

Utilization of Interpersonal Communication Channels in the Uptake of Cervical Cancer Screening at Moi Teaching and Referral Hospital, Kenya

Chepngeno Judy B.¹
Anyonje Lydia²

¹jboiyon2011@gmail.com
²lanyonje@mmust.ac.ke

^{1,2}Department Journalism and Mass Communication, School of Arts and Social Sciences, Masinde Muliro University of Science and Technology, P.O. Box 190-50100, Kakamega, Kenya

ABSTRACT

Worldwide, cervical cancer is still a major health concern. The problem is worse in developing nations because there is a lack of access to trustworthy cancer information, which discourages people from getting screened. The usefulness of interpersonal communication channels in spreading awareness about cervical cancer screening was investigated in this inquiry. The study was carried out at the Moi Teaching and Referral Hospital (MTRH) in Uasin Gishu County, Kenya, within the Maternal Child Health and Family Planning (MCH/FP) facility. The Diffusion of Innovations Theory provided direction for the research. The study was conducted at Maternal Child Health and Family Planning (MCH/FP) clinic at the Moi Teaching and Referral Hospital (MTRH) in Uasin Gishu County, Kenya. The study was guided by the Diffusion of Innovations Theory. This study employed a descriptive cross-sectional design and a mixed methods approach to investigate cervical cancer information sources. Targeting women aged 18-65 receiving family planning services at MTRH, the sample of 308 was derived from the monthly population of 1,000. Six key informants were purposively chosen for qualitative data, and 20 participants for focus groups using systematic random sampling. Quantitative data was collected using semi-structured questionnaires while qualitative data was collected using two focused group discussions and six key informant interviews. Statistical Package for Social Sciences, version 29, was used to analyse the quantitative data, and NVivo, version 12 software was used to analyse the qualitative data using thematic content analysis. Regression modelling and the estimation of Pearson's correlation coefficient were used to perform inferential statistics. The tabulated findings suggest that there was strong positive link between information sources adopted and cervical cancer testing uptake ($r=0.876$, $p = <.004$). This observation indicates that the choice of interpersonal communication medium used played a crucial role in influencing the acceptance and adoption of cervical cancer screening. The major channels of interpersonal communication utilized were friends, health care workers and the media. Out of these, the most effective channels were health care workers. As such, healthcare workers, especially doctors and nurses, can increase women's screening adherence to lessen the societal burden of cervical cancer. It is thus recommended that combining mass media and interpersonal communication channels will probably increase women's understanding of cervical cancer thus enabling them to make informed decisions about their health. It is also important to sensitize families, communities and health care workers on their role in promoting screening uptake. Specific training programmes should be put in place to sensitize the public and health care professionals and increase their capacity to promote uptake of cervical cancer screening among women of vulnerable ages.

Keywords: Cervical Cancer Screening, Information Sources, Interpersonal Communication Channels

I. INTRODUCTION

Interpersonal communication involves face-to-face exchange of information between two or more individuals (Rogers, 2003). It is a verbal and nonverbal exchange that happens in both directions, fostering the development of trustworthy relationships and allowing people or small groups to share information and feelings (Hubble, 1994). According to Rogers (2003), scholars acknowledge that adopting or changing attitudes and behaviours requires effective interpersonal communication (IPC). IPC is regarded as a fundamental component of health promotion because of its special qualities that allow it to address issues of stigma, discrimination, and cultural conflicts in addition to encouraging adherence to important behaviour adaptation components (Schiavo, 2014). Therefore, interpersonal communication can be used to influence health seeking behaviours. This article discusses the sources and/or channels of information and their effectiveness in promoting uptake of cervical cancer screening, based on a study conducted in Kenya's Moi Teaching and Referral Hospital.

Cervical cancer is a significant health concern that takes a heavy toll on women's lives. The disease ranks as the fourth most prevalent form of cancer among women on a global scale, with approximately 604,000 new cases reported in the year 2020, according to the World Health Organization (WHO, 2022). The low uptake of cervical cancer screening exacerbates the problem, as many women are diagnosed at advanced stages, leading to high mortality

rates. According to the findings derived from the records of Kenyatta National Hospital (KNH), over the period spanning from 2014 to 2016, an estimated 64% of individuals afflicted with cervical cancer were identified as having stage three or four cancer (Ministry of Public Health and Sanitation [MPHS], 2018). This would have been arrested early by screening women of reproductive age. It is therefore imperative to study the relationship between information sources and uptake of cervical cancer screening in Kenya.

1.1 Statement of the Problem

Deploying national cervical cancer prevention strategic plans and other health policy standards, as well as mass media, the Kenya government consistently conveys knowledge regarding cervical cancer screening (MPHS, 2017). Cervical cancer still poses a serious threat to public health notwithstanding these efforts, suggesting that screening rates have not increased significantly. In the absence of urgent interventions, mortalities from this cancer will keep rising since the majority of the women turn up at the MTRH hospital with late-stage disease (Were *et al.*, 2011). A few investigations have examined the relationship between interpersonal communication and screening uptake for cervical malignancy, with the majority of health communication research conducted in Kenya to date having concentrated on mass media role in this regard. This is despite the fact that interpersonal communication channels have been found to offer prompt and continuous feedback, thereby serving as influential factors in persuading individuals to adopt specific health behaviours, including those aimed at preventing cancer (Jeong & Bae, 2018). Therefore, this study sought to bridge these knowledge gaps by investigating the sources of interpersonal communication on cervical cancer and their effectiveness in enhancing the partaking of cervical cancer examination in Uasin Gishu County, Kenya.

II. LITERATURE REVIEW

Research has shown that interventions focusing on dialogue-based interpersonal communication (IPC) are effective in facilitating open and constructive discussions on sensitive, stigmatized, or revealing subjects within family, couple, and peer networks, thereby contributing to positive health outcomes (Omukule, 2019). According to Luo, Hancock and Markowitz (2022), interpersonal communication sources have demonstrated significant efficacy in effectively conveying trustworthy messages that yield intended outcomes.

2.1 Use of Women's Social Networks for Health Behaviour Change

The social networks' influence and interpersonal interactions on individuals' physical health and psychological well-being is significant (Goldsmith & Albrecht, 2011). Interpersonal networks have been noted as significant factors in the deterrence of hazardous behaviours, facilitation of cessation endeavours, and promotion of screening visits (Dillard & Shen, 2013). Social networks are links and interactions among individuals, which facilitate the acquisition of emotional, informational and instrumental assistance (Li *et al.*, 2019). Informal networks, characterized by familial connections, relatives, and friendships, establish an emotional connection that influences the provision of mutual support and reciprocity (Smith & Christakis, 2009). Formal networks encompass community groups and organized civil society associations, wherein individuals demonstrate adherence to group consciousness through membership that entails commitments, guidelines, work rules, and a hierarchical structure that is collectively established by the members (Smith & Christakis, 2009). Psychosocial mechanisms have been postulated as a means to elucidate the beneficial impact of social support networks on both physical and mental well-being. Therefore, social networks shape individual members' behavioural choices, including health seeking decisions.

In their empirical research, Palmer, Newsom and Rook (2016) indicate that women prefer obtaining health-related information through interpersonal connection with their family and friends, as opposed to impersonal methods of getting health information. Another study has also found that the biological, psychological, and social characteristics unique to women contribute to the significant impact that social ties play in their overall health and specifically in their adoption of cancer prevention behaviours (Trinh, 2017). To what degree has the involvement of family and friends, as well as the utilization of face-to-face communication, contributed to the enhancement of women's awareness of cervical cancer and their participation in cervical cancer screening inside Uasin Gishu County, Kenya? This question was relevant in the current investigation.

According to Rosenquist *et al.* (2010), social connections can potentially facilitate an individual's ability to locate a healthcare provider or attend medical visits. Studies have also provided evidence on the substantial influence of peer support on the uptake of cervical cancer testing (Logan & McIlpatrick, 2011). An inquiry in Jamaica by Ncube *et al.* (2015) posited that women who had personal acquaintance with an individual diagnosed with cervical cancer were more inclined to have undergone screening within the previous year. This observation can be elucidated by the

increased availability of knowledge regarding the disease and preventative strategies among individuals affected by cervical cancer. Previous research conducted by Gan and Dahlui (2013) as well as Logan and McIlpatrick (2011) have similarly demonstrated that women who had personal acquaintances who underwent a Pap test exhibited a higher likelihood of having undergone screening themselves.

2.2 Friends and Family as Cervical Cancer Information Sources

Globally, the family serves as a fundamental cultural entity for health education, contributing to the formation of culturally embedded perspectives on health and illness (Kreps & Sivaram, 2008). Individuals' family members and friends play a crucial role as influential sources of information pertaining to cancer prevention, control, and care actions. A study by Perz *et al.* (2011) also provides evidence indicating that women prefer obtaining health-related information through interpersonal interactions with their family and friends, as opposed to relying on impersonal methods of accessing health information. In a study in India, Singh *et al.* (2012) found that older women and family members serve as the primary source of health knowledge within Indian society. Madhivanan *et al.* (2016) also affirm the impact of family and cultural factors on cervical cancer testing. In a study by Mosavel and Ports (2015), daughters exhibited the capacity to effectively remember and convey a cancer appeal to their mothers, and women, in general, displayed a favourable disposition towards receiving such signals. Mothers not only showed receptiveness towards their daughters' pleas, but also had a notable enhancement in their understanding of cancer as a result of the chance to be educated by their younger female counterparts.

In contrast, family can also be a source of disinformation about health or discouragement from health-seeking behaviours. For instance, a study in India by Dsouza *et al.* (2020) found that both spouses and elderly family members exhibited a lack of support towards women who were receiving cervical screening. Additionally, these individuals generally demonstrated a lack of awareness regarding the need of conducting such screenings. The female participants expressed that engaging in conversations with the subject of screening gave rise to concerns over their modesty or the level of trust they had in their partners, resulting in a sense of discomfort that deterred them from broaching the topic. Similarly, Ndejjo (2017), in a study, found that women expressed apprehension regarding the possibility of their spouse abandoning them, particularly due to the financial burden associated with the treatment costs that would arise if they were diagnosed with cervical cancer. Consequently, the women refrained from undergoing screening. Consequently, the level of support for cervical screening among family members is contingent upon the dynamics of the couple's relationship, and the health literacy of these family members (Dsouza *et al.*, 2020).

2.3 Health Care Providers as Sources of Information on Cervical Cancer

Studies conducted worldwide have emphasized the significance of healthcare providers in predicting the utilization of cervical cancer screening (Muluneh, Atnafu & Wassie, 2019). Individuals are more inclined to attend to personalized communications delivered by a medical professional. Therefore, effective communication between healthcare professionals and individuals is crucial for attaining favourable health outcomes. In a study in Uganda, Black, Hyslop and Richmon (2019) found that healthcare workers play a key function in enhancement of cervical cancer knowledge and screening uptake. Healthcare professionals working in clinics have the capacity to provide education to individuals, namely those who are at a higher risk of developing cervical cancer. This education aims to inform people about the various risk factors associated with the disease and encourage them to have Pap smear testing.

Okunowo *et al.* (2018) in a study in Nigeria concluded that pre-counselling by medical professionals, such as doctors and nurses, had a notable impact on both the understanding of cervical cancer and the utilization of Pap smear screenings. These results support the conclusions found in previous research investigating interventions aimed at enhancing the availing and acceptance of cervical cancer checks (Musa *et al.*, 2017). Interventions aimed at provider recommendations, such as the utilization of invitation letters accompanied by follow-up phone call reminders, represent a worthwhile investment in order to attain a substantial enhancement in screening rates.

In a study to determine attitudes about risk and obstacles to screening for cervical cancer conducted at the MTRH, Were, Nyaberi and Buziba (2011) found that family planning counselling programmes present a favourable platform for discussing the advantages of cervical cancer screening. During consultations on reproductive health, gynaecological examinations are generally more readily accepted by patients. Cervical cancer screening contributes to the enhancement of the visit's value for women. These studies emphasize the need of not only conveying cervical cancer messages to women, but also strategically selecting and utilizing interpersonal communication channels in order to elicit the most effective response. Consequently, this study evaluated the efficacy of various interpersonal channels and sources in facilitating the adoption of cervical cancer screening.

2.4 Community Health Workers and Volunteers as Cervical Cancer Information Sources

Community health workers (CHWs) have the capacity to effectively disseminate health information to individuals through direct interpersonal communication. The significance of community health workers (CHWs) and clinic visits as crucial channels for women to access health information has been acknowledged in previous research (Potts et al., 2019). In a study conducted by Arrossi et al. (2015) in Argentina, the researchers aimed to assess the impact of self-collation of HPV DNA, provided by CHWs during home visits, on the participation rate of cervical checks. The results of the study indicated that community health workers (CHWs) had a favourable impact on the women involved. The participants in the intervention group received education regarding cervical cancer and HPV testing, and were thereafter motivated to go a healthcare facility for the purpose of undergoing screening. The intervention group demonstrated a much higher acceptance of the cancer testing, with a rate of 86%, compared to the control group, which had a rate of 21%, throughout a 12-month timeframe. Given that networks of CHWs are already engaged in delivering health services and promoting health among low- and middle-income populations, as well as those who are difficult to reach, in developing nations, their involvement in interpersonal communication for cervical cancer prevention could potentially enhance screening coverage in Kenya. This study investigated the role interpersonal communication in enhancing participation in screening for the disease in Uasin Gishu County, Kenya.

2.5 Opinion Leaders as Influencers and Sources of Health Messages

Opinion leaders are individuals in a community who consistently offer advice and knowledge to others while upholding a high degree of credibility. The capacity to begin and foster communication and social engagement with others is a crucial aspect of opinion leadership (Kim et al., 2017). Furthermore, it is posited that guidance or information originating from opinion leaders is, to some extent, disseminated to others through interpersonal communication, hence exerting influence on others (Kim et al., 2017).

Bavel et al. (2020) argue that opinion leaders influence health behaviour. Their research shows that there exist various influential elements that establish a connection between opinion leadership and behavioural results. These aspects encompass media exposure, social relationships, expertise, and others (Weimann et al., 2007). When considering the application of this reasoning to the domain of health, it becomes evident that individuals who are regarded as opinion leaders have a heightened necessity and inclination to acquire knowledge and actively participate in their specific field of expertise (Weimann et al., 2007). Hence, those who hold influential positions are inclined to actively pursue knowledge and participate in group discussions pertaining to matters of public health. Building upon the existing body of literature, this study sought to investigate the role played by influential figures, such as politicians and chiefs, in enhancing women's awareness of cervical malignancy and their utilization of testing services in Uasin Gishu County.

2.6 Religious Institutions as Avenues for Preventive Health

Theoretical frameworks such as the religious coping theory proposed by Pargament (1997) and the social support theory put forth by Israel and Schurman (1990) propose many potential mechanisms by which religious considerations may impact the utilization of pre-emptive health services, specifically in the context of cancer testing behaviour. Church participation, as commonly understood, refers to the regularity of attending religious services or engaging in church-related activities (Theodori & Robinson, 2019). This level of involvement may impact an individual's exposure to church norms, such as abstaining from smoking and practicing moderation in alcohol use, both of which are recognized as risk factors for cervical cancer. Furthermore, the provision of enhanced opportunities for individuals to obtain religious support, which encompasses instrumental, informational, or emotional aid exchanged within a faith group, has the potential to mitigate the impact of stressful life events. This, in turn, can enhance individuals' capacity to effectively manage and cope with adverse occurrences, such as receiving abnormal test outcomes (Perz et al., 2011).

According to Campbell et al. (2007), it has been suggested that churches should focus on reaching underprivileged people by implementing cancer education programmes. Churches serve as ideal collaborators for the implementation of evidence-based treatments because to their significant involvement in offering reliable spiritual direction, culturally sensitive communication, social support, and networking opportunities (Knott *et al.*, 2022). Churches also offer infrastructure and amenities for the implementation of health promotion initiatives, which can contribute to the establishment of institutionalized programs. According to Campbell *et al.* (2007), numerous churches perceive health promotion as an integral component of their purpose. They demonstrate a keen interest in offering health programs and attribute significant importance to volunteerism, as it facilitates the implementation of such programmes. This study inquired into the impact of churches on effectiveness of interpersonal communication with cervical cancer messages in Uasin Gishu County.

III. METHODOLOGY

The study was conducted at the maternal child health (MCH-FP) clinic at the Moi Teaching and Referral Hospital (MTRH), Kenya. According to the National Cervical Cancer Prevention Programme Strategic Plan (MPHS, 2012a), the suggested primary service entry points for outreach and in-reach efforts in mass cervical cancer screening campaigns in Kenya consist of Maternal Child Health-Family Planning (MCH-FP) clinics, Comprehensive Care Clinics (CCCs), and Obstetrics and gynaecology wards/clinics. The selection of the MCH-FP clinic for study was motivated by its role as a primary entry point for cervical cancer screening.

Descriptive cross-sectional research design was used in the study. The study utilized a mixed methods research approach. This combination of methods yielded rich data on the sources of information on cervical cancer. All women obtaining family planning and maternal-child wellness services between the ages of 18 and 65 at MTRH formed the target population. According to MTRH Medical Records (2018), the population of women seeking healthcare services at MCH-FP clinic was averaged at 1,000 per month. MPHS (2012b) recommends cervical cancer screening to all women aged 25 to 49 years whereas ages 18 to 65 years for HIV-positive women with history of sexual activity. Since the research focused on all women irrespective of their HIV status, the 18-65 age groups were targeted.

The sample size was computed using the formula as proposed by Gall, Gall and Borg (2007). Thus, from the average monthly population of 1000 women attending the MCH-FP clinic, a sample size of 308 women was drawn. For qualitative data six key informants were selected using purposive sampling based on their status in society and their ability to supply certain required and specialized kinds of information on the interplay of cervical cancer and interpersonal communication. For the focus group discussions, 20 respondents were picked. There were two FGDs each with 10 participants totalling to 20 respondents. The research used systematic random sampling approach, picking every 3rd subject, to obtain the sample until 308 respondents were picked.

To collect quantitative data, the study utilized questionnaires. Key informant interviews and focus groups with women were utilized to collect qualitative data. Once the questionnaires had been collected, they were coded and screened in readiness for analysis. Data analysis was undertaken with the aid of SPSS (version 29.0) for descriptive and inferential data, including percentages, frequencies and means. The qualitative data collected from the interviews and focus group discussions were documented and transcribed. Subsequently, a coding system utilizing numerical identifiers was applied to the data, which was then examined thematically.

IV. FINDINGS AND DISCUSSION

The study sought to establish the interpersonal communication channels used by women seeking healthcare services at MTRH to obtain health information in general, and specifically cervical cancer information, and how these sources of information influenced their uptake of screening. To begin with, the study sought to identify the regularity of access or use of health information sources and the effectiveness of those interpersonal communication channels.

4.1 Frequency of Use of Different Sources for Health Information

The findings on the frequency of access and use of various interpersonal communication channels for health information were as summarised in Table 1.

Table 1
Frequency of Use of Different Sources for Health Information

Interpersonal Communication channel (n=308)	M	Very frequently	Frequently	Occasionally	Rarely	Never
Health workers	3.62	52(16.9)	146(47.4)	72(23.4)	16(5.2)	22(7.1)
Family/Relatives	3.64	12(3.9)	140(45.5)	72(23.4)	30(9.7)	54(17.5)
Church/Mosque/Temple	3.48	106(34.4)	61(19.8)	54(17.5)	49(15.9)	38(12.3)
Friends	3.74	135(43.8)	69(22.4)	37(12.0)	23(7.5)	44(14.3)
Self-help group	2.69	11 (3.6)	102(33.1)	72(23.4)	28(9.1)	95(30.8)
Neighbours	3.09	56(18.2)	68 (22.1)	82(26.6)	51(16.6)	51(16.6)
Workmates	2.32	10 (3.2)	64 (20.8)	30 (9.7)	116(37.7)	88(28.6)
Cancer survivor	2.68	24 (7.8)	54 (17.5)	54(17.5)	70(22.7)	106(34.4)

The tabled findings demonstrate that women used every information channel mentioned to learn about cervical cancer. However, depending on the kind of information channel, access and use frequency varied. The commonest source of health information was friends (mean=3.74) and then family/relatives (mean=3.64). Next were health workers (mean=3.62). The least common were faith (mean=3.48) and self-help (mean=2.69) groups and community (mean=3.09). Moreover, work colleagues (mean=2.32) and cancer survivors (2.68) were useful sources of cervical cancer knowledge.

It appears that, regardless of economic progress, friends and family serve as the main cultural units for health education in the majority of countries, which contributes to the establishment of deeply ingrained cultural views about illness and wellness. This echoes the view by Mosavel and Ports (2015) that family members greatly influence health-seeking behaviours of other members. Gatumo *et al.* (2018) further aver that relatives and friends constitute for women critical sources of health knowledge, followed by other channels.

The FGD participants affirmed that they obtained knowledge on cervical cancer from the media, posters, HCWs and friends.

"I don't remember the program, but doctors and cancer survivors had been invited to an FM radio station to provide information through a talk show. I also got the information through a nurse when I came for family planning i.e., the IUCD because it is a requirement to be screened" (FGD, 02).

The finding reiterated the data obtained from interviewees, who affirmed that HCWs participated in spreading awareness about the cancer and promoting testing. For instance, there had been dialogue sessions and community outreach initiatives organized by health care workers.

"We are also using community health volunteers. We empower them with education on cervical cancer and screening. We even describe the procedure of screening and the equipment we use to dispel the myths that the women have about screening. Community health education workers and public health workers also work hand in hand with public administration in spreading the information" (KII, Facility A, 02).

With their participation in sensitization about cervical cancer through talks and education on health provided at their respective health facilities, HCWs were recognized as an important source of information.

"Sometimes we use health talks done once in a week, through a promotion team from Chandaria cancer centre. They help us in creating awareness about cervical cancer. The nurses in charge of the various sections also do educational talks and they inform them of the availability of screening. The doctors in gynaecology section inform them of the need to be screened especially those who want to get the IUCD insertion" (KII, Facility B, 01).

In addition, the key informants stated that they used public notice boards and posters to reach out to the women. Specifically, MTRH majorly used posters. This was reported as follows:

"The only source of information on cervical cancer at the hospital currently is through posters. We do use posters mainly in MTRH and here is the evidence. The poster tells everything about cervical cancer, i.e., what it is, its causes, how it is transmitted and symptoms" (KII, Facility B, 03).

Hospital clients could thus obtain information about cervical cancer and testing programmes at the health centres, ranging from dispensaries to hospitals. It was observed that while MTRH did not follow this procedure, in certain public health establishments MCH-FP services were combined with cervical cancer assessment. In such scenarios, women needing MCH-FP amenities could use the clinics to obtain cervical cancer information. Health care providers said the key messages they communicated to the clients contained the general knowledge about the cancer, such as its origins, signs and indications, and the value of early detection through screening. One of the key informants had this to say:

"We normally ask them to seek treatment for cervical cancer early. If they have any symptoms of the disease, they seek medical attention. We also sensitize them to come for cervical cancer screening especially women between 14 to 49 years because that is the reproductive age" (KII, Facility A, 01).

Another critical aspect of information distribution process mentioned by the key informants concerned sensitization on the value of testing. This entailed relaying knowledge on where to obtain screening amenities and about the testing procedures. It further involved sensitising the clients on the standard frequency of testing and the significance of HPV injections. This was reported as follows:

"The key messages that we communicate at MTRH are importance of screening, what early diagnosis of cancer means and duration in which one should return for screening. We also inform them of the HPV Vaccine for immunization of girls who are not exposed to Human Papilloma Virus, mostly aged around 10-14 years to prevent cervical cancer" (KII, Facility B, 01).

4.3 Interpersonal Communication Channels Used with Uptake of Cervical Cancer Screening

The study posited a hypothesis that there is no significant relationship between interpersonal communication channels used and adoption of cervical cancer testing among women attending MCH-FP at MTRH. A Pearson’s correlation coefficient test was done to test for the hypothesis. The outcome was as summarised in Table 2.

Table 2
Cervical Cancer Information Sources and Uptake of Screening

		Interpersonal communication channel	Cancer screening uptake
Interpersonal communication channel	Pearson Correlation	1	.876**
	Sig. (2-tailed)		.004
	N	308	308
Cancer screening uptake	Pearson Correlation	.876**	1
	Sig. (2-tailed)	.004	
	N	308	308

** . Correlation is significant at the 0.05 level (2-tailed).

The tabulated findings suggest that there was strong positive link between information sources adopted and cervical cancer testing uptake ($r=0.876$, $p = <.004$). This observation indicates that the choice of interpersonal communication medium used played a crucial role in influencing the acceptance and adoption of cervical cancer screening. Consequently, the study's hypothesis, which posited that there is no statistically significant disparity between the various interpersonal communication channels employed to acquire cervical cancer information and their efficacy in promoting the adoption of cervical cancer testing among women going for MCH-FP amenities at MTRH, Kenya, was refuted. Consequently, it was determined that the selection of interpersonal communication channel holds equal importance to the content of the message. This indicates that the mitigation of cervical cancer requires efficient use of relevant interpersonal communication channels to promote uptake of testing among susceptible women. Research has indicated that mass communication channels play a relatively significant role in enhancing awareness and knowledge regarding cancer-related risks. On the other hand, interpersonal communication channels offer prompt and continuous feedback, thereby serving as influential factors in persuading individuals to adopt specific health behaviours, including those aimed at preventing cancer (Jeong & Bae, 2018).

4.4 Most Effective Channels in Uptake of Cervical Cancer Screening

The research further explored the interpersonal communication channels that were most effective in increasing cervical cancer screening uptake. Effectiveness was described in terms of dissemination of adequate information, trustworthiness and persuasiveness. The findings were as presented in Table 3.

Table 3
Most Effective Interpersonal Communication Channels

Effective interpersonal communication channel	Mean	Most effective	Effective	Neutral	Less effective	Ineffective
Health workers	4.85	282(91.6)	14(4.6)	4(1.3)	4(1.3)	2(0.7)
Family/Relatives	3.45	22(7.1)	166(53.9)	60(19.5)	50(16.2)	10(3.3)
Church/Mosque/Temple	3.98	84(27.3)	174(56.5)	26(8.4)	8(2.6)	16(5.2)
Friends	3.31	20(6.5)	146(47.4)	82(26.6)	46(14.9)	14(4.6)
Women self-help group	3.44	32(10.4)	166(53.9)	40(13.0)	48(15.6)	22(7.1)
Neighbours	3.25	14(4.6)	114(37.0)	114(37.0)	46(14.9)	20(6.5)
Workmates	3.12	14(4.55)	132(42.9)	78(25.3)	54(17.5)	30(9.7)
Cervical cancer survivors	4.47	192(62.3)	98(31.8)	16(5.2)	0(0.0)	2(0.7)

The research results in Table 3 show that health care workers (mean=4.85) were the most effective interpersonal communication channels, followed by cervical cancer survivors (mean=4.47). Religious institutions, including temples, mosques and churches, followed with a mean of 3.98.

The key informants also mentioned health care providers as the most effective interpersonal sources of information, especially at the facility level. They noted that HCWs at all levels were effective in disseminating accurate information on the cancer, especially by offering health education and health talks to clients during clinic

visits. The health care providers in the MCH-FP clinic were mentioned as being in a better place to advise women to take up cervical cancer screening.

“The healthcare providers can be effective during clinical visits-Every client who comes for any MCH FP service should be informed and persuaded to go for screening. Any trained personnel who can advocate for cancer screening in various health facilities can also be effective” (KII, Facility B, 01).

Various studies have underlined the value of HCWs as predictors of use of cervical cancer testing services. A study done by Mbatia (2016), in Naivasha Kenya, revealed that women preferred to receive information on cervical cancer in facilities during health talks. They also wanted spaces where they could seek clarifications on what they did not comprehend about the illness. According to Muluneh *et al.* (2019), when a message comes from a doctor, people are likely to listen. Good interpersonal communication between healthcare providers and individuals is thus important in achieving positive health outcomes.

In one of the FGDs, cervical cancer survivors were also proposed as potentially reliable sources of information to spur women to take up screening.

“There should be forums where cervical cancer survivors can be invited to speak to women about their experience maybe they can be invited to churches. This would encourage more women to go for screening” (FGD, 02).

Other channels considered most effective by women included religious institutions, i.e., church/mosque/temple (2.0), women self-help groups (2.6), family/relatives (2.6) and friends (2.6). The interpersonal communication channels considered least effective was neighbours (2.8) and workmates (2.9).

From one of the FGDs, the participants described friends and health care providers as channels they considered most convincing in promoting uptake of cervical cancer screening. As one participant indicated, they made the decision to go for screening following an advice from a friend or health care provider.

“I was advised by a healthcare provider-doctor while seeking a different service from the doctor and I got convinced. I made the decision, after my friend told me” (FGD, 01).

At the health facilities, FGD participants mentioned health care providers and use of posters as the most effective interpersonal communication channels.

“Hospitals because the healthcare providers can provide health education to women when they go for clinic visits. The hospitals can also put-up posters that provide information about cervical cancer screening” (FGD, 02).

In addition, FGD participants also noted other effective channels of interpersonal communication to include door to door campaigns and religious institutions, such as churches.

“Community health workers can go door to door to speak to women, especially those in rural areas who may not have access to cervical cancer information. Healthcare providers could also use religious institutions to spread awareness by working with religious leaders to organize health programs in the institutions” (FGD, 02).

Other channels mentioned included women group meetings and community outreach activities facilitated by the community health volunteers. The use of administrative leaders and schools in awareness creation were also mentioned as potential effective channels of interpersonal communication.

“There should be forums where cervical cancer survivors can be invited to speak to women about their experience maybe they can be invited to churches. This would encourage more women to go for screening. The women can be reached through administrative leaders like chiefs to create awareness in rural areas among their communities” (FGD, 02).

Similarly, the key informant interviewees and FGD participants indicated that community outreaches were among the most effective interpersonal sources of information on cervical cancer. These included the use of medical camps, open days, outreaches at the community level, and the use of the door-to-door campaigns.

“Any dialogue-based communication channels especially face to face communication is most effective. To start with, the ministry of health should have open days and community outreaches when you pitch a tent in marketplaces or centres and invite the women in the community to come for screening” (KII, Facility A, 01).

The above study findings affirmed the view by Black *et al.* (2019) in Uganda who found that healthcare workers are instrumental in enhancement of cervical cancer knowledge and screening uptake. Community health workers and visits to the clinics have been reported as important information venues for women (Tiruneh *et al.*, 2017). A study done by Arrossi *et al.* (2015) in Argentina showed that the CHWs influenced women positively. In another study, CHWs were reported to have the potential to reach people with face-to-face information (Tiruneh *et al.*, 2017).

Other interpersonal communication channels mentioned in the current study included the use of learning institutions like schools and universities, and social places such as churches and social support groups.

“The public can be reached through the use of students in through schools and colleges. The use of churches may also work” (KII, Facility A, 01).

“The churches can also be used because most women do go there. Chamas [self-help groups] also can be helpful because women do share a lot during these meetings” (KII, Facility B, 03).

The implementation of health education initiatives within communities, including religious institutions such as churches, is suggested as a viable approach to enhance the acceptance and adoption of cervical cancer testing and treatment (Enyan *et al.*, 2022; Orang’o *et al.*, 2016). During FGDs, some respondents opined that the local *barazas* (meetings) were effective interpersonal communication channels.

“The women can be reached through administrative leaders like chiefs to create awareness in rural areas among their communities through barazas” (FGD, 02).

Some key informants stated that social media platforms and local media stations such as radio and TV stations were effective in promoting cervical cancer screening uptake.

“Social media can be used. I think social media reaches large population even those who do not come to the hospital (KII, Facility B, 05). Lastly, the media- Local TV and local Radio FM stations e.g., KASS and others can be used” (KII, Facility A, 01).

The aforementioned statements reflect the action points derived from the Kenya Cancer Research and Control National Stakeholder Meeting concerning the prevention of cervical malignancy. These action points include: 1) involving community leaders and members in the identification of primary factors contributing to stigma through the implementation of knowledge, attitude, and practice (KAP) studies; 2) formulating messages that are culturally suitable to address misconceptions and knowledge deficiencies; 3) facilitating the exchange of information regarding community-based educational initiatives; and 4) enhancing public consciousness regarding cancer prevention and early detection, with a specific target of reaching 60% of the population by the year 2018 (Morgan *et al.*, 2018).

4.5 Uptake of Cervical Cancer Screening at Moi Teaching and Referral Hospital, Kenya

To gauge the levels of adoption of cervical cancer testing, the participants were requested to show whether or not they had ever been tested for the illness. The findings showed that a majority, 244(79.2%), had never been checked for cervical cancer screening. However, some 64(20.8%), had been tested for cervical cancer. The results indicate that there was a low adoption of cervical cancer check-ups at the study area. The research further inquired if those who said they had been tested had done so within the last three years. From the results, 54(84.4%) of the 66 who had been tested, had done so in more than 3 years. As such, a good number of women did not stick to the stipulated timelines for testing.

The FGD participants also affirmed the low adoption of cervical cancer checks among women. Most of them said they had never screened for the cancer. Only those with gynaecological problems admitted to having accepted to be tested for cervical cancer. The FGD respondents said women were afraid of positive diagnosis, suggesting they had poor knowledge of testing for cervical cancer. These results were also affirmed by the health care providers who said that there was generally low uptake of testing due to low awareness.

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

From the study findings and discussion, it was deduced that several channels of interpersonal communication are utilized by women for cervical cancer knowledge. The major interpersonal communication channels utilized were friends, health care staff and the media. Out of these, the most effective channels were health care workers. As such, healthcare workers, especially doctors and nurses can enhance use of testing among women thus diminishing the disease burden in society.

5.2 Recommendations

Women's understanding of cervical cancer is expected to increase with the integration of interpersonal communication networks with mass media channels, empowering them to make more informed decisions regarding their health. More often, people heavily rely on mass media channels when they are first learning about an idea, but use interpersonal channels as they move toward decision making. Integrating interpersonal communication channels will also help women overcome interpersonal communication-related barriers and enhance adoption of cervical cancer testing. It is also important to sensitize families, communities and health care workers on their role in promoting screening uptake. Specific training programmes should be put in place to sensitize the public and health care professionals and increase their capacity to promote testing for cervical cancer among women of vulnerable ages.

REFERENCES

- Arrossi, S., Thouyaret, L., & Herrero, R. (2015). Effect of Self-Collection of HPV DNA Offered by Community Health Workers at Home Visits on Uptake of Screening for Cervical Cancer (the EMA study): A population-based cluster-randomised trial. *Lancet Global Health*, 3, 85-94.
- Bavel, J. J. V., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., Druckman, J. N., Drury, J., Dube, O., Ellemers, N., Finkel, E. J., Fowler, J. H., Gelfand, M., Han, S., Haslam, S. A., Jetten, J., Kitayama, S., ... Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature human behaviour*, 4(5), 460-471. <https://doi.org/10.1038/s41562-020-0884-z>
- Black, E., Hyslop, F., & Richmond, R. (2019). Barriers and facilitators to uptake of cervical cancer screening among women in Uganda: a systematic review. *BMC women's health*, 19(1), 1-12.
- Campbell, N., Murray, E., Darbyshire, J., Emery, J., Farmer, A. Griffiths, F., & Kinmonth A. L. (2007). Designing and Evaluating Complex Interventions to Improve Health Care. *British Medical Journal*, 334, 455.
- Dillard, J. P., & Shen, L. (2013). *The Sage handbook of persuasion: Developments in Theory and Practice* (2nd ed). Los Angeles: SAGE.
- Dsouza, J. P., Van den Broucke, S., Pattanshetty, S., & Dhoore, W. (2020). Exploring the barriers to cervical cancer screening through the lens of implementers and beneficiaries of the national screening program: a multi-contextual study. *Asian Pacific journal of cancer prevention: APJCP*, 21(8), 2209.
- Enyan, N. I. E., Davies, A. E., Opoku-Danso, R., Annor, F., & Obiri-Yeboah, D. (2022). Correlates of cervical cancer screening participation, intention and self-efficacy among Muslim women in southern Ghana. *BMC Women's Health*, 22(1), 1-11.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: an introduction* (8th ed.). AE Burvikovs, Red.) USA: Pearson.
- Gan, D. E., & Dahlui, M. (2013). Cervical screening uptake and its predictors among rural women in Malaysia. *Singapore Medical Journal*, 54, 163-168.
- Gatumo, M., Gacheri, S., Sayed, A. R., & Scheibe, A. (2018). Women's knowledge and attitudes related to cervical cancer and cervical cancer screening in Isiolo and Tharaka Nithi counties, Kenya: a cross-sectional study. *BMC Cancer*, 18(1), 745.
- Goldsmith, D. J., & Albrecht, T. L. (2011). Social support, social networks, and health. In T. L. Thompson, R. Parrott, and J. F. Nussbaum (Eds.), *The Routledge Handbook of Health Communication* (pp. 335-348). New York: Routledge.
- Hubble, J. (1994). *Communicating Health: An Action Guide to Health Education and Health Promotion*. London: Macmillan.
- Israel, B. A., & Schurman, S. J. (1990). Social support, control, and the stress process. In Glanz K, Lewis FM, Rimer B. (Eds). *Health Behaviour and Health education: Theory, Research, and Practice* (pp. 187-215). San Francisco, CA: Jossey-Bass.
- Jeong, M., & Bae, R. E. (2018). The effect of campaign-generated interpersonal communication on campaign-targeted health outcomes: A meta-analysis. *Health Communication*, 33(8), 988-1003.
- Kim, E., Scheufele, D. A., Han, J. Y., & Shah, D. (2017). Opinion Leaders in Online Cancer Support Groups: An Investigation of their Antecedents and Consequences. *Health Communication*, 32(2), 142-151.
- Knott, C. L., Miech, E. J., Slade, J., Woodard, N., Robinson-Shaneman, B. J., & Huq, M. (2022). Evaluation of organizational capacity in the implementation of a church-based cancer education program. *Global implementation research and applications*, 1-11.
- Kreps, G. L., & Sivaram, R. (2008). Strategic Health Communication across the Continuum of Breast Cancer Care in Limited-Resource Countries. *Cancer*, 113, 2331-2337.
- Li, J., Stephens, K. K., Zhu, Y., & Murthy, D. (2019). Using social media to call for help in Hurricane Harvey: Bonding emotion, culture, and community relationships. *International Journal of Disaster Risk Reduction*, 38, 101212.
- Logan, L., & McIlpatrick, S. (2011). Exploring women's knowledge, experiences and perceptions of cervical cancer screening in an area of social deprivation. *European Journal of Cancer Care*, 20, 720-727.
- Luo, M., Hancock, J. T., & Markowitz, D. M. (2022). Credibility perceptions and detection accuracy of fake news headlines on social media: Effects of truth-bias and endorsement cues. *Communication Research*, 49(2), 171-195.

- Madhivanan, P., Valderrama, D., Krupp, K., & Ibanez, G. (2016). Family and cultural influences on cervical cancer screening among immigrant Latinas in Miami-Dade County, USA. *Culture Health and Sexuality, 18*(6), 710-722.
- Mbatia, S. F. (2016). *Cervical Cancer Screening Uptake Among Women Attending Naivasha County Referral Hospital* (Master's thesis). Jomo Kenyatta University of Agriculture and Technology.
- Ministry of Public Health and Sanitation (2018). *Kenya National Cancer Screening Guidelines*. Nairobi: Government Printers.
- Morgan, C., Cira, M., Karagu, A., Asirwa, F. C., Brand, N. R., Lunsford, N. B., ... & Duncan, K. (2018). The Kenya cancer research and control stakeholder program: Evaluating a bilateral partnership to strengthen national cancer efforts. *Journal of cancer policy, 17*, 38-44.
- Mosavel, M., & Ports, K. (2015). Upward Communication about Cancer Screening-Adolescent Daughter to Mother. *Journal of Health Communication, 20*(6), 680-686.
- Muluneh, B. A., Atnafu, D. D., & Wassie, B. (2019). Predictors of cervical cancer screening service utilization among commercial sex workers in Northwest Ethiopia: a case-control study. *BMC women's health, 19*(1), 1-9.
- Musa, J., Achenbach, C. J., O'Dwyer, L. C., Evans, C. T., McHugh, M., Hou, L., ... & Jordan, N. (2017). Effect of cervical cancer education and provider recommendation for screening on screening rates: A systematic review and meta-analysis. *PloS one, 12*(9), e0183924.
- Ncube, B., Bey, A., Knight, J., Bessler, P., & Jolly, P. E. (2015). Factors Associated with the Uptake of Cervical Cancer Screening Among Women in Portland, Jamaica. *North American Journal of Medical Sciences, 7*(3), 104-113.
- Ndejjo, R., Mukama, T., Musabyimana, A., & Musoke, D. (2016). Uptake of Cervical Cancer Screening and Associated Factors among Women in Rural Uganda: A Cross Sectional Study. *PloS One, 11*(2). doi: 10.1371/JOURNAL.PONE.0149696.
- Okunowo, A. A., Daramola, E. S., Ezenwankwo, F. C., Kuku, J. O. (2018). Women's knowledge of cervical cancer and uptake of Pap smear testing and the factors influencing it in a Nigerian tertiary hospital. *Journal of Cancer Research and Practice, 30*, 1-7.
- Omukule, E. (2019). *Interpersonal Communication and Uptake of Voluntary Medical Male Circumcision among Married Men in Kenya* (Doctoral dissertation). JKUAT-COHRED.
- Orang'o, E. O., Wachira, J., Asirwa, F. C., Busakhala, N., Naanyu, V., Kisuya, J., ... & Inui, T. (2016). Factors associated with uptake of visual inspection with acetic acid (VIA) for cervical cancer screening in Western Kenya. *PloS one, 11*(6), e0157217.
- Palmer, A. D., Newsom, J. T., & Rook, K. S. (2016). How does difficulty communicating affect the social relationships of older adults? An exploration using data from a national survey. *Journal of Communication Disorders, 62*, 131-146.
- Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford Press.
- Perz, J., Ussher, J. M., Butow, P., & Wain, G. (2011). Gender differences in cancer carer psychological distress: an analysis of moderators and mediators. *European Journal of Cancer Care, 20*(5), 610-619.
- Potts, M., Cartmell, K. B., Nemeth, L. S., & Qanungo, S. (2019). A qualitative evaluation of a home-based palliative care program utilizing community health workers in India. *Indian journal of palliative care, 25*(2), 181.
- Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed). New York: The Free Press.
- Rosenquist, J. N., Murabito, J., Fowler, J. H., & Christakis, N. A. (2010). The spread of alcohol consumption behavior in a large social network. *Annals of Internal Medicine, 152*, 426-433.
- Schiavo, R. (2014). *Health Communication: From Theory to Practice* (2nd ed.). Jossy-Bass San Francisco.
- Singh, E., Seth, S., Rani, V., & Srivastava, D. K. (2012). Awareness of cervical cancer screening among nursing staff in a tertiary institution of rural India. *Journal of gynaecologic oncology, 23*(3), 141-146.
- Smith, K. P., & Christakis, N. A. (2009). Social networks and health. *Annual Review of Sociology, 34*, 405-429.
- Theodori, G. L., & Robinson, C. S. (2019). A note on religious participation and community involvement. *Community Development, 50*(4), 484-493.
- Tiruneh, F. N., Chuang, K. Y., Ntenda, P. A. M., & Chuang, Y. C. (2017). Individual-level and community-level determinants of cervical cancer screening among Kenyan women: a multilevel analysis of a Nationwide survey. *BMC women's health, 17*, 1-14.



- Trinh, H. N. (2017). *Social Relationships and Cervical and Breast Cancer Screening among Older Women*. Paper to be Submitted to the Population Association of America Conference, Chicago, IL, April 27-29, 2017. University of Texas Medical Branch.
- Weimann, G., Tustin, D. H., Van Vuuren, D., & Joubert, J. P. R. (2007). Looking for opinion leaders: Traditional vs. modern measures in traditional societies. *International Journal of Public Opinion Research*, 19(2), 173-190.
- Were, E., Nyaberi, Z., & Buziba, N. (2011). Perceptions of risk and barriers to cervical cancer Screening at Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya. *African Health Sciences*, 11(1), 58-64.
- World Health Organization (WHO) (2022). *Factsheet: Cervical cancer*. Geneva, Switzerland: World Health Organization.