

**Community Education for Behavioral Change Towards Food and Nutrition Security**

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### Introduction/Need for the Study

Food and nutrition insecurity is still a global problem despite attempts by governments and organizations to address it (FAO et al., 2022). Uganda, our case study is among the seriously ill-nourished nations (von Grebmer et al., 2022); and the “current path scenario” prediction indicates that Uganda may not achieve food security by 2050 (Hedden et al., 2018). However, Uganda has a historical track of strategies for food and nutrition security since 1991 when she embarked on drafting a comprehensive Uganda Food and Nutrition Policy that was completed in 2001 (MAAIF & MoH, 2005). Part of the strategies in the policy included the promotion of private-public partnerships. This strategy was adopted and adapted by Iowa State University (ISU) through its Center for Sustainable Rural Livelihoods (CSRL) in 2003 when it set up a livelihood program to uplift the status of communities in Kamuli, district, Uganda (Butler & McMillan, 2015; Ikendi & Retallick, 2023a; 2023b). The CSRL uses a community-based approach to the management of malnutrition through nutrition education centers (NECs). The NECs are community centers where at-risk for malnutrition breastfeeding and pregnant mothers and children of 0-59 months of age are enrolled for rehabilitation through nutrition therapy (Ikendi, 2019). This study was conducted to assess the outcomes of the education programs.

### Conceptual/Theoretical Framework

This study was grounded in the theory of planned behavior (Ajzen, 1985) which evolved after the theory of reasoned action (Fishbein & Ajzen, 1975). The theory supposes that when we plan to do something, then we do it. The theory was built on three intentions i.e., behavior attitude, subjective norm, and perceived behavioral control. The behavior attitude ascribes to how we think and feel about behavior which relates to two concepts – affective attitude describing a belief about the attitude (behavior to be enjoyable or not); and instrumental attitude – belief about the attitude (behavior whether beneficial or harmful). The subjective norms relate to the support given significantly by others e.g. family and friends; and it has two concepts i.e., the injunctive norms (do others encourage you to the behavior?) and the descriptive norms (do others in the group engage in the same behavior or not?). The perceived behavioral control relates to the feeling capable and confident to do a behavior which requires that there must be capability and intention to overcome barriers and challenges. In sum, when all three intentions are fulfilled, we feel strong and more likely to engage in the behavior. This theory infuses into the operation of the NECs under study for which the training is organized within communities responding to nutrition or water, or health issues e.g. malnutrition (Ikendi, 2019). The NECs where training is conducted are managed by community-based trainers who have undergone rehabilitation through the NECs; and are trained by the program coordinators and government Nurses which influences how the community perceives the training and the subsequent implementation of the practices.

### Methodology

This study was part of a larger cross-sectional survey carried out in Kamuli, Uganda where the CSRL implements programs emphasizing capacity building towards behavioral changes for food and nutrition security (Ikendi, 2019). The target population was 1,503 who were clients of the NECs who had undergone consecutive training since 2014 in nutrition, infant feeding, water, public health, and/or received services like therapeutic porridge, immunization, family planning, HIV counseling, etc. Using a 95% C.I., we established a sample size of 306 potential participants

who were randomly drawn. Approval to conduct the study was obtained from the IRB (IRB-18-356-01). With the help of the NEC community-based trainers to locate NEC clients, we intended to survey a trained household with a corresponding non-trained neighbor in a quarter-mile radius for comparison. Participants were presented with the consent forms, read in the local “Lusoga” dialect, the native language of the Co-PI and research assistants. Only participants who provided verbal consent proceeded with the survey. A total of 454 households were surveyed, out of whom 253 (82.7%) NEC households were accessed, and 201 non-NEC households. We collected data on what program did the client train for and whether the trained themes were implemented. We employed a bivariate analysis specifically Chi-square to compare the rate of implementation of trained themes between trained and non-trained to assess the behavioral change over time.

### **Findings**

Overall, 316 (69.6%) of 454 households participated in community education programs and/or received complementary services from the CSRL program. Receiving services had the highest proportion 283 (89.6%) with most of the households having received nutrient-dense porridge, participated in clinic days for immunization, HIV/AIDS testing and counseling, and family planning, where the program works with government Nurses. Water and public health education had 250 (79.1%) and most participants were trained in water, health, hygiene, and sanitation (WASH), sexually transmitted diseases/infections, pregnancy health, and jigger and rat controls. We established that trained households had a 65.6% likelihood of having at least four of the WASH facilities including latrines, bathrooms, kitchens, rubbish pits, plate stands, and/or tippy taps than 57.4% of non-trained households. Similarly, trained were less likely to have WASH-related diseases including diarrhea, dysentery, malaria, and cough. Nutrition and infant feeding had 248 (78.5%) where the majority participated in training for complementary feeding and balanced diet, breast/exclusive breastfeeding. Also, themes of clinical signs of malnutrition and gender-based violence were trained. We established 65.1% of the trainees were more likely to go for antenatal care at least four times as compared to 45.6% of non-trained mothers. However, non-trained were 86.0% more likely to exclusively breastfeed than 76.9% of trained households.

### **Conclusions**

Household participation in nutrition and health education is a prerequisite to behavioral change toward good healthy living. The training modules arose out of a consensus between the program coordinators, the community they work with, and the government Nurses’ advice. Education of mothers, for instance, on pregnancy health is a move towards improving the management of pregnancy and childbirth; one of the strategies to achieving 70 per 100,000 live birth by 2030 as set by the SDGs (WHO, 2019). Training on water is paramount to understanding the use of water for irrigation and livestock which directly contribute to food production (Ikendi et al., 2023).

### **Implications/Recommendations**

Achieving behavioral changes in essential nutrition and health practices for food and nutrition security requires continuous education in a multifaceted approach in both the government and private sectors. The community-based education programs in this study yielded positive behavioral changes in nutrition and infant feeding, maternal, reproductive, and public health practices for which a healthy community can ably contribute to food and nutrition health. This study recommends more partnerships in monitoring implementation and assessment of the practices between program community extensionists and the government. Similarly, more mobilization of households to participate in the training programs to tap this knowledge resource.

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