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Research Article

Customer-Care Initiatives of Service Providers and the Uptake of Breast and Cervical Cancer Screening Services in Mutare, Zimbabwe

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Abstract

Social marketing globally promotes social mobilization to increase uptake of recommended health services. The Ministry of Health and Child Care in Zimbabwe markets breast and cervical cancer screening for reproductive-age women. Despite efforts, uptake remains low, particularly in Mutare district. To address this, an analytical cross-sectional study was conducted in Dangamvura suburb to explore the relationship between service providers' customer-care initiatives and screening uptake. Qualitative and quantitative data was collected via interviews with 96 women aged 18 to 49, randomly selected from Dangamvura Poly-Clinic departments. Of these women, 13.5% were screened for breast cancer, 30.3% for cervical cancer, and 78.8% expressed intent to screen. 90.3% had accurate knowledge of breast and cervical cancer, but only 30.3% could identify screening sites. Among those screened, 75.8% intended to retest. Primary motivations for screening included a desire for health status knowledge (39.2%) and reproductive system issues (32.1%). Main barriers for non-screened women were lack of motivation (56%) and fear of positive results (16.7%). Logistic regression indicated protective factors for screening uptake: history of reproductive issues (AOR: 9.0678, p: 0.0029), prior breast cancer screening (AOR: 21.4347, p: 0.0006), and age 31 to 49 (AOR: 0.1754, p: 0.0066). Overall, uptake was low, influenced by customer factors (age, reproductive issues, prior breast cancer screening) and cost factors (perceived wait times, screening duration, perceived costs). Future interventions aimed at improving uptake of screening services should be tailored to address fears, misconceptions, and lack of motivation to screen among women of reproductive age.

Keywords

Screening, Customer-Care, Customer, Cost, Communication, Convenience

1. Introduction

Globally, according to the World Health Organization (WHO), cervical cancer is the world's most frequent cancer, with an estimated 570,000 new cases in 2018, representing 75% of all female cancer deaths. In 2018, approximately 311,000 women died from cervical cancer, with more than 85% of these deaths occurring in low- and middle-income

countries [1]. Consequently, according to a September 2018 WHO article on cancer, breast cancer is the second most common type of cancer, recording 2.09 million cases in 2018. Additionally, breast cancer ranked fourth among the common causes of cancer deaths, recording 627,000 deaths in the year 2018 [1].

Among the services offered under reproductive health in Zimbabwe is screening for cancers of the female reproductive system. However, the uptake of breast and cervical cancer screening services is still very low, and this gap has not been addressed. According to the Ministry of Health National Cancer Prevention Strategy of 2014 and 2018, the majority of cancer patients in Zimbabwe (80%) present at late (3rd and 4th) stages, resulting in increased premature deaths from cancer. Diagnosis of cancer at an earlier stage of the disease can enhance the chances of a successful cure [2]. Screening programs are crucial, as many cancers have the best chances of cure when detected at an early stage.

A study conducted by Okonkwo and others in Nigeria on financial barriers to the utilization of screening and treatment services for breast cancer found that financial barriers limit the ability of women, especially the poorest groups, to utilize screening and treatment services for early diagnosis and treatment of breast cancer [3].

Another study was conducted in Malawi on barriers to cervical cancer screening as viewed by service providers. The study revealed that service delivery was affected by shortages of staff, lack of equipment and supplies, lack of supportive supervision, and the use of male service providers. Lack of awareness among the community, long distances to health facilities, lack of involvement of husbands, and misconceptions about the disease (some believe that it is caused by the Visual Inspection with Acetic Acid (VIAC) process) were also identified [4].

Kerrison and others also conducted a study on text message reminders on the uptake of routine breast cancer screening appointments, and the randomized trial was done in a hard-to-reach population. It was discovered that sending women a text message reminder before their first routine breast screening appointments significantly increased attendance [5]. In this regard, this study was guided by the 4 Cs model to explore customer care and uptake of screening services for breast and cervical cancer.

Regionally, Europe accounts for 23.4% of global cancer cases and 20.3% of cancer deaths, although it has only 9.3% of the global population. The Americans have 13.3% of the global population and account for 21% of the incidence and 14.4% of mortality worldwide. In contrast to other world regions, the proportion of cancer deaths in Asia and Africa (57.3% and 7.3%) is higher than the proportions of incident cases (57.3% and 5.8% respectively). The reasons are that this region has a higher frequency of cancer types associated with poor prognosis and higher mortality rates, in addition to limited access to timely diagnosis and treatment [1].

Locally, according to the Zimbabwe Human Papilloma-virus (HPV) Information Centre report of 2019, cervical cancer had the highest incidence (36.7%), followed by breast cancer (21.8%). According to the Cervical Cancer Screening Zimbabwe Programme data from 2012, 7% of women had ever been screened for cervical cancer, and the figure almost doubled in three years (2018) to 21.1% of all women in urban areas, 7.2% of women in rural areas, and 12.6% of all women aged 15 to 49 years [6].

The increase in uptake can be assumed to be due to the improved customer care of breast and cervical cancer service providers. In this regard, this research will look at the relationship between customer care of service providers and the uptake of breast and cervical cancer screening services by women of reproductive age. The research will be guided by the 4Cs of the marketing matrix model: customer, cost, convenience, and communication.

Our study was conducted in Dangamvura high-density suburb of Mutare at Dangamvura Poly Clinic, which is run by Mutare City Council. Under the population serviced by Dangamvura Clinic, the 15 years and above age group is 30,063 (63.8%), and the population of women of reproductive age (15-49 years of age) is 11 073 (23.5%) and expected pregnancies are 974 (8.8%) [7].

Dangamvura Poly Clinic has five departments: 1) Family and Child Health (FCH), 2) Opportunistic Infections (OI), 3) Outpatient Department (OPD), 4) Maternity, and 5) Administration. Cancer screening services for women of reproductive age are under the Family and Child Health department. Sometimes, these services are offered on an outreach basis by the Mutare Provincial Hospital Team or MOHCC Partners.

The reproductive health package of the Ministry of Health and Child Care in Zimbabwe includes marketing screening services for breast and cervical cancer. However, the uptake of these services by women aged 15 to 49 in Mutare was low. The uptake was 1.6% for breast cancer and 12% for cervical cancer in 2018 [8].

Nurses and doctors are responsible for marketing the screening of these cancers to women of reproductive age. Not much has been done yet to address the gap in uptake of these screening services. Information on customer care initiatives of service providers and uptake of breast and cervical cancer screening services is not known. This research aimed to establish the relationship between customer care initiatives of service providers and the uptake of these screening services in Mutare, Dangamvura.

This study used an analytical cross-sectional methodology guided by the conceptual framework of the 4C model by Bob Lauterborn in 1999. The major independent variables are customer factors, cost, communication, and service. The study population comprised women of reproductive age (18 to 45 years) randomly selected from Dangamvura Poly Clinic during their visits for various health services.

The objectives of the study were to:

1) Determine customer-related factors influencing the up-

take of breast and cervical cancer screening services by women aged 18-49 in Mutare, Dangamvura.

2) Assess cost-related factors affecting the uptake of breast and cervical cancer screening services by women aged 18-49 in Mutare, Dangamvura.

3) Identify communication-related factors affecting the uptake of breast and cervical cancer screening services by women aged 18-49 in Mutare, Dangamvura.

4) Establish the convenience and service factors influencing the uptake of breast and cervical cancer screening by women aged 18-49 in Mutare, Dangamvura.

2. Materials and Methods

2.1. Research Design

The study employed an exploratory research design, a non-experimental methodology aimed at gaining insight into the relationship between customer care initiatives of service providers and the uptake of breast and cervical cancer screening. The technique utilized was a mixed-method approach, incorporating both qualitative and quantitative research methods.

2.2. Study Population

The study population were females (18-49) years of age from Dangamvura suburb who come for health services at Dangamvura Poly Clinic. These females were residents of Dangamvura suburb and were staying in Dangamvura for at least 1 year from the day they were identified to participate in this research. These women were selected when they come to Dangamvura clinic for health-care services. The population of females 15-49 years in Mutare district was 141 451, and 69304 Mutare Urban (MOHCC population estimates, 2017). The population of females 15-49 years of age served by Dangamvura Poly Clinic was 30063 (63.8%) [7].

2.3. Sample Size Calculation

The sample size was determined using Cochran's Sample Size formula [9]. A confidence interval of 95% and a precision level of 5% were adopted from a similar study on the uptake of reproductive health services by university students in Kenya [10].

$$\text{Sample Size } N = Z2pq/d2$$

Z is the Z value at 95% Confidence interval which is 1.96

P is the proportion of those who were screened for breast cancer in Mutare 2018

q is 1-p and d is the degree of precision and in this study we will use 5% level = 0.05

Calculated Sample size = $(1.96)2(0.12)(0.88)/0.052 = 162$

The study chose to focus on the prevalence of breast cancer

screening because it had the lowest uptake among the two being studied. Although the calculated sample size was 162 participants, the project lacked funding, making it impossible to cover that many participants. As a result, the study proceeded with a sample size of 100 participants.

2.4. Sampling Design

2.4.1. Purposive Sampling

Dangamvura Poly Clinic was purposively selected for this study because it serves a significant portion of the population of women of reproductive age, comprising 43.4% of the Mutare Urban population [7]. Given this, Dangamvura Clinic emerged as an ideal study site due to its accessibility to women of reproductive age seeking various medical services. Additionally, Dangamvura Poly Clinic occasionally provides breast and cervical cancer screening as part of outreach activities conducted by the Mutare Provincial Hospital mobile screening team.

2.4.2. Consecutive Sampling

Participants, females aged 18 to 49 years, who visited Dangamvura Clinic for various healthcare services were selected from one department to another. Only those who volunteered to participate in the study were chosen. Sampling was conducted in each department, with interviews conducted before moving to the next department. Dangamvura Clinic comprises four departments: 1) Family and Child Health (FCH), 2) Opportunistic Infections (OI), 3) Outpatient Department (OPD), 4) Maternity, and 5) Administration. To ensure a representative sample, proportionate random sampling was employed to select clients from each of the five departments. Each department could contribute up to one-fifth of the total sample size. Participants were continuously selected on a voluntary basis until each department reached one-fifth of the sample size. Clients who visited more than one department were interviewed only once.

2.4.3. Simple Random Sampling

In cases where one department had an excess of volunteers for the study, simple random sampling was employed to select the required one-fifth for participation. Names were written on small pieces of paper and placed in a hat, from which names were randomly drawn with eyes closed, and the hat was shaken after each pick until the total required number was reached. If one department failed to provide the required participants, the remaining balance was evenly distributed across the other departments.

2.5. Data Collection Instruments

2.5.1. Sources of Data

Questionnaires and checklists were utilized in the study.

Questionnaires were employed for interviewer-administered interviews, guiding interviewers through a sequence of questions and facilitating the documentation of responses.

On the other hand, the checklist was utilized for assessing the availability of screening facilities, human resources, and commodities. Additionally, the checklist was used to analyze pharmacy stock cards and registers used in reproductive health services.

2.5.2. Pretesting Tools

The questionnaires were pre-tested on a randomly selected group of 10 participants before their final use. These 10 participants were not included in the main study. Insights gained from the pre-test were utilized to enhance the questionnaire for improved effectiveness.

2.6. Data Collection Procedures

2.6.1. Face to Face Interview

An interviewer-administered questionnaire was utilized to interview the participants. The interview process followed the sequence outlined in the questionnaire, with responses documented directly on the same questionnaire. Only individuals who provided written consent were interviewed.

2.6.2. Observation

The observation method was employed to assess various aspects including facility availability, distribution of Information Education and Communication (IEC) materials, the content of IEC materials, reproductive health services, and provider-related factors.

2.7. Analysis and Organization of Data

The data was analyzed using SPSS version 20, Epi-Info version 7, and Microsoft Excel. Descriptive statistics, including frequency distribution tables, bar charts, pie charts, and bar graphs, were employed. Measures of central tendency such as mean, median, and mode were calculated.

Bivariate and multivariate analysis techniques were utilized to assess the association between dependent and independent variables, with a confidence interval of 95% and a significance level less than 0.05 considered for association. Statistical tests used included Chi-square tests, regression analysis, correlation analysis, odds ratio analysis, and ANOVA.

2.8. Ethical Consideration

The study proposal and data collection instruments were submitted to AUREC for ethical approval. Upon receiving approval from AUREC and a letter of permission from the Provincial Medical Director, another permission was sought from Mutare City Health to conduct the research at Dangamvura Poly Clinic.

Prior to participation, every participant underwent an informed consent process conducted in the local language. Once they understood the purpose of the study and agreed to participate, they expressed their consent by signing the informed consent form.

To protect participant confidentiality, names were not used in the study; instead, a coding system was employed to identify the questionnaires. After each day of data collection, the questionnaires were securely stored under lock and key. Interviews were conducted in a private setting to ensure a high level of privacy and confidentiality. Participants were reassured that all discussions were treated with utmost privacy and confidentiality.

3. Results

This study sought to determine:
1) The relationship between customers' knowledge of breast and cervical cancer screening services and uptake of the services
2) The relationship between cost of the breast and cervical cancer screening services and uptake of the services
3) The relationship between programme communication related factors and uptake of the breast and cervical cancer screening services

3.1. Socio-Demographic Characteristics of Participants

The participants' ages ranged from 18 to 49 years, with a modal age of 48 years (7) and a mean age of 32.8 years. The majority of respondents were from Area 3 (19%), followed by Area 13 and Area 16 at 9%, and Areas N, C, and Gimboki at 8%.

Regarding religious affiliation, most participants identified as Christians. Within the Christian denominations, orthodox religious denominations were the most prevalent, followed by Pentecostal groups. The least represented were those from the White garment Churches, including the Marange Religious Sect based in Mutare Rural.

Table 1. Demographic Variables and frequencies, n=96.

Variable	Description	Frequency	%
Religious Denominations	White garment Church	14	14.6

Variable	Description	Frequency	%
	Pentecostal Church	33	34.4
	Orthodox Churches	49	51
Marital status	Married	67	69.8
	Single	9	9.4
	Separated	11	11.5
	Widow	9	9.4
Employment status	Formally Employed	16	16.7
	Informal Employment	51	53.1
	Unemployed	29	30.2

Overall, the majority of respondents had some level of formal education, with only 1% of the sample reporting no formal education. The dominant level of education was secondary school or high school, with 75% of the respondents attaining this level of education.

3.2. Customer Related Factors

Table 2. Customer related factors n (96).

	Variable	Description	Frequency	%
1	Screened for Breast Cancer	Screened	13	13.5
		Not screened	83	86.5
		Total	96	100
2	Screened for Cervical Cancer	Screened	29	30.3
		Not Screened	67	69.8
		N	96	100
3	Not screened for Cervical Cancer but Plans to be screened	Yes	52	78.8
		No	14	21.2
		Total	66	100
4	Sites were screening was done	MPH	11	37.9
		New start	9	31.0
		ZNFPC	2	6.9
		Sakubva Hospital	2	6.9
		Out-reach and other sites	5	17.2
		No Idea	3	3.1
5	Benefits of cervical cancer screening	1 Benefit	91	94.8
		At least 2	2	2.1
		Total	96	100
6	Those who have Relatives or friends screened for cervical cancer	Yes	27	28.7
		No	67	71.3

	Variable	Description	Frequency	%
		Total	94	100
		Yes	14	14.9
7	Have you ever had problem of the reproductive system?	No	80	85.1
		Total	94	100

Cervical cancer screening attracted more participants compared to breast cancer screening. Consequently, a significant number of individuals expressed willingness to undergo repeat screening tests.

The majority of those who had not yet undergone cervical cancer screening expressed intentions to do so in the future.

Across all groups, knowledge of breast and cervical cancer screening was very high, with respondents demonstrating awareness of the benefits of early cervical cancer screening.

Among those who underwent screening, 39.3% did so simply to know their status, while 32.1% were motivated by previous reproductive system issues. Health education and provider encouragement contributed to 7.1% of cervical cancer screening uptake.

Reasons for not undergoing cervical cancer screening included a lack of motivation or drive (the most common reason), followed by fear of a positive diagnosis (16.7%). Fear of a positive diagnosis was particularly prevalent among respondents from the Opportunistic Infections (OI) department. Additionally, 12% did not undergo screening because they were unaware of where to get tested, and 10.6% stated that cervical cancer screening was not a priority for them.

Table 3. Screened for cervical Cancer and Other Variables.

Variable		Screened for Cervical Cancer		Odds Ratio	CI Interval	P -Value
		Yes	No			
Screening	Yes	11	2	19.86	(4.03 - 97.84)	<0.001*
	No	18	65			
Relative screened	Yes	9	18	1.26	(0.48 - 3.30)	0.318
	No	19	48			
Reproductive system problem	Yes	9	5	5.78	(1.73 - 19.35)	0.002*
	No	19	61			
Supportive husband	Yes	17	37	0.92	(0.21 - 4.12)	0.448
	No	3	6			
Income </=$200		21	8	1.28	(0.49 - 3.35)	0.314
H Hold income >$200		45	22			
31-49 age		24	26	5.57	(2.57 - 22.32)	<0.001*
18-30 age		5	41			
Married	Yes	11	18	1.66	(0.66 - 4.19)	0.146
	No	18	49			

Similarly, the likelihood of undergoing cervical cancer screening is 5.8 times higher in individuals who reported having a reproductive health problem compared to those who did not, and this likelihood is statistically significant due to a p-value less than 0.05.

Furthermore, individuals in the 31-49 years age group have a 5.57 times higher likelihood of undergoing cervical cancer screening compared to those in the 18-20 years age

group, and this difference is statistically significant.

These findings suggest that individuals with reproductive health issues are more likely to undergo screening. Additionally, those who were screened for breast cancer also demonstrate a higher likelihood of undergoing cervical cancer screening.

However, the likelihood of undergoing cervical cancer screening is only 1.263 times higher in individuals with friends or relatives who were screened compared to those without, and this relationship is not statistically significant as the p-value of the odds ratio is greater than 0.05.

Table 4. Logistic regression, screened for cervical cancer and other variables.

Term	OR	95% CI	P-value
Screened	21.43	3.72-123.65	<0.001*
Reproductive system problem (Y/N)	9.07	2.13-38.62	0.003*
Age-class	0.18	0.05-0.62	0.007*

Having been screened for breast cancer and having a history of a reproductive health problem are significantly associated with a higher uptake of cervical cancer screening, as indicated by positive adjusted odds ratios, positive regression coefficients, and a p-value of less than 0.05. Conversely, being within the 18 to 30 years age group is a risk factor for lower uptake of cervical cancer screening, as evidenced by a negative regression coefficient, although this association is not statistically significant.

Table 5. Screened for cervical cancer and number of children, household size and age of the respondent.

ANOVA[a]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	3.966	3	1.322	7.475	.000[b]
Residual	16.273	92	.177		
Total	20.240	95			

a. Dependent Variable: 2.1.1 screened for cervical cancer
b. Predictors: (Constant), 13) Number of children you have, 12) Household size, 2) How old are you?

The calculated ANOVA P-value <0.0001 showed a significant relationship between the variables under study (Screened for cervical cancer, Number of children one has, size of their household and respondent's age).

3.3. Relationship Between Those Screened for Cervical Cancer and Variables

Table 6. Relationship between those screened for cervical cancer and variables (Age, household size and Number of children).

Coefficients[a]	Unstandardized Coefficients		Sig
Model	B	error	
Constant	2.34	.187	.000
Age	-.023	.006	.000

Coefficients[a]	Unstandardized Coefficients		Sig
Model	B	error	
HH size	.019	.024	.432
No. of Children	.022	.033	.521

a. Dependent Variable: screened for cervical

$$Y=2.340-0.0234A+0.019H+0.022C \text{ cancer}$$

A single unit increase in the age of women will result in a 2.34 decrease in the number of women screened for cervical cancer, holding all other variables constant. This relationship is statistically significant, as indicated by a p-value of less than 0.05. Therefore, as the age increases, the likelihood of women being screened for cervical cancer decreases.

Conversely, a single unit increase in the size of the household of women will lead to a 0.019 increase in the number of women screened for cervical cancer, holding all other variables constant. Similarly, a single unit increase in the number of children of the respondent will result in a 0.022 increase in the number of women screened for cervical cancer, with all other variables held constant.

The minimum possible number of women screened is 3 when all other variables are at their minimum levels.

The relationships between the number of women screened and the age of the women and the size of the household are statistically significant.

3.4. Uptake of Cervical Cancer Screening and Department of Respondent

Null Hypothesis (Ho): Being screened for cervical cancer is independent of the department the respondent was selected from.

Chi-squared statistic value: 7.179
Degrees of freedom: 5 (number of departments - 1)
Sample size (n): 96
P-value: 0.12679

The result was not significant because the p-value (0.12679) was greater than 0.05.

Therefore, we failed to reject the null hypothesis (Ho), and we concluded that the proportion of respondents who reported being screened for cervical cancer is independent of the department they were selected from.

The likelihood of having plans to be screened for cervical cancer in future was 5.78 times higher in those who have had problems of the reproductive system than those who have not, however this likelihood is not statistically significant because the P-value.

Table 7. Having plans to be screened in future and having a problem of the reproductive system.

Variable		Plans to be screened		Odds Ratio	95%CI	P value
		Yes	No			
Problem of the female reproductive system	Yes	9	5	5.78	(1.73 - 19.35)	1.726
	No	19	61			

3.5. Cost-Related Factors

Table 8. Cost of screening, waiting time, screening time and time travelling to the site.

Variable	Mode	Mean	Standard deviation
Amount paid for screening	$0 (20)	$1.76	4.61
Perceived cost of screening	$0 (29)	$85.74	220.37
Preferred screening cost	$0 (31)	$40.55	137.1

Variable	Mode	Mean	Standard deviation
Cost of transport to the site	$8 (19)	$12.46	20.90
Waiting time	30min (8)	58.22min	55.22
Perceived waiting time	60min (18)	60.24min	65.17
Screening Time	10min (8)	20.67min	13.94
Perceived screening time	30min (22)	32.21min	28.56
Time travelling to the site	30min (9)	29 min	14.38

The actual costs incurred by those who were screened for cervical cancer are significantly lower than both the perceived and preferred screening costs. Among those who were not screened, 50.8% believed the service to be free, with an average assumed cost of $220.37, far exceeding the actual average cost borne by screened individuals. Additionally, the majority (52.5%) expressed a preference for the screening service to be free.

Interestingly, the average perceived cost was higher than both the actual and preferred costs, indicating a perception of high screening expenses among participants. This perception may discourage individuals from undergoing screening. Moreover, the standard deviation of the actual cost was the lowest of the three, suggesting less variability around the mean compared to perceived and preferred costs.

Similarly, both the actual waiting time and screening time were lower than perceived waiting and screening times, as indicated by the mean, mode, and standard deviation. This perception of long waiting times may deter individuals from seeking screening services.

Regarding transportation, the majority (65.5%) spent an average of $8.00 on travel to and from the screening site, mostly utilizing public transport. Consequently, most participants reached the screening site within approximately 30 minutes.

Table 9. Description of waiting and screening time by those screened.

Variable	Description		
	Normal	Long	Too-long
Waiting time	17 (62.9%)	1 (3.7%)	9 (33.3%)
Screening time	24 (88.9%)	0	3 (12.5%)

The majority of the respondents described the waiting time and screening time as normal, although a significant proportion also described the 2 indicators as too long.

Table 10. Repeat cervical cancer screening and waiting time for screening n=26.

Variable		Repeat cervical cancer screening		Odds Ratio	95% CI	P Value
		Yes	No			
Waiting time	Normal	14	3	2.33	(0.36 - 15.05)	0.208
	Too long	6	3			
Screening time	Normal	19	5	1.90	(0.14 - 25.45)	0.330
	Too long	2	1			

The odds of undergoing a repeat cervical cancer screening were 2.33 times higher in individuals who perceived the waiting time as normal and 1.90 times higher in those who perceived the screening time as normal, compared to those who considered both to be too long. However, these odds were not statistically significant because the p-values were greater than 0.05.

Table 11. Having Plans to be screened in future and other variables.

Variable		Plans to be screened		Odds Ratio	P-Value
		Yes	No		
Perceived Screening cost	</=$10	23	7	0.3791	0.104
	>$10	26	3		
Perceived waiting time	</=30min	21	4	1.1413	0.435
	>30min	23	5		

Among women who were not screened but expressed plans to be screened in the future, those who perceived the waiting time to be less than or equal to 30 minutes had higher chances of intending to undergo screening compared to those who perceived the waiting time to be 30 minutes or more. However, this association was not statistically significant (p=0.435).

Similarly, women who perceived the screening cost of cervical cancer to be less than $10 (RTGS Dollar) were less likely to have plans to be screened for cervical cancer in the future. However, this association was also not statistically significant (p=0.104).

3.6. Communication-Related Factors

Table 12. Communication Variables, n=96.

Variable	Category	Frequency	%
Ever read/heard about breast or cervical cancer screening	Yes	89	94.5
	No	5	5.3
Quality Information recalled	Correct	84	90.3
	Incorrect	9	9.7
Providers communicating with you during the screenings	Yes	23	85.2
	No	4	14.6
Did you understand what they said when they were communicating with you	Yes	22	88
	No	3	12

A significant majority (89 out of 94) of the respondents indicated that they had read or heard about information related to breast cancer and cervical cancer screening at some point. Moreover, when asked to recall this information, 90.3% of them provided correct information. This demonstrates that access to information on cervical cancer screening is widespread, and most women have accessed this information at some point.

Similarly, among those who were screened for cervical cancer (27 individuals), 85.2% reported that the providers communicated with them during the procedure, and 88% stated that they understood what the providers were telling them.

Table 13. Assessing the likelihood of repeat cervical cancer screening amongst clients who said providers were communicating with them during the procedure, n=26.

		Cervical cancer screening		Odds Ratio	95% CI	P value
		Yes	No			
Providers communicating with you during the process	Yes	17	5	1.13	(0.10 - 13.44)	0.448
	No	3	1			

The likelihood of taking-up a repeat cervical cancer screening tests is 1.13 times higher in those who said providers were communicating with them during the procedure than in those who said providers were not communicating with them. However, the likelihood was not statistically significant (p=0.448).

3.7. Convenience and Service Factors

Table 14. Convenience variables n=96.

Variable	Category	Frequency	%
Knowledge of sites that offer cervical cancer and breast cancer screening	0	27	30.3
	1 site	35	39.3
	2 or more	27	30.3
Describe the screening process	Comfortable	19	70.4
	Discomfort /Pain	8	29.6
Would you want to be screened by same team next time	Yes	25	92.6
	No	2	7.4
Screened: Are you comfortable to be screened by males for cervical cancer	Yes	21	75
	No	7	25
	N	28	100
Perception of the screening method	Discomfort/Pain	21	45.7
	Comfortable	42	91.3
	N	46	100
Non-screened: Are you comfortable to be screened by Males?	Yes	54	79.4
	No	14	20.6
	N	68	100
Would bad attitude of health workers bar you from being screened?	Yes	11	12.1
	No	80	87.9
	N	91	100
Would fear of discomfort or pain from the method bar you from being screened?	Yes	13	14.3
	No	78	85.7
	N	91	100

Out of a sample size of 89, 30.3% did not know of any sites that offer cervical and breast cancer screening in Mutare district. Among those who were aware of screening sites, 39.3% knew of one site, while 30.3% knew of at least two or more sites.

Of the total 29 individuals who were screened for cervical cancer, the majority (89.7%) expressed satisfaction with the screening service they received. Regarding the screening process, 70.4% found it comfortable, while 29.6% experienced some discomfort. Additionally, 92.6% of those screened stated that they did not mind being screened by the same team for their repeat test. Moreover, 92.6% of respondents expressed comfort with being screened for cervical cancer by a male.

Among those who had not been screened for cervical cancer, 33.3% perceived the screening method to involve discomfort or pain. Furthermore, 20.6% were not comfortable with being screened by males. These perceptions of discomfort and discomfort during the screening process may contribute to reluctance to undergo screening.

When asked about factors that might deter them from being screened, 12.1% of respondents cited the bad attitude of screening health workers, while 14.3% expressed fear of discomfort from the procedure as potential barriers to undergoing cervical cancer screening.

In terms of convenience and proximity to screening sites, the majority (31.2%) had no idea of any nearby convenient sites. Among those who identified convenient sites, 25.3% mentioned Mutare Provincial Hospital (MPH) as their nearest site, 27.3% identified MPH as their most convenient site, and 29.7% identified New Start as their most convenient and nearest site for cervical and breast cancer screening. Finally, 11.0% pointed out non-screening sites as their convenient and nearest options for screening.

Table 15. Plans for cervical cancer screening and other variables n=67.

Variable		Plans for cervical cancer screening		Odds Ratio	95% CI	P value
		Yes	No			
Number of screening sites you know	1 or more	29	7	1.38	(0.40 - 4.8)	0.32
	0	18	6			
Would fear of method of testing bar you from being screened	No	46	11	2.51	(0.52 - 12.12)	0.14
	Yes	5	3			
Perceived customer-care (Rating out of 5)	(>/=4)/5	27	8	1.21	(0.33 - 4.38)	0.39
	(</=3)/5	14	5			

The likelihood of having plans to be screened for cervical cancer is 1.2810 times higher in those who know at least one cervical cancer screening site compared to those who don't know any screening site. However, this likelihood is not statistically significant because the p-value is above 0.05.

Similarly, the likelihood of having plans to be screened for cervical cancer is 2.5091 times higher in those who are not deterred from screening by the fear of the procedure compared to those who are affected by this fear. However, this likelihood is not statistically significant because the p-value is more than 0.05.

Furthermore, individuals who perceived the customer care of service providers to be between 4 and 5 out of 5 had higher chances of having plans to be screened again than those who perceived customer care to be rated below 3 out of 5. However, this association is not statistically significant.

4. Discussion

This research aimed to establish the relationship between customer-care initiatives of service providers and the uptake of breast and cervical cancer screening services in Mutare, Zimbabwe.

4.1. Demographics

The Opportunistic Infection (OI) department had more respondents than any other department, while the administration department had the least number of respondents. This may be attributed to the timing of the data collection, coinciding with the period when most OI clients visit for their periodic treatment resupply, resulting in a dominance of respondents from that department.

Conversely, the least number of respondents hailed from areas such as Area A, Founders, Hill View Park, and Mai Maria village. These areas are geographically distant from Dangamvura Clinic and are relatively new residential areas. It's likely that these respondents still seek health services from their previous health centers where their records are kept, especially for chronic conditions like HIV and TB.

All respondents identified as Christians, representing

various denominations. The majority (51%) were from orthodox churches, while the fewest were from the white garment Churches. Given that Zimbabwe is predominantly Christian, it's unsurprising that most respondents identified with this faith. Orthodox churches may have dominated due to their historical presence and larger initial congregations.

Regarding marital status, the majority of respondents (69.8%) were married, while the single and widowed constituted the smallest proportions (9.4%). This distribution aligns with the study's target age group of 18 to 49 years, which typically includes individuals of reproductive age, many of whom are married.

In terms of employment, most respondents (53.1%) were informally employed. This finding may reflect the economic landscape in Zimbabwe, where informal employment is prevalent.

The highest reported monthly household income was $4000, with an average of $415. However, the mean monthly household income may have been skewed by the outlier of $4000, making it difficult to generalize. The mode, or most frequently reported figure, was $200, with 10 respondents reporting this income level. Indeed, the prevalence of small-scale income-generating projects among respondents reflects the economic circumstances, especially considering the high rate of informal employment.

Collectively, the respondents reported having 208 children. Sixteen respondents reported having no children, while 28 respondents reported having two children each. Based on these figures, we can infer that the average number of children per respondent was approximately 2. This aligns with expectations for individuals in the reproductive age group, where family sizes tend to be smaller, with the potential for growth over time.

4.2. Customer Related Factors

The findings of the study indicate that the uptake of breast and cervical cancer screening is low, with only 29 out of 96 participants (30.3%) undergoing breast cancer screening and 13 out of 96 participants (13.5%) undergoing cervical cancer screening. These figures are slightly higher than those reported in the Ministry of Health and Child Care generic report for the year 2018, which indicated a screening rate of 12% for breast cancer and 1.6% for cervical cancer [8]. However, it's important to note that the denominator in this study is based on a smaller sample size selected from the clinic, whereas the generic report uses the total population of reproductive-age women in Mutare urban.

A study conducted by Cecilia and colleagues on the uptake of cervical cancer screening in Klang Valley, Malaysia, found that knowledge, perceived barriers, and regular checks were significantly associated with screening uptake [11]. Similarly, the current study found that 56% of those who did not undergo cervical cancer screening cited lack of reasons

or motivation as a barrier. However, only 7.1% of those who underwent screening were encouraged by healthcare providers, contrasting with the findings of Cecilia's study [11].

Another study by Nwabichie et al. demonstrated that perception of barriers was associated with low uptake of cervical cancer screening, which aligns with the findings of the current study. In this study, 33% of non-screened individuals cited various barriers, including lack of knowledge about screening locations, misconceptions about payment, and assuming they were cancer-free. Fear of a positive test result was identified as the most significant barrier.

Interestingly, this study found that women whose husbands were supportive had lower odds of undergoing cervical cancer screening compared to those with unsupportive husbands. This contradicts the findings of a study by Pradeep Devarapalli and colleagues, which linked lack of family support to low screening uptake. The disparity could be attributed to differences in study designs, as the current study is descriptive in nature, while Pradeep's study involved a desktop review of multiple studies [12].

The findings in Pradeep study that lack of time is a barrier in access screening services is also in line with the findings of this study. Seven out of the sixty six respondents who were not screened for cervical cancer pointed-out that their main reason for not being screened was that the screening was not on their priority list.

The study conducted by Binka et al. in 2019 identified perceived lack of privacy at screening sites as a barrier to cervical screening uptake among women in Ghana [13]. This correlates with the findings of our study, where one out of 66 participants cited lack of privacy as a reason for not undergoing screening.

Our study also revealed associations between cervical cancer screening uptake and household income of $200 or less, marital status, and age range of 31 to 49 years. Specifically, there was a significant relationship between being in the age range of 31 to 49 years and undergoing screening. However, these findings differ from those of a study by Tapera et al. conducted in 2019 [14]. Tapera's study found no significant associations between cervical cancer screening and factors such as province of residence, education, occupation, marital status, income, medical aid status, regular doctor visits, frequency of health center visits, source of information about cervical cancer, and knowledge of treatability of cervical cancer.

The disparities between these findings may stem from differences in study populations, methodologies, or contextual factors. Further research is needed to better understand the various factors influencing cervical cancer screening uptake across different populations and settings.

4.3. Cost-Related Factors

The study findings reveal low uptake rates for both breast and cervical cancer screenings, with only 13.5% screened for

breast cancer and 30.3% for cervical cancer. A significant barrier identified among those not screened was the perception of the screening process itself. Interestingly, the perceived cost of screening was significantly higher than the actual cost borne by those who underwent screening. Similarly, perceived waiting and screening times were longer than the actual times reported by participants who were screened.

Despite some participants expressing dissatisfaction with waiting and screening times, the majority indicated willingness to undergo repeat screening. This suggests that while these factors may influence initial uptake, they may not necessarily deter individuals from seeking repeat screenings. However, efforts should be made to address these concerns to improve overall satisfaction with screening services.

The analysis also highlighted the association between perceived waiting time and future screening plans, with those perceiving shorter waiting times more likely to plan for future screenings. This underscores the importance of minimizing wait times to enhance accessibility and encourage uptake of screening services.

The study's findings align with previous research, such as a study by Nana Owusu-Frimpong et al., which found unsatisfactory outcomes related to service climate factors in healthcare delivery. Additionally, the study emphasizes the significance of addressing barriers such as lack of knowledge and awareness to improve uptake of breast and cervical cancer screenings, consistent with findings from Pradeep Devarapi et al.'s study on barriers to screening uptake in low and middle-income countries [12].

Overall, the study underscores the importance of addressing perceived barriers, optimizing service delivery, and increasing awareness to improve uptake of breast and cervical cancer screenings among women.

4.4. Communication-Related Factors

Generally, access to information on breast and cervical cancer screening is high among those who were screened and those who were not screened. However, the low uptake of cervical cancer screening (30.3%) shows that access to information does not automatically translate into practice. Most participants had accurate information about cervical cancer; however, the low screening rate also indicates that having accurate information does not necessarily result in the uptake of the test.

Among those who were screened for cervical cancer, those who pointed out that the service provider was communicating with them during the procedure indicated that they would take up repeat cervical cancer screening when the time comes. This shows that provider-client communication is key to the continued uptake of services. However, the lack of statistical significance of the association may be due to a very small sample size with more controls over cases.

This study discovered that access to information on cervi-

cal cancer screening was very high among the respondents. This was evidenced by the fact that 94.5% of the respondents highlighted that at some point they had read or heard about cervical cancer screening. Additionally, when the respondents were asked to recall the information they read or heard, 90.3% of them recalled information that was correct.

This generally shows a high level of knowledge about cervical cancer screening. This is contrary to the 2017 Zimbabwe situation analysis report, which showed that Zimbabweans' knowledge of cervical cancer is generally low.

Apart from general knowledge of cervical cancer communication, this study also discovered that among those who had been screened for cervical cancer, 85.2% said the health workers were communicating with them during the process, and 88% of them actually understood what the providers were saying during the process. Consequently, although not statistically significant, the likelihood of taking up repeat screening was higher among those who said providers were communicating with them during the procedure.

The findings that providers were communicating with them during service delivery differ from the same indicator in the study of quality and satisfaction of health services in public and private services by Nana Owusu-Frimpong and others in 2012, where they discovered that healthcare users faced limitations in getting attention from doctors among other indicators. [15].

4.5. Convenience and Service Factors

The knowledge of sites that offer breast and cervical cancer screening was found to be very low, with 27 out of 89 respondents failing to point out a correct screening site. A total of 10 out of 91 gave incorrect sites when they were asked to identify screening sites within their convenience. The gap in knowledge of correct screening sites may affect access to screening services.

In terms of perceived customer care of service providers, the group of people who have not been screened before were asked about the perceived customer care of the screening service providers. This was correlated with having plans to be screened in the future. The likelihood of having plans to be screened was higher in those who had rated the customer care as between 4 and 5, relative to those who had rated the customer care as less than 3 out of 5. This shows that customer care has an effect in increasing uptake of health services.

Those who knew at least one screening site were found to be more likely to have plans to be screened than those who knew none of the screening sites. However, the lack of statistical significance of the association may be due to a small sample size and very few cases relative to controls.

This study found that amongst those who were not screened for cervical cancer, the likelihood of having plans to be screened for cervical cancer was higher in those who knew at least one or more screening site than in those who never knew any screening site. Consequently, the study dis-

covered that knowledge of screening sites was generally low, especially amongst those who have not been screened before. These findings are in line with the situation analysis that was done by Oppah Kaguyo and others in 2017, which showed that knowledge of cervical cancer is generally poor [16].

This study found that 70.4% of those who were screened described the process as comfortable, 75% pointed out that they are comfortable to be screened by males for cervical cancer, and 92.6% showed that they were comfortable to be screened by the same team again in the next screening. This shows that respondents were satisfied with the services they received. Similarly, a study was done by Stepurko and others to assess overall satisfaction with healthcare services accessed over the previous year by respondents. However, unlike in this research where less than 10% were not satisfied, Tatiano's research found 10-14% being not satisfied with the services they accessed [17].

This study found that those who have not taken up screening perceive the screening method to be somewhat uncomfortable. 12.1% pointed out that a bad attitude of health providers would bar them from being screened, and 14.3% pointed out that fear of discomfort or pain from the method can bar them from being screened. Although this is from a smaller fraction compared to those who would not be barred from screening by such indicators, it is important for the health sector to improve the quality of the screening method for improved uptake of cervical cancer screening.

5. Conclusion

In conclusion, the overall uptake of cancer screening services was low, influenced by customer factors such as age, reproductive issues, and prior breast cancer screening, as well as cost factors including perceived wait times, screening duration, and perceived costs. Although knowledge about breast cancer was high, it did not significantly influence screening practices. Future interventions aimed at improving uptake of screening services should be tailored to address fears, misconceptions, and lack of motivation to screen among women of reproductive age.

The findings highlight the importance of fostering supportive and empathetic healthcare environments, which can enhance accessibility and promote regular screening among women. By prioritizing patient-centered approaches, service providers can make significant contributions to reducing the burden of cancer and improving public health outcomes in the region.

Abbreviations

MOHCC: Ministry of Health and Child Care
OI: Opportunistic Infections
VIAC: Visual Inspection with Acetic Acid
WHO: World Health Organisation

ZDHS: Zimbabwe Demographic Health Survey

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Munyaradzi Mukuzunga: Manuscript review

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Data Availability Statement

The data is available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors have no conflicts of interest.

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