Perceptions of Pregnant Women on the Quality of Maternal and Child Health Services Offered at Selected Health Facilities in Zimbabwe

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Abstract

Introduction: *Assessing patients' perceptions on the quality of health services they receive is an integral part of health service quality management strategies and an important vehicle for improving health services. Zimbabwe has limited data on patients' perceptions of the quality of maternal and child health services.*

Methodology: *An analytic cross-sectional study was conducted to determine perceptions of pregnant women attending antenatal care (ANC) on the quality of maternal and child health services at 21 health facilities in 2 out of the 10 provinces. Exit interviews with 190 pregnant women were conducted using a semi-structured questionnaire. Data were analysed using Epi Info, generating measures of central tendency, proportions, bivariate and multivariate analysis.*

Results: *A majority (84.8%) of participants were satisfied with maternal and child health services. Participants who reported having been given a pleasant welcome [COR=3.37 (1.92 – 5.90)], given clear instructions on how to take medication [COR=2.11 (1.03 – 3.91)], and treated with respect [COR=4.14 (2.37 – 7.33)] were more likely to be satisfied with health services. Patients who visited several departments to get health services were less likely to be satisfied [COR=0.38 (0.19 - 0.67)]. Independent determinants of satisfaction / dissatisfaction include being given a pleasant and warm welcome (AOR=1.38, p=0.01), being treated with respect (AOR=2.14, p=0.03) and visiting several departments to get health services (AOR=0.47, p=0.04).*

Discussion: *Although a majority of participants reported satisfaction with quality of maternal and child health services, there is room for improvement especially patients' clinical consultation process and integration of health services.*

Keywords: *Satisfaction, maternal, child, health services, Zimbabwe.*

Introduction

Maternal, new-born and child health care are one of the 4 key priority areas of focus for the Zimbabwe Ministry of Health and Child Care (MOHCC) [1]. The Zimbabwe National Health Strategy – 2016-2020 set out maternal and child health targets including reduction of maternal mortality from 651 in 2015 to 300 per 100 000 live births by 2020, reduction of neonatal mortality rate from 29 in 2015 to 20 per 1000 live births by 2020 as well as reduction of under 5 mortality rate from 69 in 2015 to 50 per 1000 live births by 2020[1]. Over the past decade, Zimbabwe made great strides in improving maternal and child health service provision.

The proportion of married women aged 15 to 49 years using modern methods of family planning increased from 36% in 1988 to 66% in 2015, maternal mortality rate declined from 960 in 2011 to 651 per 100 000 live births in 2015, under 5 mortality declined from 102 in 1999 to 69 per 1000 live births in 2015, and infant mortality rate declined from 65 in 1999 to 50 per 1000 live births in 2015[2]. Despite these notable improvements, provision of high quality maternal and child health services continue facing a number of health systems related challenges such as shortage of skilled health care workers and shortage of essential equipment and health commodities. Other challenges include the relatively low utilization of health services, for example, institutional deliveries declined from 80% in 2014[3] to 72% in 2015[2].

Zimbabwe is one of the countries in sub-Saharan Africa that is worst affected by the HIV epidemic, with a generalized epidemic and an estimated adult (aged 15-64 years) HIV prevalence of 14.6% and an adult HIV incidence of 0.45[4]. In 2015, an estimated 1.425 million people were living with HIV, of

DOI: 10.21522/TIJPH.2013.SE.19.02.Art020
ISSN: 2520-3134

which 76,693 (5%) were children below 15 years of age. There were an estimated 29,381 HIV related deaths in 2015 and 3,310 (11%) were in children below 15 years of age[5]. It is estimated that HIV and AIDS contributes approximately 21% of under–five mortality, as well as 26% of maternal mortality in Zimbabwe[6].

Almost all public sector health facilities offer maternal and child health services including family planning, antenatal care, labour and delivery, postnatal care and under-5 child health services such as growth monitoring and immunization. The government of Zimbabwe has been advocating for an integrated service provision approach within maternal and child health settings with more emphasis on provision of high-quality services.

The consumer's perspective is an essential element of responsive health systems programming, and should be sought to ensure that services meet the needs and expectations of the intended end-users. The degree to which health systems meet the needs and expectations of the consumer is an important determinant of initial uptake, repeated uptake, adherence, and retention across the continuum of care[7]. Increasing consumer involvement and patient satisfaction provides a formidable opportunity for addressing consumer expectations, designing effective programs, and enhancing adherence to care and treatment.

Patient satisfaction is a component of healthcare quality and is increasingly being used to assess medical care in many countries in the world. It is an established fact that satisfaction influences whether a person seeks medical advice, complies with treatment and maintains a continuing relationship with practitioners. Assessing health service outcomes has merit both as an indicator of the effectiveness of different interventions and as part of a monitoring system directed to improving quality of health care as well as detecting its deterioration[8]. Quality assessment studies usually measure one of three types of outcomes: medical outcomes, costs, and patient satisfaction. For patient satisfaction, patients are asked to assess not their own health status after receiving care but their satisfaction with the services delivered[9, 10].

Components of patient satisfaction

Patient satisfaction is an expression of the gap between the expected and perceived characteristics of a health service. Satisfaction is a subjective phenomenon and could be elicited by asking simply how satisfied or not patients may be about the service. However, it has been found that, questionnaires that ask patients to rate their care in terms of how satisfied they are tend to elicit very positive ratings that are not sensitive to specific processes that affect overall quality[11]. It is recommended that patients be asked to report on their experiences through specific questions[12].

A technique of factor analysis has demonstrated that patient satisfaction is chiefly determined by six dimensions which include medical care and information, food and physical facilities, environment, nursing care, quantity of food and visiting arrangements[13]. There are other variants of the grouping of these dimensions. The Picker Institute inpatient survey instrument distinguishes eight[14]. A shorter and better-classified grouping is the United Kingdom's National Health Service experience dimension[15] (Table 1).

Table1. Client experience dimension, definitions and clinical governance review codes (United Kingdom's National Health Service experience dimension)

Dimension	Definition	Review Codes
Clinical effectiveness and outcomes	The extent to which treatments are effective and services produce positive outcomes. This includes mortality, morbidity, effectiveness and competence	Mortality rates following admission and treatment
		Evidence of morbidity following admission and treatment
		Evidence of effective/ineffective practice
		Evidence of competence/ incompetence
		Access to services
Access to services	The extent to which patients are able to reach required services and treatments when they are needed and mobilize within them. This includes waiting times, patients' ability to find out about, get referred to and physically get to services, accessibility for diverse populations, and the range of services provided	Physical access; bus services; car parks; location
		Responsiveness; waiting times and lists
		Diversity such as disability, ethnicity, poverty
		Range of services in relation to need
Organization of care	The extent to which users move smoothly between the necessary service providers throughout their healthcare journey. This encompasses the coordination and integration of care, appropriate education for and communication between professionals, and the quality of healthcare transition and continuity	Experience of admission care episode
		Experience of diagnosis care episode
		Experience of treatment stage of care episode
		Experience of discharge of care episode
Humanity of care	The extent to which users are treated with dignity and respect in the provision of care, taking into consideration their individual and social needs, values and preferences. This includes the provision of emotional support, alleviation of fear and anxiety, the provision of information and appropriate communication with and involvement of patients and carers	Privacy and confidentiality
		Patient involvement in their own care
		Promoting wellbeing
		Delivery of care; respect and dignity; staff attitudes
Environment	The extent to which the physical setting within which care is delivered is safe, comfortable and appropriate to clinical needs and the patient group	Physical state of facilities Catering

DOI: 10.21522/TIJPH.2013.SE.19.02.Art020
ISSN: 2520-3134

Research question

What are the perceptions of pregnant women with regards to the quality of maternal and child health services offered during routine antenatal care at selected health facilities in Zimbabwe?

Methodology

Objectives

1. To determine levels of satisfaction of pregnant women with the quality of maternal and child health services.
2. To identify factors associated with satisfaction or dissatisfaction with maternal and child health services amongst pregnant women attending routine antenatal care clinics.

Study design

An analytic cross-sectional study was conducted. Data for the assessment of patients' perceptions about the quality of, and satisfaction / dissatisfaction with maternal and child health services were collected through exit interviews with pregnant women using a structured interviewer administered questionnaire.

Study population

Pregnant women accessing antenatal care services at selected health facilities

Study setting

The study was conducted at selected health facilities including central hospitals, provincial hospitals, district hospitals, mission hospitals, rural hospitals and primary level clinics in 2 out the 10 provinces in Zimbabwe.

Sampling

A multi-stage sampling procedure was used to select health facilities, beginning with the sampling of provinces, districts and health facilities. This was followed by a sampling procedure for determining the minimum number of patients to be enrolled per health facility. The final sampling procedure focused on selection of patients to enrol in the study during data collection. Figure 1 shows the sampling procedure at each level.

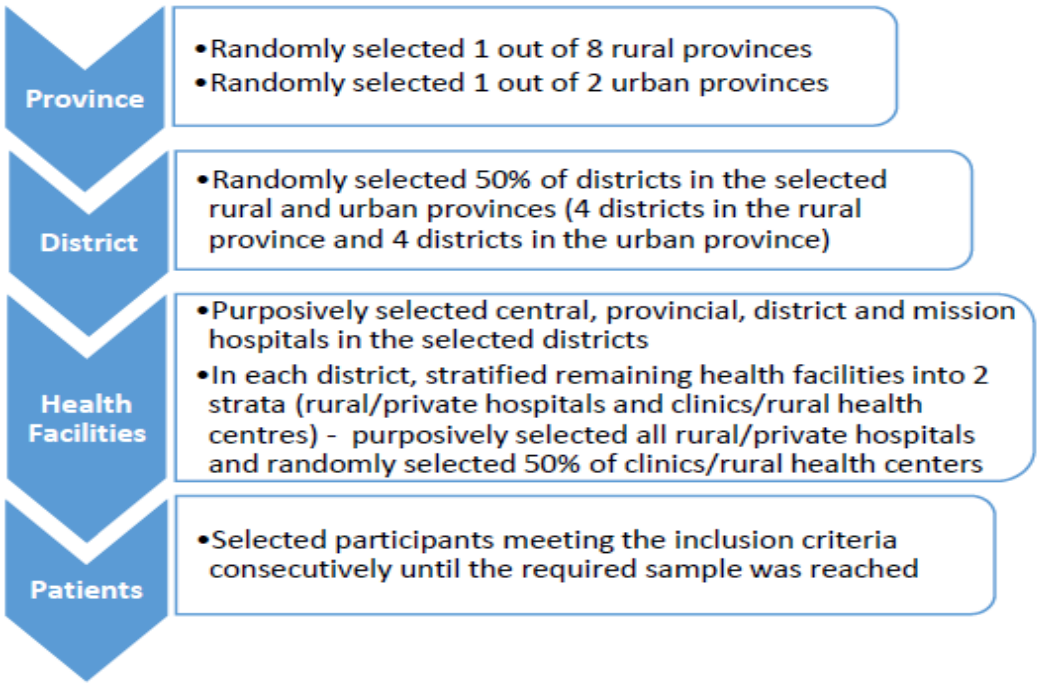

Figure 1. Sampling procedure at each level

Sampling of health facilities

One (1) out of the 8 rural and 1 out of 2 urban provinces were randomly selected. Four districts were randomly selected in each rural and urban province. All large referral hospitals i.e. central, provincial, district and mission hospitals in the selected districts were purposively selected. The remaining facilities in each selected district were stratified into 2 strata based on health facility type and these were

1. Rural /Private hospitals
2. Rural health centers / clinics

All rural/private hospitals were purposively selected and 50% of clinics/rural health centers were randomly selected. A total of 21 health facilities were selected for the study.

Participant sampling for individual interviews

The target population was pregnant women attending routine antenatal care clinics in the selected health facilities. Facility representative sample sizes were calculated using the following formulae

Large population sample size: $n0= z^2 * p*(1-p)/e^2$

Where z = 1.96, n0 = the sample size required, p = 0.5 since it is unknown and will give the most conservative estimate of the sample size required and e = precision = 0.05

Finite population sample size: n = n0 / (1+ (n0 - 1)/N); Where N is the number of the eligible individuals at the health facility. The sample size was calculated to provide a 95% CI and a precision of +/- 5% using antenatal care bookings data. Site specific sample sizes were calculated and the sample size for the 21 health facilities was 220 pregnant women.

Sampling of patients at health facilities

All pregnant women presenting at health facilities and meeting the inclusion criteria were consecutively selected until the required sample size was reached.

Inclusion criteria

All consenting pregnant women presenting at health facilities for routine antenatal care visits

Data collection tools and procedures

A structured interviewer administered questionnaire was developed based on the patient experience dimension, definitions and clinical governance review codes developed by the United Kingdom's National Health Services.

Data were collected by data collectors who had previously been trained in research ethics. Exit interviews with consenting pregnant women were conducted after they had received health services. Data collected during exit interviews were captured on paper questionnaires before being entered into Epi-Info statistical package for storage and analysis.

Data analysis

Epi-Info version 7 statistical package was used to analyse quantitative data including generating frequencies, percentages, measures of central tendency, statistical significance testing, bivariate and multivariate analysis. The table below shows data analysis tools and variables for the 2 specific study objectives.

Objective	Variables	Data	Analysis Tools
To determine level of patient satisfaction with the quality of maternal and child services	Patients' satisfaction levels	Patient exit interview data	Percentage of patients satisfied with services
To identify factors associated with satisfaction and dissatisfaction with maternal and child services among pregnant women	Factors associated with (reasons for) satisfaction and dissatisfaction	Patient exit interview data	Univariate, bivariate and multivariate analysis

DOI: 10.21522/TIJPH.2013.SE.19.02.Art020
ISSN: 2520-3134

Ethical considerations

Permission to carry out the study was sought from the MOHCC at national, provincial, district and health facility levels as well as the Medical Research Council of Zimbabwe.

Limitations of study

This was a facility-based study and all participants were interviewed at health facilities. This may have biased participants' responses, especially those that relate to their satisfaction with health services.

Results

Enrolment rate. A total of 190 pregnant women were enrolled, giving an overall enrolment rate of 86%. The relatively lower enrolment rate was partly a result of refusal to participate by some eligible women.

Demographic characteristics of participants

The demographic characteristics of pregnant women enrolled in the study are presented in Table 2.

Table2. Demographic characteristics of pregnant women enrolled in the study (N=190)

Variable		Frequency n %
Age	<= 20 years	43 22.6
	20-35 years	127 66.8
	>35 years	20 10.5
Level of education	No Education	2 1.0
	Primary	39 20.5
	Secondary	144 75.8
	Tertiary	5 2.6
Parity	0-4	175 92.1
	>4	15 7.9

A majority of the women were in the 20 to 35-year age group and only 10.5% were over 35 years of age. A majority (75.8%) of the participants had attained secondary education and only 7.9% of the participants had parity above 4.

Access to health services

Location of health facility: Participants were asked about the approximate distance they travel from their homes to the health facility (Table 3).

Table 3. Reported distances from home to health facility (N=190)

Distance from home to health facility (km)	Frequency (%)
0 – 10	127 66.8%
>10	29 15.2%
Not stated	34 17.8%

A total of 34 (17.8%) participants could not tell or give an approximate distance from their homes to health facilities. Out of the 156 participants who responded to the question, 127 (81.4%) lived within 10 km of their health facility and the remainder lived more than 10 km from health facility. All participants were asked on whether health facilities were conveniently located for their ease of access and 61.8% reported that health facilities were conveniently located. The challenges cited by clients who reported inconvenience related to location of health facilities are presented in Table 4.

Table 1. Reported challenges faced by patients travelling to health facilities (N=73)

Reason	Frequency (%)
Incur transport cost when travelling to health facility	49 67.1%
Walk long distances to health facility	45 61.6%
Bad road or terrain	11 15.1%

N/B: *Some participants could have reported facing more than 1 challenge therefore percentages do not add to 100%*

More than 60% of the participants reported that they either incurred transport costs or walked long distances to their nearest health facilities.

Health Service availability

Table 5. Percentage of participants who reported availability of different health services at their facilities (N=190)

Type of service	Frequency (%)
Antenatal care	187 (98.4%)
Delivery services	182 (95.7%)
Surgical services	70 (36.8%)
Postnatal services	187 (98.4%)
In patient services	108 (56.8%)

More than 98% of participants reported that ANC and PNC services were available at their health facilities, and only 36.8% of participants reported that surgical services were available.

Payment for health services

Table 6. Percentage of participants who reported that patients were required to pay for services by type of patient (N=190)

Type of client	Frequency (%)
Pregnant women	67 (35.2%)
Breastfeeding women	31 (16.3%)
Children under 5 years of age	9 (4.7%)
Adults over 65 years of age	9 (4.7%)
Adult general clients	99 (52.1%)

The percentage of participants who reported that pregnant and breastfeeding women were required to pay before accessing health services was 35.2% and 16.3% respectively, and only 9 (4.7%) reported that children under 5 years of age were required to pay.

Patients' satisfaction with health services

Access to health services: A majority (84.8%) of the participants reported that they were satisfied with health services received on the day they were interviewed. Participants who reported that they lived within 10km of their health facilities were more likely to be satisfied with health services than those who lived beyond 10km [COR=1.25, (0.56-2.58)]

Organisation of work

Table 2. Patients' perception about organisation of work at health facilities (N=190)

Variable	Responses (%)				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
It is easy to access medical services at this health facility	7.7%	7.2%	13.1%	42.8%	28.9%
There is privacy when I'm being examined	1.9%	3%	2.8%	46.3%	45.9%
Health workers are prompt to serve clients	8.5%	10.7%	13.6%	43.1%	24%
There are enough health workers to attend to clients	25.9%	23.5%	14.6%	26.1%	9.7%
All patients are treated equally	8.5%	9.7%	12%	42.9%	26.8%

DOI: 10.21522/TIJPH.2013.SE.19.02.Art020
ISSN: 2520-3134

Patients are required to visit several departments to get services	9.1%	22.4%	9.1%	37.4%	21.7%
Health workers explain all service disruptions	6.5%	11.3%	17.6%	41.5%	22.9%

A majority (71.7%) of participants either agreed or strongly agreed that it was easy for patients to access medical services at their health facilities, 92.2% agreed that there was privacy when they were being examined and 67.1% agreed that HCWs were prompt to serve patients. Nearly 50% of participants disagreed that there were enough HCWs to attend to patients. A majority (69.7%) of the participants agreed that all patients were treated equally and 64.4% agreed that HCWs explain all service disruptions. The participants' responses were dichotomized with "Agree" and "Strongly agree" responses being recoded "Yes" and the other 3 responses being recoded "No". Results of recoded variables were cross tabulated with responses to the patients' satisfaction question (whose outcome responses were Yes – satisfied, and No – not satisfied). Results of bivariate analysis for work organization-related determinants of satisfaction with health services are presented in Table 9.

Table 3. Work organization-related determinants of satisfaction with health services

Variable	**Crude Odds Ratio**	**95% CI**
Patients get services at whatever time they present to health facility	1.78	0.96 - 3.22
Patients wait for long periods before getting health services	0.69	0.31 - 1.24
Antenatal care services are available any day of the week	0.91	0.52 – 1.58
Patients visit several departments in order to get health services	**0.38**	**0.19 - 0.67**

Patients who reported that they were able to get services at whatever time they presented at health facilities were more likely to be satisfied with health services, although this was not statistically significant (p=0.053).

Patients who reported waiting for long periods before getting health services were less likely to be satisfied with health services; this was however not statistically significant. Patients who reported visiting several departments to get health services were less likely to be satisfied with health services (p<0.001).

Technical issues

Table 10. Perceptions of patients about the technical competence of HCWs (N=190)

Variable	**Response**		
	Always	**Sometimes**	**Not at all**
Health workers give clear information about your condition or treatment	74.2%	18%	7.8%
Health workers give clear instructions on how to take medication	89.4%	6.5%	4.1%
Health workers explain management of your condition	75.3%	16.4%	8.3%
Health workers explain causes of your condition	74.2%	18%	7.8%
Health workers give information about follow-up appointments	92.4%	4.8%	2.8%
Health workers show confidence when they are attending to patients	83.2%	13.1%	3.7%
Health workers address all patient's concerns	76.6%	16.7%	6.5%

More than 74% of participants reported that HCWs always give clear information about patients' condition or treatment, give clear instructions on how to take medication, explain causes of health condition, explain management of health condition, give information about follow-up appointments, show confidence when attending to patients and address all patient's concerns.

The participants' responses were dichotomized with "Always" response being recoded "Yes" and "Sometimes" and "Not at all" responses being recoded "No". Results of recoded variables were cross tabulated with responses to the patients' satisfaction question (whose outcome responses were Yes – satisfied, and No – not satisfied). Results of bivariate analysis for HCWs' competence-related determinants of satisfaction with health services are presented in Table 11.

Table 11. Health worker competence-related determinants of satisfaction with health services

Variable	Crude Odds Ratio	95% CI
Health workers give clear information about patients' condition and treatment	**2.05**	**1.15 – 3.61**
Health workers explain causes of patients' conditions	1.46	0.80 – 2.60
Health workers explain management of patients' condition	**1.85**	**1.02 – 3.27**
Health workers physically examine patients	1.58	0.93 – 2.80
Health workers give clear instructions on how to take medication	**2.11**	**1.03 – 3.91**
Health workers give information on follow up appointments	2.16	0.89 – 4.78
Health workers show confidence when attending to patients	**2.28**	**1.20 – 4.18**
Health workers address all patients' health concerns	**3.61**	**2.05 – 6.34**

Patients who reported receiving clear information about their health condition (p=0.01), getting explanations about management of their health condition (p=0.03), getting clear instructions on how to take medication (p<0.001) and having all health concerns addressed by health workers (p<0.001) were more likely to be satisfied with health services. Health workers' confidence when treating patients was significantly associated with patients' satisfaction.

Humanity of care

Figure 2. Perceptions of patients about humanity of care by health care workers (N=190)

DOI: 10.21522/TIJPH.2013.SE.19.02.Art020
ISSN: 2520-3134

More than 70% of participants reported that they were always given a pleasant and warm welcome, they were treated with dignity and respect and they were given clear answers to their questions.

The participants' responses were dichotomized with "Always" response being recoded "Yes" and "Sometimes" and "Not at all" responses being recoded "No". Results of recoded variables were cross tabulated with responses to the patients' satisfaction question (whose outcome responses were Yes – satisfied, and No – not satisfied). Results of bivariate analysis for HCWs' humanity of care-related determinants of satisfaction with health services are shown in Table 12.

Table 12. Humanity of care-related determinants of satisfaction with health services

Variable	COR	95% CI
Patients are given a pleasant and warm welcome	**3.37**	**1.92 – 5.90**
Patients are treated with dignity and respect	**4.14**	**2.37 – 7.33**
Health workers give clear answers to patients' questions	**4.10**	**2.34 – 7.21**
Health workers understand patients' anxieties and fears	1.89	0.95 – 3.43

Patients who reported being given a pleasant and warm welcome ($p<0.001$), treated with dignity and respect ($p<0.001$) and given clear answers to their questions ($p<0.001$) were more likely to be satisfied with health services.

Physical environment

Participants were asked to rate different aspects of the physical environment at their health facilities. A majority (72.2%) reported that the health facility grounds and compounds were always clean. Table 13 summarizes participants' perception of different aspects of physical environment of health facilities.

Table 13. Perceptions of participants with regards to physical environment of health facilities (N=190)

Variable	Responses						
	Very Poor	Poor	Fair	Good	Excellent	Not Applicable	Don't Know
Cleanliness of examination rooms	0.7%	2.3%	10.2%	59.7%	25.8%	0.5%	0.7%
Cleanliness of toilets and bathrooms	12%	12.9%	12%	39.9%	13.9%	2.3%	6.8%
Water supplies	3.2%	7.2%	13.7%	44.7%	21.5%	2.8%	6.7%
Quantity of food served	3.5%	8.6%	8.6%	13.4%	3.5%	43.8%	18.3%
Quality of food served	5.1%	9%	7.6%	13.4%	3%	43.6%	18.2%
Mothers waiting shelter	1.1%	2.6%	4.5%	25.9%	10.2%	38.2%	17.3%

Almost 60% of participants rated cleanliness of examination rooms to be good and 25% rated examination room cleanliness to be excellent. Nearly 25% of participants rated cleanliness of toilets and bathrooms to be poor/very poor. A majority of participants (66.2%) rated water supplies as good or excellent. The quantity and quality of food served, as well as mothers' waiting homes could not be rated by a majority of participants since some health centres did not have such facilities.

The participants' responses were dichotomized with "Good" and "Excellent" responses being recoded "Yes" and "Very poor", "Poor" and "Fair" responses being recoded "No". Results of recoded variables were cross tabulated with responses to the patients' satisfaction question (whose outcome

responses were Yes – satisfied, and No – not satisfied). Results of bivariate analysis for physical environment related determinants of satisfaction with health services are shown in Table 14.

Table 14. Physical environment-related determinants of satisfaction with health services

Variable	COR	95% CI
The grounds and compound of health facility is always clean	**2.15**	**1.22 – 3.76**

Participants who reported that health facilities had clean compound and grounds were more likely to be satisfied with health services (p=0.005).

Independent determinants of satisfaction with health services

Unconditional logistic regression analysis was conducted to allow for efficient estimation of measures of association between independent factors and satisfaction of participants with health services while simultaneously controlling for multiple confounding variables. Table 15 shows the independent determinants of satisfaction with health services.

Table 15. Independent determinants of satisfaction with health services

Variable	Odds Ratio	95% CI	Coefficient	P-Value
Patients are given a pleasant and warm welcome by health workers	1.38	1.06 - 3.28	0.371	0.01
Patients are treated with dignity and respect	2.14	1.02 – 4.63	0.824	0.03
Patients visit several departments to get health services	0.472	0.19 – 0.89	-1. 008	0.04

The unconditional logistic regression model accounted for 156 cases. Patients who were given a pleasant and warm welcome (p=0.01) and those who were treated with dignity and respect (p=0.03) were more likely to be satisfied with health services. Patients who visited several departments in order to get the full range of health services were less likely to be satisfied with health services (p=0.04).

Discussion

Access to health services

A majority (81.4%) of participants reported that they lived within 10 km of their health facility. This might be a result of the large contribution of primary-level health facilities to the total sample size. This, however, is line with the Zimbabwe national health strategy, which recommends that all citizens must live within 10 km of a health facility. Participants who reported living more than 10 km from their health facility might be those who would have been referred to higher-level facilities for various medical reasons. It is, however, possible that some participants were living beyond 10 km from their nearest health facility, more so in the remote rural and resettlement areas where social services are generally not readily available. A majority of participants reported that health facilities were conveniently located for their ease of access; however, some participants reported that they incurred transport costs or walked long distances to their health facilities and a majority of these lived in rural areas. Most rural areas do not have good road network and are poorly-serviced by public transport operators. In addition, transport costs are relatively higher in the rural areas because of the bad terrain. Most patients in urban areas incur transport costs to get to their nearest health facility. These challenges may result in dissatisfaction with health services, as well as poor retention of patients within care and adherence to prescribed medicines.

Health service availability

Almost all participants reported that antenatal care and postnatal care services were available at their health facilities. This is an indication of universal access to these services across all health facilities. The very few who were not sure of service availability might be those who would have been transferred from other sites or those who would have visited from outside the health facility catchment area. More

DOI: 10.21522/TIJPH.2013.SE.19.02.Art020
ISSN: 2520-3134

than 95% of participants reported availability of delivery services at their health facilities. There could be some primary-level health facilities i.e. clinics and rural health centres that did not offer delivery services for various reasons, including non-availability of adequate water.

Surgical services including caesarean section were reported to be available by only 36 % of participants and this is a result of such services being available only at higher-level, referral health facilities that have resident medical doctors and other health experts. The inadequate number of health care workers reported by participants might also impact availability of inpatient and surgical services even if medical equipment and medicines are available. The shortage of health care workers often results in burnout and poor service delivery to patients.

Payment for health services

A majority of participants reported that pregnant and lactating women were not required to pay for health services and this could be a result of the government policy for free service provision to pregnant and breastfeeding women. Various funding mechanisms and initiatives were put in place to ensure free access to all maternal and child health services and these include Results Based Financing (RBF) and the Health Development Fund (HDF). Health facilities in urban areas were, however, charging for all maternity services. This might be a result of most of the facilities being owned and run by local authorities and others being central hospitals that manage complicated patients. Charging for maternity services would result in low health service utilization, client dissatisfaction and poor maternal and new-born health outcomes. Less than 5% of participants reported that children under 5 years of age were required to pay for services. This indicates that most health facilities were providing under 5 child health services free of charge and this is in line with government policy.

About 20% of participants reported that payment was required for medicines. Most participants reported that medicines were not always available at their health facilities. In addition to paying for medicines, some participants reported that pregnant women were required to buy medical sundries such as gloves, cotton wool and spirit for use during labour. Availability and affordability of medicines is a major determinant of satisfaction of patients with health services. Many studies have shown that patients equate availability of medicines with high-quality services. In Kenya, one study reported that drug availability in the health facility had a positive impact on demand for services. Another study in the Tororo district also concluded that the availability of drugs in the rural health facilities brought satisfaction not only to the users, but also to the providers[20].

Determinants of patients' satisfaction/dissatisfaction with health services

Access to health services. A majority of participants (84.8%) reported that they were satisfied with health services received on the day they were interviewed. In a similar facility based cross sectional study on patients' satisfaction and challenges faced by health workers in Ethiopia, it was found that 74.7% of patients reported that they were satisfied with health services provided by the health facilities. Patients' satisfaction with health services was found to be associated with liking the discussion they had with their HIV counsellor, non-preference to a different counsellor with regards to sex and/or age and not seeing the same ANC counsellor before and after HIV test[21]. In another study to determine nurse and patient perception about good clinical care for HIV positive women on antiretroviral therapy in rural Zimbabwe in 2011, both nurses and patients emphasized the importance of kindness, understanding, confidentiality and acceptance i.e. treating HIV patients "like normal"[22].

Organisation of work. An assessment of perceptions of patients about organisation of work at health facilities was conducted and a majority of participants reported that it was easy for them to access medical services. Patients who face difficulties accessing health services are less likely to be satisfied with the quality of services. A majority of participants also reported that there was privacy when they were being examined. Privacy and comfort are well-recognized determinants of satisfaction with the quality of health services. Availability of adequate space to provide confidentiality for example curtains and private rooms are critical for allaying anxieties and foster a sense of security for patients[23].

More than 50% of participants reported that HCWs were prompt to serve patients. Nearly 50% of participants reported that the number of HCWs were not enough to attend to patients. This might be a result of increased workload for the few HCWs at health facilities. Most primary-level facilities were

manned by two nurses and a nurse aide. The staff establishment for HCWs in the public sector facilities has not been reviewed in line with the changing workload and disease burden, thereby overburdening the few HCWs. In addition, the workload was also compounded by the documentation requirements for all services offered to patients. Patients who reported that they were able to get services at whatever time they presented at health facilities were more likely to be satisfied with health services, although this was not statistically significant (p=0.053). This is an indication that provision of services using a "supermarket" approach is associated with patients' satisfaction. Although the MOHCC recommends a supermarket approach for all maternal and child health services, some health facilities had specific days of the week when they offered antenatal care, postnatal care and in some cases vaccinations for children below 5 years of age. This may lead to low health service utilization and therefore poor maternal and child health outcomes.

Patients who reported waiting for long periods before getting health services were less likely to be satisfied with health services, though not statistically significant. Patients who live in rural areas might have walked long distances or incurred transport costs; therefore, longer waiting time at a health facility would inevitably result in dissatisfaction. Patients who reported visiting several departments to get the full range of health services were less likely to be satisfied (p<0.001). This is an indication that most health facilities have several departments where patients are expected to visit in order to get the full range of maternal and child health services. The various departments include antenatal care booking, pharmacy, HIV testing and counselling and opportunistic infection/ antiretroviral clinic for those who test HIV positive. Patients are often expected to join several ques and this inevitably prolongs time they spent at health facilities.

Technical issues. A majority of participants rated highly the technical competence of HCWs, with more than 74% of them reporting that HCWs always give clear information about patients' condition or treatment, give clear instructions on how to take medication, explain causes of health condition, explain management of health condition, give information about follow up appointments, show confidence when attending to patients and address all patient's concerns.

Patients who reported receiving clear information about their health condition (p=0.01), getting explanations about management of their health condition (p=0.03), getting clear instructions on how to take medication (p<0.001) and having all health concerns addressed by health workers (p<0.001) were more likely to be satisfied with health services. Health workers' confidence when treating patients was significantly associated with patients' satisfaction. Many studies have shown that patients are particularly concerned about technical competence of service providers. The quality of reproductive healthcare study conducted in Uganda discovered that patients wanted providers to conduct a proper examination, identify the health problem and prescribe treatment. Many patients felt that health facilities lacked qualified staff and resented being treated by midwives or nurses who were "training-on-the-job." Although facilities often had one trained provider, this person, albeit performing well, was often overburdened. Therefore, patients recommended that the facilities maintain an adequate number of staff to satisfy demand[24]**.**

Humanity of care. More than 70% of participants reported that they were always given a pleasant and warm welcome, they were treated with dignity and respect and they were given clear answers to their questions. Further analysis of data showed that clients who were given a pleasant welcome (p<0.001), treated with dignity and respect (p<0.001) and given clear answers to their questions (p<0.001) were more likely to be satisfied with the quality of health services. The relationship between an HCW and patient is a tenuous one. Many patients view HCWs in the same light as a parent and consequently expect health providers to behave and act in a manner deserving that respect.

Physical Environment. An assessment of participants' perceptions about different aspects of the physical environment at their health facilities was conducted. A majority of participants reported that the health facility grounds and compounds were always clean. Further analysis of data showed that participants who reported that the health facility compound and grounds were clean were more likely to be satisfied with health services (p=0.005). Nearly 25% of participants reported that toilets and bathrooms were not clean. Most participants felt that portable drinking water was available at their health facilities. The status of the physical environment and availability of equipment and supplies have been cited by some studies to be critical determinants of satisfaction with the quality of health services.

DOI: 10.21522/TIJPH.2013.SE.19.02.Art020
ISSN: 2520-3134

Independent determinants of satisfaction/dissatisfaction with health services

The independent determinants of satisfaction/dissatisfaction included being given a pleasant and warm welcome, being treated with dignity and respect and visiting several departments in order to get health services. Patients who were given a pleasant and warm welcome and those who were treated with dignity and respect were more likely to be satisfied with health services. Patients who visited several departments in order to get the full range of health services were less likely to be satisfied. It is critical that HCWs pay attention to these issues, as they are important determinants of patients' satisfaction with services. These, however, should not be viewed in isolation as they are only a component of what ultimately determines the quality of health services.

Conclusions

Results of the study demonstrated that

1. A majority of pregnant women were satisfied with the quality of maternal and child health services.
2. Maternal and child health services were offered in almost all health facilities.
3. Some pregnant women were incurring some costs in order to access health care services.
4. Giving patients a pleasant and warm welcome and treating patients with dignity and respect were independently associated with patients' satisfaction with maternal and child health services.
5. Having patients visit several departments to get the full range of services was independently associated with patients' dissatisfaction with maternal and child health services.
6. Some health facilities were not offering maternal and child health services using a "supermarket" approach; there were specific days of the week when different services were offered.

Recommendations

1. The Ministry of Health and Child Care (MOHCC) should roll out implementation of comprehensive continuous quality improvement initiatives in order to improve the quality of health services and patients' satisfaction.
2. The MOHCC should ensure that maternal and child health services are offered by health facilities using a supermarket approach.
3. There is need for MOHCC to develop and implement mechanism for strict monitoring of health service charges for maternal and child health services in all public health facilities.

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