

Age is an important demographic factor which has an influence on many social aspects of individuals. The multivariate analysis results indicated that the use of antenatal services and postnatal decreases with maternal age – meaning that as women age, they tend to use antenatal services less. Similarly, the bivariate results indicated that the use of delivery care decreased with maternal age. Studies have suggested that women at older ages (i.e. those aged 35-49 years) tend to think that they are better equipped, through experience, to deal with pregnancy-related complications (Birmeta *et al*, 2013). As noted above, the low use of maternal health care services at older ages could be explained by that older women tend to believe that they have the necessary skills to handle any complications that may arise during the period around pregnancy and childbirth.

5.4.1.3. Marital status

Research has shown that marital status influences the use of maternal health care services (Mekonnen and Mekonnen, 2002). Women who indicated that they were married were more likely to use antenatal care and postnatal care, while women who reported that they were not married were more likely to use facility deliveries. The results regarding marital status and use of facility deliveries confirm results found from the analysis of the Ethiopian Demographic and Health Surveys of 2000 and 2005, which also showed that women who were not married were more likely to use facility deliveries than those who were married (Mehari, 2013). Marital status is an important predisposing factor to maternal health care – and the premise is that married people have the power to influence each other in terms of health care use than people who are not married. Another study which focused on the Nigeria Demographic and Health Survey found that women who indicated that they were married were less likely to use antenatal care services than those who were never married (Babalola, 2014). The descriptive analysis indicated that the majority of women were not married. Since maternal health care services are offered for free, and delivery services are essential to reducing maternal and infant mortality – women will tend to opt for facility deliveries more compared to non-facility deliveries. This suggests that marital status might not always be a factor in maternal health care use.

5.4.1.4. Parity

Childbirth is central to maternal health care. Studies have found that parity influences the use of maternal health care services (Simkhada *et al*, 2008; Regassa, 2011). The multivariate results indicated that use of antenatal and delivery services decrease with parity. This meant that women who have given birth to four or more children were less likely to use antenatal and delivery services than women who gave birth to only one child. Literature shows that women who have given birth before tend to think that they are better equipped to handle pregnancy complications and see no need for the utilization of maternal health care services (Simkhada *et al*, 2008; Regassa, 2011; Arthur, 2012). Conversely, women who reported that they had given birth to four or more children were more likely to use postnatal services. In fact, the use of postnatal services increased with parity. An explanation for this trend is that

older women who have given birth before will tend to experience more pregnancy-related complications at older ages compared to younger women.

5.4.2. Enabling factors

5.4.2.1. Place of residence

Place of residence is an important factor in explaining use of maternal health care services (Dagne, 2010; Chimankar and Sahoo, 2011). The results indicated that nine in ten women in all the three selected areas reported that they used antenatal and delivery services. The multivariate analysis showed variations in maternal health care use among the different areas. For example, the multivariate analysis suggests that there is a high uptake of antenatal services (compared to delivery and postnatal care) in Qumbu, whereas there is a high uptake of postnatal services (compared to antenatal and delivery care) in Mqanduli. Studies have found that women in urban areas tend to use maternal health services more than women in rural areas (Munsur *et al*, 2010; Mattson, 2010). However, even though this study only considered rural areas, the results show variation in the use of maternal health services within the selected areas, particularly concerning use of postnatal services. Location is important with regard to access and use of maternal health care services. If women reside far from the health care facility, they will not be able to fully use the services due to distance barriers.

5.4.2.2. Employment status and monthly income

Having a source of income enables women to have better access and use of maternal health services. Being employed is also an important factor in maternal health care utilization. It is argued that women with a higher socio-economic status (*i.e. those who are employed and have a good source of income*), tend to use maternal health care services at a higher rate than women who have a lower socio-economic status (Chimankar and Sahoo, 2011). However, the multivariate analysis results indicated that women who reported that they were unemployed were more likely to use maternal health care services than those who reported that they were employed. This shows that in the context of the study area, being employed is not a factor which relates to maternal health care use. The descriptive analysis indicated that the majority of women in the study area reported that they were unemployed. One would expect that

women who are unemployed would use maternal health services at a rate far less than women who are employed. Therefore, it is worth noting that even though unemployment is high in the Eastern Cape Province – it does not affect the use of maternal health care services among women within the study area.

5.4.2.3. Transport, payment and distance to health facilities

The results revealed some variations with regard to use of the different dimensions of maternal health care. The mode of transport that women were more likely to use to access antenatal and postnatal services was private transport, while other women were more likely to walk in order to access delivery services. Oftentimes women in the study are have to rely on private transport to take them to health care facilities as there is not enough ambulances to serve the entire province. Moreover, the results indicated that the majority of women who reported using maternal health care services were traveling distances of six kilometres or more in order to access health care facilities. This shows that health care facilities are not located in close proximity to the women, hence they have to travel these distances to access maternal health services. Transportation, payment and distance to health care are important enabling factors for maternal health care utilization, particularly in rural contexts. If women are located far away from health facilities, they will have to pay for transport to take them to those facilities. This is often difficult for women from lower socio-economic backgrounds, more particularly in rural areas. Studies have found that transportation costs and distance to health facilities have an influence on the use of maternal health care, more so in rural areas (Tsoka *et al*, 2003; Gage, 2007; Mattson, 2010; Harris *et al*, 2011).

5.5. Conclusion

The aim of this chapter was to discuss some key findings from the analysis. Predisposing and enabling factors, as outlined above, have an effect on the use of maternal health care services, though this effect varies according to each of the three dimensions of maternal health care. The chapter which follows will elaborate more on this and add some conclusions which speak to the objectives of this study.

Chapter VI

Conclusions and Recommendations

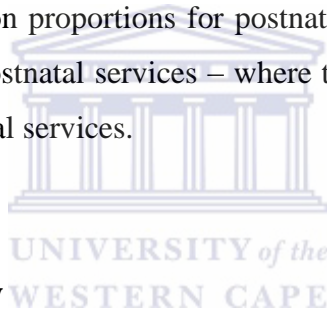
6.1. Conclusions

The importance of maternal health care services cannot be stressed enough. These services are essential in minimising pregnancy-related complications as well as maternal and infant deaths. Findings from this study have pointed to variations in maternal health care use. These variations are better explained by socio-economic and demographic factors which affect the use of maternal health care services. Therefore, it is important to study and understand factors that contribute to maternal deaths as means of reducing the maternal mortality ratio of developing countries, particularly in rural areas. The findings from the study confirm what is known in the literature, in that rates of antenatal and delivery services were high, whereas use of postnatal services was very low. The postnatal phase is completely neglected by women in the study area where the majority of those who did not use these services felt that it was unnecessary for them to use postnatal services. This is a concern because postnatal services are an important phase in maternal health care which is meant to monitor and check for post-delivery complications. Women often don't feel the need to use postnatal services unless complications arise after childbirth. The findings indicated that the attitude women have towards maternal health services determines the frequency with which they use these services. The majority of women who did not use postnatal services indicated that it was not necessary to use these services. Moreover, other factors that played a role in non-use of maternal health care services were that the facility was located too far and ambulances did not arrive on time to assist pregnant women. The study has highlighted various predisposing and enabling factors in order to meet the research objectives and research question outlined in chapter one. These factors have differing effects on the use of maternal health care services. What follows are some concluding remarks which highlight the study objectives.

6.1.2. What determines maternal health care utilization in the study area?

6.1.2.1. Maternal education

Even though maternal education was not statistically significant with some of the dimensions of maternal health care, it did indicate the importance of having higher levels of education with regard to maternal health care use. The findings have indicated that maternal education is an important factor to maternal health care utilization. It was found that women with higher levels of education have a higher rate of antenatal and delivery care use compared to those with lower educational levels. This is an important finding which is supported by the literature. Education has the potential to empower women and give them essential tools to help them understand the need to use maternal health care services. This makes maternal education an essential predisposing factor governing the utilization of maternal health care services. The bivariate analysis of postnatal services indicated that women with lower levels of education had higher utilization proportions for postnatal care. This finding relates to the attitudes women have towards postnatal services – where the majority indicated that it is not necessary for them to use postnatal services.



6.1.2.2. Maternal age and parity

Age is an important determinant of health care utilization. In terms of general health, people at older ages tend to experience more health-related complications. Findings from the study indicated that use of antenatal and delivery services was high among younger women (i.e. those aged 15-24 years). This is the age cohort where women would not be experienced with pregnancy or childbirth; as such, it is expected for these women to take as much precaution as possible during this phase. Conversely, use of postnatal services was higher among women at older ages (i.e. 35-49 years) who had given birth to four or more children. This finding could be explained by that women at older ages might experience more pregnancy-related complications than women at younger ages. As with age, use of antenatal and delivery services decrease with parity. Therefore, these findings suggests that as women grow older and experience more childbirths they tend to use maternal health care services less frequently as they did during their younger years. What is interesting from these findings is the suggestion of a direct link between maternal age and parity with regard to maternal health care utilization.

6.1.2.3. Marital status

The findings indicated variations in the use of maternal health care services explained by marital status. Use of antenatal services was higher among married women, whereas use of delivery and postnatal services was higher among women who were not married. Therefore, being in union had no effect on the use of maternal health care services. Generally, marital status has the power to influence health care utilization in that married people tend to make decisions together. For instance, if one is not feeling well their partner will encourage that person to seek medical care. But this depends on context due to that in some instances, men are absent to matters relating to pregnancy and childbirth, more particularly African men.

6.1.2.4. Place of residence

Even though this study did not consider urban areas, the findings show distinct variations between the areas where it is evident that some areas have better access to health care facilities than others. Location is an important predictor of maternal health care use. Women whose place of residence is located far away from the health facility will tend to use facilities less often than those whose place of residence is located closer to the facility. Variations were found with regard to maternal health care use in the selected areas (Tsolo, Qumbu, and Mqanduli). The findings indicated that women in Qumbu had high rates of antenatal and delivery services utilization, whereas use of postnatal services was high among women from Mqanduli.

6.1.2.5. Employment status and monthly income

Being employed and having a source of income relates to affordability and use of health care services. Having higher monthly income levels was shown to increase the odds of using maternal health care services. However, an interesting finding was that use of antenatal and delivery services was higher among women who reported that they were unemployed. An explanation for this is that, this could be due to the fact that these services are offered free-of-charge. Hence, even women who are unemployed are able to access and use maternal health care services, provided that these services are accessible (i.e. close to them). Nonetheless, it is important to note that women in rural areas have fewer sources of employment and this often

hampers their use of health care services because health care facilities are often located far from them.

6.1.2.6. Transport, payment and distance to health facilities

What is evident from the findings is that transport, payment and distance to health facilities are important factors which enable women to use maternal health care services. In rural areas, health care facilities are often located far from the people they are meant to serve. This poses a serious challenge when it comes to use of these facilities. If women are located far away from health facilities, they will have to pay for transport to take them to those facilities. This is often difficult for women from lower socio-economic backgrounds, more particularly in rural areas.

6.2. Recommendations

The findings have highlighted some of the factors that determine the use of maternal health care services. Even though some of these determinants were not statistically significant with maternal health care use, the rates of maternal health care use indicated important findings. From the findings, distance was seen to be among the greatest determinant of maternal health care use. The majority of women who did not use these services reported that distance was the reason they did not use maternal health services. Due to the fact that most health care facilities are often located far away from people, it is recommended that the Department of Health implement mobile clinics and centralise health care facilities as this will bring essential health services closer to the communities. As things stand, women struggle to use these services due to the costs involved in terms of traveling to health care facilities. Centralising health care facilities would mean that instead of having one hospital that serves several local municipalities or areas, central points which women would have access to health facilities. Moreover, women in the areas need to be educated about the importance of these services, more particularly pertaining to postnatal care. Educating women about the importance of maternal health care use is essential, more so among women who reported that they did not use these services. The attitudes women have towards use of maternal health

services, particular postnatal services is a concern which could be addressed through educating them.



References

Aa, I., Grove, M. A., Haugsjå, A. H., & Hinderaker, S. G. (2011). High maternal mortality estimated by the sisterhood method in a rural area of Mali. *BMC Pregnancy and Childbirth*, 11(56): 1-6. URL: <http://www.biomedcentral.com/1471-2393/11/56>.

Adamu, H.S. (2011). *Utilization of Maternal Health Care Services in Nigeria: An Analysis of Regional Differences in the Patterns and Determinants of Maternal Health Care Use*. Dissertation.

Addai, I. (2000). Determinants of Use of Maternal-child Health Services in Rural Ghana. *Journal of Biosocial Science*, 32(1), 1-15.

Ahmed, S., Creanga, A. A., Gillespie, D. G., & Tsui, A. O. (2010). Economic Status, Education and Empowerment: Implications for Maternal Health Service Utilization in Developing Countries. *PLoS ONE*, 5(6): 1-6. e11190. doi:10.1371/journal.pone.0011190

Alvarez, J.L., Gil, R., Hernández, V., & Gil, A. (2009). Factors associated with maternal mortality in Sub-Saharan Africa: an ecological study. *BMC Public Health*, 9(462): doi:10.1186/1471-2458-9-462.

Andersen, R., & Newman, J.F. (1973). Societal and Individual Determinants of Medical Care Utilization in the United States, *The Milbank Memorial Fund Quarterly*, Health and Society, 51(1): 95-124. doi:10.2307/3349613.

Arthur, E. (2012). Wealth and antenatal care use: implications for maternal health care utilisation in Ghana. *Health Economics Review*, 2(14): 1-8. doi:10.1186/2191-1991-2-14. URL: <http://www.healthconomicsreview.com/content/2/1/14>.

Babalola, B.I. (2014). Determinants of urban-rural differentials of antenatal care utilization in Nigeria. *African Population Studies*, 28(3): 1263-1273.

Babalola, S. & Fatusi, A. (2009). Determinants of use of maternal health services in Nigeria – looking beyond individual and household factors. *BMC Pregnancy and Childbirth*, 9(43): 1-13. URL: <http://www.biomedcentral.com/1471-2393/9/43>

Beksinska, M., Kunene, B., & Mullick, S. (2006). Maternal Care: Antenatal, peri and postnatal. In: Ijumba, P., Padarath, A., editors. *South African Health Review 2006*. Durban: Health Systems Trust. URL: <http://www.hst.org.za/generic/29>.



Birmeta, K., Dibaba, Y., & Woldeyohannes, D. (2013). Determinants of maternal health care utilization in Holeta town, central Ethiopia. *BMC Health Services Research*, 13(256): 1-10. <http://www.biomedcentral.com/1472-6963/13/256>.

Blaauw, D., & Penn-Kekana, M. (2010). Maternal Health. In: Fonn, S., Padarath A, editors. *South African Health Review 2010*. Durban: Health Systems Trust. URL: <http://www.hst.org.za/publications/876>.

Bradshaw, D. (2008). Determinants of Health and their Trends. In: Barron, P., & Roma-Reardon, J. editors. *South African Health Review 2008*. Durban: Health Systems Trust. URL: <http://www.hst.org.za/publications/841>.

Burton, R. (2013). Maternal health: There is cause for optimism. *South African Medical Journal*, 103(8): 520-521. doi:10.7196/SAMJ.7237.

Cadegan, M., English, R., Pillay, Y., & Barron, P. (2012). A Brief Summary of the Strategic Plan for Maternal, Newborn, Child and Women's Health (MNCWH) and Nutrition in South Africa 2012 – 2016. Series name: *Kwik Skwiz*, Issue 2. Kwazulu-Natal: Health Systems Trust.

Celik, Y., & Hotchkiss, D. R. (2000). The socio-economic determinants of maternal health care utilization in Turkey. *Social Science & Medicine*, 50: 1797-1806.

Chakraborty, N., Islam, M.A., Chowdhury, R.I., Bari, W., & Akhter, H.H. (2003). Determinants of the use of maternal health services in rural Bangladesh. *Health Promotion International*, 18(4): 327-337. doi: 10.1093/heapro/dag414.

Chimankar, D. A., & Sahoo, H. (2011). Factors influencing the Utilization of Maternal Health Care Services in Uttarakhand. *Ethno Med*, 5(3): 209-216.

Chopra, M., Lawn, J. E., Sanders, D., Barron, P., Karim, S. S. A., Bradshaw, D., Jewkes, R., Karim, Q. A., Flisher, A. J., Mayosi, B. M., Tollman, S. M., Churchyard, G. J., & Coovadia, H. (2009). Achieving the health Millennium Development Goals for South Africa challenges and priorities. *Lancet*, 374: 1023-1031.

Chweneyagae, D., Delis-Jarrosay, N., Farina, Z., Fawcus, S., Godi, N. P., Khaole, N., Kunene, B., Mhlanga, R. E., Mbambisa, G. Z., Mbombo, N., Molefe, N. E., Moodley, J., Moran, N. F., Pattinson, R. C., Rout, C., Schoon, M., & Seabe, S. J. (2012). The impact of HIV infection on maternal deaths in South Africa. *South African Journal of Obstetrics and Gynaecology*, 18(3): 70-76. doi:10.7196/SAJOG.581.

Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., & Innis, J. (2006). Family planning: the unfinished agenda. *Lancet*, 368(9549):1810-1827. doi:10.1016/S0140-6736(06)69480-4.

Dagne, E. (2010). *Role of socio-demographic factors on utilization of maternal health care services in Ethiopia*. Dissertation. Umeå University: Sweden.

Department of Health, Medical Research Council, OrcMacro. (2007). *South Africa Demographic and Health Survey 2003 (Full Report)*. Pretoria: Department of Health.

Dhaka, S., Chapman, G.N., Simkhada, P.P., van Teijlingen, E.R., Stephens, J., & Raja, A.E. (2007). Utilisation of postnatal care among rural women in Nepal. *BMC Pregnancy and Childbirth*, 7(19): 1-9. doi:10.1186/1471-2393-7-19

Do, M., & Hotchkiss, D. (2013). Relationships between antenatal and postnatal care and postpartum modern contraceptive use: evidence from population surveys in Kenya and Zambia. *BMC Health Services Research*, 13(6): 1-14. <http://www.biomedcentral.com/1472-6963/13/6>.

Doku, D., Neupane, S., & Doku, P.N. (2012). Factors associated with reproductive health care utilization among Ghanaian women. *BMC International Health and Human Rights*, 12(29): 2-8. <http://www.biomedcentral.com/1472-698X/12/29>.

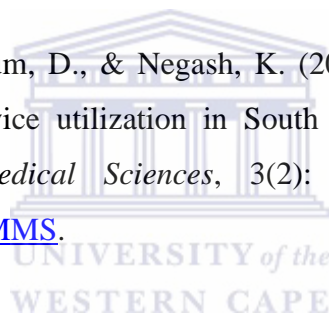
Ebuehi, O.M., & Akintujoye, I. (2012). Perception and utilization of traditional birth attendants by pregnant women attending primary health care clinics in a rural Local Government Area in Ogun State, Nigeria. *International Journal of Women's Health*, 4: 25–34.

Elo, I. T. (1992). Utilization of maternal health-care services in Peru: the role of women's education. *Health Transition Review*, 2(1): 1-20. [Online] Available: <http://dspace.anu.edu.au/bitstream/1885/41194/1/Elo1.pdf>.

El-Sabaa, H.A., Oweedah, N.A-A., & Alhazmi, J.M. (2012). Competence of Midwives versus Non-Midwives Nurses Regarding Postnatal Care in Saudi Arabia. *Journal of American Science*, 8(12): 217-222. <http://www.jofamericanscience.org>.

Ensor, T., & Cooper, S. (2004). Overcoming barriers to health service access: influencing the demand side. *HEALTH POLICY AND PLANNING*, 19(2): 69–79.

Ergano, K., Getachew, M., Seyum, D., & Negash, K. (2012). Determinants of community based maternal health care service utilization in South Omo pastoral areas of Ethiopia. *Journal of Medicine and Medical Sciences*, 3(2): 112-121. Available online at: <http://www.interestjournals.org/JMMS>.



Filippi, V., Ronsmans, C., Campbell, O.M.R., Graham, W.J., Mills, A., Borghi, J., Koblinsky, M., & Osrin, D. (2006). Maternal health in poor countries: the broader context and a call for action. *Lancet*, 368(9546): 1535–1541. DOI:10.1016/S0140-6736(06)69384-7

Gage, A. (2007). Barriers to the utilization of maternal healthcare in rural Mali. *Social Science and Medicine*, 65(8):1666-1682. doi:10.1016/j.socscimed.2007.06.001.

Garrido, G.G. (2009). The impact of adequate prenatal care in a developing country: Testing the WHO recommendations. California Center for Population Research. *On-Line Working Paper Series*, CPR-2009-014. Los Angeles: University of California, Los Angeles.

Govindasamy, P., & Ramesh, B. M. (1997). Maternal Education and the Utilization of Maternal and Child Health Services in India. *National Family Health Survey Subject Reports*, Number 5: 1-28.

Graner, S., Mogren, I., Duong, L. Q., Krantz, G., & Klingberg-Allvin, M. (2010). Maternal health care professionals' perspectives on the provision and use of antenatal and delivery care: a qualitative descriptive study in rural Vietnam. *BMC Public Health*, 10(608): 1-10. <http://www.biomedcentral.com/1471-2458/10/608>.

Gross, K., Alba, S., Glass, T. R., Schellenberg, J. A., & Obrist, B. (2012). Timing of antenatal care for adolescent and adult pregnant women in south-eastern Tanzania. *BMC Pregnancy and Childbirth*, 12(16): <http://www.biomedcentral.com/1471-2393/12/16>.

Halim N., Bohara, A. K., & Ruan, X. (2011). Healthy mothers, healthy children: does maternal demand for antenatal care matter for child health in Nepal? *Health Policy and Planning*, 26(3): 242–256. doi:10.1093/heapol/czq040.

Harris, B., Goudge, J., Ataguba, J. E., McIntyre, D., Nxumalo, N., Jikwana, S., & Chersich, M. (2011). Inequities in access to health care in South Africa. *Journal of Public Health Policy*, 32(S): S102–S123. doi:10.1057/jphp.2011.35.

Hodnett, E. (2012). Traditional birth attendants are an effective resource: Strategies to ensure their training and support in all settings are key. *BMJ*, 344:e365. doi:10.1136/bmj.e365.

Hogan, M. C., Foreman, K. J., Naghavi, M., Ahn, S. Y., Wang, M., Makela, S. M., Lopez, A. D., Lozano, R., & Murray, C. J. L. (2010). Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. *Lancet*, 375: 1609-1623.

Ibnouf, A. H., van den Borne, H., & Maarse, J. A., (2007). Utilization of antenatal care services by Sudanese women in their reproductive age. *Saudi Medical Journal*, 28(5): 737-743.

Joseph, B., Krishna, S.R.S., Philip, J., George, B. (2002). Preferences for home deliveries in a suburban community of Bangalore city. *Health and Population-Perspectives and Issues*, 25(2): 96-103.

Kambala, C., Morse, T., Masangwi, S., Mitunda, P. (2011). Barriers to maternal health service use in Chikhwawa, Southern Malawi. *Malawi Medical Journal*; 23(1): 1-5. URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3615329/pdf/MMJ2301-0001.pdf>

Karlsen, S., Say, L., Souza, J-P., Hogue, C. J., Calles, D. L., Gülmezoglu, A. M., & Raine, R. (2011). The relationship between maternal education and mortality among women giving birth in health care institutions: Analysis of the cross sectional WHO Global Survey on Maternal and Perinatal Health. *BMC Public Health*, 11(606): 1-10. Available online: <http://www.biomedcentral.com/1471-2458/11/606>.

Kautzky, K., & Tollman, S. M. (2008). A Perspective on Primary Health Care in South Africa. In: Barron, P., & Roma-Reardon, J. editors. *South African Health Review 2008*. Durban: Health Systems Trust. URL: <http://www.hst.org.za/publications/841>.

King, M. S., Mhlanga, R. E., & de Pinho, H. (2006). The context of Maternal and Child Health. In: Ijumba, P., Padarath, A., editors. *South African Health Review 2006*. Durban: Health Systems Trust. URL: <http://www.hst.org.za/generic/29>.

Koblinsky, M., Campbell, O., & Heichelheim, J. (1999). Organizing delivery care: what works for safe motherhood? *Bulletin of the World Health Organization*, 77(5): 399-406.

Koblinsky, M., Anwar, I., Mridha, M. K., Chowdhury, M. E., & Botlero, R. (2008). 'Reducing Maternal Mortality and Improving Maternal Health: Bangladesh and MDG 5'. *Journal of Health, Population and Nutrition*, 26(3): 280-294.

Mattson, J. (2010). *Transportation, Distance, and Health Care Utilization for Older Adults in Rural and Small Urban Areas, DP-236*. Fargo: Upper Great Plains Transportation Institute: North Dakota State University.

McAlister, C., & Baskett, T. (2006). Female Education and Maternal Mortality: A Worldwide Survey. *Journal of Obstetrics Gynaecology Canada*, 28(11): 983-990.

Mehari, A.M. (2013). *Levels and Determinants of Use of Institutional Delivery Care Services among Women of Childbearing Age in Ethiopia: Analysis of EDHS 2000 and 2005 Data*. DHS Working Papers. United States Agency for International Development.



Mekonnen, Y., & Mekonnen, A. (2002). Utilization of Maternal Health Care Services in Ethiopia. USA: ORC Macro.

Moran, N.F., & Moodley, J. (2012). The effect of HIV infection on maternal health and mortality. *International Journal of Gynecology and Obstetrics*, 119(1): S26–S29.

Moronkola, O.A., Ojediran, N.M., & Amosu, A. (2006). Reproductive health knowledge, beliefs and determinants of contraceptives use among women attending family planning clinics in Ibadan, Nigeria. *African Health Sciences*, 6(3): 155-159.

Mrisho, M., Obrist, B., Schellenberg, J. A., Haws, R. A., Mushi, A. K., Mshinda, H., Tanner, M., & Schellenberg, D. (2009). The use of antenatal and postnatal care: perspectives and experiences of women and health care providers in rural southern Tanzania. *BMC Pregnancy and Childbirth*, 9(10): 1-12. <http://www.biomedcentral.com/1471-2393/9/10>.

Mugisha, F., Bocar, K., Dong, H., Chepng'eno, G., & Sauerborn, R. (2004). The two faces of enhancing utilization of health-care services: determinants of patient initiation and retention in rural Burkina Faso. *Bulletin of the World Health Organization*, 82(8): 572-579.

Munsur, A. M., Atia, A., & Kawahara, K. (2010). Relationship Between Educational Attainment and Maternal Health Care Utilization in Bangladesh: Evidence from the 2005 Bangladesh Household Income and Expenditure Survey. *Research Journal of Medical Sciences*, 4(1): 33-37.

Myer, L., & Harrison, A. (2003). Why Do Women Seek Antenatal Care Late? Perspectives From Rural South Africa. *Journal of Midwifery & Women's Health*, 48(4): 268-272.

Naledi, T., Barroni, P., & Schneider, H. (2011). Primary Health Care in SA since 1994 and implications of the new vision for PHC re-engineering. In: Padarath A, English R, editors. *South African Health Review 2011*. Durban: Health Systems Trust. <http://www.hst.org.za/publications/south-african-health-review-2011>.

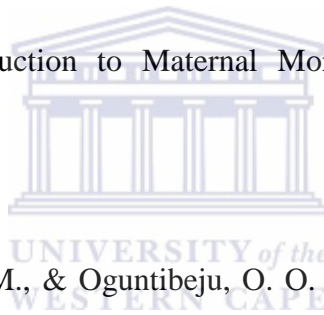
National Committee on Confidential Enquiries into Maternal Deaths. *Saving Mothers fourth report 2005-2007*. Pretoria: Department of Health, 2009. <http://www.doh.gov.za/docs/reports-f.html>.

Ngomane, S., & Mulaudzi, F. M. (2010). Indigenous beliefs and practices that influence the delayed attendance of antenatal clinics by women in the Bohlabele district in Limpopo, South Africa. *Midwifery*, 1-9. doi:10.1016/j.midw.2010.11.002.

Ngwena, C. (2000). The Recognition of Access to Health Care as a Human Right in South Africa: Is It Enough? *Health and Human Rights*, 5(1): 26-44.

Nisar, N., & White, F., (2003). Factors affecting utilization of Antenatal Care among reproductive age group Women (15-49 years) in an urban squatter settlement of Karachi. *Journal of Pakistan Medical Association*, 53(2): 47-53.

Nour, N.M. (2008). An Introduction to Maternal Mortality. *Reviews in Obstetrics & Gynecology*, 1(2): 77-81.



Nteta, T. P., Mokgatle-Nthabu, M., & Oguntibeju, O. O. (2010). Utilization of the Primary Health Care Services in the Tshwane Region of Gauteng Province, South Africa. *PLoS ONE*, 5(11): 1-8. e13909. doi:10.1371/journal.pone.0013909.

Olayinka, O.A., Achi, O.T., Amos, A.O., & Chiedu, E.M. (2014). Awareness and barriers to utilization of maternal health care services among reproductive women in Amassoma community, Bayelsa State. *International Journal of Nursing and Midwifery*, 6(1): 10-15. doi:10.5897/IJNM2013.0108.

Onakewhor, J.U., Olagbuji, B.N., Ande, A.B., Ezeanochie, M.C., Olorok, O.E., & Okonofua, F.E. (2011). HIV-AIDS Related Maternal Mortality in Benin City, Nigeria. *Ghana Medical Journal*, 46(2): 54-59.

Palamuleni, M.A. (2013). Estimates of Fertility for South Africa based on Rele Method, 1996-2011. *Journal of Human Ecology*, 43(3): 257-265.

Pell, C., Menâca, A., Were, F., Afrah, N. A., Chatio, S., Manda-Taylor, L., Hamel, M. J., Hodgson, A., Tagbor, H., Kalilani, L., Ouma, P., & Pool, R. (2013). Factors Affecting Antenatal Care Attendance: Results from Qualitative Studies in Ghana, Kenya and Malawi. *PLoS ONE*, 8(1), e53747: 1-11. doi:10.1371/journal.pone.0053747.

Peltzer, K., Skinner, D., Mfecane, S., Shisana, O., Nqeketo, A., & Mosala, T. (2005). Factors Influencing the Utilisation of Prevention of Mother-to-Child Transmission (PMTCT) Services by Pregnant Women in the Eastern Cape, South Africa. *Health SA Gesondheid*, 10(1): 26-40.

Peltzer, K., & Henda, N. (2006). Traditional birth attendants, HIV/AIDS and safe delivery in the Eastern Cape. South Africa – evaluation of a training programme. *South African Journal of Obstetrics and Gynaecology*, 12(3): 140-145.

Penn-Kekana, L., & Blaauw, D. (2002). *A Rapid Appraisal of Maternal Health Services in South Africa: A Health Systems Approach*. Centre for Health Policy, University of the Witwatersrand, South Africa.

Phillips, H. (2002). Use of maternal health care among African women in South Africa. *South African Journal of demography*, 8(1): 61-72.

Regassa, N. (2011). Antenatal and postnatal care service utilization in southern Ethiopia: a population-based study. *African Health Sciences*, 11(3): 390 – 397.

Sathiya Susuman, A. (2012). Correlates of Antenatal and Postnatal Care among Tribal Women in India. *Studies on Ethno-Medicine*, 6(1): 55-62.

Saxena, D., Vangani, R., Mavalankar, D. V., & Thomsen, S. (2013). Inequity in maternal health care service utilization in Gujarat: analyses of district-level health survey data. *Global Health Action*, 6: 1-9. <http://dx.doi.org/10.3402/gha.v6i0.19652>.

Say, L., & Raine, R. (2007). A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context. *Bulletin of the World Health Organization*, 85(10): 812–819.

Sibeko, S. & Moodley, J. (2006). Healthcare attendance patterns by pregnant women in Durban, South Africa. *South African Family Practice*, 48(10): 17-17e.

Silal, S. P., Penn-Kekana, L., Harris, B., Birch, S., & McIntyre, D. (2012). Exploring inequalities in access to and use of maternal health services in South Africa. *BMC Health Services Research*, 12(120): 1 – 12. doi:10.1186/1472-6963-12-120.

Simkhada, B., van Teijlingen, E. R., Porter, M., & Simkhada, P. (2008). Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. *Journal of Advanced Nursing*, 61(3): 244–260: doi: 10.1111/j.1365-2648.2007.04532.x

Sines, E., Syed, U., Wall, S., & Worley, H. (2007). *Postnatal Care: A Critical Opportunity to Save Mothers and Newborns*. Washington DC: Population Reference Bureau.

Statistics South Africa, (2012a). Census 2011 Statistical release – P0301.4. Pretoria: Statistics South Africa.

Statistics South Africa, (2012b). Census 2011 Municipal report – Eastern Cape. Pretoria: Statistics South Africa.

Statistics South Africa, (2013). Millennium Development Goals, Country Report 2013. Pretoria: Statistics South Africa.

Statistics South Africa, (2014). Mid-year population estimates, Statistical release – P0302. Pretoria: Statistics South Africa.

Tann, C. J., Kizza, M., Morison, L., Mabey, D., Muwanga, M., Grosskurth, H., & Elliott, A. M. (2007). Use of antenatal services and delivery care in Entebbe, Uganda: a community survey. *BMC Pregnancy and Childbirth*, 7(23): 1-11. <http://www.biomedcentral.com/1471-2393/7/23>.

Tanser, F., Gijsbertsen, B., & Herbst, K. (2006). Modelling and understanding primary health care accessibility and utilization in rural South Africa: An exploration using a geographical information system. *Social Science & Medicine*, 63: 691–705.

Tsawe, M., & Sathiya Susuman, A. (2014). Determinants of access to and use of maternal health care services in the Eastern Cape, South Africa: a quantitative and qualitative investigation. *BMC Research Notes*, 7(723): 1-10. <http://www.biomedcentral.com/1756-0500/7/723>.

Tsoka, J.M., Sueur, D.L., & Sharp, B.L. (2003). Maternal health service utilisation in Ubombo district. *South African Journal of Obstetrics & Gynaecology*, 9(3): 70-74.

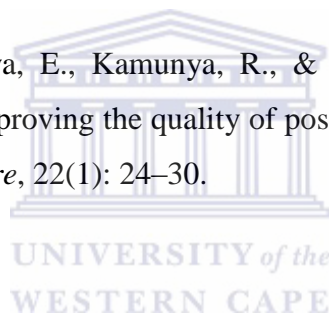
Udjo, E. (2014). Estimating demographic parameters from the 2011 South Africa population census. *African Population Studies, Supplement on Population Issues in South Africa*, 28(1): 564-578.

UNESCO (2000). *The right to education: towards education for all throughout life*. World education report 2000: UNESCO Publishing.

van der Hoeven, M., Kruger, A., & Greeff, M. (2012). Differences in health care seeking behaviour between rural and urban communities in South Africa. *International Journal for Equity in Health*, 11(31): 1-9. <http://www.equityhealthj.com/content/11/1/31>.

Wang, W., Alva, S., Wang, S., & Fort, A. (2011). *Levels and Trends in the Use of Maternal Health Services in Developing Countries*. DHS Comparative Reports No. 26. Calverton, Maryland, USA: ICF Macro.

Warren, C., Mwangi, A., Oweya, E., Kamunya, R., & Koskei, N. (2010). Safeguarding maternal and newborn health: improving the quality of postnatal care in Kenya. *International Journal for Quality in Health Care*, 22(1): 24–30.



World Health Organization (2010). *Trends in Maternal Mortality: 1990 to 2008*. Estimates developed by: WHO, UNICEF, UNFPA and The World Bank. Geneva: World Health Organization Press.

World Health Organization (2012). *Trends in maternal mortality: 1990 to 2010*. Estimates developed by: WHO, UNICEF, UNFPA and The World Bank. Geneva: World Health Organization Press.

World Health Organization (2014). *Trends in maternal mortality: 1990 to 2013*. Estimates developed by: WHO, UNICEF, UNFPA and The World Bank. Geneva: World Health Organization Press.

Yamane, T. (1967). *Statistics: an introductory analysis*. (2nd ed.). New York: Harper & Row.

Young, J.T., Menken, J., Williams, J., Khan, N., & Kuhn, R.S. (2005). *Who Receives Healthcare? Age and Sex Differentials in Adult Use of Healthcare Services in Rural Bangladesh*. Colorado: Institute of Behavioural Science and Department of Sociology, University of Colorado at Boulder.



Appendices

Appendix A: Questionnaire

ASK WOMEN ONLY: AGES FROM 15 TO 49		
<i>Please read carefully and follow the instructions</i>		
Questionnaire number: Date of issue of questionnaire (e.g. 02/Jan/2014) ___/___/___	Place of issue: _____ e.g. Tsolo	
A: GEOGRAPHIC LOCATION		
1. Province 1. Eastern Cape <input type="checkbox"/>	2. Town/Location 1. Tsolo <input type="checkbox"/> 2. Qumbu <input type="checkbox"/> 3. Mqanduli <input type="checkbox"/>	3. Type of residence 1. Urban <input type="checkbox"/> 2. Rural <input type="checkbox"/>
B. BACKGROUND CHARACTERISTICS (please tick appropriate box. Only one box)		
4. What is your Date of Birth? <i>Please write on spaces provided</i> 1. Date _____ 2. Month _____ 3. Year _____ <i>Example: 05, January, 1992</i>	5. What is your <u>current</u> marital status? 1. Married <input type="checkbox"/> 2. Living together like married people <input type="checkbox"/> 3. Never married/single <input type="checkbox"/> 4. Divorced/Separated <input type="checkbox"/> 5. Widowed <input type="checkbox"/>	
EDUCATION		
6(a). Are you <u>currently</u> studying? 1. Yes <input type="checkbox"/> go to 6(b) 2. No <input type="checkbox"/> <i>If yes, please answer 6(b) If no, skip to 7</i>	6(b). If you are currently studying. At which level are you currently in? 1. High school <input type="checkbox"/> 2. Tertiary <input type="checkbox"/> <i>a) High school is grade 8 to 12 b) Tertiary is university or college</i>	7. What is your highest (completed) level of education? 1. No education <input type="checkbox"/> 2. Primary (grade R to grade 7) <input type="checkbox"/> 3. Secondary (grade 8-12) <input type="checkbox"/> 4. University/College <input type="checkbox"/>
EMPLOYMENT		
8. Are you currently working? 1. Yes (including self-employed) <input type="checkbox"/> go to 9 2. No <input type="checkbox"/> skip to 10	9. If <u>working</u>, which sector are you currently employed in? (skip this question if you are not employed) 1. Government <input type="checkbox"/> 2. Private sector <input type="checkbox"/>	
10. What is your individual (own) income per month (including any monies you receive per month, whether from parents or from social grants)? 1. No income <input type="checkbox"/> 2. R1 to R800 <input type="checkbox"/> 3. R801 to R3200 <input type="checkbox"/> 4. R3201 to R6400 <input type="checkbox"/> 5. R6401 to R12800 <input type="checkbox"/> 6. R12801 or more <input type="checkbox"/>		
MEDIA EXPOSURE (please select one box)		
11. How often do you listen to the radio? 1. Never listen <input type="checkbox"/> 2. At least once a week <input type="checkbox"/> 3. Almost every-day <input type="checkbox"/>	12. How often do you read newspapers/magazines? 1. Never read <input type="checkbox"/> 2. At least once a week <input type="checkbox"/> 3. Almost every-day <input type="checkbox"/>	13. How often do you watch TV? 1. Never watch <input type="checkbox"/> 2. At least once a week <input type="checkbox"/> 3. Almost every-day <input type="checkbox"/>

C. PREGNANCY AND HEALTHCARE RELATED QUESTIONS

Please answer the following questions related to the time of your pregnancy

<p>14. When you were pregnant, did you have medical aid?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p>	<p>15. What means of transport did you mostly use to get to hospital/clinic/health center?</p> <p>1. Walk <input type="checkbox"/></p> <p>2. Taxi <input type="checkbox"/></p> <p>3. Private (<i>own</i>) transport <input type="checkbox"/></p>	<p>16. How much did mostly you pay to get to hospital/clinic/health center and back home?</p> <p>1. Nothing <input type="checkbox"/></p> <p>2. R1 to R15 <input type="checkbox"/></p> <p>3. R16 or more <input type="checkbox"/></p>
<p>17. How far are you from your hospital/clinic/health center?</p> <p>1. 0-5km <input type="checkbox"/></p> <p>2. 6-8km <input type="checkbox"/></p> <p>3. 9km or more <input type="checkbox"/></p>	<p>18. At what age did you give birth to your <u>FIRST</u> child?</p> <p>Write that age here: _____</p> <p><i>Example: 17 years</i></p>	<p>19. Have you given birth in the <u>LAST TWELVE MONTHS</u>?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p>
<p>20. How many children have you <u>EVER</u> given birth to (all your children, including those who died <u>AFTER</u> birth)?</p> <p>1. One <input type="checkbox"/></p> <p>2. Two <input type="checkbox"/></p> <p>3. Three <input type="checkbox"/></p> <p>4. Four <input type="checkbox"/></p> <p>5. Five or more <input type="checkbox"/></p>	<p>21. Are you currently pregnant?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p> <p>3. Don't know <input type="checkbox"/></p>	

D. ANTENATAL, DELIVERY, AND POSTNATAL SERVICES (please refer to your last/latest pregnancy and birth)

<p>ANTENATAL (please tick the most appropriate box, only one box)</p>		
<p>22(a). How many check-ups did you go to (at hospital/clinic/health center) for your pregnancy?</p> <p>1. None <input type="checkbox"/> <i>go to 22(b)</i></p> <p>2. 1 to 3 <input type="checkbox"/></p> <p>3. 4 or more <input type="checkbox"/></p> <p><i>If you selected "1 to 5 or more", please skip to 23</i></p>	<p>22(b). If <u>none</u>, what was your main reason for not going for check-ups? (do not answer if you did go to one or more check-ups)</p> <p>1. Cultural <input type="checkbox"/></p> <p>2. Not necessary <input type="checkbox"/></p> <p>3. Hospital/clinic too far <input type="checkbox"/></p> <p>4. Depression/mental stress <input type="checkbox"/></p> <p>5. Not in good mood (<i>mentally</i>) <input type="checkbox"/></p> <p>6. Did not know about check-ups <input type="checkbox"/></p>	<p>23. Did you (at any point) regret being pregnant?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p>
<p>24. Did you communicate with your husband/partner about going for check-ups during pregnancy?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p>	<p>25(a). Did you need permission to go for check-ups?</p> <p>1. Yes <input type="checkbox"/> <i>go to 25(b)</i></p> <p>2. No <input type="checkbox"/> <i>skip to 26</i></p>	<p>25(b). If <u>YES</u>, from whom did you need to get permission? (do not answer if you <u>DIDN'T NEED PERMISSION</u> to go for check-ups)</p> <p>1. Parents <input type="checkbox"/></p> <p>2. Partner/husband <input type="checkbox"/></p>
<p>DELIVERY (please tick the most appropriate box, only one box)</p>		
<p>26. By which method did you give birth to your last child?</p> <p>1. Normal vaginal delivery <input type="checkbox"/></p> <p>2. Caesarean section/operation <input type="checkbox"/></p>	<p>27(a). At which place did you deliver (or give birth to) your child/children?</p> <p>1. Hospital/clinic/health center <input type="checkbox"/> <i>skip to 28</i></p> <p>2. Home <input type="checkbox"/> <i>go to 27(b)</i></p> <p>3. Other <input type="checkbox"/> <i>go to 27(b)</i></p>	
<p>27(b). If <u>not</u> hospital/clinic/health center, why not?</p> <p>1. Cultural reasons <input type="checkbox"/></p> <p>2. Not necessary <input type="checkbox"/></p> <p>3. Hospital too far <input type="checkbox"/></p> <p>4. Ambulance arrived late <input type="checkbox"/></p>	<p>28. Who assisted you when you were giving birth?</p> <p>1. Parent/relative <input type="checkbox"/></p> <p>2. Traditional midwife <input type="checkbox"/></p> <p>3. Nurse <input type="checkbox"/></p> <p>4. Doctor <input type="checkbox"/></p> <p>5. Self <input type="checkbox"/></p>	
<p>29(a). Did you make the final decision about where to give birth?</p> <p>1. Yes <input type="checkbox"/> <i>skip to 30 (a)</i></p> <p>2. No <input type="checkbox"/> <i>go to 29(b)</i></p>	<p>29(b). If <u>no</u>, who decided where you should give birth?</p> <p>1. Parents <input type="checkbox"/></p> <p>2. Partner/husband <input type="checkbox"/></p>	

POSTNATAL (please tick the most appropriate box, only one box)		
<p>30(a). Did you go for check-ups after giving birth?</p> <p>1. Yes <input type="checkbox"/> skip to 31</p> <p>2. No <input type="checkbox"/> go to 30(b)</p>	<p>30(b). If No, please give reasons why not? (answer only if you did NOT go for check-ups)</p> <p>1. Cultural reasons <input type="checkbox"/></p> <p>2. Not necessary <input type="checkbox"/></p> <p>3. Hospital too far <input type="checkbox"/></p>	<p>31(a). If you went for check-ups after giving birth, how many did you go to? (don't answer if you DID NOT go for check-ups)</p> <p>1. 1 to 2 <input type="checkbox"/></p> <p>2. 3 to 4 <input type="checkbox"/></p> <p>3. 5 or more <input type="checkbox"/></p>
<p>31(b). If you went for check-ups after giving birth, who assisted you with the check-up? (don't answer if you DID NOT go for check-ups)</p> <p>1. Nurse <input type="checkbox"/></p> <p>2. Doctor <input type="checkbox"/></p> <p>3. Other <input type="checkbox"/></p>	<p>32(a). After giving birth to your last child, did you regret having the baby?</p> <p>1. Yes <input type="checkbox"/> go to 32(b)</p> <p>2. No <input type="checkbox"/> skip to 33</p> <p>If your answer is Yes, go to 32(b). If No, skip to question 33.</p>	
<p>32(b). If Yes, what do you think was the reason for you regretting having the baby? (answer only if you answered YES to 32a)</p> <p>1. Had no support from partner/husband <input type="checkbox"/></p> <p>2. Did not have money to raise the baby <input type="checkbox"/></p> <p>3. Had not planned to be pregnant <input type="checkbox"/></p> <p>4. Other <input type="checkbox"/></p>	<p>33(a). After giving birth to your LAST CHILD, were you able to bond with the child/baby?</p> <p>1. Yes <input type="checkbox"/> skip to 34</p> <p>2. No <input type="checkbox"/> go to 33(b); 33(c) and 33(d)</p> <p>If YES, please skip to 34 If NO, please answer 33(b); 33(c) and 33(d)</p>	
<p>33(b). If NO, for how long did you feel this way? (answer this question only if you responded with No to the previous question)</p> <p>1. Up to 6 days <input type="checkbox"/></p> <p>2. 7 days to 13 days <input type="checkbox"/></p> <p>3. 14 days or more <input type="checkbox"/></p>	<p>33(c). If NO, what do you think was the reason for you NOT being able to have a bond having the baby? (answer only if you answered NO to 33a)</p> <p>1. Had no support from partner/husband <input type="checkbox"/></p> <p>2. Had not planned to be pregnant <input type="checkbox"/></p> <p>3. Other <input type="checkbox"/></p>	
<p>33(d). If you were NOT able to bond with your child, did you receive counselling (psychologist/social worker)?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p>	<p>34. Did you communicate with your husband/partner about going for check-ups after giving birth?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p>	

E. PSYCHOLOGICAL ISSUES (please refer to your last/latest pregnancy and birth)

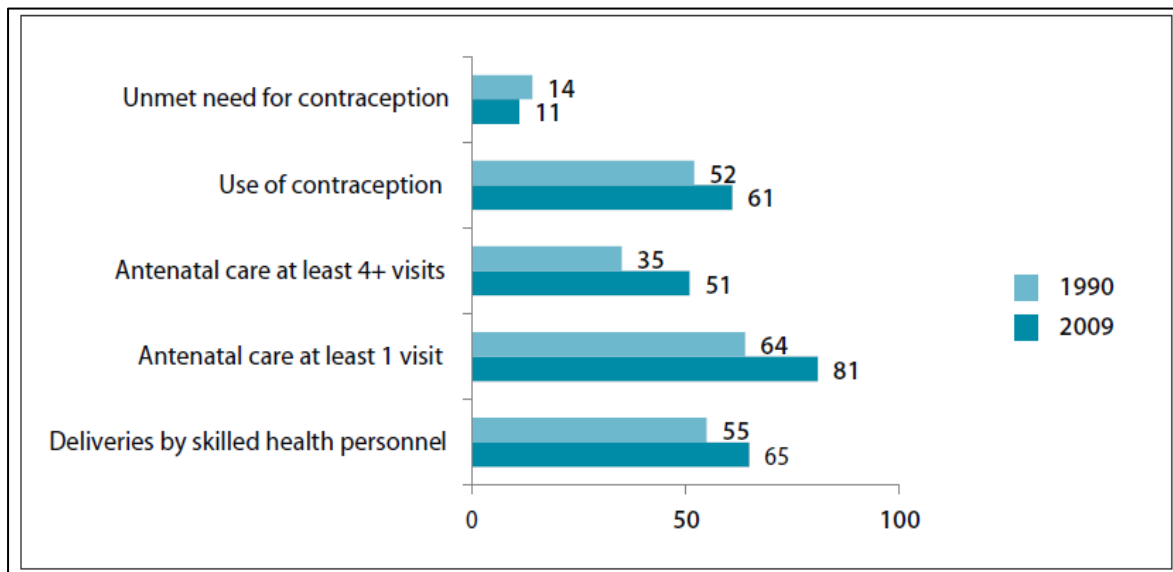
<p>35. During pregnancy, was it difficult for you to get along with others?</p> <p>1. Yes <input type="checkbox"/></p> <p>2. No <input type="checkbox"/></p>	<p>36(a). During pregnancy did you experience any psychological / mental problems?</p> <p>1. Yes <input type="checkbox"/> go to 36(b)</p> <p>2. No <input type="checkbox"/></p>
<p>36(b). During pregnancy did you experience any of these psychological / mental problems? (tick all those you experienced) – Do not answer this question if you answered NO, to 35(a)</p> <p>1. Eating disorders <input type="checkbox"/></p> <p>2. Mood disorders <input type="checkbox"/></p> <p>3. Personality disorders <input type="checkbox"/></p> <p>4. Disorders of behaviour <input type="checkbox"/></p> <p>5. Sleep disorders <input type="checkbox"/></p> <p>6. Stress <input type="checkbox"/></p> <p>7. Other <input type="checkbox"/></p>	

Thank you

Appendix B: Consent form

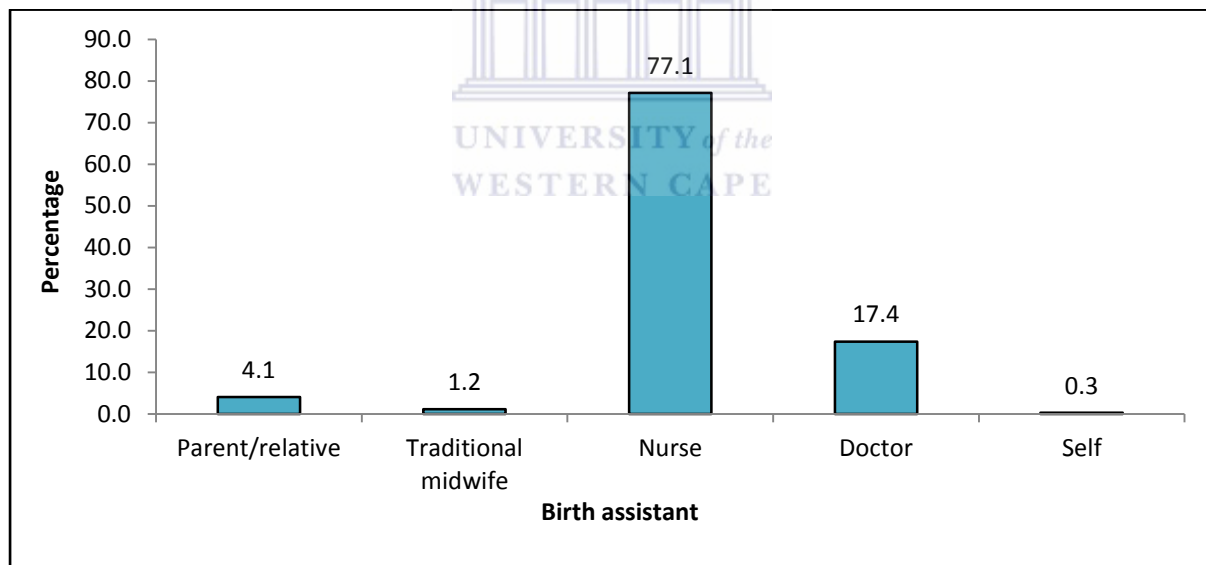
	FACULTY OF NATURAL SCIENCES	Private Bag X17, Bellville, 7535 South Africa Tel: +27 (0) 21 959 3039 Fax: +27 (0) 21 959 1405 Email: sappunni@uwc.ac.za Website: www.uwc.ac.za/stats
DEPARTMENT OF STATISTICS AND POPULATION STUDIES		03 March 2014
TO WHOM SO EVER IT MAY CONCERN		
<p>This is to inform you that Mr. Mluleki Tsawe is a Post Graduate student at the University of the Western Cape, in the Department of Statistics and Population Studies, under my supervision. You are kindly invited to participate in a study titled: <i>Utilization of health care services and maternal education in South Africa</i>. This work will be used for Mr Tsawe's postgraduate work and for academic purposes only. The purpose of this research is to find out the factors that affect the use of maternal health services. 'Maternal health services means, health services related to pregnant women and those who have just given birth (i.e. whether women went for check-ups, and what are the reasons for not going among women who did not go for check-ups).</p>		
<p>In order for you to participate in this study, you must have had given birth to one or more children in your lifetime. Also, only women between the ages of 15 to 49 years can participate in this study. It would be appreciated if you could please assist in completing the questionnaire attached. Please note that: (a) your personal information will not be shared with anyone; (b) your identity will not be revealed to anyone (<i>please do not write your name or full address</i>); and, (c) you are not forced to participate in this study (if you do not want to participate in the study then you are free to do so).</p>		
<p>It is hoped that the results of this study will helpful to the government and policy-makers in promoting women's health and ensuring that women receive adequate health care during their pregnancy, birth, and after they have given birth.</p>		
<p>For more information about the study, please contact:</p>		
1. Mr Mluleki Tsawe Cell: 071 424 2271 Email: 2861022@myuwc.ac.za	2. Prof A Sathiya Susuman Tel: 021 959 3898 Email: sappunni@uwc.ac.za	3. Department of Statistics & Population Studies (Contact person: Mr Leslie Selbourne) Tel: 021 959 3039 Email: lselbourne@uwc.ac.za
<p>Thanking you</p>		
		
<p>A Sathiya Susuman, Ph D Professor (Associate) Dept. of Statistics and Population Studies University of the Western Cape Cape Town, South Africa Tel: +27 21 9593898 Mobile: 0725925898 Email: sappunni@uwc.ac.za</p>		
		UNIVERSITY of the WESTERN CAPE
<p>A place of quality, a place to grow, from hope to action through knowledge</p>		

Appendix C: Reproductive health indicators in developing regions, 1990 and 2009 (%)



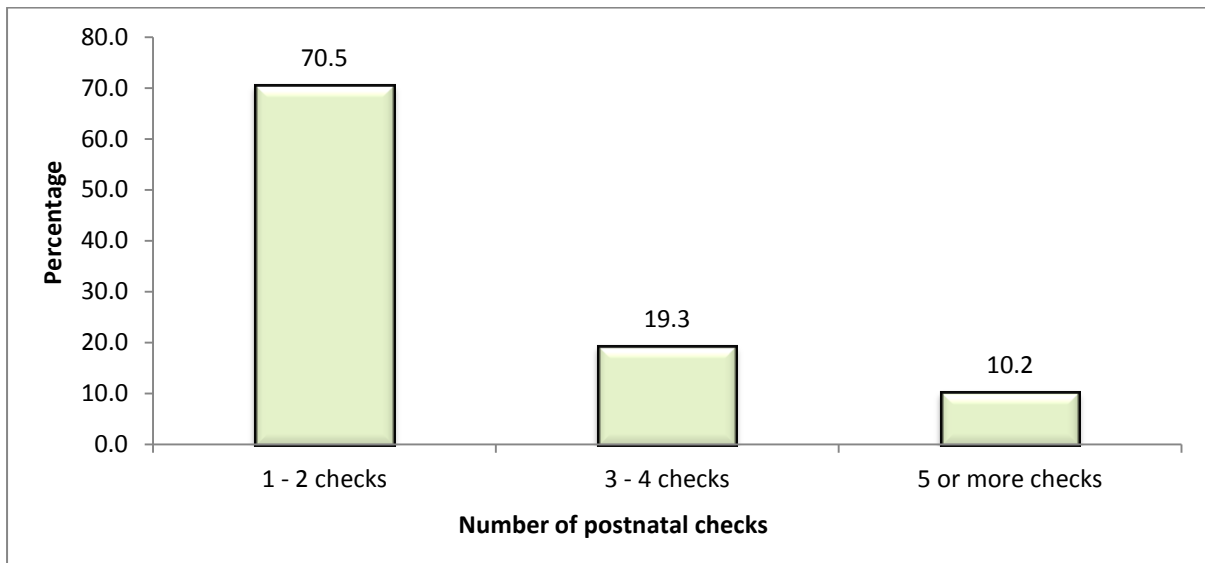
Source: WHO, UNICEF, UNFPA and The World Bank estimates – (Trends in Maternal Mortality, 2010)

Appendix D: Type of birth assistant present at birth



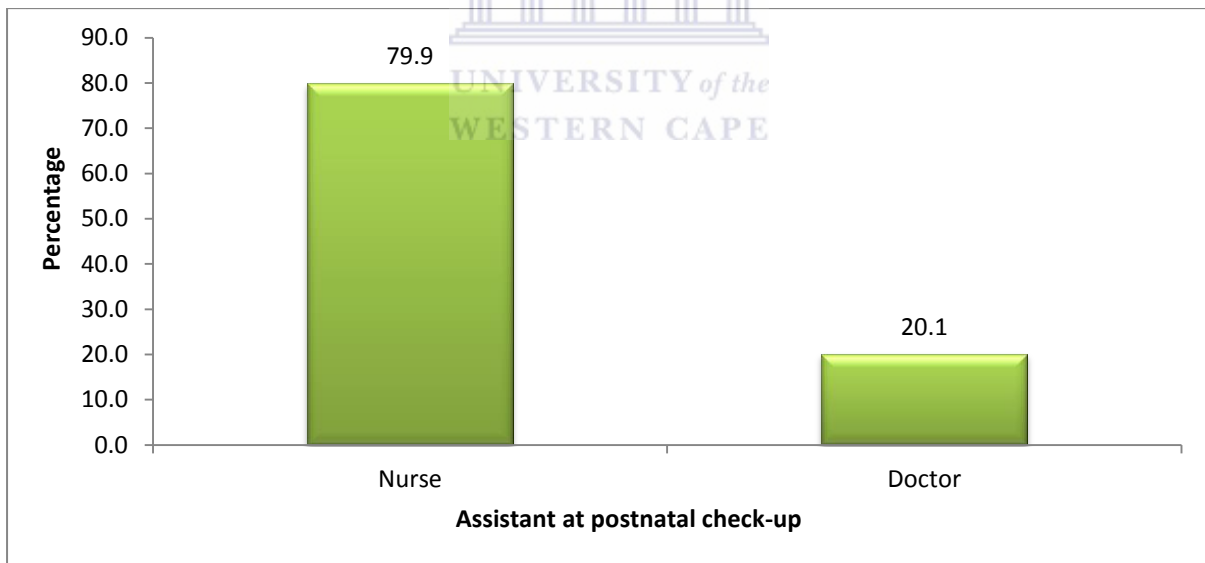
Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

Appendix E: Percentage distribution of the number of postnatal check-ups



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

Appendix F: Type of assistant at postnatal check-up



Source: Primary data, O.R. Tambo district, Eastern Cape, South Africa, 2014

Determinants of access to and use of maternal health care services in the Eastern Cape, South Africa: a quantitative and qualitative investigation

Abstract

Background

The main aim of the study is to examine whether women in Mdantsane are accessing and using maternal health care services. Accessibility of maternal health care facilities is important in ensuring that lives are saved through the provision and use of essential maternal services. Therefore, access to these health care services directly translates to use – that is, if women cannot access life-saving maternal health care services, then use of such services will be limited.

Methods

The study makes use of mixed methods to explore the main factors associated with access to and use of maternal health care services in Mdantsane. For the quantitative approach, we collected data using a structured questionnaire. A sample of 267 participants was selected from health facilities within the Mdantsane area. We analysed this data using bivariate and multivariate models. For the qualitative approach, we collected data from health care professionals (including nurses, doctors, and maternal health specialists) using one-on-one interviews.

Findings

The study found that women who were aged 35–39, were not married, had secondary education, were government employees, and who had to travel less than 20 km to get to hospital were more likely to access maternal health services. The qualitative analysis provided the insights of health care professionals regarding the determinants of maternal health care use. Staff shortages, financial problems, and lack of knowledge about maternal health care services as well as about the importance of these services were among the major themes of the qualitative analysis.

Conclusion

A number of strategies could play a big role in campaigning for better access to and use of maternal health services, especially in rural areas. These strategies could include (a) the inclusion of the media in terms of broadcasting information relating to maternal health services and the importance of such services, (b) educational programs aimed at enhancing the literacy skills of women (especially in rural areas), (c) implementing better policies that are aimed at shaping the livelihoods of women, and (d) implementing better delivery of maternal health care services in rural settings.

Source: <http://www.biomedcentral.com/content/pdf/1756-0500-7-723.pdf>

