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'BOTTOM UP' APPROACH: A COMMUNITY-BASED INTERVENTION IN FIGHTING NON-COMMUNICABLE DISEASES IN URBAN INFORMAL SETTLEMENTS KENYA
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'BOTTOM UP' APPROACH: A COMMUNITY-BASED INTERVENTION IN FIGHTING NON-COMMUNICABLE DISEASES IN URBAN INFORMAL SETTLEMENTS KENYA

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ABSTRACT

Objective: **The main objective of this study was to identify challenges faced by healthcare front-liners towards health promotion in the prevention and management of Non-Communicable Diseases (NCDs) amongst the urban 25 - 59-year olds living in urban informal settlements within Kamukunji, Nairobi County.**

Design: **Using the design thinking methodology, this qualitative research aimed at exploring the use of an innovative communication strategy using community-based interventions as a new approach towards NCDs prevention and management.**

Setting: **This study was carried out in two community units within California Ward, in Kamukunji Sub-county, one of the most populous sub-counties in Nairobi**

Participants: **7 CHVs, 6 Sub-county health officers and 3 Design Thinking practitioners were included in this study.**

Intervention: **A *'bottom-up approach'* of involving healthcare front-liners in communities in decision making about their health choices and what works best for them, is an unexplored area in health promotion programmes in Kenya. Towards this end, a co-design workshop conducted with the key stakeholders helped in framing and designing health promotion and communication messages that could have a major impact in the reduction of NCDs and related risk factors and increase health-seeking behaviour within the community.**

Results: **The significance of the findings from this qualitative study identified major challenges which included irrelevant and poor health information, education and communication (IEC) material, poor health education and training methods and tools, socio-cultural barriers as well as limited health literacy levels amongst the community members. It was also observed that the current health promotion programmes used were designed and implemented by the National Government, who were not fully aware of the challenges faced at the grassroots.**

Conclusion: **This paper argues that community engagement in designing health promotion programmes goes a long way in influencing health behaviour change among community members.**

INTRODUCTION

Limited public awareness and lack of knowledge about Non-Communicable Diseases (NCDs) – also referred to as 'lifestyle diseases', have been cited as a major influence in the attitudes and practices in their prevention and control [1]. Low level of knowledge by the community and health care workers has been seen as a major hindrance to effective health promotion for most NCDs [2]. WHO 2015, defines NCDs as medical conditions or diseases that are non-infectious, non-transmissible and chronic which last for long periods of time and progress slowly over the human life-cycle. The four main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. Although NCDs have for a long time been associated with older age groups, evidence shows that 16 million of all deaths attributed to NCDs occur before the age of 70. Of these premature deaths, 82% occurred in low-and-middle income countries (LMICs) [3].

The increasing prevalence of NCDs in LMICs is a big challenge to governments, which are all still struggling with a myriad of communicable diseases (CDs) like Tuberculosis, HIV/AIDS and Malaria [4,5,6]. The findings from studies done in Kenya by Maina et al 2010 and Haregu et al 2015 [7] revealed that public awareness campaigns through effective communication channels would help bridge the knowledge gap on NCDs and in turn promote healthier lifestyles.

Health awareness programmes have mainly used a *'top-down approach'* – a term used in the fields of management and organization of an institution or structural unit. A *'top-down approach'* has executives or people high in the hierarchy of government make decisions about how systems run or should work for the people below them, without necessarily having them as part of the decision-making process. [6].

Public Health problems now call for systemic solutions that encourage change at individual, community and societal levels [8]. Joint Health Promotion and Communication Programmes towards an all-inclusive and holistic campaign towards NCDs awareness is an unexplored channel within LMICs. A *'bottom-up approach'* has been suggested in many studies as a way of involving communities in decision making about their health choices and what works best for them [9].

A *'bottom-up approach'* engages people at the grassroots levels in joint health campaigns, in causing a change within their settings and thus influencing an incremental change towards their intended goals. This usually engages healthcare front-liners within their communities, who include community health workers, community members as well as community leaders. The aim of *'bottom-up approach'* is to increase local access to health at the primary level in communities.

Community-based outreach and dialogues have been a new approach to reach individuals within a community. The role of community health workers has been very critical in the dissemination of health information and health referral system within sidelined communities. In a study done on Female Genital Mutilation (FGM) by UNFPA and UNICEF in 2016, the practice was highly prevalent in the Northern parts of Kenya. Through a campaign dubbed '*Champions of Change'*, the study engaged community health workers in driving a campaign towards taming of this practice. The community members who included men, women, circumcisers and religious

leaders were jointly gathered and educated on the demerits of this practice. Through the campaign, the various agents were provided with information that allowed shifts in attitudes towards curbing FGM. Programmatic interventions based on readiness of the community allowed members to adapt to the new norm of discouraging FGM and instead sought other modes of initiating young girls into adulthood.

The '*bottom-up approach'* emulates the Design Thinking (DT) process that leads human-centered solutions by direct engagement with consumers in the communication strategy process. End-users are involved in the research and design process of a concept as well as the prototyping of the design in an iterative cycle [10]. By applying unique approaches to understanding user needs, design thinking takes up a human-centered approach in creating and implementing innovative health promotion programmes. This is done through integrating the needs of the people, the various type of technology and media as well as the requirements of the success of the intervention.

Designing a successful public health intervention can increase the access and uptake of healthcare services, prompt behavior change and equally improve expected health outcomes. In this light, a cost-effective and feasible preventive action for NCDs is the most viable approach to avert potentially catastrophic costs through primordial prevention. Specifically, this paper explores the use of community and stakeholder engagement in designing effective health promotion programmes towards the prevention of NCDs through a 'design thinking' approach.

METHOD

Study Site and Population: This study was carried out in California Ward, in one of the most populous sub-counties in Nairobi, Kamukunji Sub County. The area has had a prevalence of NCDs with majority of the population not being well informed on these lifestyle diseases and their prevention, management and care. Seven (7) Community Health Volunteers (CHVs) were used as the case study group and were considered as the key informants in this study. This is the group tasked to attend to the community members to whom this study targeted (healthy population aged 25 – 59 years). The study also involved six (6) health officers from the Sub-County (Sub-county Health Administrator - SCHA, Sub-county Health Promotion Officer - SCHPO, Sub-county Clinical Officer - SCCO, Sub-county Community Health Strategist – SCCHS, Community Health Administrator – CHA and the Sub-county Clinic Health Worker. The Biafra Lions' Health Clinic, which is county-owned provides health services to the locals in this area.

Tools and Methodology

Co-Design Workshop: This workshop involved key stakeholders in the health promotion process, the decision-makers and the implementers. The CHVs and the Sub-county Health Officers, guided by 3 Design Thinking experts were engaged in a Design Thinking Workshop that helped them come up with challenges and possible solutions that would be used in designing health promotion programmes towards NCDs awareness in their local community of Kamukunji. This also involved working together to design information, education and communication (IEC) material towards health promotion of lifestyle diseases. Key issues discussed during the workshop involved; understanding patient and staff experiences (both health practitioners and CHVs), delving into the issues affecting health-seeking behaviour among the community members and coming up with tangible solutions towards the issues.

RESULTS

Key stakeholders in the design process of health promotion material were grouped

together to discuss various topical issues in the prevention and control of lifestyle diseases within their community. Major issues tackled in their select groups were all aimed at improving the health-seeking behaviour of the members within their community. Aside from this, they needed to agree on ways and possible solutions as to how they could decrease the incidence of NCDs within California Ward of Kamukunji sub-county. The responses were clustered as indicated in Table1, 2 and 3 below.

Table 1

1. **Poorly informed on NCDs:** The CHVs said that the trainings done around the topic of NCDs conducted by Sub-county health officers was very minimal and barely covered the topic. They indicated that the trainings are usually centred on Maternal, Neo-natal and Child Health (MNCH) and other Communicable Diseases. In the case where they encountered someone with an NCD, they were forced to source information from online platforms and thereafter guide the patient.
2. **Inadequate Training Material:** The trainings were done in a sort of classroom setting of which they were asked to take carry-home notes that they would write during the training. The CHV would then use the handwritten notes as reference to conduct the training.
3. **Short training sessions:** The trainings were conducted within one week of half a day each. The trainings covered all major diseases both CDs and NCDs and thus they had no time to internalise what they were taught extensively.
4. **Lack of IEC Material, Branding Material:** The CHVs stated that they were not easily accepted or welcome by some households because the inhabitants were not sure who they were as they had no identifiers to show they were CHVs. Additionally, the community members did not always take up their advice because they (CHVs) had no reference material to prove they had knowledge on the subject matter.
5. **Incentivize the CHVs:** The CHVs indicated that they were overwhelmed by the number of households they had to attend to being that the region had only 38 CHVs attending to over 50,000 households within California Ward. They noted that their services were completely voluntary and did not receive any emolument unless a Funder came by to conduct a research and were then given '*something small'.*
6. **Social Cultural Barriers:** The CHVs highlighted various socio-cultural issues they faced with the members of the community. Some of these included Language Barriers, Religious alterations and Gender related issues where a male CHV could not approach a female community member, or a female CHV attend to a male community member.

Challenges faced by CHVs towards health promotion and awareness of NCDs

Table 2

Challenges faced by Health Officers in awareness creation, diagnosis and management of NCDs

1. **Non-existence of IEC material:** The health officers admitted they had very minimal and outdated reference material that they could share with the CHVs. They noted that occasionally, they have had to use their knowledge from their medical background training in sharing information on NCDs to the CHVs.
2. **NCDs not prioritized:** Despite the increased reported cases of NCDs in the community, NCDs had not been prioritized by the national and local government. The health budget was not enough to support health promotion towards NCDs and as such 'more pressing' health issues were prioritized. For this community, MNCH and CDs like typhoid and cholera were given more prevalence.
3. **No proper recording on NCDs prevalence:** The Data Management System in the locality is non-existent and the officials still managed their data using analogue methods i.e. written records. This had made it hard to keep track of those affected by NCDs and thus were not able to do follow up on the patients.
4. **Newer forms of NCDs emerging:** Ailments like mental health had increased greatly in this locality and trained medical experts were unavailable to attend to them. The sub-county is presently unable to assist and end up referring the patients to Level Five Hospitals. However patients cannot afford the fees in these hospitals and end up suffering at home.
5. **Minimal CHVs:** The Sub-county has very few people who volunteer to do primary health care. As such the whole community is under serviced as pertains to health issues and thus they were forced to prioritise certain regions and certain illnesses.
6. **Social Cultural Barriers:** Being a cosmopolitan region with a lot of illegal immigrants, promoting health issues to the inhabitants was an issue and thus not all the community members are reached out to. Challenges included religious and cultural issues, language barriers, and education and literacy levels amongst others.

Table 3

Joint proposals by CHVs and Health Officers in addressing NCDs prevalence in Kamukunji Sub-county

A. HEALTH AWARENESS CREATION

- ✓ **IEC Material** – Revised IEC Material that accommodates all the community members in terms of language, clear visual illustration and ease of dissemination of information.
- ✓ **Audio/Visual Campaigns** – To deal with literacy among community members, participants proposed having simplified audio-visual communication to pass across health messages to community members.
- ✓ **Social Media** – Social media promotional messages were encouraged as a source of information transmission as it was found more than 90% of the community members had mobile phones. This form of communication channel could be explored as a good avenue of encouraging the community towards increased health-seeking behaviours.
- ✓ **Health Education** – It was agreed that the health officers together with the CHVs encourage more health talks within the community and proposed geographical settings such as social halls and religious forums.
- ✓ **Community Screening** – This was expressed as a challenge because of lack of financial resources but it was agreed that participants could inform their community about any free health checks within or outside the community. In line with this, the county officers agreed to reach out to potential funders to sponsor this venture.

B. TRAINING METHODS/STYLES

- ✓ **Audio-Visual Displays** – The CHVs requested for improved teaching methods as these would help them in understanding the health topics more intensively. The same audio-visual material can then be shared in health facilities within California Ward, Kamukunji sub-county.
- ✓ **Social Media** – Social media promotional messages were encouraged as a source of information transmission as it was found more than 90% of the community members had mobile phones. This form of communication channel could be explored as a good avenue of encouraging the community towards increased health-seeking behaviours.
- ✓ **Training Manuals -** The CHVs requested production of customized training manuals that were disease-specific that they could carry home and with them during the house-to-house visits within their locality.
- ✓ **Engaged Activities** – The stakeholders agreed that the local CHVs could be exposed to other trainings and medical camps that were not within their sub-county as a benchmarking effort towards improving quality of health care in Kamukunji.
- ✓ **Skits –** It was agreed by the participants that skits and short plays could be used as a means of health promotion in any social gathering within the wider Kamukunji area. This would be used as a form of health education strategy especially in settings where literacy levels were limited and places where these diseases were stigmatized.

C. SOCIAL CULTURAL BARRIERS

- ✓ **Language:** The stakeholders agreed that all IEC and training material should be customized to fit the diverse population within the community. In line with this, the CHVs were encouraged to bring on board colleagues who were from varied ethnic backgrounds.
- ✓ **Religious and Cultural Barriers** - Religious and Community elders would be approached in helping pass across positive health messages and shown the value-add it has to their members in terms of improved quality of health.
- ✓ **Stigma** – Intensive health education and counseling would be provided by the CHVs and the Health Officers to curb stigma around NCDs as is the case with Cancer in the locality.

DISCUSSIONS

The deliberations from the co-design workshop were contextually analyzed and are thematically discussed as follows:

Empowerment of Community Health Volunteers: Major factors that have affected effective awareness and access to health education and promotion to communities include; irrelevant content in the Information, Education and Communication (IEC) material; conflicting health education messages; messages with language barriers and messages not considering the cultural beliefs of the target audience [11,12]. Thus, it is critical to involve the audience in which an intervention is being designed for.

The CHVs believed if they were actively involved in the design process of health promotion programmes from inception, they would effectively be able to give relevant information that was target-specific to the community members they served. Empowerment of the CHVs meant that they would be motivated towards the role they played as healthcare givers within their communities, and in turn assist the members of this community adopt positive health-seeking behaviour.

Stakeholder Collaboration and Joint Ventures: Key problems such as social cultural issues, language and religious barriers, poor awareness programmes and poor or lack of training material have all contributed to increased prevalence of NCDs in Kamukunji Sub-county. Design thinking (DT) approach looks at a participatory '*bottom-up*' process where the end users and other stakeholders play a role in shaping of solutions dependent on their needs. DT starts at a small level so that a prototype is developed and tested and a proposed solution to the targeted population is influenced by the message developed. Focus is then laid on the suggested message. Stakeholder collaboration in designing health promotion programmes towards the fight against NCDs was a positive and feasible approach in reducing the incidence of this burden of disease.

Community Participation and Engagement: Community-based interventions for example involving the community in framing and designing health promotion and communication messages have had a major impact in the reduction of NCDs in LMICs like Indonesia and India [13]. The communities in these regions played a role in the design and implementation of the community-based interventions that saw the effectiveness of these interventions as they felt empowered to take care of themselves through behaviour change alongside the uptake of health-seeking services like early screening and disease control and management.

Stakeholders in the DT workshop identified community participation and engagement as key in the design and implementation of health promotion programmes towards NCDs prevention and management. Through a proper understanding of the communities' interest regarding health matters, the design intervention in health campaigns can be tailored to accommodate the needs of the end-user which in turn have a positive influence towards behaviour change in curbing NCDs risk exposure.

Co-Designing in Healthcare Quality Improvement: Principles of effective campaign designs are critical in putting together a targeted, well-executed health campaign strategy. In health education and communication, studies have shown that tailored communication material are generally more effective than non-tailored ones in helping individuals change health-related behaviours such as smoking, diet, physical activity, cancer and cholesterol screening and in turn enhance participation in health promotion programs [14,15,16].

The identified concepts from the DT workshop reflected the different framings of problem areas towards the NCDs scourge, which were later converted into possible solutions. Some of the proposals made by the CHVs as potential information dissemination areas included use of Skits during Community Dialogues, digital media to promote healthy living via television screens in the local health facility, training manuals designed to accommodate the different levels of education of the community members and promotional material that was target-specific to the end-users.

CONCLUSION

From the findings of this research a health promotion programme, co-created and co-designed by individuals within the target community alongside the related front-liners in the health system is the way to go. A well-structured public health campaign using design thinking as a tool, can assist communities achieve healthy lifestyle behaviour and increase uptake of health-seeking services in curbing the incidence of NCDs.

REFERENCES

1. Maina, W. K., Ndegwa, Z. M., Njenga, E. W., & Muchemi, E. W. (2010). Knowledge, attitude and practices related to diabetes among community members in four provinces in Kenya: a cross-sectional study. *Pan African Medical Journal, 7*(1).
2. Schillinger, D., Grumbach, K., Piette, J., Wang, F., Osmond, D., Daher, C., Bindman, A. B. (2002). Association of health literacy with diabetes outcomes. *JAMA, 288*(4), 475-482.
3. Amuyunzu-Nyamongo, M. (2010). Need for a multi-factorial, multi-sectorial and multi-disciplinary approach to NCD prevention and control in Africa. *Glob Health Promot, 17*(2 Suppl), 31-32. doi:10.1177/1757975910363928
4. Probst-Hensch, N., Tanner, M., Kessler, C., Burri, C., & Kunzli, N. (2011). Prevention--a cost-effective way to fight the non-communicable disease epidemic: an academic perspective of the United Nations High-level NCD Meeting. *Swiss Med Wkly, 141*, w13266. doi:10.4414/smw.2011.13266
5. Oti, S. O., van de Vijver, S., & Kyobutungi, C. (2014). Trends in non-communicable disease mortality among adult residents in Nairobi's slums, 2003-2011: applying InterVA-4 to verbal autopsy data. *Glob Health Action, 7*, 25533. doi:10.3402/gha.v7.25533
6. Stewart, G. L., Manges, K. A., & Ward, M. M. (2015). Empowering Sustained Patient Safety: The Benefits of Combining Top-down and Bottom-up Approaches. *Journal of nursing care quality, 30*(3), 240-246. doi:10.1097/ncq.0000000000000103
7. Haregu, T. N., Oti, S., Egondi, T., & Kyobutungi, C. (2015). Co-occurrence of behavioral risk factors of common non-communicable diseases among urban slum dwellers in Nairobi, Kenya. *Glob Health Action, 8*, 28697. doi:10.3402/gha.v8.28697
8. Riboli-Sasco, E. F., Leslie, J., Felix, L., Head, R., Car, J., & Gunn, L. (2015). Effectiveness of Communication Strategies Embedded in Social Marketing Programmes on Health Behaviours and Related Health and Welfare Outcomes in LMICs.
9. Chen, H. T. (2010). The bottom-up approach to integrative validity: A new perspective for program evaluation. *Evaluation and Program Planning, 33*(3), 205-214. doi:https://doi.org/10.1016/j.evalprogplan.2009.10.002
10. Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign, 4*(1), 5-18. doi:10.1080/15710880701875068
11. Parker, W. A., Steyn, N. P., Levitt, N. S., & Lombard, C. J. (2012). Health promotion services for patients having non-comminicable diseases: feedback from patients and health care providers in Cape Town, South Africa. *BMC Public Health, 12*, 503. doi:10.1186/1471-2458-12-503
12. Govender, R. D. (2014). The barriers and challenges to Health Promotion in Africa. *South African Family Practice, 47*(10), 39-42. doi:10.1080/20786204.2005.10873303
13. Krishnan, A., Ekowati, R., Baridalyne, N., Kusumawardani, N., Suhardi, Kapoor, S. K., & Leowski, J. (2011). Evaluation of

community-based interventions for non-communicable diseases: experiences from India and Indonesia. *Health Promot Int, 26*(3), 276-289. doi:10.1093/heapro/daq067

14. Hawkins, R. P., Kreuter, M., Resnicow, K., Fishbein, M., & Dijkstra, A. (2008). Understanding tailoring in communicating about health. *Health Education Research, 23*(3), 454-466.
15. Kreuter, M. W., Oswald, D. L., Bull, F. C., & Clark, E. M. (2000). Are tailored health education materials always more effective than non-tailored materials? *Health Education Research, 15*(3), 305-315. doi:10.1093/her/15.3.305
16. Lang, A. (2006). Using the Limited Capacity Model of Motivated Mediated Message Processing to Design Effective Cancer Communication Messages. *Journal of communication, 56*, S57-S80. doi:10.1111/j.1460-2466.2006.00283.x