

Constraints to use of animal source foods in diets of 2 - 5 year old children from rural communities in Kamuli District, Uganda

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Abstract

This cross sectional study, conducted in 2007 assessed household constraints to use of animal source foods (ASF) in diets of 2-5 year old children in rural Kamuli District in eastern Uganda. Assessments were made at food security levels on availability, accessibility and utilisation using a combination of Participatory Rapid Appraisal (PRA) methods. Survey data showed that 38.0% (29.4-46.7 C.I) and 9.9% (4.6-15.2 C.I) of all children were stunted and underweight, respectively. Less than half of 8 ASF groups had been consumed within households one week preceding the study. Unlike eggs from home production, most ASF were purchased. Having a small number of index children in the household, male gender of index child, living with an educated caregiver and/ or biological father positively influenced diverse ASF intake significantly. In bivariate analyses, children from low wealth households were significantly more wasted and stunted than children from medium-to-high wealth households. Perceptions of key informants and focus group participants elicited low income, lack of access to technology and markets, inequitable household food allocation, inadequate knowledge, and beliefs as constraints to ASF use. Interventions to address household constraints to use of ASF in diets of 2-5 year old children must be sought especially in communities with ASF.

Key words: ASF constraints, children, Kamuli, PRA, Uganda

Résumé

Cette étude transversale a évalué les contraintes des ménages à utiliser des aliments d'origine animale (ASF) dans l'alimentation des enfants âgés de 2-5 ans dans le district rural de Kamuli en 2007. Des évaluations ont été menées à trois niveaux de sécurité alimentaire à savoir: la disponibilité, l'accessibilité et l'utilisation à l'aide d'une combinaison des méthodes d'Evaluation Rapide Participative (PRA). Les données du sondage ont montré que 38,0% (de 29,4 à 46,7 C.I) et 9,9% (4,6 à 15,2 C.I) de tous les enfants ont eu un retard de

croissance et une insuffisance pondérale, respectivement. Moins de la moitié des 8 groupes d'ASF avait été consommée dans les ménages une semaine qui a précédé l'étude. Contrairement aux œufs de la production domestique, la plupart des ASF ont été achetés. Avoir un petit nombre d'enfants à répertorier dans le ménage, le sexe masculin de l'enfant à répertorier, vivant avec un tuteur et / ou le père biologique a influencé positivement l'apport diversifié des ASF de manière significative. Dans les analyses bivariées, les enfants issus de ménages pauvres étaient significativement plus atrophés et chétifs que les enfants issus de ménages moyennement riches ou très riches. Les perceptions des informateurs clés et les participants aux groupes de discussion ont considéré le faible revenu, le manque d'accès à la technologie et aux marchés, l'allocation alimentaire inéquitable dans les ménages, des connaissances insuffisantes et les croyances, comme des contraintes à l'utilisation des ASF. Les interventions visant à remédier aux contraintes des ménages pour l'utilisation des ASF dans les régimes alimentaires des enfants de 2-5 ans doivent être recherchées notamment au sein des communautés avec aliments d'origine animale (ASF).

Mots clés: Contraintes des ASF, enfants, Kamuli, PRA, Ouganda

Background

According to Food and Agricultural Organization (FAO, 2004) poultry, goats and cattle are reared in about 40 %, 20% and almost one third of Ugandan households, respectively, indicating abundant production of nutritionally important ASF. However, an estimated 39% and 25% of children under five years of age are stunted and underweight, respectively (UDHS, 2000/1) contributing to Uganda's high under-5 mortality rate (140 per 1000), ranked 29th highest in the world (UNICEF, 2005). In addition, the prevalence of vitamin A deficiency and iron deficiency anemia among preschool age children are estimated at 28% and 64 %, respectively (Bachou, 2000). This profile requires that efforts for interventions that augment children's ASF intakes and hence improve the quality of their diets.

Literature Summary

Although ASF are nutritionally important and numerous studies recommend inclusion of even small amounts in diets of children in developing countries to improve nutritional status (Murphy and Allen, 2003), use of ASF is limited by non availability and accessibility at the household level and lack of knowledge about their value in the diet and role in health. Animal source foods are believed to be one of the most highly regulated foods around the world but most arguably at the household level where their

use is influenced by several economic and socio-cultural constraints (Gittelsohn and Vastine, 2003). Solutions to these constraints exist but need to be applied within specific contexts in order to deliver multiple nutrients needed by children. Coupling policies of livestock development and nutrition education could readily take advantage of these contextual constraints especially when coupled with well designed sustainable, effective and appropriate interventions (Creed-Kanashiro *et al.*, 2003).

Study Description

Across-sectional study with quantitative and qualitative components was conducted in Kamuli district located in south east Uganda. One study site, locally called a zone, was selected from each of two communities based on presence of ASF production and related activities. Study participants included 6 programme level key informants selected by snowball sampling, 39 caregivers randomly selected to participate in one of five Focus Group Discussions (FGDs) for a specific wealth rank (2 low, 2 medium and 1 high). Caregivers (person looking after children) were only selected to participate in FGDs after community mapping and household wealth ranking. All households (121) with 2-5 year old children were eligible for the quantitative assessment. Ethical clearance was obtained from the Uganda National Council of Science and Technology (NCS&T) prior to the study. Written and verbal informed consent was sought from caregivers and other participants, respectively.

In the qualitative component, perceived constraints to ASF use in children's diets were assessed using separate semi-structured questionnaires. Face to face interviews were held with programme level key informants to elicit their experiences of community level constraints to ASF use during service delivery. Focus group discussions were held with caregivers to elicit household constraints to ASF use. In the quantitative component, a pretested structured questionnaire was administered to caregivers to obtain household socioeconomic and demographic characteristics and caregiver knowledge, attitudes and beliefs that influence ASF use in diets of children (Armar-Klemesu *et al.*, 2000). In addition, ASF intake and nutrition status of 2-5 yr old children were assessed. ASF intake was assessed using the ASF frequency and diversity score in the week preceding the study (Mirmiran *et al.*, 2006). Anthropometry (height, weight and age) was assessed using standard procedures (WHO, 1995). In a household with more than one child in the 2-5 year category, the younger child was assessed.

Qualitative data were subjected to content analysis (Patton, 1990) while quantitative data were analysed using SPSS software (version 11.0). Anthropometric measures were fed into the WHO ANTHRO (2005) to compute standardised Z-scores of height, weight and age before transferring to SPSS. Descriptive statistics were computed as means or frequencies/proportions. Significant differences (p -values < 0.05) were computed using Student's t -test or Pearson's Chi-square.

Research Application

Regardless of wealth rank and community, at least 30% of the participants in FGDs reported poultry, goats, piggery and cattle in their households. Fishing was only reported in one community. Qualitative perceptions of key informants and focus group participants elicited the following constraints to ASF use: 1) Availability was constrained by animal diseases, pests and low productivity animal breeds coupled with high costs of veterinary services, shortage of veterinary workers, inadequacy of drugs and transport for outreach; 2) Access was constrained by mainly low household incomes; and 3) Utilisation was hindered by few household meals containing ASF, beliefs and attitudes and practices for example, ASF allocation favoring household heads over children. Underlying constraints were ignorance of nutritional benefits of ASF, relative abundance of other cheap non-ASF, large family sizes and short child spacing intervals. On average, less than one half of 8 ASF groups presented had been consumed within households (and by 2-5 year old children) one week preceding the study. Unlike eggs, milk and fish (in fishing community) also obtained from home, other ASF were mostly purchased. From bivariate analysis, having a small number of index children in the household, male gender of index child, living with an educated caregiver and/ or biological father positively influenced diverse ASF intake significantly ($p < 0.05$). Children from low wealth households however, consume significantly less diverse ASF ($p = 0.055$). Anthropometric data showed that 38.0% (29.4-46.7 C.I) and 9.9% (4.6-15.2 C.I) of all children were stunted and underweight, respectively. Of all household characteristics, children from households of low wealth status consumed less diverse ASF ($p = 0.037$), were more wasted ($p = 0.002$) and tended to be more stunted ($p = 0.052$). In conclusion, through triangulation of methods, this study has shown that children were malnourished even when nutritionally important ASF were available. Thus, there is need for interventions that address context specific constraints to availability, accessibility and utilisation of ASF for child nutrition.

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