Addressing Poverty, Malnutrition and Poor Health for Adolescent Mothers in Rural Eastern Uganda:

Recommendations of Local Level Stakeholders.

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Summary

BACKGROUND

Adolescent mothers in Uganda were a large and highly vulnerable population with inadequate food, economic and social resources thus nutrition and health care unlike their adult counterparts. This could place young mothers at risk of poor wellbeing.

OBJECTIVE

To identify perceived individual and community-level recommendations and capacity building support young mothers for improved adolescent maternal/child nutrition and health.

METHODOLOGY

This qualitative study was conducted in rural Budondo sub-county (Jinja district), Eastern Uganda which is one of the poorest regions. Interviews were conducted with 101 adolescent mothers aged 14-16 years, family members and service providers in the fields of health, education and community administration. The unique application of the social cognitive theory (SCT) took cause, while interview guides were translated into the Lusoga language, guidelines laid down in the Declaration of Helsinki and all procedures were approved by the Office of Research Ethics of the University of Waterloo (ORE # 20708). Pretesting was done in rural Butagaya sub-county with a few members representatives of the target groups. community members whose perceptions were framed around constructs of the social cognitive theory and thematic analysis was conducted using Atlas-ti (version 7.5.4).

RESULTS

The study identified diverse needs and barriers facing young mothers such as Sensitizing community members to treat them kindly; monitoring health-related services; job creation; paying service providers for additional roles; provision of medical staff houses, operating theatres, medical equipment/materials; using tailored nutrition and health education videos; creating facilities to support food skills training; designating spaces within health facilities for young mothers; and supplying adequate and needs-based drugs.

CONCLUSION

Capacity building, training of: health personnel to serve young mothers, community workers to counsel parents. instructors in handcraft and food nutrition skills. The social cognitive theory, point to changes in behaviors or practices on the part of individuals, families, community, society and government to better support these very vulnerable group and their babies.

RECOMMENDATION

Specialized community-based adolescent maternal / child friendly services built on available strength at individual and environmental level are required. Partnering organizations might help furnish the income generating projects, training support or capital/supplies as recommended by many participants as a capacity-building avenue.

Keywords: Adolescent mother, nutrition, health, , capacity building, social cognitive theory

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Introduction

Adolescent mothers in Uganda were a large and highly vulnerable population. Adequate food, economic and social resources were generally neither available nor accessible to them [1,2,3]. Those young mothers and their infants, din't seem to receive quality health care [4,5].

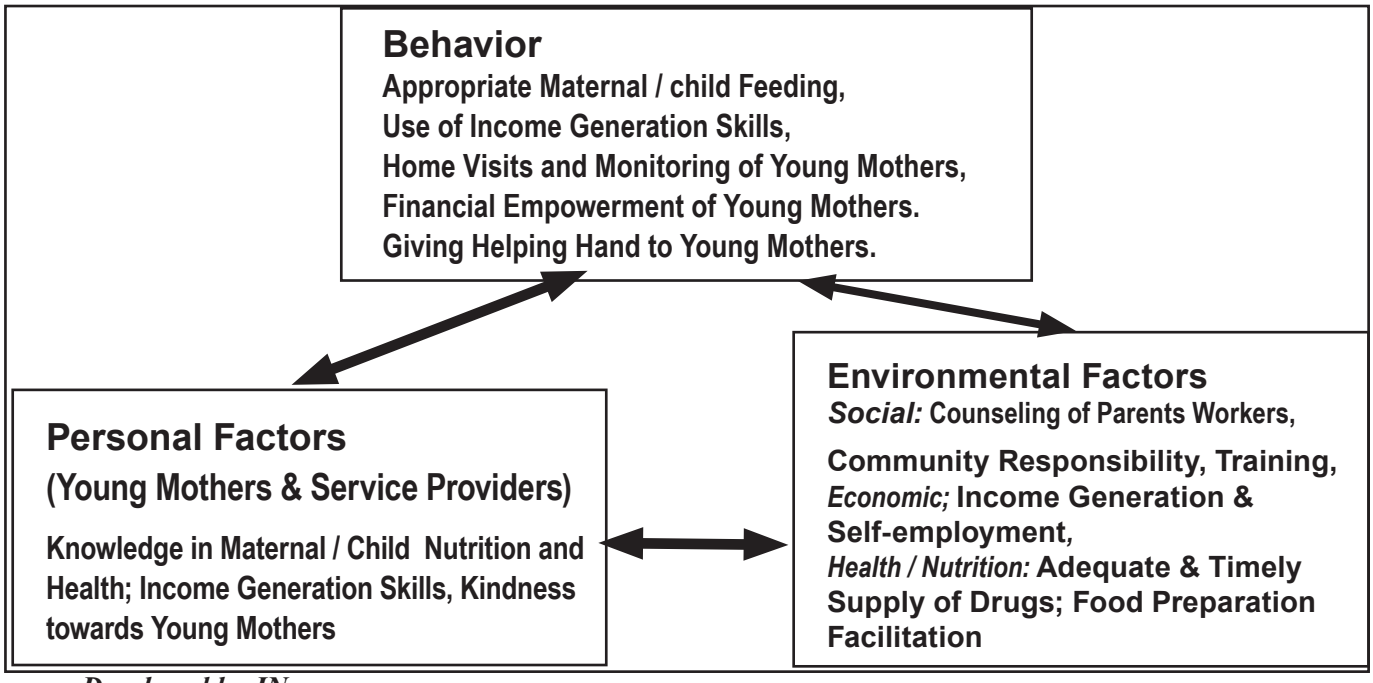
Developing countries like Uganda grapple to address the United Nations sustainable development goals [6], whic include eradication of poverty, hunger, good health, wellbeing and gender equity. 'Local action is a key driver of change'.

We have previously identified diverse needs and barriers facing young mothers in rural Eastern Uganda [7]. While there were some local opportunities available for improvement of adolescent maternal/ child health, service-providers also faced challenges in addressing these needs [7]. Recommendations from the target groups were an important first step to identifying and prioritizing areas for local action. The objective of the study was to explore multiple stakeholder recommendations for action and capacity building towards addressing needs, barriers and challenges related to adolescent maternal/child nutrition and health making good use of the available support and opportunities.

Methodology

The unique application of the social cognitive theory (SCT) [8,9,10,11] in the research aimed at emphasizing how individual and environmental (social, economic/physical/nutrition/health service) actions and capacities could interact to affect maternal/child nutrition and health *(Fig. 1)*

Figure 1: *Social Cognitive Theory Framework of Stakeholder Recommendations for Action and Areas of Capacity Building for the Improvement of the Welfare of Young Mothers and their Infants*



Developed by JN

Table 1: *Demographics of Study Respondents (N=101)*

Respondent Category	Gender		Number
	Male	Female	
Adolescent Mothers	0	25	25
Family Members	0	11	11
Doctors	4	0	4
Midwives	0	7	7
Village Health Team workers (VHTs)	1	4	5
Traditional Birth Attendants (TBAs)	0	3	3
Teachers	0	5	5
Head teachers	9	2	11
Agricultural Officers	3	0	3
Religious Leaders	3	0	3
Local Village Administrators	6	0	6
District Administrators	4	4	8
Sub-county Administrators	3	2	5
NGO Staff	3	2	5
Total	35	66	101

The study was oriented towards the *epistemological* position of post-positivism with an aim of finding out community-based recommendations and areas of capacity building towards improving the well-being of adolescent mothers and their infants without the researcher's prejudgement [12,13]. The study therefore used both predetermined questions based on the SCT [12,13] but also gave room to open ended questions for freedom of expression by the participants [14,15].

Study Site

The study took place in rural Budondo sub-county, Jinja district of Eastern Uganda. Eastern Uganda is the poorest of regions in Uganda with a poverty rate of close to 25% [17,18]. The residents of Budondo sub-county are mainly subsistence farmers. The population of the sub-county is 51,560, with over 50% being females and 36.3% of its residents beneath the poverty line [19]. The sub-county has 6 public health centers [16].

Inclusion Criteria

All study participants signed consent forms and had resided in the study area for at least 3 years. Participants who were adolescent mothers were those attending or had attended school in the area 3 years before the study, and either carrying their first pregnancy or having their first baby aged 0-12 months.

Study Sample and Recruitment

Over 100 participants were recruited by 6 local study guides through purposive sampling [14,20,21] and were each interviewed for this study *(Table 1).* Study participants represented adolescent mothers, family members and service providers in the fields of health, education, and community administration.

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human participants was approved by the Office of Research Ethics of the University of Waterloo (ORE # 20708), The AIDS Support Organization Research Ethics Committee (TASO-REC) [TASOREC04/16-UG-REC-009] and Uganda National Council for Science and Technology (UNCST) [number SS4013]. Written support was also given by Uganda Christian University (UCU); Ministry of Health for Uganda, Ministry of Education for Uganda, and authorities of Jinja district, Budondo sub-county and the local community.

All participants were given interview invitation letters with consent forms translated from English into Lusoga. For those who never understood or read English language, the translated invitation letters and attached consent forms were read to them. Each participant who was willing to take part in the study then gave verbal consent and signed the consent form. After each interview, these consent forms were again signed by each participant and any available adult, witnessed and co-signed by the study VHTs and researcher/interviewee (JN). Consent of the administrators at health centers, schools, and sub-county and district headquarters was by word of mouth (by JN) for short interviews conducted in English of about 10 minutes; no invitation letters and consent forms were required.

Data Collection

Study interview guides were translated into the Lusoga language. Key questions were developed according to individual and environmental factors of the SCT relevant to recommendations and avenues of capacity building for improved adolescent maternal/ child nutrition and health. Pretesting of interview questions was done in rural Butagaya sub-county with a few members representative of the target groups. At the start of each interview, participants were welcomed by the researcher, told the study purpose and assured of confidentiality.

Data Analysis

Interviews administered by the researcher (JN) helped by local trained research assistants were transcribed and translated into English. Coding of transcribed conversations was guided by constructs of the SCT model and pre-set themes of recommendations for action and capacity building for the improvement of adolescent maternal / infant health and nutrition. Using Atlas-ti 7.5.4 software, the words of study participants were linked to the created codes which were networked towards the major theme of adolescent maternal/ child nutrition and health using sub-thematic analysis [14,22,23,24] as shown in *Figure 2.*

RESULTS

Demographic Characteristics of the Respondents

Demographic characteristics of the 101 study participants of this study are presented in *Table 1.* Female participants were the majority (65%) while males were 35%. Over 60% of the study participants were community service providers in the areas of health, education, administration, and non - governmental organizations (NGOs). Mothers and grandmothers of the adolescent mothers accounted for over 11% of the study participants. The adolescent mothers who were 25% of all the study participants were aged 14-16 years.

Recommendations for Action and Capacity Building to address needs for barriers and Service Challenges to Improve the Welfare of Young Mothers

Recommendations for action or suggested ways of building capacity were presented according to individual and environmental (social, economic, physical, nutrition, health service) levels.

Recommendations at Individual Level

The majority of the respondents recommended that parents and health workers be sensitized on the importance of handling young mothers with kindness and love, and also parents not to lose hope in their daughters. Keeping or re-enrolling the young mothers in school was recommended as a choice that was feasible for family members who could help with financial support and childcare. Motivation of community members, including medical workers and local leaders, through increasing their personal funds for work related to maternal/ child nutrition and health, was also recommended.

"Please advised our parents not to lose hope in us, we are not useless. As much as we made mistakes, we can reform. They need to love, care and support us financially when in need. Also, take us back to school."
Adolescent Mother 1.

Training young mothers in making handcrafts or practical skills at accessible vocational schools was suggested by half of the respondents so as to give them capacity for self-employment and hence, self-sustainability. There was also a call for training midwives on adolescent maternal friendly services.

"Young mothers aught to be trained in practical income generating activity skills at vocational centres like tailoring, machine repairs, making bags out of beads, decorative mats and baskets and jewelry so that they can earn a living." Teacher.

Recommendations at the Social Environmental Level

Study participants felt that, it was collective community responsibility to help mothers to stay in their (parent's) homes and give young mothers support, such as helping with childcare, so that they could re-enroll in school. Another recommendation was putting up a special school for young mothers. In addition, adult Village Health Team workers (VHTs) were chosen by stakeholders as the most suitable workers for future initiatives to support young mothers, as they were community-based, experienced and would not migrate away from their villages.

"After delivery, some girls want to go back to school but then they don't have childcare for their babies and so my recommendation is that people should volunteer to help such girls so that they can go back to school and also bring up for their babies."
VHT 1.

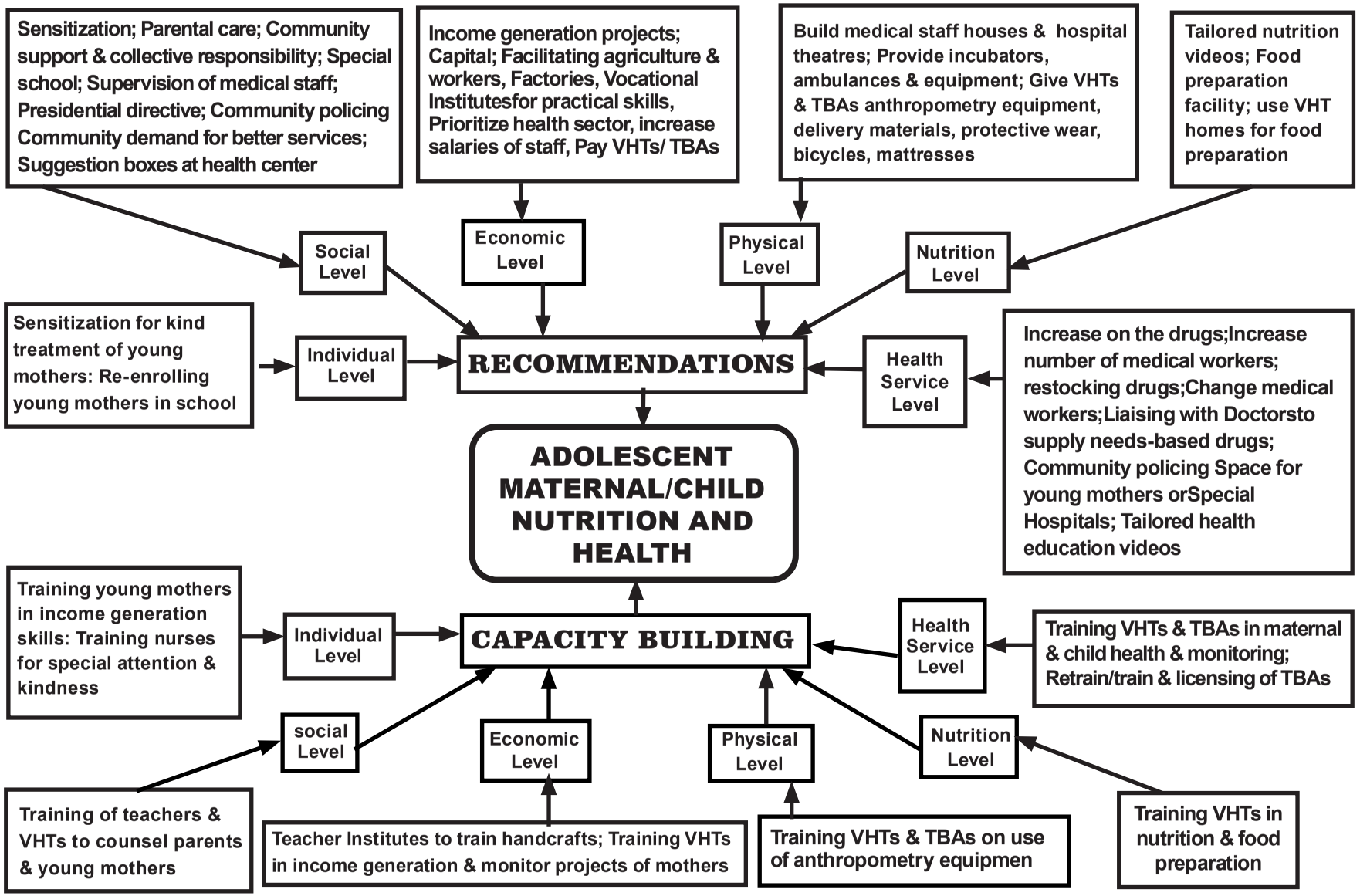
The President of Uganda was equally called upon to give a directive towards soliciting for support from fathers of these babies. As the highest governing political authority, respondents felt that the masses would respect his word.

"The President (of Uganda) need come up and speak tough to all male who impregnate girls and refuse to take care of them with their babies. The president is the highest authority and no one can disobey his directive. Have'nt you heard people saying that 'something must be done because it is a directive from above'?"
Local Village Administrator 1.

Other stakeholders suggested that arrangements to be made for medical staff to live in health center houses to facilitate timely reporting to work. Strict government supervision of health care staff in their work and community 'policing' to 'guard' medical supplies that are thought to be taken by medical staff was suggested as a way of improving health services. [Note that the perception of mishandling supplies was refuted by medical personnel who claimed that supplies received often fell short for the medications most needed]. Community advocacy for better health services was perceived as another way of improving the health of young mothers.

"Every community member should do 'policing' to cub the allegations of drugs and equipment mismanagement, theft or health personnel who do not work. Each and every community member must wake up and demand for better health services from their Health service Providers if drugs [were supplied] and [medical] staff paid well."
District Administrator 1.

Figure 2: *Thematic Network of Recommendations and Areas of Capacity Building for the Improvement of the Nutrition and Health of Young Mothers and their Infants*



Adapted from: *Attride-Stirling J. Thematic networks: an analytic tool for qualitative research. Commission for health improvement, England. Qualitative Research. SAGE Publications (London, Thousand Oaks, CA and New Delhi). 2001;1(3):385-405.*

Training and support of teachers and (formerly voluntary) VHTs to counsel parents to be resilient, support and assist young mothers in several ways was perceived to be a local capacity building strategy.

"All teachers in schools and the community-based VHTs should be trained in counselling parents and the young mothers but they should be given some money as allowances otherwise there will be no progress."
Head teacher.

Recommendations at Economic Environmental Level

Provision of income generation training or projects was perceived by stakeholders as a way of improving their economic status of young mothers. It was suggested that young mothers would like bird rearing (local or robust chickens, known as kuroilers) or rearing goats that did not need a large grazing area, as a form of income generation.

Although they also grew several crops with their families. Young mothers might like making handcrafts (bags out of beads, decorative mats, baskets and jewelry), or being given capital for self-employment, or opportunities within factories to employ them (young mothers).

*"They (*young mothers*) would wish to keep chicken because the products from handcrafts had no market and yet chicken has market. These days people prefer kuroilers since you can sell them within 4-5 months and you can sell one bird between 20,000= to 30,000= UGX. Kuroilers are not very expensive in terms of treatment unlike broilers which are expensive to rare. One bird is sold at 7,000= UGX. Even goats are easy to keep compared to cows because a small place is used or you just tie it at the roadside and it eats grass. They can grow vegetables, maize, potatoes and cassava with their parents."*
District Administrator 2.

The government n to provide affordable agricultural equipment for easy access by mothers, train agriculture extension workers and financially prioritize the health service sector. Other suggestions included: increasing salaries of health workers to motivate them as well as enumerating traditional birth attendants (TBAs) and VHTs for their services.

"I can assure you that the locals will continue complaining in vain until when this government will wake up and [financially] prioritize health over other sectors such as defense." Doctor 1.

To support capacity building, more than half of the respondents felt that VHTs should be trained in various income generation skills so that they could in turn train young mothers and monitor the projects of young mothers. Teacher training institutions could similarly instruct on handcraft skills.
VHTs should be well trained in income generation so as to also train and monitor young mothers in what they were doing." Sub-county Administrator 1.

Recommendations at Physical Environmental Level

The government was urged to improve health care facilities through provision of operating theatres, modern sterilizers, incubators and ambulances. Building houses at health centers for health workers can to reduce worker's travel times and support by reporting to work on time. It was also suggested that VHTs need to be given materials like delivery materials and mosquito nets that could be given to young mothers, and infant and adult weigh scales to use in the community.

"We try so hard to save lives but the conditions are not easy. You can imagine we do not even have an incubator and when we get a baby that needs one, we just wrap them up, get a boda-boda [commercial public transportation motorbike] for the mother and quickly send them to Jinja referral hospital. So let the government provide us with life-saving equipment and materials otherwise the situation is bad. We should be upgraded to a modern hospital with a theatre because the patients needing surgery are many."
Midwife 1.

Provision of a small income or basic personal needs would improve the work of VHTs. It was also recommended that TBAs be given government support, such as providing them with mattresses, delivery

materials and training, since they were often entrusted for local support.

"VHTs to be given equipment like boots and Umbrellas especially during rainy seasons. They should get for them bicycles to enable them reach all places and should be given monthly allowance." Agricultural Officer 1.

It was suggested that TBAs and VHTs, be trained in the use of maternal/child anthropometric equipment to support prenatal measurements and the transfer of the results to mothers in a comprehensible way.

"TBAs deliver many mothers. They could be given weighing equipment and trained on how to use them. VHTs also move around communities for immunizations, they should also be trained on how to use measuring equipment for m others and babies." Local Village Administrator 2.

Recommendations at Nutrition Environmental Level

Making and showing nutrition education videos tailored to the local area in vernacular was recommended. That will educate young mothers about feeding and childcare, as said by almost half of the respondents.

"We need videos made in our area and in vernacular about feeding of pregnant women and babies childcare, unlike those made in English as many mothers do not understand the language." Midwife 2.

Provision of facilities for training young mothers in practical skills like cooking foods appropriate for pregnant/ lactating mothers and infants was suggested. Once facilitated with the needed foods, equipment and funds, VHTs could potentially conduct such training of young mothers at their homes.

"We should have a Kitchen that is well facilitated at the health centers where young mothers can be trained. They can also be trained at the homes of VHTs if well facilitated by providing the cooking equipment, foods and allowances." Midwife 3.

Training VHTs in nutrition education and nutritional status monitoring, including practical food preparation for adolescents and infants, was suggested.

"Empower and train VHTs in areas of nutrition and cooking of those needed foods for mothers and babies." Sub-county Administrator 2.

Recommendations at Health Service Environmental Level

It was recommended by respondents that the government should increase the amounts of needed drugs sent to health centers. Other recommendations included: increasing the number of medical workers to deal with the heavy workload and relocating medical workers that were not performing their duties.

"More health and medical staff personnel should be recruited, because the work is overwhelming and patients are many. We also need a salary raise." Doctor 2.

Making health education videos tailored to the local area and in local languages was also suggested for educating young mothers in areas such as infant/child/ maternal care. In addition, provision of a designated day and time or place to address concerns of young mothers separate from adult mothers would help give them the special attention they need.

"They (nurses) aught to separate us from adult mothers and give us our own day and time so that they attend to us alone just like the patients of HIV/AIDS....." Adolescent Mother 2.

It was also suggested that doctors should be involved and consulted when re-stocking drugs so that the qualities and quantities match what is required.

"We are given insufficient drugs compared to the large number of patients we receive. The suppliers do not follow up to know when they should re-stock drugs. I would recommend that let

requisitions be made by us the User because we are the ones who are supposed to know when the drugs have run out of stock and the quantity needed by our patients." Doctor 2.

Areas that need capacity building in the health service sector include training of VHTs in health education and childcare, monitoring of maternal/child health and retraining/training and licensing of TBAs in optimal child delivery processes since TBAs are available and accessible alternatives to modern health workers.

"Empower and train VHTs in areas of childcare and health education and monitoring the health of the young mothers. Retrain a female medical staff to take care of these young mothers when at the health center." NGO Staff.

Discussion

Participants recommended a number of areas for improvement and capacity building that leverage existing strengths to improve adolescent maternal/child nutrition and health in rural Uganda. Some of the participants' recommendations, including keeping/re-enrolling young mothers in school [25,26], community support for mothers to remain in their parents' homes [26], tailored health care [1], self-employment in the form of animal rearing [3], and initiating income generation projects, such as handcraft making, crop growing or animal rearing [27] were also recommended by earlier studies in other areas of Uganda.

At the individual level, the resilience of young mothers must be commended and supported because they have not given up on life but rather are wanting to better their lives. The resilience was impressive since it seems to rise within a system of structural violence [28,-,35] that victimizes and oppresses them through suffering that is exacerbated by aspects of culture, low socioeconomic status, and gender discrimination [29,33,34]. Individuals who were victims of structural violence were usually poor, marginalized and lived with several types of inequalities [28,-,35].

Medical staff faced with negative attitudes from community members who call them drug thieves, who also face low pay, heavy workloads, poor or no medical supplies, lack of staff housing and poor working conditions, also seemed to place their burden and disappointment of un-met needs onto the young mothers who may be an easier target than the government. The harsh treatment of young mothers from parents and medical personnel may not be due to the fact that these stakeholders do not know about kind treatment, but rather an escalation of frustrations brought about by poverty and poor working conditions.

All these forms of structural violence and painful social experiences bring suffering. Much as the young mothers may have different personal and psychological attributes, they do share the suffering and pains caused by social exclusion given their occupancy of the bottom level at the social hierarchy in their communities [29].

At the social level, a change of attitude of parents and community members, so as to be kind, care for young mothers and re-enroll them into schools, is possible, as demonstrated by [3]. This recommendation was made possible for young mothers in Manafwa District of eastern Uganda where the Teenage Mothers Project (TMP) sensitized and persuaded the family and community members to support re-enrollment into schools [3,25]. This strategy of persuasion and sensitization could also be extended to help young mothers in acquiring personal land as a physical asset from their families, so as to use it for agriculture.

The Teenage Mothers Project (TMP) in Manafwa district also gave each of the young mothers a goat to rear for economic sustainability [3, 25] with support from the African Rural Development Initiatives (ARDI), whose community-based staff members did a needs assessment and the Dutch organization Adopteer een Geit (Adopt a Goat), which gave each of the mothers a goat [25]. This strategy of lobbying for partners within available NGOs to support young mothers could be borrowed by future interventions. Partnership may be especially important because the high poverty rates in rural Uganda [17,18], suggest that families, even if willing, may not be able to assist the adolescent mothers as recommended by this study. Partnering organizations might help furnish the income generating projects, training support or capital/supplies as recommended by many participants as a capacity-building avenue.

Another 'best practice' project funded by an external organization is the Pelletier Teenage Mothers Foundation (PTMOF) in Wakiso District of Uganda.

The initiative, funded by PTMOF friends in Canada [36,37], provided young mothers with vocational skills such as baking, tailoring and hair dressing; and also facilitates the education of the offspring of the teenage mothers [36,37].

Those activities of PTMOF could further economic and social recommendations in the study area as well. Another program, the Center for Education Innovation Profiles, offers secondary school and vocational training to teenage girls at Pader Girls' Academy in Pader northern Uganda and cares for the children to give adolescent mothers free time for school.

In Kenya, Hope for Teenage Mothers gives young mothers the vocational skills training for economic improvement recommended in the current research [38]. Improvement of the education and economic status of young mothers is critical, as it may boost the well-being of both mother and child [39]. NGOs could help support community recommendations.

The recommended micro-credits for financial empowerment of young mothers could be lobbied for from the available NGOs and microfinance deposit-taking institutions in Budondo sub-county or Jinja district, such as BRAC Uganda [40], Pride Micro-finance Ltd [41], Finca Uganda Ltd [42], and Opportunity Bank [43]. In addition, as recommended by the study participants, training in making handcrafts, whose market could be advocated for locally and nationally, could be another NGO-supported strategy to enhance self-employment and economic empowerment of young mothers. TASO Uganda operates in the region and could help to train young mothers in vocational skills such as carpentry, hair dressing, tailoring and mechanics [44].

At the nutrition and health service level, education of mothers by community-based workers [45,-49] or medical personnel at the health centers [50,51] could be a strategy for improvement of maternal/child nutrition. Community health workers who visited mothers and educated them on good maternal, newborn care and health practices have been found to improve maternal/child well-being in Uganda and beyond [52].

However, nutrition education in the absence of sufficient food to eat, which was the situation for some young mothers, may not be helpful. Supporting agriculture (crop growing and animal rearing) as an alternative strategy, could be successful, because on a gender level, women and girls are the biggest agriculture labor force in Africa [53 - 55]. Moreover, stakeholders in the current research suggested that chicken and goat rearing would be preferred by young mothers. Much as nutrition education and food production have been reported to help in improving good nutrition practices and health [56 - 67], additional strategies such as micro-credit skills and motivation, e.g., by cellphone, have also been found to be helpful [68]. It seems likely that a combination of capacity-building strategies at the economic, nutrition and health service environment levels will be needed to improve the well-being of young mothers.

Several examples of successful interventions align with the recommendations of stakeholders in the current study. A self-participatory agricultural practice of inter-cropping crops such as peanut, pigeon pea, soya bean and maize, was integrated with nutrition education to improve food security and child nutritional status among small-scale farmers in a rural area in northern Malawi [56]. The micronutrients and health (MICAH) program implemented by World Vision in Africa from 1996-2005, used a number of approaches including training of mothers and their communities on the importance and use of supplementation, fortification, rearing of fowl and rabbits and establishment of vegetable gardens and fruit tree orchards; it was successful in improving prenatal maternal health [59,61].

The MICAH program facilitated prevention and control of malaria through provision of anti-malarial drugs and distribution of insecticide-treated nets to pregnant women [59]. In addition, a recent review by Ruel et al (2013) indicated that improvement of maternal and child nutritional status is more likely when agriculture interventions include women's empowerment activities and skills to increase their incomes from the sale of commodities [57].

Other projects used nutrition education and financial empowerment. In Bangladesh, a home gardening program and counselling not only improved food security but also gave families economic returns and increased the women's decision-making power [58]. Flax and colleagues (2014) added nutrition education, the use of peer groups and cell-phone messages to an existing microcredit skills initiative and improved breastfeeding practices among women in Nigeria [67].

Building on recommendations of multi-stakeholder participants in the current study and successes from relevant programs in the literature, it appears that comprehensive supports can enhance maternal/ child nutrition and health for vulnerable adolescents in Busoga region, Uganda, and their infants. Such programs might encompass food production and animal rearing; nutrition and health education; encouragements and monitoring through peer groups and home visits by community-based counsellors; financial support and training. In the case of community support of young mothers, most stakeholders suggested building on capacity within adult VHTs. Due to their resilience and trust from community members, VHTs could be agents of change, e.g., of the poor attitudes of family and community members towards young mothers.

NGOs like TASO, World Vision and Soul Foundation have potential to help in training of VHTs in food preparation skills and adolescent friendly health services [44,68,69], developing community-level programs and supporting resources like videos concerning adolescent maternal/child nutrition and health in the local language.

It would be important to note that for any intervention to succeed, agency-focused approaches (that emphasize individuals' actions whether young women, family members and other service providers) need to be reconciled with structure-focused approaches (that emphasize changes in higher-level factors such as government policies, organizational practices, societal resources, norms and beliefs, etc.). Approaches that consider the structure-agency issue have recently been used to address ways of reducing social inequalities [70 - 74] and could also lead to improved well-being of young mothers. As individuals (agents), stakeholders of adolescent maternal/child nutrition and health improvement in rural Uganda to some extent have the power to make decisions for their well-being but this is constrained by external factors (structure).

Decisions such as attendance at health care settings or good feeding or engaging in income-generating work are to some extent controlled by external factors. Examples of such external factors, some of which are macro-level policy aspects, include supply and availability of medical items, change in salary structures by the government, employing more medical staff, accepting young mothers to stay in school, employment opportunities for young mothers and their parents, and provision of land to young mothers.

There is a need to marry the two approaches of agency and structure [70,71] for improved adolescent maternal/child nutrition and health. The government of Uganda launched a Presidential initiative in 2016 to train female youths in urban Kampala district with vocational skills in making shoes, household crafts and clothing, cookery and beautification in urban Kampala district [75,76]. This program, which recently graduated over 4,000 girls for the 2018 class [77], could also roll out such economic projects beyond Kampala District for self-sustenance of young mothers in rural areas since the initiative is fully funded by the state house of Uganda in terms of training materials and capital on graduation [75,76]. The government could also put in place policies that aim for the improvement of adolescent maternal/ child nutrition and health in Uganda.

Conclusion

Stakeholders' recommendations for action and avenues of capacity building could help improve the welfare of young mothers in rural Uganda. The recommendations point towards specialized adolescent maternal/child friendly services that, if taken up, could improve the social, health and economic well-being of young mothers and their infants. Recommendations for action and capacity building, categorized according to levels of influence and the social cognitive theory, point to changes in behaviors or practices on the part of individuals, families, community, society and government to better support these very vulnerable young women and their babies. Findings of this study may help to direct future interventions for improvement of maternal/child nutrition and health.

List of Abbreviations

HIV: Human Immunodeficiency Virus

NGO: Non-Governmental Organization

ORE: Office of Research Ethics

SCT: Social Cognitive Theory

TASO-REC: The AIDS Support Organization Research Ethics Committee

TBA; Traditional Birth Attendant

VHTs: Village Health Team workers

Declarations

Availability of Data and Materials

Data supporting consent and results in this article are filed and safely locked away in the office of the Corresponding Author (Dr. Rhona Hanning) at the University of Waterloo, Ontario, Canada. The corresponding author is ready to avail the said data on reasonable request.

Competing Interests

None

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Author's Contributions

JN and RH conceptualized the study; JN, RH, and GKS designed the study; JN, RH, and GKS coordinated the study; JN collected, transcribed and analyzed the data, and wrote the manuscript with editorial input from: RH and GKS. All authors have read and approved the manuscript.

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