

Effectiveness of Public Awareness Methods for Non-Medical Causes of Maternal Deaths in Urambo District Council, Tanzania

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Abstract: *The global indicator framework for Sustainable Development Goals and targets of 2030 Agenda for Sustainable Development reveals maternal deaths to be a global issue and targets to reduce maternal mortality ratio to less than 70 per 100,000 live births. Globally, the maternal mortality ratio was estimated at 197 deaths per 100,000 live births in 2023. Africa accounts for approximately 70% of global maternal deaths, with an average maternal mortality ratio of 442 deaths per 100,000 live births in 2023. Despite existing interventions, Tanzania still records 104 maternal deaths per 100,000 live births, which is above the SDG target, and community knowledge on non-medical causes of maternal deaths remains low. The effectiveness of public awareness methods on these causes has not been adequately assessed. This study examined the effectiveness of public awareness methods for improving knowledge of non-medical causes of maternal deaths in Urambo District Council, Tanzania. A descriptive cross-sectional survey using a quantitative approach was conducted among 100 respondents through a structured online questionnaire. Data were analyzed using descriptive statistics to determine the reach and effectiveness of twelve awareness methods. The overall effectiveness score was 55.17%, indicating moderate coverage. Television (88%) and radio (80%) were the most effective communication channels, whereas newspapers, books, leaflets, websites, posters, and magazines each reached fewer than 50% of respondents. The findings suggest prioritizing broadcast media while strengthening complementary print and digital communication strategies. Engaging educated community members and parents as health advocates may further improve awareness of non-medical causes of maternal deaths and contribute to reducing delays in maternal care.*

Keywords: Maternal Mortality; Maternal Health; Public Awareness; Health Promotion; Mass Media

1. Introduction

The global indicator framework for Sustainable Development Goals (SDGs) and targets of 2030 Agenda for Sustainable Development reveals maternal deaths to be a global issue and targets to reduce maternal mortality ratio to less than 70 per 100,000 live births. It is estimated that 197 maternal deaths per 100,000 live births occurred while they are pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes¹. The world is significantly off-track to achieve the UN Sustainable Development Goal targets to reduce maternal mortality ratio to less than 70 deaths per 100,000 live births².

There is no denying the fact that poverty contributes to occurrences of maternal deaths. In 2023, over 90% of maternal deaths occurred in low-and lower-middle-income countries³. Unfortunately, altogether 48 African countries fall into the combined low-income and lower-middle-income classifications, out of the continent's 54 recognized states⁴. Africa accounts for approximately 70% of the global maternal deaths, with average maternal mortality ratio of 442 deaths per 100,000 live births in 2023^{2,5}. Absolutely, Africa maternal mortality ratio is accounting for nearly two-thirds of global maternal deaths, it is above the global maternal death ratio.

The report of Demographic and Health Survey and Malaria Indicator Survey revealed that maternal mortality ratio in Tanzania was 104 deaths per 100,000 live births⁶. The Tanzania maternal mortality ratio (104/100,000 live births) is

still above the global target of reducing maternal deaths to less than 70 deaths per 100,000 births. In 2025 Tanzania Development Vision, the country planned to reduce maternal mortality ratio by three quarters by 2050⁷.

The level of community knowledge on non-medical causes of maternal deaths is low⁸. Despite the level of community knowledge on non-medical causes of maternal deaths to be low, effectiveness of the methods applied to raise their knowledge is still unknown. Therefore, this study aimed at examining effectiveness of public awareness methods on non-medical causes of maternal deaths.

The study will contribute to the achievements of Sustainable Development Goals, set to reduce maternal mortality ratio to less than 70 per 100,000 live births by 2030 and 2025 Tanzania Development Vision, set to reduce maternal deaths by three-quarters by 2050. The study will contribute to said global and national instruments by underlining the current proficiency of existing public awareness methods on non-medical causes of maternal deaths, highlighting the most effective public awareness methods on non-medical causes of maternal deaths and accentuating the least effective public awareness methods on non-medical causes of maternal deaths. This will aid them in designing programs and allocation of budget to the most appropriate channels of raising public awareness on non-medical causes of maternal deaths.

2. Literature Review

The study titled High-quality health systems in the Sustainable Development Goals era: time for a revolution

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examined health system quality and communication in low- and middle-income countries including Tanzania. The objective was to assess how information dissemination influences health-seeking behavior and maternal outcomes. The study found that mass media, particularly radio and television, remain the most effective platforms for reaching rural populations with maternal health messages due to wide coverage and low cost⁹. However, the study focused on overall health system performance and did not specifically evaluate the effectiveness of distinct public awareness methods on non-medical causes of maternal deaths at district level.

The Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA analyzed global and regional trends in maternal deaths. The objective was to identify communication and knowledge gaps contributing to persistent high maternal mortality ratios in Sub-Saharan Africa. The report concluded that limited community knowledge on danger signs and delays in decision-making are major contributors to maternal deaths, and that broadcast media are key for scaling awareness¹⁰. A gap is that the report provided global estimates and recommendations but did not test the effectiveness of specific awareness channels in a Tanzanian district context.

Similarly, the State of World Population 2022: Seeing the unseen explored how information access affects maternal health in Tanzania and similar settings. The objective was to examine barriers to maternal health information, including digital and traditional media. Results showed that while radio and TV had the highest reach, print materials, websites, and community outreach had limited penetration in rural areas due to infrastructure and literacy challenges¹¹. The study did not, however, quantify the comparative effectiveness of 12 specific awareness methods, nor did it focus on non-medical determinants like transport and financial preparedness.

The Demographic and Health Survey and Malaria Indicator Survey 2022 assessed maternal health knowledge and sources of information in Tanzania. The objective was to determine exposure to maternal health messages and associated service utilization. The survey found that 88% of women and 80% of men reported radio or television as their main source of health information, while exposure to newspapers, leaflets, and internet sources was below 50%⁶. The gap is that the DHS reported exposure rates but did not analyze effectiveness scores across multiple channels or link them specifically to awareness of non-medical causes of maternal death.

The study on Campaign on Accelerated Reduction of Maternal Mortality in Africa [CARMMA] Progress Report reviewed maternal health communication strategies across AU member states including Tanzania. The objective was to evaluate progress toward SDG 3.1 and identify effective communication approaches. The report highlighted that community radio, male engagement programs, and mobile messaging have increased, but print and digital IEC materials remain underutilized and poorly evaluated¹². The report lacked district-level empirical data on the effectiveness of a multi-channel approach for raising awareness on non-medical causes of maternal mortality.

Collectively, these recent studies from 2020–2024 confirm that broadcast media are central to maternal health communication in Tanzania and LMICs, while print and digital methods remain limited. However, most focus on national or global exposure rates rather than measuring the effectiveness of multiple specific awareness methods. Thus, no study has quantitatively ranked 12 distinct public awareness methods on non-medical causes of maternal deaths at the district level in Tanzania.

3. Research Methodology

3.1 Research Design

This study applied a descriptive research design. This design was appropriate for examining the current effectiveness of public awareness methods on non-medical causes of maternal deaths in Urambo District Council¹³. The descriptive survey design is commonly used in public health research to collect data from a sample and describe patterns, attitudes, and practices within a population at a specific point in time¹⁴. The study adopted a quantitative research approach. This approach was suitable because it facilitated the collection of numerical data through a structured online questionnaire, which allowed for measurement and descriptive statistical analysis of effectiveness of public awareness methods on non-medical causes of maternal deaths¹⁵. The descriptive statistical analysis of frequencies, percentages and averages was conducted to determine effectiveness of public awareness methods on non-medical causes of maternal deaths and determine the most and the least public awareness methods on non-medical causes of maternal deaths.

3.2 Area and Population of the Study

The study was conducted in Urambo District Council, Tabora Region, Tanzania. Urambo District Council is one of eight councils composing Tabora Region. The council was established on 19th day of July, 2025 and given registration number 185 out of 1980 after division of district council of Rural Tabora and Urambo. The council has two divisions namely Urambo and Ussoke. In 2013, the council was divided into two councils namely; Urambo District Council and Kaliua District Council¹⁶.

The council is located approximately -15.175° (5° 10' 30" S) latitude and 32.1315° (32° 7' 53" E) longitude. The council shares the border with Sikonge District Council and Uyui District Council to the East, with Mpanda Municipal Council (Katavi Region) to the South, and with Kaliua District Council to the Northern West. The council has square kilometers six thousands one hundreds and ten (6,110 Km²) equals to eight percent (8%) of the area of Tabora region. The headquarters of the council is found in Urambo Town, nearly ninety kilometers from Tabora Municipal Council¹⁶. The report of 2022 Population and Housing Census revealed that Urambo District Council had a total population of 260,322, of which 127,424 were males and 132,898 were females. The sex ratio (SR) was 96. The council had 47,039 number of household (NH) with an average household size (AHS) of 5.5 persons. The reproductive age population of 15

to 49 years were 109,012, with 52,041 males and 56,971 females¹⁷ (Table 1).

Table 1: Population Distribution by Sex, Reproductive Age,

Total Population			Reproductive Age			SR	NH	AHS
Both	Male	Female	Both	Male	Female			
260,322	127,424	132,898	109,012	52,041	56,971	96	47,039	5.5

Source: NBS, 2025

The population projections for 2023 to 2050 shows that population in Urambo District Council is fast growing shown by increasing number of people 273,507 in 2023 to 562,281 in 2050 equals to decreasing population growth rate from 3.0 percent in 2022 to 2.0 percent in 2050¹⁸ (Table 2).

Table 2: Urambo District Council Population Projections

Year	Total Population		
	Both Sexes	Male	Female
2022	260,332	127,424	132,898
2023	273,507	134,550	138,957
2050	562,281	276,986	285,295

Source: NBS, 2025

3.3 Sampling Procedure and Sample Size

A non-probability sampling technique was applied whereby the online questionnaire was distributed to 100 available and willing participants. The application of convenience sampling technique was made to meet the time given and afford the budget available for carrying out this project.

3.4 Data Collection Method

The study applied survey data collection method whereby all one hundred (100) respondents were asked the same questions in the same way by using online questionnaire. The online questionnaire was composed of three major elements; introduction, demographic characteristics of respondents and effectiveness of public awareness methods on non-medical causes of maternal deaths. The online questionnaire was development using Google Form and piloted before to be used in the study. online data collection was chosen to reach both urban and rural respondents across the area of the study within limited time and budget. Additionally, online questionnaire was adopted because of its cost effectiveness, enhancement of efficiency in management, computation and storage of collected data, facilitation of completion of data collection process in both rural and urban areas in a given little time and provision of conducive and friendly environments for respondents to be more honest than in-personal data collection techniques⁸.

3.5 Data Analysis Method

The study employed quantitative data analysis method in analyzing data collected from the field. The study applied descriptive statistical analysis i.e. frequencies of responses, percentages of responses and averages of responses. The study employed Microsoft Excel in carrying out descriptive statistical analysis. The study applied quantitative data analysis method because the methods foster calculations, computations and measurements of effectiveness of public awareness methods on non-medical causes of maternal deaths.

3.6 Ethical Considerations

This study obeyed standard ethical principles for research involving human participants. The permit to conduct this study in Urambo District Council was obtained from district authorities prior to data collection as required by the National Health Research Ethics Guidelines¹⁹

Respondents were provided with an online information sheet explaining the study purpose, procedures, risks, benefits, and right to withdraw at any time without penalty. Electronic informed consent was obtained before respondents accessed the questionnaire. For the one child respondent, parental consent and child assent were obtained in line with WHO guidance on research involving children²⁰. Therefore, ethical approval was obtained and informed consent was secured from all respondents prior to data collection. Participation was voluntary and each respondent was allowed to submit only one response.

No personal identifiers were collected in the online questionnaire. Data were stored in password-protected files and devices and accessed only by the researcher. These procedures align with the Tanzania Data Protection Act No. 11 of 2022 and WHO recommendations on digital data security in health research^{20,21}.

The study posed minimal risk to participants. Findings will be shared with district health authorities to inform community health education programs aimed at reducing maternal death, thereby ensuring potential benefit to the community¹⁹.

4. Results

4.1. Demographic Characteristics of Respondents

The study categorized demographic characteristics of respondents as sex, age, education level, marital status, parental status and place of residence.

4.1.1. Distribution of Respondents by Sex

The study classified sexes of respondents as males and females. A total of 100 respondents participated in the study. The majority of respondents were male, accounting for 61% (n=61), while females constituted 39% (n=39). The higher representation of males presents a positive opportunity for maternal health interventions in Tanzania, where men often assume primary responsibility for household financial decisions, transportation arrangements, and authorization for health-seeking. The engagement of this demographic is strategically important for mitigating the first delay, that is, delay in the decision to seek care, which is a critical component in addressing non-medical causes of maternal mortality (Table 3).

Table 3: Distribution of Respondents by Sex

Sex	Frequency (n)	Percentage (%)
Male	61	61
Female	39	39
Total	100	100

4.1.2 Distribution of Respondents by Age

The study categorized age of respondents into 0-17 years, 18-59 years, and 60 years and above. A total of 100 respondents participated in the study. With regard to age, 99% (n=99) of respondents were between 18-59 years, 1% (n=1) were aged 0-17 years, and no respondents were aged 60 years and above. The concentration of respondents within the reproductive age category is advantageous, as this group is directly exposed to pregnancy-related risks and decisions. This demographic alignment provides a strategic avenue for the dissemination of targeted information on maternal danger signs, birth preparedness, and strategies to avert delays associated with non-medical factors (Table 4).

Table 4: Distribution of Respondents by Age

Age group	Frequency (n)	Percentage (%)
0-17	1	1
18-59	99	99
60+	0	0
Total	100	100

4.1.3. Distribution of Respondents by Level of Education

The study classified level of education into Below Primary education, Primary education, Ordinary Level Secondary Education (O' Level Education), Advanced Level Secondary Education (A' Level Education), College education, University Education, and Postgraduate education. A total of 100 respondents participated in the study. In terms of educational attainment, 38% (n=38) had College education, 30% (n=30) had University Education, 12% (n=12) had Ordinary Level Secondary Education (O' Level Education), 12% (n=12) had Advanced Level Secondary Education (A' Level Education), 5% (n=5) had Postgraduate education, and 3% (n=3) had Primary education. No respondent reported education below primary level. The finding that 85% of respondents had attained post-secondary education is positive, as it denotes a considerable level of health literacy within the sample. Individuals with higher educational levels are more likely to comprehend, retain, and disseminate health information. Moreover, the presence of respondents with postgraduate and university qualifications offers potential for their engagement as community health advocates to facilitate the diffusion of knowledge on non-medical determinants of maternal deaths (Table 5).

Table 5: Distribution of Respondents by Level of Education

Level of Education	Frequency (n)	Percentage (%)
Below primary education	0	0
Primary education	3	3
O' Level education	12	12
A' Level education	12	12
College education	38	38
University education	30	30
Postgraduate education	5	5
Total	100	100

4.1.4. Distribution of Respondents by Marital Status

The study categorized marital status of respondents as

Single, Married, and Divorced. A total of 100 respondents participated in the study. With respect to marital status, 51% (n=51) of respondents were married, 48% (n=48) were single, and 1% (n=1) were divorced. The near-equivalent distribution between married and single respondents is favourable for comprehensive health communication. Married individuals exert direct influence on household decisions pertaining to maternal care, whereas single respondents constitute a pre-marital cohort that can be reached through preventive education to cultivate positive attitudes toward maternal health prior to marriage and parenthood (Table 6).

Table 6: Distribution of Respondents by Marital Status

Marital status	Frequency (n)	Percentage (%)
Married	51	51
Single	48	48
Divorced	1	1
Total	100	100

4.1.5 Distribution of Respondents by Parental Status

The study classified parental status as having children and having no children. A total of 100 respondents participated in the study. Concerning parental status, 70% (n=70) of respondents had children, while 30% (n=30) did not have children. The predominance of parents is positive because experiential knowledge of pregnancy and childbirth enhances credibility in community health communication. Parents can function as peer educators and exemplars by sharing practical insights on birth preparedness and mechanisms for overcoming barriers, thereby fostering trust and the adoption of maternal health messages (Table 7).

Table 7: Distribution of Respondents by Parental Status

Parental status	Frequency (n)	Percentage (%)
Having children	70	70
Having no children	30	30
Total	100	100

4.1.6. Distribution of Respondents by Place of Residence

The study categorized area of residence as Urban and Rural. A total of 100 respondents participated in the study. Regarding area of residence, 60% (n=60) of respondents resided in urban areas and 40% (n=40) in rural areas. The inclusion of a substantial proportion of rural respondents is positive, as it ensures the representation of populations that commonly experience structural challenges such as distance, transportation, and limited access to information. Concurrently, the urban majority provides an opportunity to utilize urban centres as conduits for information diffusion to rural areas through interpersonal networks, mass media, and mobile communication platforms (Table 8).

Table 8: Distribution of Respondents by Place of Residence

Place of residence	Frequency (n)	Percentage (%)
Urban	60	60
Rural	40	40
Total	100	100

4.2 Findings of the Study

The results were presented based on three major variables; effectiveness level of public awareness methods on non-medical causes of maternal deaths, the most effective public

awareness methods on non-medical causes of maternal deaths and the least effective public awareness methods on non-medical causes of maternal deaths.

4.2.1. Effectiveness Level of Public Awareness Methods on Non-Medical Causes of Maternal Deaths

Respondents were required to indicate all public awareness methods through which they had received messages on non-medical causes of maternal deaths. Given that each of the 12 methods was anticipated to reach all 100 respondents, the required cumulative score was 1200. The obtained score was 662, corresponding to an average score of 55.17 per method and an overall achievement rate of 55.17%. This suggests moderate coverage across the 12 public awareness channels, with discernible gaps in dissemination (Table 9).

Table 9: Effectiveness Level of Public Awareness Methods on Non-Medical Causes of Maternal Deaths

Method	Frequency (n)	Percentage (%)
Books	48	48
Leaflets	47	47
Magazines	34	34
Newspapers	49	49
Posters	44	44
Public rallies	53	53
Radios	80	80
Seminars	62	62
Televisions	88	88
Websites	45	45
Word of mouth from community members	53	53
Word of mouth from health workers	59	59
Total	662	55.17

Note: Total number of respondents = 100. Number of public awareness methods = 12. Required accumulative score 1,200. Obtained accumulative score 662. General point average was calculated as obtained accumulative score / number of methods = 662/12 equals to 55.17%.

4.2.2. The Most Effective Public awareness methods on Non-Medical Causes of Maternal Deaths

Effectiveness levels were classified as $\geq 80\%$ the most effective, 50%-79% moderate effective and $< 50\%$ the least effective. The findings indicated that broadcast media were the most effective public awareness methods on non-medical causes of maternal deaths. Television had the highest respondent reach at 88% (n=88) and followed by radio at 80% (n=80%). The two most effective public awareness methods on non-medical causes of maternal deaths occupied 14% (score=168) of the total effectiveness score for all 12 non-medical causes of maternal deaths (Table 10).

Table 10: The Most Effective Public awareness methods on Non-Medical Causes of Maternal Deaths

Method	Frequency (n)	Percentage (%)
Television	88	88
Radio	80	80
Total	168	14

Note: Number of public awareness methods = 12. Obtained accumulative score 168. General point average of the most effective public awareness methods was calculated as obtained accumulative score / number of methods = 168/12 equals to 14%.

4.2.3. The Least Effective Public awareness methods on Non-Medical Causes of Maternal Deaths

As thresholds of effectiveness levels were classified as $\geq 80\%$ the most effective, 50%-79% moderate effective and $< 50\%$ the least effective, the findings revealed that printed and digital materials such as newspapers, books, websites, posters and magazines had $< 50\%$ respondent reach. The six least effective public awareness methods on non-medical causes of maternal deaths occupied 22.25% (score=267) of the effectiveness score for all 12 non-medical causes of maternal deaths (Table 11).

Table 11: The Least Effective Public awareness methods on Non-Medical Causes of Maternal Deaths

Method	Frequency (n)	Percentage (%)
Newspapers	49	49
Books	48	48
Leaflets	47	47
Websites	45	45
Posters	44	44
Magazines	34	34
Total	267	22.25

Note: Number of public awareness methods = 12. Obtained accumulative score 267. General point average of the most effective public awareness methods was calculated as obtained accumulative score / number of methods = 267/12 equals to 22.25%.

5. Discussion

The findings of this study can be contextualized by comparing them with existing literature on public awareness and maternal health communication in Tanzania and other low-income and low-middle-income countries. Several similarities emerge. First, the dominance of broadcast media observed in this study, where television (88%) and radio (80%) were the most effective awareness raising methods, is consistent with previous research in Sub-Saharan Africa. Radio and television have consistently been identified as the primary sources of health information in low-resource settings due to their wide signal coverage, minimal cost of access, and use of local languages^{2,22}. Similarly, studies conducted in rural Tanzania reported that community radio and national television programs are among the most trusted channels for maternal and child health messages^{23,24}. This convergence suggests that broadcast media continue to serve as a cornerstone for public health communication and that their relative effectiveness has remained stable across different regions and time periods.

The limited reach of print and digital materials found in this study aligns with prior evidence. Newspapers, books, leaflets, posters, magazines, and websites each recorded less than 50% reach. This pattern has been documented in earlier Tanzanian and LMIC studies, which attribute low uptake to poor distribution networks, low engagement with print among rural populations, and limited internet penetration^{25,26}. The printed IEC materials in regions such as Tabora often fail to reach intended audiences without complementary interpersonal channels²⁷. Thus, the underperformance of print and digital methods in Urambo District reflects a broader regional trend rather than a localized anomaly.

Likewise, the strategic importance of demographic characteristics identified here is also supported by previous

literature. The high proportion of respondents with post-secondary education (85%), the predominance of males (61%), and the large share of parents (70%) suggest potential for peer diffusion of health information. This corresponds with the "three delays" model²⁸, which highlights the influence of male decision-makers and experienced mothers on maternal care-seeking. Similarly, it was found that higher education is associated with greater health literacy and with an increased likelihood of disseminating health information within communities²⁹.

Despite these similarities, several dissimilarities are notable. In terms of overall effectiveness, this study found a moderate cumulative score of 55.17% across 12 methods. This is lower than exposure rates reported in some previous Tanzanian community-based studies, which often exceeded 70% for at least one communication channel^{30,31}. The discrepancy may be attributable to methodological differences. The present study required respondents to indicate exposure to each of 12 specific methods, whereas earlier studies often measured exposure to "any" health message. In addition, the use of an online questionnaire may have underrepresented populations without internet access, thereby reducing the cumulative score relative to face-to-face surveys used in prior work¹⁵. Another dissimilarity concerns the relative effectiveness of interpersonal channels. Previous research has frequently ranked "word of mouth from health workers" and "community meetings" among the top three most effective methods for maternal health information in rural areas³². In this study, however, "word of mouth from health workers" reached 59% and was classified as moderately effective, while "public rallies" and "word of mouth from community members" reached 53%. This suggests a relative decline in the prominence of interpersonal communication compared to mass media. This shift may reflect broader changes in communication patterns following COVID-19 and the increasing penetration of mobile and broadcast media even in rural districts such as Urambo¹.

Finally, the urban-rural dynamics observed here differ from earlier reports. Whereas there is a stark urban-rural divide in access to media, this study found substantial rural representation (40%) and moderate reach of broadcast media in both settings³³. This may indicate a narrowing gap attributable to expanded radio coverage and increased mobile phone ownership in rural Tanzania since 2020³⁵. While disparities persist, the data suggest that broadcast media are increasingly functioning as bridging platforms.

In summary, the findings of this study largely corroborate previous literature regarding the primacy of broadcast media and the limitations of print and digital channels for raising awareness on maternal health^{2,22}. However, differences in overall effectiveness and in the role of interpersonal communication likely reflect methodological variations and an evolving media environment in Tanzania. These similarities reinforce the rationale for prioritizing radio and television in national health promotion strategies, while the dissimilarities underscore the need for updated, context-specific evidence to inform resource allocation under SDG 3.1 and the Tanzania Development Vision 2025^{1,7}. Future research employing mixed methods will be important to reconcile these differences and to monitor how digital

transformation continues to reshape health communication in districts such as Urambo.

6. Conclusion

This study demonstrates that public awareness methods on non-medical causes of maternal deaths achieved moderate overall effectiveness in Urambo District Council. Television and radio were the most effective communication channels, whereas print and digital media showed substantially lower reach. Strengthening broadcast media while improving complementary communication approaches and engaging educated community members and parents as local health advocates may enhance community awareness and contribute to reducing preventable maternal deaths. These findings provide useful evidence for planning maternal health communication strategies in Tanzania.

7. Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance the effectiveness of public awareness raising on non-medical causes of maternal deaths: -

Ministries, Departments, and Agencies (MDAs), UN agencies and Non-Governmental Organizations (NGOs) should prioritize and strengthen broadcast media channels. Given that television (88%) and radio (80%) demonstrated the highest respondent reach, policymakers and health communication practitioners should allocate a disproportionate share of resources and budget to these platforms. Messaging should be regularized, localized in Kiswahili, and scheduled during peak listening or viewing hours to maximize exposure among reproductive-age populations in both urban and rural areas of Urambo District Council.

Ministries, Departments, and Agencies (MDAs), UN agencies and Non-Governmental Organizations (NGOs) have to revitalize print and digital materials through targeted distribution. Printed and digital methods including newspapers, books, leaflets, websites, posters, and magazines recorded <50% reach and were classified as least effective. To improve their utility, these materials should be redesigned for lower literacy barriers, disseminated through health facilities, schools, and community gathering points, and integrated with broadcast campaigns to reinforce key messages rather than function as standalone channels.

Ministries, Departments, and Agencies (MDAs), UN agencies and Non-Governmental Organizations (NGOs) should leverage demographic strengths for community diffusion. The high proportion of respondents with post-secondary education (85%), parental experience (70%), and male representation (61%) presents an opportunity to engage these groups as peer educators and community health advocates. Programs should specifically train educated individuals, parents, and male household decision-makers to disseminate information on birth preparedness and danger signs, thereby addressing the first delay in maternal care-seeking.

Ministries, Departments, and Agencies (MDAs), UN agencies and Non-Governmental Organizations (NGOs) should ensure equity in rural-urban information access. With 40% of respondents residing in rural areas who face structural barriers such as distance and limited access to information, communication strategies should utilize urban centres and mobile platforms as hubs to relay information to rural communities. Interpersonal networks and word-of-mouth from health workers (59% reach) should be systematically incorporated to bridge this gap.

8. Limitations of the Study

This study employed a convenience sampling technique to recruit 100 community members from Urambo District Council through an online survey. The sample included participants from both urban and rural areas within the district. The decision to adopt an online mode of data collection was informed by the need to access respondents across geographically dispersed locations within the constraints of time and available resources.

Notwithstanding its practicality, the use of convenience sampling presents several methodological limitations. First, as a non-probability sampling technique, it does not provide all members of the target population with an equal probability of selection. This characteristic limits the generalizability of the study findings to the entire population of Urambo District Council and to other districts in Tanzania.

Second, the reliance on an online survey introduces potential selection bias and digital divide bias. The sample is likely to over-represent individuals with access to smartphones, internet connectivity, and requisite digital literacy. Conversely, individuals residing in remote rural areas with limited technological infrastructure may be under-represented.

Third, to ensure data integrity, each participant was restricted to a single submission. Ethical clearance was obtained prior to data collection, and informed consent was secured from all respondents. Participation was voluntary. However, the voluntary nature of online participation may have resulted in the under-representation of specific demographic groups, including older adults, low-income households, and individuals with limited access to digital technologies.

In view of these limitations, the findings of this study should be interpreted as representative of the perspectives of the community members in Urambo District Council who participated in the online survey, rather than as representative of the entire population. Future studies are recommended to utilize probability-based sampling techniques and mixed-mode data collection strategies to enhance the representativeness of both analogical and digital populations.

9. Future Scope

This study provides baseline evidence on the current effectiveness of public awareness methods in Urambo District Council; however, several areas warrant further

investigation. A comparative analysis across multiple districts in Tanzania would be valuable to determine the generalizability of these findings and to identify context-specific effective channels.

Furthermore, qualitative studies are needed to explore community perceptions of message credibility, cultural barriers, and preferred communication formats, particularly among low-literacy and offline subgroups not fully captured in this online survey.

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