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Health Communication for Sustainable Health Attitudes and Behaviour Change. A Study of Community Health Promoters in Uasin Gishu County

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Abstract

Globally healthcare workforce deficit continues to be a serious challenge in healthcare service delivery. Community healthcare promoters have been incorporated to bridge this gap in urban and rural marginalized communities. While their contribution has been applauded, health related behaviour change among these communities remains relatively low. This study aims at investigating the contribution of CHVs in enhancing health literacy for individual and communal health development. The study objectives were to identify the communities' perceptions on CHVs contribution towards understanding and management of non-communicable diseases, to establish CHVs application of health information and communication strategies/skills in health promotion, to establish the content of health messages shared with communities/individuals about non-communicable diseases and to identify the challenges experienced by CHVs in promoting healthcare literacy. The study was guided by integrated behavioral model, health belief model and theory of interpersonal behavior. The study adopted a qualitative research approach guided by interpretivist epistemology and social constructivist ontology. A case study design was used to facilitate in-depth exploration of communication experiences and behavioural outcomes within community settings. The target population comprised 560 participants, including Community Health Promoters, Community Health Assistants (CHAs), household members, and patients affected by NCDs. A sample of 60 participants was selected through purposive, stratified random, and convenience sampling techniques. Data were collected using semi-structured interviews, focus group discussions, and document analysis. Thematic and content analysis techniques were used to analyse the data. The findings revealed that CHPs were widely perceived as trusted health literacy brokers who bridged the gap between formal healthcare systems and local communities. Through culturally adaptive and dialogic communication approaches, CHPs improved understanding of NCDs, medication adherence, dietary practices, physical activity, and preventive health behaviours.

Home visits, participatory discussions, experiential demonstrations, local language interpretation, and digital health referrals emerged as key communication strategies supporting sustainable behaviour change. Participants reported increased clinic attendance, improved self-management skills, enhanced treatment adherence, and stronger community support networks. However, several barriers constrained the effectiveness and sustainability of CHP interventions, including low literacy levels, inadequate communication materials, inconsistent supervision, insufficient training, limited digital access, and lack of financial and structural support for CHPs. The study concludes that CHP-mediated health communication plays a significant role in strengthening health literacy and promoting sustainable health attitudes and behavioural transformation in communities affected by NCDs. The study recommends strengthening CHP training, integrating digital communication tools, developing literacy-sensitive educational materials, improving supervision and logistical support, and formally integrating CHPs into county health systems through structured remuneration and career progression frameworks.

Keywords: Community health volunteers, communication, health attitudes, behaviour change, Uasin Gishu County, Kenya

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Introduction

Health communication is a strategic, evidence-based process that uses targeted communication frameworks to inform, influence, and motivate individuals, communities, and institutions to adopt health-enhancing decisions (Allen et al., 2020). The Centers for Disease Control and Prevention (CDC) conceptualizes health communication as the study and operational use of communication strategies to enhance public and individual health trajectories (Adesina et al., 2020). Modern public health systems increasingly rely on structured communication interventions to govern health behavior regarding vaccination uptake, maternal and child health, water and sanitation hygiene (WASH), nutritional security, and chronic non-communicable disease (NCD) prevention (Makahaghi, 2025). Operationally, health communication is multi-functional as it enhances health literacy, shifts risk perceptions, deconstructs deeply rooted sociocultural

myths, and builds collective community efficacy (Adesina et al., 2020).

Global evidence shows that health communication is most effective when it shifts from top-down information dissemination to participatory, localized approaches that use culturally responsive messaging (Githinji et al., 2024; Tan et al., 2023). While mass media raises short-term awareness, sustaining long-term behavior change requires programs grounded in behavioral science frameworks (Adesina et al., 2020; DiMatteo et al., 2025). Furthermore, because individual actions are shaped by social norms and structural inequalities, effective social and behavioral change communication must take an ecological approach that targets the individual, the community, and the broader environment simultaneously (Adesina et al., 2020). When communication interventions neglect structural determinants like poverty, systemic inequality, and physical barriers to service access, the behavioral outcomes remain temporary and superficial (Desmon, 2025; Tengland, 2016). Therefore, sustainable change requires a blended communication matrix, combining interpersonal behavior change communication, mass communication, advocacy, and community-driven participatory dialogue (Malikhao, 2020).

In Sub-Saharan Africa, strategic health communication has become central to addressing complex health burdens, including infectious diseases, maternal-child mortality, vaccine hesitancy, and weak primary healthcare infrastructure. To address these challenges, the region has shifted toward community-based health promotion models led by trusted frontline health actors. A systematic review by Olaoye and Onyenankeya (2023) established that multi-pronged, participatory health communication models generate stronger community ownership and higher intervention uptake than externally imposed, top-down campaigns. The success of these regional interventions depends heavily on local language alignment, cultural sensitivity, and the continuous presence of community health workers within households. Across Sub-Saharan Africa, community health workers (CHWs) serve as vital bridges between formal health systems and underserved populations (Were et al., 2024). Because they are embedded within their own villages, they possess a deep contextual understanding of local health beliefs, taboos, and household dynamics. Handebo et al. (2024) noted that when frontline health workers exhibit strong SBCC competencies, public responsiveness to health interventions and overall healthcare utilization improve significantly. This interpersonal capacity has been further augmented by the integration of digital health innovations. Multi-country reviews indicate that smart devices, mobile health (mHealth) applications, and interactive reporting systems have enhanced the capacity of CHWs to deliver timely health education, monitor behavioral compliance, and conduct patient follow-up (Blondino et al., 2024). For instance, maternal health programs utilizing mHealth platforms have significantly improved antenatal care adherence and treatment compliance in resource-constrained African settings (Kachimanga et al., 2024). However, execution of these communication duties is frequently undermined by poor resource allocation, fragmented training, weak supervisory mechanisms, and a lack of formalized incentives (Were et al., 2024; Blondino et al., 2024).

In Kenya, primary healthcare transformation forms the foundation for achieving Universal Health Coverage (UHC). Under the National Community Health Strategy, the Ministry of Health institutionalized a "Tier 1" community

health interface by training, kitting, and deploying over 107,000 Community Health Promoters (CHPs), formerly known as Community Health Volunteers (Amref Health Africa, 2025). The national strategy explicitly mandates the use of Behavior Change Communication (BCC) as a core competency for CHPs, delivered via household visits, community dialogues, barazas, drama, and song (Ministry of Health, 2020). These frontline promoters are tasked with monitoring maternal health, tracking immunization schedules, promoting environmental hygiene, screening for early danger signs of diseases, and addressing chronic conditions at the household level (Amref Health Africa, 2025). Empirical evaluations demonstrate that well-supported CHPs can achieve statistically significant improvements in localized health indicators, including insecticide-treated net utilization, clean water adoption, and facility-based deliveries (Ndegwa et al. 2025). In rural regions, data-driven community surveillance models managed by CHPs have accelerated disease reporting and behavioral tracking (Kiragga et al., 2025). For example, evaluation research by the Kenya Medical Research Institute (KEMRI) in Busia County revealed that a technology-supported CHP intervention drove child malaria testing from 51% to 75% and raised same-day diagnosis and treatment rates from 9% to 59% (Echoka-Wafula, 2024). Similarly, Aseyo et al. (2018) observed that the close social ties, familiarity, and trust shared between CHPs and households are the primary drivers of sustainable hygiene behavior changes in informal settlements. CHPs have also proven essential in specialized care programs, such as expanding tuberculosis (TB) control by raising awareness, reducing community stigma, and tracking medication adherence (Wakiaga et al., 2024). Despite these policy and operational strides, systemic gaps limit the long-term effectiveness of the CHP model across Kenya's 47 counties.

Uasin Gishu County, situated in Kenya’s North Rift region, is a rapidly urbanizing, high-literacy agricultural hub of 1.3 million people featuring advanced health system infrastructure anchored by the Moi Teaching and Referral Hospital (MTRH). This structural availability is reflected in strong utilization metrics, such as a 98.6% rate of facility-based live births and the nation's highest death registration rate at 82% (Kenya National Bureau of Statistics, 2025). However, this robust institutional landscape stands in sharp contrast with poor community-level health indicators, including a neonatal mortality rate of 17 per 1,000 live births and a childhood stunting rate of 14% (Uasin Gishu Information Platform, 2025). This socio-epidemiological paradox indicates that high physical access to formal healthcare is still undermined by household-level behavioral and attitudinal challenges, emphasizing the critical need for effective preventive health communication. To bridge these gaps, the county department of health decentralized primary care services through collaborative governance models (Okello, 2025; Sitienei et al., 2021) and recently distributed 542 comprehensive equipment kits to Community Health Promoters (CHPs) to expand their mandate into primary screening for chronic conditions like hypertension and diabetes. Despite these resource investments, a significant gap remains in translating national behavior change communication (BCC) policy into permanent county-level practices. Most existing research evaluates community health programs through a narrow, disease-specific lens or focuses exclusively on resource-poor informal urban settlements. Consequently, there is very little empirical evidence examining how

health communication delivered by frontline CHPs shapes self-sustaining, long-term health attitudes within high-infrastructure, agricultural counties where promoters must navigate complex rural-urban dynamics, generational communication taboos, and uneven digital literacy (Elias et al., 2024; Shitsinzi, 2026). Without an empirical understanding of how capacity-building, supervisory factors, and social norms influence household interactions, CHP efforts risk falling back into top-down, ineffective teaching models that fail to achieve permanent behavioral adaptation. This study directly addresses this gap by investigating health communication for sustainable health attitudes and behavior change among Community Health Promoters in Uasin Gishu County, Kenya.

Theoretical Review

Integrated Behavioral Model (IBM)

The Integrated Behavioral Model (IBM) was developed by Martin Fishbein and Icek Ajzen in 2010 as an extension and synthesis of the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB). The IBM posits that behavioral intention is driven by attitude (experiential affect and instrumental utility), perceived norms (injunctive expectations and descriptive behaviors), and personal agency (self-efficacy and perceived control). Crucially, the model advances beyond its predecessors by dictating that even the strongest intentions fail to manifest as sustained action without four direct environmental and experiential facilitators: knowledge and skills, high behavioral salience, minimal environmental constraints, and the transition of the action into a definitive habit (Montaño & Kasprzyk, 2015). Despite its utility, critics argue that the IBM relies on a highly rationalized, linear pathway that underestimates the volatile influence of visceral emotional states and cultural taboos (Ritchie et al., 2020). Furthermore, by grouping systemic barriers under "environmental constraints, the model fails to provide actionable metrics for macro-level structural dynamics like severe poverty or infrastructure deficits (Tengland, 2016), while its overlapping sub-constructs demand complex data collection instruments that risk respondent fatigue (Glanz et al., 2015). For this study, the IBM provided analytical matrix to evaluate how health communication shifts households from temporary compliance to permanent behavioral adaptation. The framework allowed for a systematic dissection of how Community Health Promoters (CHPs) used interpersonal communication and newly distributed diagnostic kits to alter household intentions by reshaping experiential attitudes and redefining descriptive community norms within the county.

The Health Belief Model

The Health Belief Model (HBM) was originally developed in the early 1950s by U.S. Public Health Service social psychologists, notably Godfrey Hochbaum, Irwin Rosenstock, and Stephen Kegels, to explain the widespread failure of free tuberculosis screenings, and was later expanded by Marshall Becker to accommodate compliance with complex medical regimens (Becker, 1974; Rosenstock, 1974). Rooted in cognitive behaviorist theory, the HBM posits that an individual's decision to adopt preventive health actions is driven by internal cognitive perceptions across six constructs: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers, the balance of which dictates action mediated by self-efficacy and triggered by internal or external cues to action (Glanz et al., 2015). Despite its

historical prominence, contemporary critics argue that the HBM overemphasizes rational decision-making, failing to account for habitual behaviors, visceral emotional states, and cultural myths (Jones et al., 2015). Furthermore, it treats health decisions in a structural vacuum, overlooking macro-level socioeconomic determinants like severe poverty and infrastructure deficits that can render individual perceptions irrelevant to behavioral execution (Tengland, 2016), while methodologically lacking standardized operational definitions, which leads to weak predictive power across diverse demographic groups (Carpenter, 2010). For this study, the HBM served as a powerful analytical tool to explain the socio-epidemiological paradox of why a highly literate county with strong infrastructure still struggles with preventable community health issues like childhood malnutrition. By applying the HBM, the study evaluated how effectively the interpersonal behavior change communication delivered by Community Health Promoters (CHPs) acted as an external cue to action to alter household perceptions of susceptibility and severity. The model provided a structured framework to measure whether newly distributed CHP diagnostic kits elevated community self-efficacy, or if targeted communication failed because it did not adequately deconstruct localized perceived barriers like generational traditions and economic constraints.

Theory of Interpersonal Behavior

The Theory of Interpersonal Behavior (TIB), developed by Harry C. Triandis between 1977 and 1980, is an integrative framework positing that social action is proximally driven by behavioral intention, habit, and facilitating conditions, with intention further shaped by social factors, affect, and perceived consequences (Triandis, 1977). A core feature of the TIB is its dynamic weighting principle, which dictates that intention dominates in novel situations, whereas automatic habit governs action in familiar settings. Despite its strengths, critics argue that the model lacks operational specificity, lacks clear measurement guidelines for facilitating conditions, and compromises parsimony, which can introduce multicollinearity and reduce practical utility for intervention design (Godin et al. 2008; Martiskainen, 2007). For this study, the TIB offered an ideal framework because it accommodated the habitual, emotional, and socially embedded dimensions of community health work that cognitive models neglect. The model illuminated how CHPs repeated engagement crystallized into professional habit, while the affect component evaluated how their emotional investment such as compassion fatigue or pride shaped motivation independent of rational calculations. Furthermore, the emphasis on social roles where CHPs navigate positions between formal and traditional structures, while the facilitating conditions construct directly addressed how institutional constraints like missing transport, supplies or supervisory support moderated the translation of their intentions and habits into actual sustainable health promotion behavior.

Empirical Review

Community Health Volunteers and Health Communication for Behaviour Change in Non-Communicable Diseases

At the global and macro-analytical level, empirical evidence underscores the capacity of structured, community-led communication models to shift behavioral paradigms for chronic non-communicable diseases (NCDs). Kim et al. (2025) pre–post intervention study involving 221 rural participants revealed that continuous, community-based health coaching and

behavioral counseling yielded significant reductions in systolic blood pressure and marked improvements in patient self-management. To operationalize these interpersonal interventions at scale, researchers have increasingly turned to programmatic modeling. Adams et al. (2023) developed an optimization model for diabetes care in low- and middle-income countries, demonstrating through program simulation data and modeling techniques that integrating Community Health Workers (CHWs) into highly structured communication protocols and organized follow-up visits significantly accelerates patient enrollment and glycemic control. Furthermore, within digital health frameworks, Fadhil and Wang (2019) conducted a systematic review of behavior change techniques embedded within diabetes management applications, establishing that while independent digital tools support technical self-monitoring, sustained behavior change is achieved only when combined with human-supported interpersonal guidance to improve treatment adherence compared to digital-only platforms. Similarly, Werner et al. (2015) evaluated a targeted hypertension and diabetes treatment program within Nairobi's informal settlements using a retrospective cohort design, finding substantial improvements in treatment adherence and longitudinal service utilization driven by CHWs who enhanced the clarity of provider-patient communication and strengthened patient follow-up tracking systems. In Kenya, Aseyo et al. (2018) utilized a mixed-methods design in a peri-urban settlement in Kisumu County to investigate promoters as agents of behavior change, finding that targeted household visits, localized counseling, and structured health education significantly enhanced community understanding of chronic conditions and drove positive lifestyle adjustments, including dietary modifications and strict medication adherence. However, their qualitative analysis exposed critical structural limitations, including inadequate communication training, restricted time allocations per household, and depressed motivation stemming from a lack of formalized financial incentives and inadequate resources.

A randomized controlled trial by Mbuthia et al. (2024) in Kiambu County assessed home-based interventions specifically for hypertension management and found substantial improvements in both blood pressure control and positive health-seeking behaviors among the treatment group, concluding that promoters directly enhance chronic disease management when permitted to maintain continuous, uninhibited interpersonal communication and household engagement. This pattern of continuity is corroborated by Oti et al. (2015) in their study of Nairobi's informal settlements, which demonstrated that CHW-led interventions significantly improved longitudinal adherence to both diabetes and hypertension treatment regimens, highlighting that frontline promoters optimize the continuity of care by bridging the communicative gap between vulnerable patients and formal clinical providers.

Communication Strategies Used by Community Health Volunteers in Health Promotion

Employing a quasi-experimental design, Kim et al. (2023) examined community-based communication strategies for chronic disease self-management across low-income populations, demonstrating that interactive, participatory health education sessions delivered by trained personnel significantly improved patient disease knowledge, medication adherence, and

lifestyle modifications compared to standard, facility-based counseling. This emphasis on human-anchored, multi-channel interaction is supported by Fadhil and Wang (2019), whose systematic review utilized mixed methods to synthesize qualitative and quantitative data from diverse diabetes management programs. Their findings indicated that communication strategies combining interpersonal counseling with written and visual materials produced substantially stronger behavioral adherence than digital-only interventions, concluding that human-supported interaction remains indispensable for sustained lifestyle modification. To scale these interpersonal skills, Nouraei et al. (2024) evaluated virtual agent-assisted training in health persuasion skills using an experimental design featuring role-playing simulations. Their results showed that structured, simulation-based training markedly enhanced volunteers' communication confidence, motivational interviewing skills, and behavioral influence, concluding that deliberate capacity building is required to optimize message delivery in community settings.

In Africa, Coleman et al. (2012) examined communication barriers within rural health systems in Southern Africa through a descriptive case study design, revealing that a lack of communication infrastructure, limited access to digital tools, and fractured institutional coordination severely diluted the efficacy of rural health messaging. To circumvent such structural bottlenecks, modern interventions have pivoted toward mobile tools. Bakibinga et al. (2020) investigated the implementation of mobile health communication tools among community health volunteers in Nairobi informal settlements, using qualitative interviews with volunteers and health managers. Their findings showed that while digital applications optimized reporting efficiency, follow-up tracking, and messaging speeds, technical constraints such as limited digital literacy, poor network connectivity, and infrastructural gaps necessitated hybrid models that explicitly combine digital utilities with face-to-face interaction. In Kenya, Shumba et al. (2024), who investigated communication experiences during COVID-19 vaccine promotion in Kenya through qualitative interviews. Their findings demonstrated that repetitive, trust-based interpersonal strategies including door-to-door counseling, targeted community dialogue, and localized meetings successfully dismantled public misinformation and drove vaccine uptake.Similarly, Aseyo et al. (2018) captured the operational reality of these channels in Kenyan peri-urban settings using a mixed-methods design, proving that volunteers successfully drive household understanding and treatment adherence by blending multiple channels, including verbal counseling, group dialogues, and formal referral messaging; however, their findings also exposed an critical lack of standardization in communication approaches, leading to extreme variations in message quality and highlighting the need for formalized, structured communication guidelines.

Barriers and Enablers of CHV Effectiveness in Sustainable Health Behaviour Change

Conducting a comprehensive systematic review of low- and middle-income countries to assess performance determinants, Olaniran et al. (2017) utilized evidence synthesis across multiple intervention studies to demonstrate that community health worker (CHW) efficacy in health communication depends strictly on continuous training, supportive supervision, and explicit role definitions. Their findings revealed that while CHWs markedly improve health outcomes when adequately supported, their performance

declines sharply in environments characterized by weak supervision and poor incentive structures. This structural dependency is further elaborated by Naimoli et al. (2014) through a mixed-methods synthesis of global implementation studies. Their work identified critical institutional barriers including inadequate remuneration, restricted career progression, and weak integration into formal health systems that depress CHW motivation and retention, while simultaneously isolating local recruitment and deep community trust as indispensable enablers of behavioral adaptation. Bhutta et al. (2010) in a meta-review of maternal and child health interventions, which established that while CHWs are highly effective agents of behavior change, their impact is maximized only when a standardized curriculum and manageable workloads are embedded within a well-functioning, integrated primary healthcare infrastructure. In Africa, Scott et al. (2018) executed a multi-country, mixed-methods evaluation across Sub-Saharan Africa, revealing that while frontline health workers successfully drive health literacy and localized service delivery through strong community relationships, they remain structurally constrained by insufficient remuneration and fragile supervisory frameworks. These field-level resource constraints are illustrated by Zulu et al. (2014) in a qualitative implementation study in Zambia, where severe logistical bottlenecks such as chronic shortages of basic medical supplies and an absence of transport restricted outreach capacity; nonetheless, high community acceptance and established trust enabled effective health messaging and enhanced the uptake of preventive services.

In Kenya, Aseyo et al. (2018) investigated these dynamics in a peri-urban setting in Kisumu County using a mixed-methods design, finding that promoters face severe operational barriers, including inadequate training in advanced behavior change communication (BCC), irregular supervision, and a lack of transport for household visits. Despite these deficits, their cultural familiarity and deep community trust served as primary enablers of message acceptance. In the domain of digital health integration, Bakibinga et al. (2020) examined CHPs in Nairobi informal settlements, discovering that while mobile health tools optimize raw reporting and follow-up communication efficiency, their practical utility is constrained by poor network connectivity, low digital literacy, and limited device access thereby demanding sustainable, hybrid communication models that merge digital platforms with face-to-face interaction. This urban operational reality is expanded by Oti et al. (2015) in their study on chronic disease management in Nairobi slums, which demonstrated that high workloads and an absence of financial incentives create severe structural strain, yet promoters successfully maintain treatment adherence and health-seeking behaviors through resilient, household-level interpersonal relationships.

Methodology

The study adopted a qualitative research approach as it supported exploration of participants' lived experiences, perceptions, and interpretations of health communication processes linked to prevention and management of non-communicable diseases (NCDs).

A case study design was used to allow in-depth examination of communication interactions, community perceptions, and behavioural responses within the natural setting where CHPs operate. The study was grounded in

interpretivist epistemology and social constructivist ontology, which guided interpretation of how individuals construct meaning from health communication experiences.

The study was conducted in Uasin Gishu County, Kenya, where CHPs actively support health promotion, disease prevention, referrals, and follow-up services at community level. The target population comprised 560 participants, including 50 Community Health Promoters, 10 Community Health Assistants (CHAs), and 500 household members and patients affected by non-communicable diseases.

The sample size was 60 participants, comprising 10 CHPs, 5 CHAs, and 45 household members and patients. The sample size was determined using qualitative sampling principles guided by data saturation, where participant numbers were sufficient to generate repeated patterns of responses across interviews, focus group discussions, and document review. The researcher also considered heterogeneity of the population and ensured representation across key stakeholder groups (CHPs, CHAs, and households). Proportional representation informed selection, with households forming the largest category due to their direct exposure to CHP communication activities. Sampling adequacy was confirmed during fieldwork when additional interviews produced no substantially new themes, indicating attainment of saturation.

Purposive sampling was used to select CHPs and CHAs based on their experience in community health work and involvement in non-communicable disease management. Stratified random sampling was applied in selecting household participants across community units to capture variation in socio-economic and demographic characteristics. Convenient sampling was used to recruit household members who were available and willing to participate during data collection.

Data were collected using semi-structured interviews, focus group discussions, and document analysis. Interview guides contained open-ended questions aligned to study objectives and explored perceptions of CHP roles, communication methods, content of health messages, behavioural and attitudinal changes, and challenges in health literacy promotion. Focus group discussions provided shared community experiences regarding CHP communication effectiveness, disease understanding, lifestyle modification, and social support systems. Document analysis included review of community health reports, CHP activity records, training manuals, patient adherence records, and health education materials such as posters and brochures.

Data were analysed using thematic and content analysis. Transcripts, field notes, and documents were coded and organized into themes aligned with study objectives. Key themes included community perceptions of CHPs, communication approaches, health literacy improvement, treatment adherence, lifestyle modification, and behaviour change outcomes.

Ethical approval and research authorization were obtained from relevant institutional and county authorities before commencement of the study. Participants were informed about the purpose of the research, confidentiality measures, and their right to withdraw from participation at any stage without penalty. Confidentiality and anonymity were maintained through use of codes instead of participant names. Information collected during the study was used strictly for academic purposes and stored securely to prevent unauthorized access. The researcher

respected participants' privacy, dignity, and cultural sensitivities throughout the research process.

Findings and Discussion

Community Perceptions of CHPs' Contribution to NCD Management and Health Literacy Enhancement

Recognition of CHPs as Trusted Health Literacy Brokers

The first objective sought to identify community perceptions regarding CHPs' contribution to the understanding and management of NCDs. An overwhelming majority of household participants articulated highly positive perceptions of CHPs' work, describing them as "helpful," "critical," and "a very important addition" to the local health system. Participants reported that CHPs were welcomed into households not merely as health messengers but as trusted intermediaries who bridged the communicative and relational gap between community members and the formal health system.

> *"What can I say about their work? It is very helpful. Before they came, we only saw doctors when we were very sick. Now there is someone who knows us, speaks our language, and explains things in a way we understand. We welcome them because they have helped the community."* (Participant 3, male, household member)

Community Health Assistants corroborated these perceptions, noting that the feedback they received from patients and households consistently pointed to improved understanding of NCD management, prevention, and treatment. CHAs emphasized that CHPs provided a safe communicative space where patients could "ask and clarify issues that they were not clear about and could not ask their doctors." The familiarity of CHPs and their use of local language were repeatedly cited as facilitators of this trust. These findings resonate with social constructivist ontology, which posits that meaning is co-created through social interaction. In this context, health knowledge is not merely transferred from expert to layperson; rather, it is constructed dialogically within pre-existing social relationships that confer legitimacy and trust upon the CHP.

Enhanced Disease Understanding and Self-Management Capacity

When asked whether CHPs had helped them understand their health conditions, participants provided detailed accounts of improved comprehension regarding disease aetiology, medication adherence, dietary requirements, and lifestyle modification. A diabetic participant described a transformative learning experience:

> *"I am diabetic and for a long time did not understand my condition very well and how to live with it. I was not keen on attending clinics and taking medicines at the right time. She [the CHP] helped me to understand what the medicine was for, why I should take it as told, not when I remember. This has helped me because it is for me, for my own health. I see a lot has changed. I eat better, and avoid the foods she said I should avoid. I now know what happens if I do what the doctor says I shouldn't."* (Participant 7, female, diabetic patient)

This narrative illustrates a shift from passive compliance to active, informed self-management a hallmark of enhanced health literacy. Participants reported that CHPs explained how, when *and* why medications should be taken, translating biomedical instructions into personally meaningful action plans. Document analysis of community health reports, patient adherence records, and CHP activity logs provided corroborating

evidence. These documents indicated measurable improvements in adherence to medication timelines, dietary protocols, exercise routines, and clinic attendance, with records suggesting an almost negligible default rate compared to the pre-CHP period. While these documentary data cannot conclusively attribute causality solely to CHP activity given potential confounding variables such as personality differences, concurrent health campaigns, and intrinsic patient motivation they nevertheless provide triangulated evidence of a positive association between CHP engagement and improved self-management outcomes.

Attitudinal Transformation and Sustainable Behaviour Change

Participants were asked to describe any changes in their attitudes and behaviours since interacting with CHPs, as well as broader changes observed at the community level. At the individual level, participants described profound attitudinal shifts: from fatalism and denial to acceptance and responsibility; from episodic curative care-seeking to continuous preventive self-care; and from viewing medication as an external imposition to understanding it as an act of self-preservation.

A hypertensive participant captured this psychosocial transformation:

> *"I progressively changed my diet by avoiding salt, avoiding stressful situations, and generally accepting that some things were beyond my control. Just accepting that I couldn't change the trajectory of my life assisted me to accept my life and make peace with some situations. I also focused on the positives in my life, and I was noting improvement in my blood pressure."* (Participant 15, male, hypertensive patient)

This excerpt highlights what Nutbeam (2000) describes as critical health literacy the capacity not only to follow instructions but to appraise one's social and emotional circumstances and make contextually appropriate health decisions. The participant's emphasis on acceptance, stress reduction, and dietary discipline suggests that CHP communication fostered not merely behavioural compliance but a deeper, values-based orientation toward health.

At the community level, participants reported observable shifts including increased willingness to seek medical help, greater public conversation about NCDs, collective engagement in physical activity (such as walking groups), and the emergence of patient support networks. These community-level changes suggest that CHPs function as change agents within a diffusion-of-innovation dynamic, wherein early adopters of healthy behaviours influence broader social norms through visible modelling and peer encouragement.

Health Communication Strategies and Methods Employed by CHPs

Dialogic Home Visits and Participatory Group Interactions

The second objective examined CHPs' application of health information and communication strategies. Participants described CHP visits as structured yet flexible interactions that occurred either as individual household visits or as small group sessions. Contrary to top-down, didactic health education, the majority of participants characterized these interactions as dialogic and participatory. They reported that CHPs did not simply issue instructions but engaged in two-way conversations, inviting questions, sharing personal experiences, and co-developing management plans.

> *"When she visits, we talk about it together. She asks me how I am feeling, whether I took my medicine,*

what I ate. Then we discuss what I should do differently. It is not like being told what to do and left alone. I get a chance to ask questions about diet, about why I must take medicine at the same time every day, about everything." (Participant 11, female, diabetic patient)

This dialogic approach aligns with Freirean pedagogy and the principles of participatory health communication, which posit that sustainable behaviour change is more likely when learners are treated as active subjects rather than passive objects of health messaging. The CHAs confirmed this observation, noting that CHPs employed discussion-based methods rather than "giving orders or instructions." However, CHAs also observed variability in communication competence across CHPs, suggesting that while the *ethos* of dialogue was present, its *quality* depended on individual CHP training and experience.

Multimodal and Culturally Adaptive Communication Channels

Participants identified a diverse repertoire of communication channels through which CHPs conveyed health information. These included printed materials (posters, pamphlets, brochures), oral communication, visual aids, and, increasingly, mobile phone messages and referrals to digital platforms. The multimodal strategy allowed CHPs to adapt messages to varying literacy levels and sensory preferences.

Written materials were typically provided in Kiswahili. Participants with basic literacy skills (at least primary education, approximately Class 8 level and above) reported that they could read and comprehend these materials independently. However, a significant challenge emerged for participants with lower literacy levels. As one participant noted:

"The pamphlets are good for those who can read. But for those of us who did not go far in school, it is difficult. Fortunately, our CHP reads for us and explains in our mother tongue until we understand." (Participant 22, male, household member)

This finding emphasize the importance of functional health literacy supports where CHPs serve as literacy mediators who decode, interpret, and contextualize written health information for vulnerable subgroups. The use of local language emerged as a critical cultural adaptation strategy that enhanced message comprehension and emotional resonance. Nevertheless, the reliance on CHPs for oral interpretation of written materials reveals a systemic vulnerability: health literacy gains remain partially dependent on individual CHP initiative rather than being embedded in universally accessible communication design.

Experiential Learning and Demonstration-Based Skill Transfer

When asked how CHPs supported practical understanding of health tasks, participants highlighted the centrality of demonstration-based learning. For diabetic patients, CHPs demonstrated insulin injection techniques, medicine storage protocols, and foot-care practices. Participants were then given opportunities for mock practice under CHP supervision, coupled with immediate feedback and question-and-answer sessions.

"She showed me how to inject myself, how to store the medicine, and then watched me do it myself. I asked many questions why this angle, why this time, what if I forget and she answered all of them until I was confident." (Participant 9, female, diabetic patient)

This experiential pedagogy reflects Bandura's Social Cognitive Theory, particularly the construct of self-efficacy

by mastering a health skill through guided practice, patients develop confidence in their ability to manage their condition independently. Such hands-on communication is especially vital for NCD management, which requires sustained technical self-care over a lifetime.

Integration of Digital and Mass Media Referrals

An emergent finding concerned CHPs' role as navigators to broader information ecosystems. Participants reported that CHPs encouraged them to use mobile phones to search for additional health information via Google and reputable health websites. Some participants with smartphones had begun verifying drug uses, exploring dietary guidelines, and accessing exercise tutorials online. Additionally, CHPs referred community members to radio and television health programmes specifically citing *Ask the Doctor* on Citizen TV as supplementary sources of authoritative information.

> *"My CHP told me I can use my phone to find out more about my condition. Now I check the uses of the drugs I am taking, and I understand how they are good for my condition. I also listen to the doctor on radio and TV. I feel more literate about my condition and able to make informed decisions."* (Participant 18, male, hypertensive patient)

This represents a progression toward interactive and critical health literacy, wherein community members are empowered to access, understand, and appraise health information from multiple sources. However, the digital divide was evident: participants without smartphones or reliable internet access could not leverage these referrals, highlighting a need for equitable digital health infrastructure.

Content and Focus of Health Messages on NCDs

Disease-Specific Management and Self-Care Protocols

The third objective sought to establish the content of health messages shared with communities. Analysis revealed that CHPs delivered highly targeted, disease-specific information tailored to the predominant NCDs in the community: diabetes, hypertension, and cancer. For diabetic patients, message content focused on blood glucose monitoring, insulin administration, recognition of hypo- and hyperglycaemic symptoms, foot care, and the importance of consistent medication timing. For hypertensive patients the largest subgroup in the sample content emphasized blood pressure self-monitoring, sodium restriction, stress management, medication adherence, and recognition of danger signs requiring emergency care.

For the few cancer patients in the sample most of whom were at advanced stages of disease CHPs provided information on nutrition, pain management, chemotherapy adherence, and psychosocial coping. However, participants and CHAs alike noted that behaviour change was less evident among this group, primarily due to disease progression and physical pain rather than communication failure. Nevertheless, these patients and their families expressed appreciation for the CHPs' emotional and informational support, suggesting that health communication at end-stage illness serves palliative and dignity-preserving functions even when curative behaviour change is no longer feasible.

Risk Factor Reduction and Lifestyle Modification

Beyond disease-specific protocols, CHPs communicated

extensively on risk factor reduction and primary prevention. During focus group discussions, participants articulated newfound understanding of how lifestyle choices—particularly diet, physical inactivity, alcohol use, and stress predisposed individuals to NCDs. CHPs used printed posters and oral narratives to promote dietary diversification, salt and sugar reduction, increased physical activity, and smoking cessation.

Participants reported translating this knowledge into concrete actions: walking greater distances by parking vehicles farther away, substituting traditional high-salt foods with healthier alternatives, and establishing community walking groups. The focus on *why* certain behaviours were harmful rather than mere prohibition appeared to facilitate acceptance. One participant summarized:

> *"We understood the need to adapt and shun certain lifestyles that were predisposing us to ill health. As much as this was difficult for some to accept, the support from CHPs and the support groups in the community assisted in proper understanding and overall change in our lifestyles."* (Participant 5, male, FGD participant)

Health System Navigation and Preventive Care

A less visible but equally important content domain concerned health system navigation. CHPs provided explicit guidance on when and how to attend clinic appointments, how to prepare for consultations, what questions to ask clinicians, and how to obtain prescription refills. This navigational guidance addressed a frequently overlooked dimension of health literacy: the *procedural* knowledge required to engage effectively with formal health institutions. By demystifying clinic protocols, CHPs reduced the anxiety and logistical barriers that often led to treatment default.

Challenges and Opportunities for Strengthening CHP-Mediated Health Communication

Individual, Community, and Structural Challenges

The fourth objective identified challenges experienced by CHPs and the communities they serve. Despite the overwhelmingly positive perceptions, several interrelated challenges emerged from interviews with CHPs, CHAs, and household participants.

The most frequently cited challenge was the mismatch between written health education materials and the literacy levels of certain community members. Participants who had not completed primary education (below Class 8) struggled to read Kiswahili pamphlets and posters independently. While CHPs compensated through oral interpretation, this created additional workload and introduced risks of message distortion. This finding suggests that current communication materials are designed for a functionally literate audience, inadvertently excluding the most vulnerable populations.

Disease Severity and Communication Limits

For patients with advanced-stage cancer, the standard health promotion and behaviour-change messaging had limited observable impact. These participants required palliative-focused communication and complex pain management support that exceeded the current training scope of CHPs. CHAs confirmed that CHPs were not adequately equipped to handle end-of-life counselling or advanced cancer care communication, indicating a need for differentiated

support strategies based on disease trajectory.

Resource and Capacity Constraints

CHPs reported working with limited supplies, inconsistent supervision, and inadequate printed materials. Document analysis of CHP activity records and strategic plans revealed that while some community units maintained structured reporting systems, others lacked systematic documentation of patient outcomes, challenges, and achievements. CHAs noted that not all CHPs had access to comprehensive training manuals or regular refresher courses, leading to variability in the depth and accuracy of health information conveyed.

Motivation and Retention

When asked about their job satisfaction, CHPs expressed intrinsic motivation derived from community appreciation and visible health improvements. However, they also described operational challenges including long distances travelled on foot, lack of stipends or material incentives, and limited recognition from the formal health system that threatened long-term retention and performance quality.

Communication Method Adequacy

CHAs offered a nuanced assessment of CHP communication methods. While they affirmed the overall effectiveness of home visits, group discussions, and demonstrations, they noted that these methods were labour-intensive and difficult to sustain at scale without greater investment in digital tools, transport, and human resources. The absence of structured communication protocols or standardized patient education curricula meant that message content varied significantly between CHPs.

CHPs operated with limited supplies, inconsistent supervision, and inadequate printed materials, corroborating Olaniran et al. (2017), Bhutta et al. (2010), and Scott et al. (2018), who demonstrate that CHW performance depends strictly on continuous training, standardized curricula, supportive supervision, and manageable workloads within integrated health systems. In Kenya specifically, Aseyo et al. (2018) found similar operational barriers including inadequate advanced behaviour-change communication training and transport shortages, while Zulu et al. (2014) documented how chronic supply and logistical bottlenecks restrict outreach despite high community acceptance. Motivation and retention were further undermined by the absence of stipends, long distances travelled on foot, and limited formal recognition, aligning with Naimoli et al. (2014) and Oti et al. (2015), who show that inadequate remuneration and weak career progression depress workforce retention even where interpersonal trust sustains treatment adherence. Additionally, the labour-intensive nature of home visits and demonstrations, compounded by the absence of standardized communication protocols, rendered current methods difficult to scale, a constraint exacerbated by the digital divide evident in poor network connectivity and low device access noted by Bakibinga et al. (2020), underscoring the urgent need for hybrid digital-face-to-face models embedded within strengthened primary healthcare infrastructure.

Recommendations for Health System Strengthening

Participants and CHAs generated several recommendations to address these challenges. At the capacity-building level, CHAs suggested that CHPs require enhanced training in NCD-specific

communication, counselling skills for advanced illness, and digital health literacy to support community members in navigating online information safely. At the materials level, participants requested more pictographic and audio-visual health education tools that would transcend literacy barriers. At the structural level, CHPs and CHAs alike called for formal integration into the county health system, including regular supervision, stipends, structured career pathways, and provision of basic equipment such as smartphones, blood pressure monitors, and glucometers.

The document analysis revealed that where community health units maintained strategic plans and patient adherence records, programme coherence and outcome tracking were stronger. This suggests that formalizing planning and documentation systems through standardized registers, digital reporting tools, and periodic programme reviews could enhance both the quality of CHP communication and the evidence base for policy advocacy.

Conclusion

The findings of this study demonstrate that Community Health Promoters in Uasin Gishu County serve as indispensable health literacy brokers who bridge the gap between formal biomedical systems and local communities through dialogic, culturally adaptive, and multimodal communication strategies. By employing participatory home visits, experiential demonstrations, local language interpretation, and digital health referrals, CHPs enhance community understanding of non-communicable diseases, foster critical self-management capacities, and catalyse sustainable attitudinal and behavioural changes—ranging from improved medication adherence and dietary modification to the emergence of community-level peer support networks. However, the sustainability of these gains is constrained by systemic challenges including literacy mismatches in existing health materials, limited resources and supervision, inadequate capacity for advanced illness counselling, and a widening digital divide that excludes vulnerable populations. Consequently, while CHP-mediated communication has proven effective in co-constructing health meaning and empowering individuals toward informed self-care, realizing long-term, equitable health outcomes necessitates urgent policy intervention to standardise CHP training, develop literacy-sensitive and audio-visual education tools, integrate community health data into county health information systems, and formally recognise CHPs within the health workforce through structured remuneration, supervision, and career pathways.

Recommendations

The findings of this study generate six priority recommendations for health policy, programme design, and communication practice in Uasin Gishu County and comparable settings. First, health communication strategies must move beyond generic, one-size-fits-all messaging and embrace personalized engagement. CHPs should adopt tailored communication that responds to individual patient needs, literacy levels, disease trajectories, and socio-economic circumstances. Such personalization deepens comprehension, fosters ownership of self-care regimens, and strengthens the sustainability of behaviour change outcomes for NCD management.

Second, health programmes should integrate interactive digital tools such as WhatsApp and mobile-based follow-up systems to complement face-to-face home visits. These platforms can sustain continuous engagement between

CHPs and households through appointment reminders, medication alerts, and real-time clarification of health concerns. While connectivity and smartphone access remain uneven, blended communication approaches that combine digital and in-person contact can significantly improve reach, responsiveness, and the scalability of CHP-mediated health literacy promotion.

Third, the translation and simplification of biomedical information into local languages should remain a core, institutionalized function of CHPs rather than an ad hoc volunteer effort. Clear interpretation of technical health terminology improves understanding, supports informed decision-making, and is particularly vital for populations with limited formal education.

Fourth, health interventions must deliberately account for diversity among target populations, including differences in gender, culture, educational attainment, and economic status. Communication strategies should be designed to reflect these intersecting differences, ensuring that messages are not only linguistically accessible but also socially relevant and culturally resonant.

Fifth, strengthening social networks and community structures should be prioritized as a deliberate programme strategy. CHPs should be formally integrated into existing community groups such as patient support networks, faith-based organizations, and local administration structures where they can reinforce health messages through peer learning, visible social modelling, and collective lifestyle initiatives. Collaboration with local administrative leadership can further improve community mobilization, coordination, and the dissemination of consistent health information. Finally, the sustainability of CHP-mediated health communication depends critically on improved support systems. County health authorities should institute financial incentives, structured supervision, continuous in-service training in NCD-specific counselling and digital health navigation, and clear career pathways for CHPs. Strengthening motivation and operational support will enhance service quality, reduce attrition, and ensure that community health programmes retain the experienced communicators who are central to fostering long-term health attitude and behaviour change.

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