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Young Mothers' Perspectives on Maternal Nutrition Communication in Kenya's Informal Settlements: A Case Study of Pumwani Hospital

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Abstract

Maternal nutrition is an important public health issue, particularly in informal settlements where young mothers face unique socio-economic and cultural barriers that hinder them from accessing maternal-related services such as antenatal care and maternal nutrient supplementations. Thus, this qualitative research explored perspectives of young mothers in an informal settlement in Nairobi, Kenya, on the communication strategies used by Pumwani Maternity Hospital to promote maternal nutrition. The study is anchored on the health belief model and employed six in-depth interviews and two focus group discussions with 12 young mothers. Findings reveal that communication strategies such as the use of visual aids, one-on-one counselling and family involvement in supporting mothers enhance the uptake of maternal nutrition. Furthermore, the study found that low literacy levels and economic constraints among mothers are key barriers to accessing and continuously using maternal nutrition. As such, the results showcase the need for culturally tailored, community-driven communication strategies to improve maternal health outcomes. Recommendations include policy interventions to enhance accessibility and effectiveness of maternal nutrition programmes in urban informal settlements. The limitations and implications of the study's findings are also discussed.

Keywords

Communication strategies, health belief model (HBM), informal settlements, Kenya, maternal nutrition, thematic analysis

INTRODUCTION

Maternal nutrition has a significant impact on maternal and child health outcomes. Yet, challenges in communication often hinder the adoption of healthy nutritional practices among young mothers in urban informal settlements (Anker et al., 2016; Locks et al., 2015). As maternal nutrition is crucial to reducing risks such as low birth weight, stunted growth and maternal morbidity, global frameworks such as the Sustainable Development Goals (SDGs) prioritise nutrition-focused initiatives – specifically SDG 2, which aims to end hunger and ensure access to nutritious food for all (Grosso et al. 2020). Past studies indicate that to be able to successfully achieve any health development goal, especially in informal settlements, there is a greater need to communicate health needs in a way that resonates with the people's cultural beliefs and values (Ochola, 2016). Communication facilitates the building of trust between health promoters and health seekers, thus promoting awareness and making it easier for individuals to adhere to health recommendations and adopt healthy behaviours (Chichirez & Purcarea, 2018).

The increased focus on maternal nutrition is a result of rising global cases of adolescent pregnancies and young mothers. According to the World Health Organization (2024), approximately 21 million pregnancies occur among adolescent girls aged 15 to 19 years in developing countries annually, of which 12 million result in birth. Sub-Saharan Africa continues to experience a disproportionate burden of

unwanted and unintended pregnancy rates (Tolla et al., 2024). This scenario presents enormous health consequences for both mothers and their infants and can result in severe malnutrition risks such as stunted growth and maternal anaemia (Saaka & Aggrey, 2023). Similar trends have been observed in Kenya, where pregnancy cases of about 15% of adolescent girls aged 15 to 19 continue to be reported, with 12.0% of pregnancies resulting in birth (Kenya National Bureau of Statistics, 2022). In 2019, the global childhood statistics data revealed that Kenya ranked third in the world for adolescent pregnancies, with 82 births per 1,000 births (Geoghegan, 2019). The data indicate an increasing concern about the detrimental nutritional effects on infants and their young mothers. The statistics are worrying and have placed infant nutrition as one of the most significant public health concerns today (Okeyo et al., 2019).

Communication challenges in maternal health are even more pronounced in informal settlements where barriers such as low literacy, economic constraints and entrenched cultural norms persist (Hackett et al., 2015; Norouzinia et al., 2015). Studies have highlighted that traditional health communication strategies often fail to resonate with such vulnerable populations due to their lack of contextual adaptation (Nabugoomu et al., 2018; Saaka et al., 2021). This underscores the need for tailored strategies that consider the unique socio-cultural and economic dynamics of urban informal settings (Kennedy et al., 2018; Schouten et al., 2020). Communication has a major impact on maternal nutrition behaviours. For example, health communication strategies such as visual aids, one-on-one counselling and family involvement have been demonstrated as effective in enhancing maternal health outcomes by simplifying complex health messages and fostering behavioural change (Handajani & Daries, 2018; Harris et al., 2021). In addition, visual communication methods, such as using images to depict malnutrition risks, have been shown to create a more profound understanding of health outcomes, especially among populations with low literacy (Anker et al., 2016; Chen et al., 2018). Personalised counselling and family-centred communication strategies further amplify these effects by addressing individual needs and leveraging social support networks to promote adherence to recommended practices (Locks et al., 2015; Tiwary et al., 2019).

Despite Kenya's efforts to improve maternal health communication through its national nutrition action plan, the uptake of maternal nutrition supplementation remains low in urban informal settlements (National Council for Population and Development, 2020; United Nations Population Fund, 2020). This is a worrying trend, as effective uptake of maternal nutrition is crucial to ensuring positive health outcomes for both mothers and infants, but in low-income urban settlements such as Mathare, young mothers face significant barriers to accessing and comprehending nutrition information (De Vita et al., 2019; Kimani-Murage et al., 2019). For example, barriers such as poor dietary habits, misinformation and poverty exacerbate the problem (Anker et al., 2016; Locks et al., 2015). Thus, effective communication strategies are essential to addressing these challenges.

The present research – focusing on Pumwani Maternity Hospital, one of Kenya's largest maternity hospitals in informal settlements – explored the perspectives of young mothers regarding the strategies used to communicate the risks of poor maternal nutrition; the benefits of maternal nutrition information communicated by the hospital; perceived barriers in hospital communication strategies that promote maternal nutrition; and the role of social support networks in the promotion of maternal nutrition. The 18 young mothers were drawn from the Mathare informal settlement and received their maternal nutrition services from Pumwani Hospital. Research highlights that early childbearing is prevalent in informal settlements (Mumah et al., 2020) and adolescent girls and women lack strong policy protection against undernutrition (UNICEF, 2023).

Although there are several studies focusing on maternal nutrition in general, existing research often overlooks the unique challenges of dwellers of informal settlements such as Mathare, hence the reason the current research is significant. Many studies tend to focus on controlled settings (see, for example, Billah et al., 2022; Nguyen et al., 2016), which limits their applicability to urban informal settlements. In addition, there is a lack of research on the long-term impact of communication strategies in informal contexts, particularly regarding sustained behaviour change. Thus, by examining the perspectives of young mothers in Nairobi's informal settlements on maternal nutrition communication strategies, this

study sought to bridge the above-identified research gaps. In addition, by focusing on culturally sensitive approaches – including visual aids and social support networks – this research aims to offer actionable insights for improving maternal health outcomes in resource-constrained contexts such as Mathare. This research also contributes to the growth of the health belief model (HBM) and related literature. Health communication scholars, health institutions, public health practitioners, governments, policymakers and donors, among other key stakeholders, stand to benefit from the study's findings. For instance, based on the findings, hospitals in Kenya could develop better communication strategies for their maternal nutrition customers by emphasising the use of visual communications.

THEORETICAL FRAMEWORK: HEALTH BELIEF MODEL

In the early 1950s, the United States public health social scientists sought to design a model to enhance the effectiveness of health interventions (Champion & Skinner, 2008). They believed that demographic variables such as gender or age could not be modified to improve health interventions. Individuals' failure to adopt disease prevention strategies prompted them to explore modifiable individual traits as a means of enhancing behaviour change (Green et al., 2020). They identified beliefs as the possible link between socialisation and behaviour change, viewing these as enduring personal attributes that shape behaviour and can be influenced through social interaction and persuasive methods (Glanz et al., 2008). This resulted in the HBM – a theoretical framework for explaining and predicting individual health behaviour change. The HBM was constructed to explain which beliefs should be targeted in communication campaigns to lead to positive health behaviours (Rosenstock, 2005). Thus, given HBM's effectiveness in communicating recommended health actions and their benefits, this research enlisted HBM as its theoretical intellectual guide. HBM identifies two fundamental aspects of behaviour change: the value people assign to a health goal and their estimate of the likelihood that a given action will achieve the aim (Rosenstock, 1974). These aspects translate into two critical issues: the desire to avoid illness and the belief that a health action can prevent it (Abraham & Sheeran, 2015).

Thus, HBM explains people's perceptions of health and behaviour through threat perception and behavioural evaluation. Threat perception includes beliefs about susceptibility to illness and anticipated risks of consequences (Carpenter, 2010), while behavioural evaluation consists of perceived benefits of a recommended health behaviour and perceived barriers to adopting it (Glanz et al., 2008). Initially, HBM was built on four constructs: susceptibility, severity, benefits and barriers. Two additional constructs – cues to action and self-efficacy – were later included. Perceived susceptibility reflects beliefs about the likelihood of developing an illness, which can prompt behaviour change (Champion & Skinner, 2008). Perceived severity concerns an individual's assessment of clinical and non-clinical consequences of a disease, with susceptibility and severity acting as triggers for behaviour change (Abraham & Sheeran 2015). Perceived benefits refer to beliefs about the effectiveness of interventions, which influences decisions based on expected outcomes. Perceived barriers encompass obstacles to health practices, such as costs, inconvenience or side effects (Oriji et al., 2012).

Cues to action are stimuli – internal or external – such as medical advice from health workers or media messages published on various media platforms that initiate decision-making. Self-efficacy reflects an individual's confidence in their ability to adopt a desired behaviour (Glanz et al., 2008). It helps individuals assess the likely outcomes of their behaviour. For behaviour change to occur, individuals must perceive their current habits as risky, which exposes them to a risk that they can avoid by adopting the recommended behaviour (Champion & Skinner, 2008). HBM thus links cognitive factors with individual beliefs to predict health behaviour. Abraham and Sheeran (2015) argue that cognitive factors such as education, knowledge, experience and skills, along with cues to action, shape individual beliefs and behaviours. Conner and Norman (2022) emphasise that HBM has been widely used to investigate health behaviours and key health beliefs, which has yielded moderate success in predicting various behaviours. They note that its strength lies in being developed by social scientists directly engaged in health behaviour research, thus ensuring its face validity.

LITERATURE REVIEW

Despite some of the weaknesses of HBM, its application in predicting health behaviours is widespread. Various studies, for instance, have investigated the place of HBM in health communication strategies (Asare & Sharma, 2012; Mattson, 1999; Patterson et al., 2018). Using HBM to identify communication opportunities to prevent Chagas disease (CD) in Southern Ecuador, Patterson et al. (2018) explored culturally relevant information to develop a health campaign to decrease the risk of CD transmission. They found that the overarching barrier was the limited economic resources among the communities that could otherwise allow them to enact the desired changes. These communities believed that they had limited economic resources to effect the desired changes. In conclusion, they noted that messages should provide additional information on the protective nature of the behaviours promoted for CD prevention.

Mattson (1999) examined the persuasive communication of HIV test counsellors as cues to action in clients' decisions to practice safer sex. This study found that clients' perceptions of the severity of HIV and AIDS, their susceptibility to HIV and AIDS, the benefits of and barriers to practising safer sex and self-efficacy were correlated with compliance with safer-sex recommendations reported on the post-HIV test survey. Furthermore, in certain cases, the short-term adoption of safer sex recommendations was associated with the use of certain persuasive strategies. Thus, Mattson concludes that the findings bolstered the argument for a move towards reconceptualising HBM by centralising communication cues to action. In the United States, Yoo, Kwon and Pfeiffer (2013) investigated how communication factors influence colorectal cancer screening. They reported that media use for health information and interpersonal health communication had direct effects on both perceived threats of colorectal cancer and positive expectations for screening. Interpersonal health communication, new media use for health information, perceived colorectal cancer threat and positive expectations for colorectal cancer screening mediated the effects of media use for health information on colorectal cancer screening. Surveying 412 respondents and using HBM and acculturation, Asare and Sharma (2012) examined sexual communication behaviours among African immigrants in Ohio in the United States. Results show that cues to action, perceived benefits, perceived susceptibility and acculturation significantly predicted sexual communication behaviour.

In Australia, D'Souza et al. (2011) investigated the uptake of the human papillomavirus (HPV) immunisation using HBM. Findings show that social capital and trust can produce effective communication message strategies that reinforce social bonds. Using HBM, Mao, Wang and Zheng (2023) analysed tweets related to COVID-19 that had been published by national health departments of the United States, South Korea, the United Kingdom, Japan, Germany and India to explore their differences in: (1) the health measures against COVID-19, (2) the health promotion strategies, and (3) the social media engagements that those measures and strategies triggered. Results show the most commonly used HBM construct was cues to action, followed by susceptibility, benefits, self-efficacy, severity and barriers. All HBM constructs were positively related to Twitter (X) engagement variables except barriers. They concluded that the use of HBM constructs is generally effective in inducing Twitter (X) engagement.

Drawing on components of agenda-setting theory and the two-step flow of information from mass media to news audiences, Ogata, Denham and Springston (2006) examined the effects of mass and interpersonal communication on breast cancer screening practices among college and middle-aged women (n=284). The findings revealed important and varying roles for both mass and interpersonal communication in the health behaviours of women. Thus, this literature review paves the way for the study's four research questions:

> **RQ1:** What are young mothers' perceptions of how the hospital communicates the risks of poor maternal nutrition?
>
> **RQ2:** What are young mothers' perspectives about the benefits of maternal nutrition communication strategies used by the hospital?

RQ3: What are the perceived barriers young mothers face with the hospital's communication strategies promoting maternal nutrition?

RQ4: What are the young mothers' perspectives on the role of social support networks in promoting maternal nutrition?

METHODS

This study employed a qualitative research approach to explore young mothers' perspectives on the maternal nutrition communication strategies used at Pumwani Maternity Hospital in Nairobi, Kenya. A qualitative approach was chosen to allow for an in-depth exploration of participants' experiences, perceptions and social contexts, which are essential to understanding health communication dynamics in informal settlements (Braun & Clarke, 2006; Neuman, 2006). Located in Starehe constituency of Nairobi City County, Pumwani Maternity Hospital conducts a daily average of 100 natural and 15 caesarean deliveries (Nairobi City County, 2025) making it one of the largest healthcare care facilities in Kenya.

Sampling

A purposive sampling technique was employed to select 18 young mothers aged 18–35 years from Mathare, an informal settlement, who had accessed maternal nutrition services at Pumwani Maternity Hospital. The participants were recruited through healthcare providers and local community networks to ensure that only participants who with firsthand experience of maternal nutrition services at the health facility were included in the study. The recruitment process began with an initial engagement with hospital administration and maternal nutrition service providers, who assisted in identifying eligible participants. This approach was particularly effective in capturing a diverse subset of young mothers within the target community. Each participant was thoroughly briefed on the study's objectives to ensure informed consent.

Data collection

Data for this study were collected using 18 participants split as six in-depth interviews (IDIs) and two focus group discussions (FGDs) of 12 participants, with six participants in each FGD. The two data collection techniques were preferred because they help in uncovering in-depth individual insights and group-level interactions that could reveal shared perspectives and differences (Neuman, 2006; Nowell et al., 2017; Rubin & Rubin, 2012). As such, the use of IDIs and FGDs allowed for a comprehensive understanding of individual experiences and group dynamics, which is essential in exploring health communication strategies (Handajani & Daries, 2018). Interviews and FGDs were conducted in English and Kiswahili to accommodate participants' language preferences, thus ensuring inclusivity. Each session lasted an average of 30 minutes and took place in a secure and comfortable setting within Pumwani Maternity Hospital. Open-ended questions were used to facilitate detailed, unstructured responses, which enabled participants to express their experiences and views freely (Chen et al., 2018; Harris et al., 2021). With participants' consent, interviews and FGDs were audio-recorded to ensure accuracy during transcription and analysis.

Data analysis

Data from the FGDs and IDIs were analysed using thematic analysis due to the appropriateness and flexibility of the approach in identifying, analysing and reporting patterns and themes within data (Braun & Clarke, 2006; Champion & Skinner, 2008; Green et al., 2020; Nowell et al., 2017). The analysis began with verbatim transcription of audio recordings. Interviews conducted in Kiswahili were translated into English to maintain consistency. The transcripts were reviewed multiple times to familiarise the researchers with the data and to ensure accuracy (Neuman, 2006). Coding was then conducted using NVivo 14 software, which streamlined the organisation and management of data to facilitate the identification of recurring themes. NVivo 14 software was well-suited for the study because of its efficiency in handling large

volumes of qualitative data, enabling systematic coding and theme development (Braun & Clarke, 2006; Nowell et al., 2017). Themes were developed iteratively, with initial codes such as "visual communication", "personalised counselling", and "social support networks" emerging early in the process. These were further refined to reflect the study's focus on communication strategies and barriers to maternal nutrition in informal settlements.

Ethics

Ethical approval was obtained before data collection from the Internal Review Board (IRB) of the United States International University-Africa's and the National Commission for Science, Technology, and Innovation (NACOSTI) – both based in Nairobi, Kenya. Informed consent was also obtained from all participants before data collection. Hence, the research was voluntary, anonymous and confidential. No incentives were provided to the interviewees. The responses from the participants were anonymised to further protect their privacy and confidentiality.

FINDINGS

The analysed qualitative data corpus highlights informative findings for the four research questions. In summary, promoting maternal nutrition through visual communications, personalised counselling and social support networks were the hospital's effective communication strategies. Unfortunately, the full success of the communication strategies was impeded by economic constraints, literacy barriers and misinformation. These findings are presented in depth below.

Perception on communication strategy

Research question 1 addressed the young mothers' perception of how the hospital communicates risks of poor maternal nutrition. The hospital's use of visual communications was identified as the most powerful and effective means of communicating knowledge about the risks associated with poor nutrition during pregnancy. The participants reported that the images of malnourished infants impacted them emotionally. This enabled them to realise that poor maternal nutrition was a serious issue. In media studies, visuals make communication more vivid, credible and captivating, resulting in what Coleman and Wu (2015) refer to as "picture superiority", adding that visuals on people's perceptions are too important to ignore. In this context, Participant 2 (25 years old) observed:

> The use of pictures [persuaded me] if there is one thing that really helped me to get ideas of the risks of poor nutrition during pregnancy. The moment the hospital nurse showed me an image of a one-day old baby born underweight because of poor diet, I made the decision to eat well and follow up the nutritional advice the nurses gave me.

This finding is consistent with Harris et al.'s (2021) argument which indicates that visual communication is particularly powerful in health promotion, including in low-literate populations. Pictures are a visible reminder to pregnant and lactating mothers of the risks and consequences of poor nutrition. Pictures make this more tangible and urgent. This is affirmed in comments by other participants who stated the following:

> It was until I went to Pumwani Hospital and the nurses brought us pictures of babies affected by malnutrition that I did understand why they were saying I must eat food with good nutrients. It was shocking. I had never wanted to picture my baby not moving in my womb because I couldn't eat well, so I changed my diet right away. (Participant 6, Mother of 2, 26 years old)

> The use of pictures to elaborate on maternal nutritional foods made it stick in my mind, especially where pictures of a healthy infant under inclusive breastfeeding for six months

> appeared healthier. This made me do exactly as I was recommended in the hospital and my child is healthy today. (Participant 6, Mother of 2, 27 years old).

The use of pictures demonstrated the stark contrast between healthy and malnourished babies. This provided tangible representation of the risks, making the consequences of poor nutrition more relatable and urgent for both pregnant mothers and those who had given birth. The findings report that the use of pictures helped young mothers to understand the real-life consequences of poor maternal nutrition, including infant mortality. Generally, the findings indicate that visual aids are not only informative but also motivational and are able to produce behaviour change among young mothers. However, it was not just the visual communication that was perceived to be effective, but also counselling. The participants viewed counselling as a key strategy in promoting the hospital's communication messages regarding the consequences of poor maternal nutrition.

Perspectives on benefits of maternal nutrition

Research question 2 explored the young mothers' perspectives regarding communication strategies used by the hospital on the benefits of maternal nutrition. Most participants viewed personalised counselling as crucial to driving the uptake of maternal nutrition among pregnant women. This is because personalised counselling allowed the young mothers to ask questions and share concerns that they had about maternal nutrition. The comments below by Participant 8 and 13 showcase this:

> One good thing is that the hospital encourages just one-on-one visits with the nurses the next day. I used to be able to ask questions and get personalised advice. It seemed more serious because then, when the nurse spoke directly to me about the risks of not eating correctly during pregnancy, I listened. (Participant 8, Mother of 1, 21 years old)

> I really appreciated the one-on-one time with the nurse because she explained things in a way that made sense to me. In most of my visits, we used to talk about my specific eating habits, and the nurse pointed out how I am putting my baby at risk. This conversation was something that made a difference in how I then started adhering to good maternal nutritional practices, even six months after giving birth to my baby girl. (Participant 13, Mother of 1, 19 years old)

These findings are in line with the work of Handajani and Daries (2018) who reiterate that individualised counselling enhances comprehension and trust with regards to health recommendations. As such, this can increase people's willingness to adhere to recommended nutritional practices by interacting directly with healthcare providers. In addition, awareness-building efforts at the hospital that helped to raise more knowledge about maternal nutrition were also reported as significant. Key messages, for example, were internalised by young mothers after frequent reminders of nutrition benefits. One mother said:

> Before I began attending [antenatal care] at Pumwani Hospital, I had no idea about how my eating habits would impact my pregnancy. Besides they continued to remind me of the different nutrients they wanted me to have. This was when I realised I needed to be intentional with my diet. (Participant 1, Mother of 1, 22 years old)

> During our days, we had one-on one sessions where nurses share the journey, encouraging us on the kind of nutritional foods to eat to keep both me and the baby safe. I found this a very effective way of Pumwani Hospital helping young women like us in adhering to maternal nutritional recommendations. (Participant 4, Mother of 2, 29 years old)

This aligns with the findings from Anker et al. (2016) and Nabugoomu et al. (2018) on the need for repetitive and accessible messaging in bringing about sustained behaviour change. The more mothers are exposed to nutrition messages, the better the understanding – simply because the more they see, the easier it is for them to take up and maintain healthier dietary habits. Nonetheless, some barriers hindered the participants from fully enjoying the hospital's communication strategies. as captured below.

Perceived barriers to communication strategies used by the hospital

This study's research question 3 examined the perceived barriers to the hospital's communication strategies in promoting maternal nutrition. The two major barriers identified by the participants were lack of resources and low literacy among the young mothers. The participants, for example, reported that at times they could not afford to buy the recommended nutrient-rich food. Even though they knew the benefits of a balanced diet, many young mothers could not afford foods rich in protein and fresh vegetables. One participant, for instance, stated that she could not always afford the required nutrient-rich food, noting that on most days, she bought what was cheapest, like corn flour and vegetables. This reflects Hackett et al.'s (2015) claim that financial constraints affect dietary choices in resource-constrained situations, such as in informal settlements. Visual communication partly remedied some of the literacy barriers, but printed nutrition materials were perceived as ineffective, hence hampering the hospital's communication strategies. Participants with less formal education, for instance, struggled with fully understanding written nutrition guidelines. One participant in one of the FGDs shared that:

> Sometimes I don't understand the words in the brochures. It would be better if the materials had more pictures. I request the nurse to explain.

Low literacy is a key barrier identified by Norouzinia et al. (2016) as a critical communication barrier in healthcare settings. These barriers, therefore, resulted in community-based support systems having the upper hand when helping young mothers deal with maternal nutrition challenges. This is explained in the theme below.

Perspectives on the role of social support networks

Research question 4 examined the participants' perspectives on the role of social support networks in promoting maternal nutrition among young mothers from Mathare informal settlement. The participants identified two forms of social support: group counselling sessions and family involvement. Group counselling sessions were perceived as safe spaces where mothers could share their experiences, as well as get peer support. Participant 5 (24 years and a mother of 2) reported that:

> Young mothers would meet weekly in a group and share experiences. As it just made it easier to receive the advice at home, the nurses encouraged us to involve our families with us.

This resonates with Kennedy et al.'s (2018) assertion that involving family and peer networks is beneficial in health seeking, as it provides a supportive environment that allows for adherence to advised practices of nutrition. Thus, supportive family members helped participants to follow the nutrition guidelines more easily. The interviewees said family involvement in their pregnancy journey helped them abide by the recommended guidelines. For example, it was beneficial when family members, including mothers, attended the sessions because they often assisted pregnant women in adopting healthier eating habits. One participant said:

> The clinic sessions were joined by my mother and she began making healthier meals at home. It was easier to keep the dietary guidelines for me this way.

This is in line with the recognition of family-centred types of approach in delivering health communication by Handajani and Daries (2018). Maternal nutrition efforts are enhanced greatly when supported by family members. The implications of these findings are discussed in the next section.

DISCUSSION

The findings of this study underscore the critical role of tailored communication strategies in promoting maternal nutrition among young mothers in informal settlements. By contextualising these findings within global and regional literature, this section highlights implications for policy and practice, offering actionable recommendations to improve maternal health communication.

Visual communication and awareness: The use of visual aids, such as images depicting the risks of poor nutrition, was identified as a particularly effective maternal communication strategy. The participants reported that the visuals provided a tangible understanding of the consequences of inadequate maternal nutrition, leading to significant behaviour changes. This aligns with the findings of Harris et al. (2021), who found that visual communication is highly impactful in low literacy settings. Relatedly, Anker et al. (2016) emphasise that visual aids can bridge knowledge gaps by presenting complex information in an accessible format. Regionally, studies in sub-Saharan Africa have also highlighted the importance of culturally relevant visual materials in promoting health behaviours (Kennedy et al., 2018). In Kenya, where literacy levels vary significantly, visual aids could offer a practical solution for enhancing health communication in informal settlements such as Mathare and others. Thus, policymakers should consider integrating visuals into national maternal health campaigns and prioritising their use in resource-constrained settings.

Personalised counselling and social support: Personalised counselling emerged as another pivotal strategy, offering tailored advice and fostering trust between healthcare providers and young mothers. This finding is consistent with Handajani and Daries (2018), who observed that one-on-one counselling sessions enhance the retention of health messages and address individual concerns effectively. By addressing unique challenges faced by mothers in informal settlements, personalised counselling ensures that health communication is both relevant and actionable. In addition, the study highlights the importance of social support networks in reinforcing maternal nutrition practices. Participants reported that involving family members in counselling sessions helped create a supportive environment that encouraged adherence to recommended dietary guidelines. This finding echoes the conclusions of Kennedy et al. (2018) and Saaka et al. (2021), who advocate community-based approaches that engage families and peers. As such, policymakers and healthcare providers should design interventions that incorporate family-centred strategies, as these have been shown to improve health outcomes significantly.

Economic and structural barriers: Despite efforts to improve communication strategies, economic constraints and low literacy levels were significant barriers to implementing maternal nutrition recommendations. Participants, for example, reported difficulties in affording nutrient-rich foods, a barrier also noted by Hackett et al. (2015) and Nabugoomu et al. (2018). These findings indicate the importance of multi-sectoral interventions that address the structural determinants of health and well-being in informal settlements. Therefore, policymakers should prioritise initiatives that make nutritious foods more affordable and accessible. For example, subsidies for essential food items or community gardens could help mitigate financial barriers. In addition, healthcare providers should integrate financial counselling into maternal health services to equip young mothers with practical strategies for balancing nutrition and budget constraints.

Practical implications for policy and practice: To address the identified challenges and enhance maternal health outcomes, several actionable recommendations are proposed. First, the use of visual aids should be prioritised in maternal health communication programmes. These materials should be culturally relevant and engaging to effectively bridge literacy gaps. For example, posters and videos illustrating the consequences of malnutrition and the benefits of proper nutrition could be displayed in prominent areas in clinics and community centres. Studies such as Harris et al. (2021) and Anker et al. (2016) affirm the potential of visual communication in improving health literacy and behaviour. Second, healthcare providers should expand personalised counselling services. One-on-one counselling sessions

offer an opportunity to address the unique needs and circumstances of each mother, thus fostering trust and improving adherence to nutritional advice. Training programmes for nurses and nutritionists should emphasise empathetic, patient-centred communication, as supported by Handajani and Daries (2018) and Norouzinia et al. (2016). This approach can significantly enhance the retention and application of health messages.

Third, family and community involvement should be actively incorporated into maternal nutrition interventions. Including husbands, mothers-in-law and other family members in counselling sessions can create a supportive environment for young mothers. This could reinforce hospital-based guidance at home. Community-based initiatives, such as peer support groups and family counselling sessions, have shown success in similar contexts (Kennedy et al., 2018; Saaka et al., 2021). These strategies encourage collective accountability for maternal and child health. Economic barriers to nutrition should also be addressed through targeted policy interventions. Thus, policymakers should consider subsidising essential food items, establishing community gardens or providing vouchers to low-income families to improve access to nutrient-rich foods. Financial counselling integrated into maternal health services could further help mothers plan balanced diets within their budgets, as also emphasised by Hackett et al. (2015) and Nabugoomu et al. (2018).

In addition, addressing literacy-related barriers requires the incorporation of health literacy programmes into maternal health initiatives. Workshops, easy-to-read educational materials and the use of plain language can ensure that health messages are accessible to diverse audiences. Programmes that leverage these best practices have demonstrated success in enhancing maternal nutrition literacy (Chen et al., 2018; Locks et al., 2015). Also, as HBM suggests, people are more likely to adopt the required behaviour if they feel capable of overcoming barriers and see the value of the desired behaviour in avoiding a perceived threat (Jones et al., 2015). Thus, when informational materials are simplified and presented in an easy-to-comprehend format, and young mothers are counselled, they are more likely to adopt suggested maternal nutrition. A collaborative, multi-sectoral approach is essential to addressing the systemic challenges facing maternal nutrition in informal settlements. Partnerships between healthcare providers, government agencies, non-governmental organisations (NGOs) and community leaders should focus on scaling successful interventions and integrating nutrition education into existing maternal health services. Importantly, leveraging digital platforms such as mobile health (mHealth) applications and SMS-based education can provide real-time support and reminders to young mothers. This could play a role in overcoming geographical and logistical barriers (Chen et al., 2018).

CONCLUSION

Founded on HBM, this research explored four perspectives in relation to the communication strategies employed by Pumwani Maternal Hospital in promoting maternal nutrition among young mothers in Mathare informal settlement in Nairobi, Kenya. These perspectives are: how the hospital communicates the risks of poor maternal nutrition, benefits of maternal nutrition communication strategies, perceived barriers with the hospital's communication strategies and the role of social support networks in promotion of maternal nutrition. The findings indicate that communication strategies such as use of visual aids, one-on-one counselling and family involvement in supporting mothers enhanced the uptake of maternal nutrition. Low literacy levels and economic constraints were the key barriers to accessing and continuously using maternal nutrition.

This study's findings are not generalisable because of the use of a non-representative sample, which represents a research limitation. Thus, the results should be interpreted with some caution, although they provide useful insights about young mothers' perceptions of communication strategies used by the hospital. Asher (2012:92) explains that while some nonprobability sampling could potentially mislead, like those using volunteer respondents, others are "very legitimate and informative". Even though the focus groups and IDIs employed in the present study used nonprobability sets of respondents, Asher (2012) confirms that they still yield important insights about many topics. Future studies, therefore, should consider using representative samples, such as surveys. Another option could be to use the triangulation

approach, where, for instance, survey and qualitative data collection techniques such as FGDs or IDIs are combined, with the former (survey) as the primary data collection method. This could ensure that the combination tapped into the strengths of the data collection techniques used while at the same time compensating for their weaknesses. In addition, while this investigation offers important perspectives on maternal nutrition communication strategies, further research is needed to explore the long-term impact of these strategies on maternal and child health outcomes. Comparative studies examining communication approaches across different informal settlements could also provide a broader understanding of best practices. Finally, future research should examine how digital communication tools, including mobile health platforms, can promote maternal nutrition in low-resource settings (Chen et al., 2018).

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