

EFFECT OF COMMUNITY-BASED PUBLIC HEALTH STRATEGIES ON HEALTH SERVICE OUTCOMES IN TANA DELTA SUBCOUNTY, KENYA

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ABSTRACT

Purpose of Study: The study examined the effect of community-based public health strategies on health service outcomes in Tana Delta Sub County, Tana River County, Kenya.

Problem Statement: Despite the potential of community-based public health strategies, equitable access to quality healthcare remains limited in Tana Delta Sub-County due to infrastructural, socio-cultural, and economic barriers.

Methodology: The study was grounded in Social Capital Theory, and Health Belief Model. The research used a cross-sectional design. The target population included community health workers, local leaders, health facility staff and residents within the Tana Delta Sub County. The study used stratified random sampling. The study used both descriptive statistics and inferential statistics of the Pearson correlation coefficient and the multiple regression model.

Result: The findings revealed significant relations between community awareness program and health outcomes ($\beta = 0.572$, $p = 0.001$), and collaboration with local organizations and health outcomes ($\beta = 0.583$, $p = 0.001$).

Conclusion: Community based PH strategies have significant effect on the health outcomes in Tana River Sub County, in Kenya.

Recommendation: Health awareness should be considered when developing strategies to improve health outcomes in Tana River Sub County. In addition, community participation should be included in strategies of PH in order to enhance health outcomes. Recommendation for further research to investigate the impact of community-based public health initiatives on health care outcomes in various sub-counties and counties throughout Kenya.

Keywords: *Community health awareness programs; collaboration with local organizations, and health service outcomes*

INTRODUCTION

Effective health service delivery is essential for achieving universal health coverage, particularly in low-and middle-income countries where inequities in access, limited infrastructure and shortages of health personnel persist. Community-oriented public health initiatives, such as health education, community health personnel, disease monitoring, community engagement, and local collaborations, serve as a crucial means of delivering healthcare services to marginalized groups. Research indicates that community-focused strategies may enhance health consciousness, facilitate early illness identification, promote treatment compliance, and increase the use of vital health services. Thus, enhancing community involvement has emerged as a crucial element of person-centered primary healthcare.

Worldwide, nations like Brazil and Bangladesh have shown the efficacy of community-oriented strategies in enhancing health results. Brazil's Family Health Strategy has enhanced accessibility to basic healthcare, reduced newborn death rates, and decreased avoidable hospital admissions via interdisciplinary community-oriented teams. In a like manner, Bangladesh's community health worker initiatives have bolstered maternity and child health, TB identification, health education, and nutrition. These examples illustrate that community-oriented initiatives may enhance health systems provided they have sufficient backing, are incorporated into established healthcare frameworks, and address the specific requirements of local populations.

Throughout sub-Saharan Africa, community-oriented health initiatives have enhanced healthcare use and public health results. Ethiopia's Health Extension Program has enhanced preventative and promotive healthcare, vaccination, sanitation, and maternal and child health services, while Ghana's community health planning services have increased the usage of prenatal care. Rwanda has also included community health workers into basic healthcare provision, enhancing access to vital treatments and disease prevention. Notwithstanding these accomplishments, the area still has deficiencies in healthcare personnel, insufficient funding, geographical obstacles, and elevated illness prevalence, hindering fair access to effective medical services.

In Kenya, community-oriented health initiatives have been integrated into national health reforms and the Universal Health Coverage framework via community health volunteers, health units, and local health committees. These frameworks facilitate health education, illness monitoring, referrals, vaccination, and connections between families and healthcare institutions. Nonetheless, considerable inequalities persist, especially in rural, dry, and disadvantaged regions. Elements including insufficient finances, restricted oversight, cultural norms, insecurity, low health literacy, and deficient infrastructure persist in hindering the efficacy of community health initiatives. These obstacles underscore the need of assessing the efficacy of community-oriented approaches in particular local settings instead than presuming consistent results throughout different counties.

Tana Delta Sub-County in Tana River County offers a notably significant backdrop due to geographical dispersion, socioeconomic fragility, insufficient infrastructure, and instability that may hinder access to healthcare services. Existing data reveals ongoing difficulties with healthcare accessibility, maternal well-being, vaccination, and the control of avoidable illnesses. Despite the existence of community awareness programs, health infrastructure, participatory health committees, and culturally relevant health education that provide avenues for enhancing service delivery, empirical data about their efficacy in Tana Delta is still scarce. Consequently, analyzing the effect of community-based health awareness programs and

collaboration with local organizations on health service results in Tana Delta Sub-County is crucial for producing context-relevant evidence to guide healthcare planning, resource distribution, and initiatives aimed at achieving equitable and people-centered Universal Health Coverage in Kenya.

STATEMENT OF THE PROBLEM

Effective health service delivery is essential for improving health outcomes and promoting the well-being of communities. However, in developing countries such as Kenya, access to quality healthcare continues to be constrained by socio-economic, geographical and infrastructural challenges (Ministry of Health, Kenya, 2022). Kenya also continues to experience a relatively high maternal mortality rate of 342 deaths per 100,000 live births, compared with the global average of 152 deaths per 100,000 live births (Njororai et al., 2021). The situation is particularly challenging in remote and underserved counties such as Tana River, where only about 54% of households have access to safe water and adequate sanitation, increasing communities' vulnerability to preventable diseases such as diarrhoea and malaria (World Health Organization, 2021). This suggests that although community-based policies have advanced health outcomes, enduring systemic challenges, including elevated maternal and child mortality rates, inadequate disease management, and restricted access to essential health services, persistently undermine their effectiveness (World Health Organization, 2021). Consequently, it is essential to assess the impact of community-based public health policies on health care delivery in this region to identify current obstacles and opportunities for improvement.

Studies demonstrate that community-based health efforts may improve service delivery by enhancing accessibility, raising awareness, and promoting community ownership of health programs (Ahmed et al., 2020; Musyoka & Mutunga, 2021). The efficacy of these policies mostly relies on sufficient finance, competent execution, and strong community engagement (Muriithi & Mwangi, 2022). In Tana Delta Subcounty, obstacles such as insufficient infrastructure, a scarcity of healthcare workers, and social influences may impede the efficacy of these strategies (Ministry of Health, Kenya, 2022). Although research has explored community health initiatives in wider contexts, there is still a restricted comprehension of their particular effects on health care delivery in disadvantaged and rural areas such as Tana Delta. Furthermore, the contributions of local government, community health volunteers, and traditional health systems in facilitating public health programs have not been thoroughly examined.

Despite existing research, significant knowledge gaps persist. Conceptually, previous studies have focused on general health outcomes without disaggregating the specific effects of community-based public health policies on service delivery metrics such as accessibility, quality, and patient satisfaction (Mwangi, 2020). Contextually, while much attention has been given to urban and peri-urban areas, there is a lack of focused research on rural subcounties like Tana Delta, which face unique health service delivery challenges (Omondi & Wambui, 2021). Geographically, most studies on community health strategies in Kenya have been centered in counties like Nairobi, Kisumu, and Mombasa, leaving a research gap in understanding the specific dynamics in Tana River County (Ministry of Health, Kenya, 2022). The study therefore sought to answer the following main research question: What is the effect of community-based public health strategies on health service outcomes in Tana Delta Subcounty, Tana River County, Kenya?

RESEARCH OBJECTIVES

To assess the effect of community-based health awareness programs on health service outcomes in Tana Delta Subcounty in Tana River County, Kenya

To examine the effect of collaboration with local organizations on health service outcomes in Tana Delta Subcounty in Tana River County, Kenya

RESEARCH HYPOTHESES

H₀₁: Community-based health awareness programs has no statistically significant effect on health service outcomes in Tana River County, Kenya.

H₀₂: Collaboration with local organizations has no statistically significant effect on health service outcomes in Tana Delta Subcounty in Tana River County, Kenya.

THEORETICAL LITERATURE REVIEW

Social Capital Theory

Social Capital Theory, associated with scholars such as Bourdieu (1986), Coleman (1988), and Putnam (2000), posits that social networks, norms of reciprocity, and trust constitute a valuable resource that facilitates coordination and cooperation for mutual benefit. Social capital operates through bonding ties within homogeneous groups, bridging ties across diverse groups, and linking ties between communities and formal institutions (Bourdieu, 1986). In public health, social capital enhances information diffusion, collective action, community oversight, and resource mobilization all essential components of effective service delivery.

Collaboration with local organizations such as faith-based groups, youth associations, women's groups, and CBOs can significantly enhance health outcomes in Tana Delta (Otieno et al., 2023). These organizations often possess deep trust and extensive networks within the community, making them important channels for disseminating health information, mobilizing volunteers, identifying vulnerable individuals, and supporting follow-up for chronic illnesses (Putnam, 2000). By strengthening bridging and linking capital, collaboration helps integrate marginalized groups into mainstream health systems and ensures that services are culturally responsive and community-driven.

For empirical analysis, Social Capital Theory suggests measuring both structural dimensions (network density, number of collaborative activities, inter-organizational linkages) and cognitive dimensions (trust, reciprocity, shared norms) (Oduor et al., 2022). Methods such as social network analysis, partnership mapping, and regression modelling can assess how collaboration intensity predicts outcomes such as immunization coverage, maternal health service utilization, or continuity of care (Mohajan, 2022). However, researchers should also recognize that excessive bonding capital may reinforce exclusionary norms or resistance to change, meaning that the type and quality of social capital not merely its presence must be critically examined in Tana Delta.

The Health Belief Model

The Health Belief Model (HBM), first proposed by Rosenstock (1974) and later expanded by Becker and colleagues, explains health behaviours by examining how individuals evaluate personal health risks and the perceived value of taking preventive or curative actions. It is grounded in six key constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. These constructs jointly influence an individual's likelihood of adopting recommended health behaviours. The model is widely used

in public health promotion because it highlights the cognitive and motivational processes underlying health-seeking actions.

In the context of community-based health awareness programmes, HBM provides a strong theoretical basis for understanding how information dissemination influences service uptake (Oduor et al., 2022). For example, awareness initiatives that clearly communicate the risks associated with communicable diseases and explain the benefits of early diagnosis or preventive practices can elevate the community's readiness to use available health services (Alemu et al., 2023). In Tana Delta Subcounty where socio-cultural beliefs, low health literacy, and geographical barriers often hinder timely care-seeking programmes that effectively target these perceptions can significantly improve attendance at health facilities, adherence to prescribed treatments, and participation in preventive services such as immunization and screening (Musoke et al., 2021).

LITERATURE REVIEW

Community-based health awareness strategies and health service outcome

Community-based health awareness strategies refer to organized interventions designed to provide communities with information about health risks, disease prevention, available health services, and appropriate health-seeking behaviours through locally accessible platforms and community structures (Mohajan, 2022). These approaches could include community engagement initiatives, health advocacy discussions, home visits, local health volunteers, public assemblies, and the use of regional communication mediums (Otieno et al., 2023). The primary difference is that community-oriented health awareness focuses on engaging and educating the broader community within its social and local framework (Oduor et al., 2022). Concerning health care outcomes, efficient awareness initiatives may enhance understanding of accessible services, stimulate prompt health-seeking actions, boost service use and facilitate early illness identification and prevention (Mohajan, 2022). Thus, heightened community knowledge may enhance accessibility, usage, response, and the overall efficacy of health care.

In Kenya, evidence shows that community-based awareness interventions are especially crucial in rural and marginalized regions such as Tana River County, where geographic and cultural barriers often limit access to health services. Research indicates that CHV-led awareness campaigns improve uptake of antenatal care, HIV testing, malaria prevention, and child immunization in arid and semi-arid areas by enhancing trust between the health system and local communities (MoH Kenya, 2020). Moreover, awareness programs contribute to reduced disease burden and improved health indicators by fostering early care-seeking and encouraging health-protective behaviours (Yohannes et al., 2021). However, scholars caution that the effectiveness of these programs depends on adequate training, supervision, and remuneration of CHVs, as well as strong health system support (Musoke et al., 2021). Therefore, community-based health awareness programs remain a critical pathway for strengthening health service delivery in underserved settings, provided they are well-integrated within broader health system strategies

Collaboration with local organizations and health service outcome

Collaboration with local organizations refers to the process of different community-based entities, such as NGOs, community groups, religious institutions, and local government agencies, working together toward common goals (Mushi, 2020). In public health, these organizations collaborate to improve healthcare delivery, expand access to services, and enhance the overall quality of care in targeted communities (Abdi & Maina, 2021). Collaborations at the local level enhance health outcomes, particularly in underserved or rural

regions with restricted access to formal health services (Mburu et al., 2023). Local organizations provide health services directly, advocate for health policies, and mobilize communities, resulting in enhanced health service delivery (Molyneux et al., 2021).

Moreover, collaboration with local organizations contributes to sustainability and continuity of health service delivery (Bloom et al., 2022). Local groups often serve as intermediaries between communities and formal health systems, helping to co-design interventions, negotiate cultural appropriateness, and maintain long-term engagement even after external programs conclude (Kruk et al., 2023). According to Rifkin, (2021) indicated that joint planning, shared governance, and co-implementation of interventions improve accountability and resource efficiency, leading to better outcomes such as higher immunization coverage, improved maternal–child health indicators, and increased adherence to treatment programs. In areas such as Tana Delta Subcounty, where geographical, socioeconomic, and cultural barriers may limit access to care, strong collaboration with local organizations enhances the adaptability and responsiveness of the health system.

EMPIRICAL LITERATURE REVIEW

Oduor and Otieno (2024) assessed the impact of community outreach programs on service utilization in the informal settlements of Kisumu. The research employed a mixed-methods approach, incorporating household surveys and interviews. Data were analyzed through SPSS and thematic content analysis. The findings indicated that health outreach enhanced understanding of disease prevention and elevated clinic attendance for non-communicable diseases. Inadequate coordination with local health facilities constrained the sustainability of the program. This research examined urban informal settlements characterized by elevated population density. The analysis did not account for rural and sparsely populated areas such as Tana Delta, where outreach necessitates distinct logistical and communication approaches

Chikaphupha et al. (2021) investigated the impact of community engagement on enhancing maternal and newborn health outcomes in Malawi. The research utilized participatory action methods in three districts, incorporating community dialogue forums and health education sessions. The findings indicated that engaged communities demonstrated a higher likelihood of reporting complications promptly and pursuing institutional delivery. Trust in healthcare providers has also increased. The findings highlight the significance of awareness; however, the study did not assess specific service delivery indicators such as staffing, supply chain, and facility readiness, which are essential in the context of Tana Delta

A study by Mbau, Kabia, Honda, Hanson, and Barasa (2021) examined the impact of collaboration between county governments and non-state actors on the implementation of Kenya's Universal Health Coverage (UHC) policies at the community level. A qualitative case study design was utilized in four counties in Kenya. Data were gathered via key informant interviews. The research indicated that partnerships with local organizations improved community mobilization and awareness, especially in difficult-to-access regions. Weak coordination mechanisms and inconsistent funding have constrained the sustainability of these partnerships. The study emphasized the importance of collaboration in improving health awareness; however, it did not evaluate the impact of these awareness programs on the utilization and quality of health service delivery at the sub-county level, especially in marginalized regions such as Tana Delta. This study addresses the gap by evaluating the effects of health awareness strategies on service delivery indicators.

Lujwangana and Mmbando (2023) conducted a study assessing the effects of public-private-community partnerships on enhancing access to health information and services in semi-urban and rural districts of Tanzania. The research employed a mixed-methods design, integrating

household surveys with focus group discussions involving community leaders and health providers. Partnerships included local businesses, non-governmental organizations, and village health teams. Findings indicated that collaborations enhanced health promotion results via coordinated outreach initiatives, mobile health clinics, and the training of community health volunteers. The study validated the role of multi-stakeholder collaboration in enhancing health awareness; however, it failed to differentiate the impact of individual awareness programs on quantifiable service delivery outcomes such as referral rates, medication adherence, or the decrease in preventable diseases. The proposed study in Tana Delta aims to isolate the specific impact of community-based health awareness strategies on delivery outcomes.

RESEARCH METHODOLOGY

Kumar (2011), a research design refers to set of methods and procedures used in collecting and analyzing measures of the variables specified in the problem research. The design of this study was cross-sectional design. A cross-sectional approach allows the researcher to collect data at a particular point in time, providing an overview of the current effects of community-based public health policies on health service delivery in Tana Delta Sub County, Tana River County, Kenya. The study target population comprised community health workers, health facility personnel (nurses, clinical officers, and public health officers), local community leaders, and adult household members residing in Tana Delta Subcounty. According to the (Ministry OF Health 2025 report) 545 community benefited from the community PPH Strategies program in Tana River Sub county Tana River. Study sample size was determined with Yamane technique (1967) to ensure statistical reliability and generalizability. Utilizing a 5% margin of error and an estimated target population of 545, the formula will determine the sample size as follows:

$$n = (N / (1+N (e)^2))$$

Where:

N= 545 (total population), and e=0.05 (margin of error).

$$n = (545 / (1+ 545 (0.05)^2))$$

$$n = 230.74$$

$$n = 230 \text{ respondents}$$

The sample was stratified as in table 1

Table 1: Sample Size

	Population	Proportion	Sample size
Community household	445	0.8165	188
Community Health Extension Workers	70	0.1284	30
Health facility staff	30	0.0550	13
Totals	545		230

Study sample size was 230 respondents. The study used stratified random sampling, where respondents were randomly selected from each stratum randomly. The study used a questionnaire with both open and close-ended questions as data collection instrument. A questionnaire is an essential research instrument that allows a researcher to collect data directly from people (Ogula (2009). The close-ended questions were scaled on 1-5 a point Likert scale, whereby 1=extremely dissatisfied, 2= dissatisfied 3= neutral, 4=satisfied, 5= extremely satisfied. The study used primary data that was collected by administering the questionnaires to respondents with the help of research assistant. The study used drop and pick method. This increased the return rate.

The study used quantitative techniques in analyzing the data. Descriptive analysis employed included mean standard deviations and percentages. The following study multiple linear regression model was tested;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where:

Y = Health service outcome in Tana Delta Sub county, X_1 = community-based health awareness programs, X_2 = collaboration with local organizations, ε is error term, β_0 represents the constant while β_1 , β_2 are regression coefficients. The analysed data was presented using tables, graphs and charts to enhance easier interpretation and understanding of the research findings.

Results

In this study, a total of 230 questionnaires were distributed to participants, of which 174 were duly completed and returned. This indicates a response rate of 75.7%, deemed statistically significant. According to Finchman (2008) suggestion a response rate of above 70% is good enough for statistical analysis; hence a response rate of 73.75% as shown in table 2 is good for analysis. The higher return rate was achieved through prior arrangements, reminders and follow-ups.

Table 2: Response Rate

	Number of Questionnaires	Percentage
Returned questionnaires	174	75.7
Unreturned questionnaires	56	24.3
Total	230	100

Respondents Demographic Information

Table 3: Respondent Demographic Information

	Characteristics	Frequency	Percentage
Gender	Male	8	40.0
	Female	12	60.0
Age bracket	20-25 yrs.	3	15.0
	26-30 yrs.	5	25.0
	31-35 yrs.	8	40.0
	36-40 yrs.	3	15.0
	41 years and above	1	5.0
	Certificate	3	15.0
Highest level of education attained	Diploma	12	60.0
	Degree	5	25.0
Distance to nearest health facility	Less than 1 km	4	20.0
	1–5 km	10	50.0
	More than 5 km	6	30.0

Community-Based Health Awareness Programs and Health Service Delivery Outcome

This section presents the respondents views on various aspects of community-based health awareness programs. The respondents were asked to rate the extent to which respondents are satisfied with the various aspects of community-based health awareness programs on a scale of 1 to 5 where 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree. The findings are presented in Table 4.

Table 4: Community-based health awareness programs on health service outcome

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std. Dev
Public health campaigns are frequently conducted in my community	9.2%	21.4%	40.8%	5.1%	23.5%	3.34	0.88
Community members actively participate in public health programs	0.0%	9.2%	28.6%	48.0%	14.3%	3.67	0.83
There is regular follow-up on community participation in awareness programs	8.2%	11.2%	14.3%	53.1%	13.3%	3.52	1.11
I am aware of major public health concerns affecting my community	8.2%	0.0%	65.3%	10.2%	16.3%	3.38	0.87
Outreach activities on health issues are easily accessible to all community members	8.2%	15.3%	45.9%	12.2%	18.4%	3.12	0.91
Average Mean and standard deviation						3.41	0.92

The findings in Table 4 above indicate a moderate level of public health awareness and participation, with an overall mean of 3.41 (SD = 0.92). Community participation recorded the highest mean (3.67), followed by follow-up on participation (3.52), suggesting relatively strong engagement. However, accessibility of outreach activities recorded the lowest mean (3.12), indicating a potential gap in reaching all community members. The high neutral response on awareness of major health concerns (65.3%) also suggests limited clarity or awareness among respondents. Overall, the results point to the need for more frequent, inclusive, and accessible community health campaigns and outreach activities. Similarly, Oduor et al., (2022), study also revealed that awareness interventions significantly enhance health-seeking behaviour by increasing recognition of disease symptoms, understanding of prevention strategies, and appreciation of the benefits of early treatment.

Collaboration with Local Organizations and Health Service Outcome

The respondents were asked to rate the extent to which agreed with the statement concerning the effect of collaboration with local organizations on health service outcome in Tana Delta Subcounty in Tana River County, Kenya. Table 5 presents the descriptive analysis results on statement used to measure collaboration with local organizations.

Table 5: Collaboration with Local Organizations

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std. Dev
Local organizations support joint community health initiatives	1.8%	15.3%	27.6%	40.0%	15.3%	3.58	1.01
Coordination meetings between local organizations and health providers are frequent	0.0%	6.1%	40.8%	44.9%	8.2%	3.55	0.73
Collaboration with local NGOs has improved service delivery	3.1%	9.2%	24.5%	44.9%	18.4%	3.66	0.98
Health activities involving local organizations are well-organized	14.0%	5.5%	39.8%	20.7%	20.0%	3.86	0.80
Joint efforts have led to improved health outcomes in the community	11.4%	9.2%	27.6%	30.4%	21.4%	3.76	0.90
Average mean and standard deviation						3.68	0.88

The findings presented in Table 5 that collaboration with local organizations had a generally positive contribution to health service outcomes, with an overall mean of 3.68 (SD = 0.88). Most respondents agreed that local organizations support joint community health initiatives (55.3%) and that coordination meetings between local organizations and health providers are frequent (53.1%). Similarly, 63.3% agreed that collaboration with local NGOs has improved service delivery, while 41.4% indicated that health activities involving local organizations were well organized. Furthermore, 51.8% agreed that joint efforts had contributed to improved health outcomes in the community. Overall, the results suggest that collaboration with local organizations was relatively effective in supporting health service delivery and improving community health outcomes, although the neutral responses indicate that some respondents were uncertain about the consistency and effectiveness of these collaborative activities. The results agrees with Lujwangana and Mmbando (2023) study results that revealed that collaborations enhanced health promotion results via coordinated outreach initiatives, mobile health clinics, and the training of community health volunteers.

Multivariate Regression Analysis

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.952	0.814	0.819	0.1232
Predictors: (Constant), Collaboration with Local Organizations, Community-Based Health Awareness Programs				

The model summary results in table 6 shows that the independent variables namely collaboration with local organizations, and community-based health awareness programs had a strong positive influence on health service outcome in Tana Delta Subcounty in Tana River County, Kenya as shown by a joint Pearson correlation of 0.952. This suggests overall improvement in all independent variables of collaboration with local organizations, and community-based health awareness programs resulted to a strong positive improvement in the health service outcome in Tana Delta Subcounty in Tana River County, Kenya. The coefficient of determination/R-square value was 0.814; this implies that all four variables jointly accounted for up to 81.4% of the variation in health service outcome in Tana Delta Subcounty

in Tana River County, Kenya. It follows 18.6% of the variation in health service outcome in Tana Delta Subcounty in Tana River County, Kenya was accounted for by other factors not covered in the model presented in this study. The Anova results as presented in Table 7.

Table 7: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.246	4	0.8115	22.97276	0.000
Residual	7.948	225	0.035324		
Total	11.194	229			

Dependent Variable: Health Service Outcome in Tana Delta Sub County
Predictors: (Constant), Collaboration with Local Organizations, Community-Based Health Awareness Programs

The results in Table 7 indicate that the F-statistic is 22.97276, accompanied with a significance value (p-value) of 0.000. The model is statistically significant since the p-value is below 0.05. This indicates that the collective influence of the independent factors strongly predicts health care outcomes in Tana Delta Sub County. These findings indicate that the model well fits the data, and the four variables together have a significant impact on health care outcomes. Improvements in collaboration with local organisations, and successful community-based health awareness initiatives are collectively linked to superior health service outcome in Tana Delta Sub County.

Table 8: Regression Coefficients

	Beta	Std. Error	t	Sig.
(Constant)	3.589	0.396	9.074	0.000
Collaboration with Local Organizations	0.572	0.096	5.958	0.001
Community-Based Health Awareness Programs	0.583	0.098	5.948	0.001

Dependent Variable: Health Service Outcome in Tana Delta Sub County

Results in Table 8 above show that collaboration with local organizations has a substantial positive impact on health service outcome in Tana Delta Sub County ($\beta = 0.572$, $p = 0.001$). See Table 4.11 above. Since relationship between collaboration with local organisations and health service outcomes in Tana Delta Sub County, Kenya is significant, we reject the null hypothesis, accept the alternative, and conclude that there is a significant relationship between collaboration with local organisations and health service outcomes in Tana Delta Sub County, Kenya. This demonstrates that a one-unit increase in cooperation with local organisations correlates with a 0.572-unit enhancement in health care outcomes. Similarly, Lujwangana and Mmbando (2023) argue that strategic partnerships enhanced health promotion results via coordinated outreach programs, mobile health clinics, and capacity-building efforts for community health volunteers.

Further, community-based health awareness programs were seen to have a positive and significant impact on health service outcomes ($\beta = 0.583$, $p = 0.001$). Since relationship between community-based health awareness programs and health service outcomes in Tana Delta Sub County, Kenya is significant, we reject the null hypothesis, accept the alternative, and conclude that there is a significant relationship between community-based health awareness programs and health service outcomes in Tana Delta Sub County, Kenya. The findings indicate that a one-unit enhancement in health awareness programs leads to a 0.583-unit improvement in health service outcomes. Despite having the lowest beta coefficient among the predictors, this variable's impact is considerable and statistically significant. The discovery

indicates that awareness and sensitization programs are essential for enhancing health-seeking behaviour and encouraging the use of healthcare services. This conclusion aligns with Oduor et al. (2022), who discovered that health awareness programs augment health-seeking behaviour by enhancing understanding of illness symptoms, preventative strategies, and the advantages of early treatment.

The study results in Table 8 provided the following regression model as shown below;

$$\text{Health service outcome} = 3.589 + 0.583 \text{ Community-Based Health Awareness Programs} + 0.572 \text{ Collaboration with Local Organizations} + \varepsilon$$

The above regression model indicates that the most significant determinant of health service outcome in Tana Delta Subcounty in Tana River County, Kenya was community-based health awareness programs followed by collaboration with local organizations.

CONCLUSION

The study concludes that community-based health awareness programs are significant in improving health-care outcomes in Tana Delta Subcounty. Effective health awareness raises community understanding of accessible health services, stimulates prompt healthcare seeking, and promotes the use of preventative and curative services. The findings imply that increasing community health education and awareness programs can help to enhance health-care outcomes.

The study also concludes that partnership with local organizations helps to enhance health-care results. Collaboration among health facilities, community organizations, local leaders, non-governmental organizations, and other stakeholders promotes resource sharing, community mobilization, referrals, and coordinated delivery of health interventions. Stronger collaboration improves the ability of health service providers to respond effectively to community health needs.

RECOMMENDATIONS

Based on the findings, the study recommends that health authorities and community health stakeholders expand community-based health awareness programs through frequent health education, outreach activities, and focused communication, particularly in underprivileged areas. Community health workers should be sufficiently supported and equipped to deliver accurate health information to households.

The report also suggests that health facilities and local groups increase their collaboration and coordination methods. Regular stakeholder meetings, collaborative planning, resource pooling, and integrated community engagement programs should be promoted. This would improve the efficiency of health interventions and increase access to health services in Tana Delta Subcounty.

Conflict of Interest

No potential conflict of interest was reported by the authors.

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