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DISSERTATION

ASSESSMENT AND VALIDATION OF YOUTH HEADED HOUSEHOLDS PSYCHOSOCIAL MENTORING MEASURES

Bugesera District, Rwanda

PRESENTED BY ASSUMPTA MUKABUTERA FOR OBTENTION OF MASTERS DEGREE OF PUBLIC HEALTH

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Kigali, April 2010

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DEDICATED

To

♥ My wonderful and adored husband MANYWA JEAN PIERRE,

   My dearest, lovely Children:

- ISHIMWE KEVIN GARNON,
- ISHAMI MUTONI KETHIA,
- INEZA TETA KELYÄ,
- ISHEJA KEZA SABINE KENIA.

♥ My mother MUKARUTABANA ANGELIQUE

Assumpta MUKABUTERA

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LIST OF ABBREVIATIONS AND ACCRONYMS

ABBREVIATIONS	SIGNIFICATION
ADP	Area development Program
CDC	Center for Disease Control and Prevention
CED-S	Center for Epidemiologic studies Depression -scale
CFA	Confirmatory Factor Analysis
GAF	Global Assessment of Functioning
HC	Health Center
HF	Health Facility
HIV&AIDS	Human immunodeficiency Virus and acquired immuno deficiency syndrome
M&E	Monitoring and evaluation
MIGEPROFE	Ministère du genre est de la promotion de la femme
MoH	Ministry of Health
NUR	National University of Rwanda
NURSPH	National university Rwanda school of public health
OVC	Orphan and vulnerable children
RDHS	Rwanda Demographic health survey
TSPH	Tulane School of public Health
UNICEF	United Nations children's funds
WHO	World Health Organization
WVR	World vision Rwanda
YHH	Youth headed household

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RESUME

Introduction

Au Rwanda, il y a un grand nombre d'enfants chefs de ménages - plus de 65.000 ménages, composés de plus de 300.000 enfants, sont sans soins ni supervision d'une personne adulte. Comme solution à ce problème, World vision Rwanda (WVR), en partenariat avec l'école de santé publique de l'université nationale du Rwanda et l'école de santé publique de Tulane a lancé un programme de « mentoring », qui est un programme de visites à domicile par des adultes formés pour offrir un soutien psychosocial aux jeunes chefs de ménages. L'objectif de cette étude était d'étudier et valider les mesures utilisées pour mesurer le niveau de symptômes dépressif, la maltraitance (abus), la marginalisation, le grief (chagrin) et la qualité de « mentoring » chez les jeunes chefs de ménages. L'analyse se base sur la dépression, la marginalisation, grief (chagrin) et la qualité de « mentoring » ou encadrement psychosocial de ces jeunes dans le district de Bugesera.

Méthodologie

Nous avons mené une étude transversale au niveau des ménages dont les chefs sont des jeunes âgés de moins de 25 ans et participant dans le programme de « mentoring » dans le district de Bugesera. Nous avons mesuré les taux et la sévérité des symptômes dépressifs en utilisant la mesure de la dépression du « centre for Epidemiologic Studies Depression Scale: CED-S ». En plus de la description des facteurs sociodémographiques et économiques ; la validation de mesures ou d'échelle comme le chagrin (grief), la marginalisation, la dépression et la maltraitance a été faite. Les propriétés des mesures de la qualité de « mentoring » ont été révisées en utilisant « Confirmatory Factors Analysis (CFA) ». Outre la distribution de fréquence, le test de T de student, de F de Fisher, test de « one-way ANOVA », régression linéaire et des modèles de régression logistique ont été utilisés pour évaluer la dépression chez les jeunes chefs de ménage la maltraitance, de la marginalisation, le chagrin, et évaluer leurs facteurs d'association. L'effet de la qualité de « mentoring » sur la dépression, maltraitance, de la marginalisation et le chagrin ont été analysées en utilisant le coefficient de corrélation (r).

Résultats:

Parmi les 201 jeunes chefs de ménages enquêtés, 55% étaient de sexe féminin et 45% de sexe masculin. L'âge variait entre 11ans et 24 ans. Environ 54% d'entre eux ont fait quelques années d'études primaires, 26% ont complété 6 années d'enseignement primaire et 8% ont atteint le niveau secondaire. Un jeune sur quatre vits seul dans le ménage. Plus de la moitié des jeunes chefs de ménages enquêtés (55%) ont dépassé le score limite de la dépression chez les adolescents. L'analyse multivariée (en contrôlant les variables indépendantes) a révélé que les symptômes dépressifs dépassant le seuil clinique ont été associés au sexe féminin, par opposition au sexe masculin (p. value 0,015); le fait que les jeunes pensent qu'ils ont une bonne santé (P. value 0,040) et le fait de recevoir un appui d'une personne adulte ont été associés au niveau bas de dépression. La régression linéaire indique que la marginalisation est associée au fait d'être actuellement au banc de l'école (Coefficient = -0,460006, P. value = 0,007), et le fait de recevoir un appui d'une personne adulte (coefficient = - 0,2229212, P. value = 0,001). Après avoir contrôlé pour les variables indépendantes, la réponse négative au mentor (P. value=0,025), utiliser l'eau de ruisseau ou de pluies source d'eau (p. value 0,001) et le fait de ne pas avoir des moyens d'éclairage (p. value=0,048) étaient significativement associés au « grief ». Ceux qui puisent de l'eau dans les rivières ou qui utilisent de l'eau de pluie et ceux qui n'ont pas les moyens d'éclairage ont plus de « grief ».

Conclusion

Plus de la moitié des jeunes chefs de ménages dans le programme de « mentoring » présentent des symptômes dépressifs. Beaucoup de variables dépendantes ont été associés au fait d'être de sexe masculin, le temps pris en charge par la world vision et de vivre seul. Alors le programme visant à aller au-delà de soutien psychosocial et d'augmenter l'appui matériel, d'aider le jeunes vivant seuls à trouver quelqu'un qui peut leur rendre visite presque chaque jour pourrait être nécessaire pour réduire les problèmes psychosociaux des jeunes chefs de ménages.

ABSTRACT

Background:

In Rwanda there are large numbers of child-headed households – more than 65,000 households, consisting of more than 300,000 children in total, are living without adult care and supervision. As a solution to this problem World Vision Rwanda (WVR) in partnership with National University of Rwanda School of Public Health and Tulane School of Public Health has initiated an adult mentorship program, which is a home visitation program utilizing trained adults to provide psychosocial support to Youth Heads of Household (YHH). The objective of this study was to assess and validate youth psychosocial wellbeing measurements. We report on depression, marginalization, grief and quality of mentoring relationship experience outcome in youth participating in the mentorship program in Bugesera district.

Methods:

We conducted a cross-sectional household survey with youth heads of households in Bugesera District. All YHH who were less than 24 years of age and participating in WVR mentorship program in Bugesera District were included in the survey. We measured rates and severity of depressive symptoms using the Center for Epidemiologic Studies Depression scale, in addition to description of socio demographic factors, a bivariate analysis were done between social-demographics variables. The psychometrics properties of scale of Quality of mentoring, grief, marginalization, and adults support were reviewed using confirmatory factor analysis (CFA); to verify their validity.

In addition to frequency distribution, T test, F fisher, χ^2 test, one-way ANOVA and linear regression models were used to assess the depression among YHH, marginalization, grief and their association factors. The effect of Quality of mentoring relationship experience on psychosocial outcomes was analyzed using correlation coefficient (r).

Results:

Of the 201 YHH, 55% were female and 45% male. Age varied between 11 and 24 years. About 54% of them didn't achieve primary school, 26% completed 6 years of primary school and 8% reached secondary school. One out of four lives alone in the household. More than half of YHH

(55%) exceeded the most conservative cutoff score depression score for adolescents. Multivariable analysis revealed that depressive symptoms that exceeded the clinical cutoff were associated with Gender, physical health and adult support. Being female was associated with high level of depressive symptoms (p=0.015). A good or excellent health (p=0.040) or high level of adult support (p=0.005) were associated with lower level of depressive symptoms. Marginalization was measured by 6 items, (alpha=0.77) to explore perceptions of isolation and stigma from the surrounding community. Analysis revealed that high level of adult support was associated with low levels of marginalization (p=0.001) and being currently in school (p=0.007). Gender, physical health and adult support were associated with depression. On one hand, being female was associated with high level of depressive symptoms (p=0.015). On the other hand, a good or excellent health (p=0.040) or high level of adult support (p=0.005) were associated with lower level of depressive symptoms.

Conclusion:

Multivariable analysis revealed that depressive symptoms that exceeded the clinical cutoff were associated with Gender, physical health and adult support. Being female was associated with high level of depressive symptoms; a good or excellent health or high level of adult support was associated with lower level of depressive symptoms.

Marginalization was measured by 6 items, to explore perceptions of isolation and stigma from the surrounding community. Analysis revealed that high level of adult support was associated with low levels of marginalization and being currently in school.

Gender, physical health and adult support were associated with depression. Being female was associated with high level of depressive symptoms. And a good or excellent health (p=0.040) or high level of adult support were associated with lower level of depressive symptoms.

I. INTRODUCTION

1.1 Background

The HIV&AIDS pandemic has caused untold pain and social problems for children and communities in sub-Saharan Africa. Fourteen million children under 15 year have lost one or both parents [1].

In Rwanda, the combined effects of the 1994 genocide and the HIV&AIDS pandemic have contributed to an increasing number of orphans and other vulnerable children (OVC). The 2005 RDHS mentions that 29% of children under age of 18 years are considered to be OVC [2].

Fourteen percent of children under the age of 15 in Rwanda are orphans, and there are large numbers of child-headed households − more than 65,000 households, consisting of more than 300,000 children in total, are living without adult care and supervision [3].

In 2005, RDHS-III found that 21 % of children under age 18 have lost their father and/or mother (4% double orphans, 13% fatherless, 3% motherless) and 11% of vulnerable children in the under 18 population. In particular RDHS-III highlighted that:

  ➢ The percentage of OVC increases as the age increases (11% at age 0-1years, 25% at age 5-9years, 36% at age 10-14 years and 48% at age 15-17years). The percentage of orphans reaches very high levels among the age groups 10-14years (36%) and 15-17years (41%), likely due to the effects of the 1994 genocide.

  ➢ The percentage of OVC is higher in the poorest households (33%) than in the richest households (28%).

There is growing empirical evidence showing that children who live without adult supervision have far reaching and lasting challenges. Children are especially vulnerable to the severe consequences of the HIV/AIDS pandemic, which have caused unprecedented suffering and social disruption.

These young people are "left behind," not only by parents and other caregivers who died from the disease or genocide, but also by extended families and communities who stigmatize them, and by governments who fail to adequately provide for their protection and care [3].

The increasing number of orphans has greatly contributed to the presence of poor households. These orphans have suffered the loss of adults who should have provided healthcare, education and protective structures for their growth and development. The quality of services provided has varied greatly and referral and linkages across services remained a challenge among different service providers. The height of impact on children and communities require innovative solutions to support community members and child caregivers in the care of orphaned and vulnerable children in their midst.

One model of community-based psychosocial support is the mentoring approach model, which World vision Rwanda (WVR) in partnership with National University of Rwanda School of Public Health (NURSPH) and Tulane School of Public Health (TSPH) has initiated to address OVC's problems by promoting in the communities, sustainable care and supportive environment.

Adult mentorship program, a community-based approach, is a home visitation program utilizing trained adults to provide psychosocial support to OVC by adult mentors with attention to adult guidance, supervision and emotional and social support. Each mentor is assigned a maximum of 3 households to take care of. Mentors are divided in groups of 28-30 people and meet on a monthly basis to share information on households and challenges. In this approach, trained adult volunteers from the local community develop a stable, caring relationship with children and youth living without an adult care giver, through regular home visits. Through this positive relationship, they monitor the well being of children and youth, provide guidance and transfer life skills, give love, attention and encouragement to youth, and help to ensure their health and safety. This project is intended to strengthen the supportive environment for children's healthy growth and development, and mitigate the impacts of disrupted care giving structures and marginalization of these vulnerable children and youth. The mentorship program intends to strengthen the role of the community in assisting vulnerable children through OVC home visitations.

This program started in former Gikongoro province in 2004 (in former Karaba, nyamagabe, mudasomwa and Nyaruguru district) as a pilot project, targeting 851 OVC families with a total number of 2,484 household members. After two years of implementing the pilot project an evaluation was made which showed that the mentoring program appeared to have mitigated some of the psychosocial challenges encountered by youth heads of households. The findings from this pilot program showed that youth in the intervention group improved slightly in their psychosocial wellbeing compared to the comparison group [4]. The same findings provide evidence for the effectiveness of mentoring interventions. However a broad range of basic questions remains regarding the nature of the relationship and its effects on the youth's psychosocial outcomes. In particular, additional information is needed regarding the ways in which the variation in mentor and youth relationship affects youth psychosocial outcomes [4].

Understanding of how youth mentoring relationships may exert a positive effect on youth outcomes can be useful in identifying subgroups of youth for whom mentoring interventions work better and thereby promote policies regarding these programs.

On the other hand, one of the challenges encountered during the evaluation of the Rwandan mentoring program interventions is that there is no well established tool to assess either youth psychosocial wellbeing outcomes or the nature of the youth and mentor relationship. In fact, most of the measurements used for the evaluation of this program were developed and piloted within that study and have never been tested in other populations to assess and validate their psychometric properties. There are no theoretically based instruments in literature that measure psychosocial well-being among youth headed households. Thus, the present study is the first research in the assessment and validation of youth psychosocial mentoring measures. It also identifies youth at risk, track psychosocial-related problems and identifies quality of mentoring in YHH. In acknowledging the challenges and problems of these youth during their life; standardized, reliable and valid measures of psychosocial mentoring measures for this population is essential.

1.2. Purpose of the study

The purpose of the research is to assess the psychometric characteristics of youth psychosocial mentoring measurement tool. The study assessed the reliability and the validity of measurements of the unique relational experiences of youth and their mentors and investigates how these experiences influence youth outcomes. Furthermore, the reliability and validity of youth psychosocial outcomes were established.

This provides a necessary and critical tool to advance research in area of youth psychosocial mentoring evaluations. Developing a reliable and valid psychosocial mentoring assessment tool is useful in evaluating the effectiveness of youth mentoring interventions. Furthermore, it will be used to provide some insights into the subgroups of youths that can be affected by such interventions.

Specifically, the study addresses the following objectives:
1. To describe the social-demographic characteristics and economic situation of Bugesera YHH in mentorship program.
2. To assess the psychometric properties of youth psychosocial mentoring measurement tool.
3. To evaluate the effect of youth and mentor relationship experience, socio demographic characteristics, living conditions and economic situation on youth psychosocial wellbeing outcomes.

1.3 Definition of concepts

1.3.1 **Youth:** is the period between childhood and adulthood, described as the period of physical and psychological development from the onset of puberty to maturity and early adulthood. Definitions of the specific age range that constitutes youth vary. An individual's actual maturity may not correspond to their chronological age, as immature individuals exist at all ages [5]. In this study, the word refers to a person between 0 and 24 years of age.

1.3.2 **Orphan**: An orphan is a child who has lost one or both parents [4].

1.3.3 **Vulnerable Child:** A vulnerable child is a person under 18 years exposed to conditions, which do not permit him/her to fulfill her/his fundamental rights for her/his harmonious development [4]. For this study we are considering all children 24years and below and so, we shall refer to such vulnerable children as Vulnerable Youths.

1.3.4 **Reliability:** Reliability concerns the extent to which an experiment, test, or any measuring procedure yields the same results on repeated trials. The more consistent the results given by repeated measurements, the higher the reliability of the measuring procedure; conversely the less consistent the results, the lower the reliability [5].

1.3.5 **Validity:** is specific to the appropriateness of the interpretations wish to make with the scores. The measuring tool is valid if it does what it is intended to do. An indicator must be more than reliable if it is to provide an accurate representation of some abstract concept; it must also be valid. Reliability and validity assessment is the first step towards understanding the complex issues of measurement. A reliable indicator does not mean that it is also relatively valid [5].

1.3.6 **Depression :** Depression is a disabling condition, which can severely disrupt life, affecting appetite, eating habits, sleep, work or school life, relationships and general health Major depressive disorder is a mental disorder characterized by an all-encompassing low mood accompanied by low self-esteem, and loss of interest or pleasure in normally enjoyable activities. [6].

1.3.7 **Grief:** Grief is a multi-faceted response to loss, particularly to the loss of someone or something one loved most. It spans the emotions of numbness, disbelief, separation anxiety, despair, sadness, and loneliness [7]. Although conventionally focused on the emotional response to loss, it also has physical, cognitive, behavioral, social, and philosophical dimensions. Common to human experience is the death of a loved one, whether it is a friend, family, or other companion. While the terms are often used interchangeably, bereavement often refers to the state of loss, and grief to the reaction to loss. Bereavement, while a normal part of life, carries a degree of risk when limited support is available.

1.3.8 **Marginalization:** Marginalization is the social process of becoming or being made marginal (to relegate or confine to a lower social standing or outer limit or edge, as of social

standing). Marginalization at the individual level results in an individual's exclusion from meaningful participation in society [7].

1.3.9 **Mentoring:** Mentoring is a term generally used to describe a relationship between a less experienced individual, called a mentee or "protégé", and a more experienced individual known as a mentor. Mentorship refers to a developmental relationship in which a more experienced or more knowledgeable person helps a less experienced or less knowledgeable person: who can be referred to as a "protégé", or apprentice, to develop in a specified capacity [8].

Mentoring is one of the most commonly-used interventions to prevent, divert, and remediate youth engaged in, or thought to be at risk for, delinquent behavior, school failure, aggression, or other antisocial behavior [9]. One account lists over 4500 organizations within the United States that use mentoring to promote youth well being and reduce risk of delinquency.

Definitions of mentoring vary, but there are common elements: mentoring was defined by the following 4 common characteristics:
1) Interaction between two individuals over an extended period of time,
2) Inequality of experience, knowledge, or power between the mentor and mentee (recipient), with the mentor possessing the greater share,
3) The mentee is in a position to imitate and benefit from the knowledge, skill, ability, or experience of the mentor,
4) The absence of the role inequality that typifies other helping relationships and is marked by professional training, certification, or predetermined status differences such as parent-child or teacher-student relationships [9].

1.3.10 **Adult support:** This support is the physical and emotional comfort given to youth by an adult person such as, a family member, friends, and others. Adult support is a part of social support: We are part of a community of people who love and care for us, and value and think well of us. Social support is a way of categorizing the rewards of communication in a particular circumstance. An important aspect of support is that a message or communicative experience does not constitute support unless the receiver views it as such [10].

1.4 Summary of literature review

When an adult member of a household dies or falls chronically ill, it can have a devastating effect on the remaining members of the household, particularly children. In such cases, household survival often depends on external assistance or support. Strengthening family capacities to support and protect orphans is essential. Some research have been done and discussed about mentoring psychosocial outcomes.

Grief: Grief puts a great stress on the physical body as well as on the psyche, resulting in wear and tear beyond what is normal. Nightmares, appetite problems, dryness of mouth, shortness of breath, sleep disorders, and repetitive motions to avoid pain are often reported by people experiencing normal grief. Even hallucinatory experiences may be normal early in grief. When a parent or caregiver dies or leaves, children may have symptoms of psychopathology, but they are less severe than in children with major depression [11].
The loss of a parent, grandparent or sibling can be very troubling in childhood, but even in childhood there are age differences in relation to the loss. A very young child, under one or two years, may be felt to have no reaction if a caregiver dies, but this is far from the truth. Separation from a parent or other person who cares for the child can cause distress.
As a child, the death of a parent, without support to manage the effect of the grief, may result in long-term psychological harm. Therefore, it is important that the emotions the child feels are worked through completely and discussed openly. The high levels of grief were associated with having a parent killed in the genocide, poor health status, and having only one meal per day [4].

Mentoring Relationships: The available theory and research suggest the potential importance of several characteristics of mentoring relationships. These include the mentor's role in the youth's life, frequency of contact between mentor and youth, emotional closeness in the relationship, and relationship duration [9].

That greater amounts of time spent together (mentee and mentor) have been found to be associated with higher reported levels of emotional and instrumental support in mentoring relationships as well as an increased likelihood of the youth nominating the mentor as a

significant adult in his or her life [9]. A review of mentoring program evaluations, furthermore, concluded that relationships characterized by more frequent contact were associated with more positive youth outcomes. The degree to which feelings of closeness exist between the mentor and youth has been widely regarded as an important component of mentoring relationships [9].

Several studies also have found support for an association between relationship closeness and positive youth outcomes; "Relationships that end after only a relatively short period of time, moreover, may leave youth susceptible to feelings of loss or rejection." [12].

Some research has established that young people matched with mentors experienced a reduction in feelings of hopelessness; however, other research found that mentoring had less of an effect on depression than various individual and environmental factors [12]. Finally, mentoring has been shown to have a positive effect on some forms of delinquent behaviour, including skipping school and skipping class, initiating alcohol and drug use, and getting in physical fights [13].

The mentoring program contributed to the decrease in depression: youth who participated in the mentoring program at Gikongoro reported significant lower levels of depression as effect of mentoring [4]. The factors associated with high depression scores include being female, a high level of education, living with others, having a parent killed in the genocide, poor health, having fewer assets, and eating only one meal per day [4].

The YHH in mentoring program (Gikongoro) reported a significant decrease in feelings of marginalization. "Advocacy by mentors on behalf of youth may have served to encourage their social integration and acceptance among the large community." [4].
Living alone, having parent killed in the genocide, poor health status, not having assets, and having only one meal per day were factors associated with high levels of marginalization [4].

"Mentoring by adults within the community can measurably mitigate adverse psychosocial outcomes among male and female youth who serve as heads of household." [4].
It would be helpful to have a word on what we know about psychometric properties of the measurements we are evaluating!

Mentoring has been recognized as an effective way of engaging volunteers to address poverty issues and thereby increase community involvement in collaborative efforts [13].

Categories of vulnerable children

According to Rwanda National Policy for Orphans and Vulnerable Children [14], the following categories of children are considered at special risk and requiring particular protection and/or assistance:

Children living in households headed by children, Children in foster care, Street children, Children living in child protection centers, Children in conflict with the law, Children with disabilities, Children affected by armed conflict, Children who are sexually exploited and/or abused, Working children, Children affected/infected by HIV/AIDS, Infants with their mothers in prison, Children in very poor households, Refugee and displaced children, Children of single mothers, Children who are married before the age of maturity.

Depression: In the United States, approximately 3.4% of people with major depression commit suicide, and up to 60% of people who commit suicide have depression or other mood disorder [6].

II. MATERIALS AND METHODS

2. 1 Research design

A cross-sectional household survey was conducted during 12 days with youth heads of households in Bugesera District in September 2009. This district was chosen because it was easy to access the YHH. All YHH who were less than 24 years of age and participating in WVR mentorship program in Bugesera District were included in the survey. The investigation was done in 3 Area Development Programs (ADP) of World Vision Rwanda (Nyamata ADP, Ngenda ADP and Gashora ADP of which cover the entire Bugesera districts). This study was conducted in 9 sectors of Bugesera district comprising Gashora, Juru, Mareba, Nyarugenge, Ruhuha, Ntarama, Kayenzi, Musenyi and Mwogo: where mentorship program is implemented.

2. 2 Participants

The study population was YHH in the area of the study.

Participants were members of the mentorship program in Bugesera - youth headed households who met the inclusion criteria of the study:

- being in mentorship program,

- being aged not more than 24 years old - living in the study area,

- being single (not married).

The eligible subjects were recruited from 3 World vision's areas of development programs (Nyamata, Gashora and Ngenda). A total of 201 YHH were interviewed.

2.3 Ethical consideration

The study was authorized by the NURSPH and district authority. The participants were told about the general nature of the study and were assured of the confidentiality of the data and informed consents for the study were obtained from all the subjects. The Participants in research were informed orally that the survey involves sensitive questions, which their participation is voluntary and they were given information regarding the right to withdraw from the study at any time without penalty. Participants were also given the opportunity to ask questions before giving consent to the interview. Information on individual mentor households and YHH has been kept

confidential. The interviewers were persons who have knowledge or a background in psychosocial or psycho-clinical issues. They were trained to recognize child participants in need of immediate higher-level interventions and, where appropriate, referral provisions were put in place. We had in place plans that if during the research, youths reported attempting suicide, being abused, or experiencing serious health needs, these would be referred to WVR ADP NGENDA or ADP GASHORA or NYAMATA ADP for assistance and ongoing support. However, we did not have any referral case.

2.4 Instrument Development

We used youth psychosocial outcomes measurement that were previously adapted and developed during the youth headed households mentorship program at Gikongoro by NURSPH and TSPH [4]. The sample of the questionnaires is presented in the appendix.

A pilot study was conducted to test whether the youth psychosocial mentoring questionnaires were easy to read and to comprehend by the data collectors. A convenience sample of 12 YHH and 4 mentors were completed the youth psychosocial mentoring questionnaires and gave comments on their understanding of the items.

2.5 Research variables and Measurements

The main variables of the study are as shown in table 1 and the list of different variables and definition of each variable is attached in appendix1.

Table 1: Research variables

Type of variables	Main variables
Dependent variables	Marginalization, Grief and Depression Symptoms
Independent variables	Demographic characteristic, Socio-economic situation and Quality of mentoring.

2.6 Sampling and sample size

Factor analysis was used and according to the literature, factor analysis requires a minimum adequate sample size of 100 subjects. The guideline stipules that, *"the minimal number of subjects in the sample should be the larger of 100 subjects or 5 times the number of variables being analyzed*" [16]. For this study we choose the second option.

Thirty-two items comprising of marginalization (6 items), grief (6 items); quality of mentoring (16) have been analyzed in this research for YHH; As we want to perform an analysis on responses to 32- items questionnaire; Five times 32 items on the questionnaire of YHH equal 160.

We conducted an exhaustive sampling for the YHH who met the inclusion criteria and the final sample of 201 YHH was provided by usable (complete) data, minimum was 160 YHH. Any subject who failed to answer just one item was considered not to have provided usable data for the factor analysis; these have therefore been dropped from the final sample. So to ensure that the final sample includes at least 160 YHH usable responses, we administered the questionnaires to all YHH and all mentors who met the inclusion criteria.

2.7 Analysis plan

The analysis has been done in three steps: first, the description of Bugesera YHH in mentoring program has been established. Secondary, the reliability and validity of youth psychosocial outcomes and that of the mentoring experience have been assessed. Thirdly, the effect of the relationship experience, socio demographics characteristics, living conditions and economic situation on the youth psychosocial outcomes has also been established.

The Results have been presented as follows:

Demographic characteristics of the participating YHH have been shown (area, age, gender, education, estimation of physical health estimation, being currently in school …)

We measured rates and severity of depressive symptoms using the Center for Epidemiologic Studies Depression scale. Psycho social wellbeing: Grief and Marginalization), adult support and quality of mentoring relationship factors were assessed.

We conducted a confirmatory factors analysis of the youth psychosocial mentoring tool: (Marginalization, depression, grief and quality of mentoring) to assess the number of factors and

the loading of variables, to analyze construct validity. Cronbach's alpha is used in CFA to measure the reliability of two or more construct indicators.

Data was entered in the computer using CSPro4 and analyzed using STATA version 10 and with SAS 9.1, a CFA was conducted to examine dimensionality and the propriety of the model specified through EFA.

In addition to frequency distribution, T test, F-test of Fisher, and χ^2 tests, linear regression models were used to explore linkages between the psychosocial outcomes (the depression, marginalization, and grief) and socio demographic characteristic. Quality of mentoring relationship experience among YHH in mentorship program was also analyzed.

By the means of Exploratory Factory Analysis (EFA), the basic factor structure of the instrument to measure the quality of YHH mentoring and Psychosocial wellbeing were determined: We investigated the psychometric properties of quality of mentoring and psychosocial measurements used in the above mentioned study using data collected from YHH in Bugesera mentorship.

2.8 Limitation of the study

The contacts made at the district levels and literature review, revealed that no national study has been made so far to assess and validate the psychosocial well being. There is therefore a limitation in the provision of basic data for comparison of study results with the situation at national level. The work undertaken may not reflect either the national picture in view of the limited time and materials to cover the whole country. The recommendations to be issued will contain only the area of the study. Other limitation was the issue of self reporting: bias in reporting. this is where the respondents mostly likely to report more on the bad thing (to show that they need more assistance) or to report more on positive aspect and less on the negative aspect. We minimized this error by explained to YHH the important of this research and we assured them of confidentiality. YHH were surveyed at home without mentors' presence to avoid bias in reporting. The other issue was forgetfulness: is easy to forget the things that have not impacted much. This was minimized by asking question in limited time like what happened in the past two weeks.

III. RESULTS

In order to respond to our research objectives the assessment has been done in three steps: first, the description of the social-demographics characteristics and economic situation of Bugesera YHH in mentorship program has been established. Secondly, the psychometric properties of scales measuring the quality of YHH mentoring and their psychosocial wellbeing have been assessed. Thirdly, the effect of the YHH-mentor relationship experience, socio demographics characteristics, living conditions and economic situation on youth psychosocial outcomes has been also analyzed. The tables presented in these report were done using the data of this survey.

3.1. Description of YHH Participated in the survey

3.1.1. Basic Demographic and education

As seen in the table 2 the sample included 201 youth heads of household (YHH), with 44.78% from Gashora ADP, 29. 35% from Ngenda and 25.87% from Nyamata. The YHH surveyed were between the ages of 11 and 24years (mean age of 20 years with SD of 2.52).

More than a half (55%) of YHH surveyed was female and 45% male. Concerning education, 87.82% have attended the school. The majority (53.81%) of YHH completed some levels of primary schooling; 25.89% completed up to 6 years of primary school and 8.12% post primary level. Almost one third of youth reported having fair/poor physical health (27.86%).

Table 2: Basic Demographic characteristics

VARIABLES	FREQUENCY	PERCENTAGE
PLACE (ADP), (n=201)		
Nyamata	52	25.87
Ngenda	59	29.35
Gashora	90	44.78
AGE, (n=201)		
11-16	13	6.47
17-20	81	40.30
21-24	107	53.23
gender (n=201)		
Male	90	44.78
Female	111	55.22
Education, (n=197)		
None	24	12.18
Some primary	106	53.81
Completed primary	51	25.89
post primary	16	8.12
Physical health, (n=201)		
Excellent/good	56	27.86
Fair/poor	145	72.14

Reason of not attending/discontinuing the school

One would expect that before the age of 24 years, a child would still be in school. However, about one children out of ten (12.69%) involved in mentoring program in Bugesera reported that they were not in school. The main raisons for not attending or discontinuing the school include lack of school fees and scholastic materials (45.88%) and domestic responsibilities (35.88%).

Table 3: Reason of not attending/ discontinuing the school

Raison of not continue the school	Frequency	Percentage
Currently in school		
Yes	25	**12.69**
No	172	**87.31**
Reason for not being in school		
Lack of school fees and scholastic materials	78	**45.88**
Domestic responsibilities	61	**35.88**
To earn money or look for employment	13	7.65
Too old	1	0.59
Poor performance in school	2	1.18
Pregnant/had a baby	2	1.18
Did not pass entrance exam	3	1.76
Emotional or Health problem	3	1.76
Other (dropped out, no one helped him/her to start, no reason	7	4.12

3.1.2. Socio economic situation

As it is shown in table 4, Majority of YHH surveyed (75%) have other children (whom they have to take care of) and three children in ten (25.5%) live alone. Almost a half of YHH surveyed lost their parent during 1994 genocide. One in 3 YHH (29. 85%) eat one meal per day. one third of YHH are not satisfied by the amount of food eaten. approximately 35.82% get water from stream/rain/river. These YHH are at risk of getting low hygiene diseases.

Table 4 : Socio-economic situation

Socio-economic situation	Number	Percentage
Living alone, (n=200)		
Yes	51	25.50
No	149	74.50
Parent died during genocide, (n=201)		
Yes	92	45.77
No	109	54.23
Eat more than one meal per day, (n=201)		
Yes	141	70.15
No	60	29.85
Satisfied with amount of food, (n=201)		
Yes	127	63.18
No	74	36.82
Source of water, (n=201)		
public tap	97	48.26
well	32	15.92
stream/river/rain	72	35.82
Household owns livestock, (n=201)		
Yes	76	37.81
No	125	62.19
Variable	**Mean±SD**	**Range**
Time being YHH, y (n=201)	5.28 ± 4.04	0 – 16
Number of assets owned, (n=199)	4.07 ± 1.29	0 – 6
Number of material support received, (n=199)	2.03 ± 1.46	0 – 6

3.2. Psychometric properties of YHH psychosocial wellbeing and mentoring quality scales.

The 2006 study on the impact of YHH mentoring on their psychological wellbeing conducted in Gikongoro, former province of Rwanda, employed a triangulation of several research approaches to develop a tool for measuring the quality of youth mentoring relationship and their psychosocial wellbeing. Research approaches used included formative research using focus groups among youth and community members, consultation with a Rwandan technical committee of youth and professionals, a survey with youth to assess their psychosocial wellbeing and the quality of mentoring relationship after youth participated in the program for about two years. In this section, we investigate the psychometric properties of quality of mentoring and psychosocial measurements used in the above mentioned study using data collected from YHH in Bugesera mentorship program.

3.2.1. Quality of youth YHH mentoring scale

3.2.1.1. Introduction

The data collected through the above mentioned study was analyzed by the means of Exploratory Factory Analysis (EFA) to determine the basic factor structure of the instrument to measure the quality of YHH mentoring. Three scales measuring the nature of the relationship with the mentor: positive relationship with mentor, amount of time spent with the mentor and negative response to the mentor were retained. In addition, one scale (result) concerning things that the mentor accomplished or provided the YHH and their household was also retained. For three scales: positive relationship, amount of time and result, a high positive score indicated a high positive attitude. For the negative response scale, a high score indicated a high negative attitude.

Reliability analyses were conducted to examine internal consistency reliability of the instrument scores. Table 5 displays the properties of the YHH mentoring scale as measured during the Gikongoro survey.

 Positive relationship: this was a scale composed of seven items such as "your mentor gives you good advice" and "your mentor understands your feelings". Cronbach's alpha for the scores on this scale was 0.88.

Amount of time with mentor: this scale was composed of four items assessing the adequacy of the frequency and the length of the visits. Cronbach's alpha for the scores on this scale was 0.80

Negative response to mentor: this was a 3-item scale such as "when you are with your mentor, you feel angry". The Cronbach's alpha for this scale was 0.72.

Results: this was a 3-item scale assessing the amount of help and protection that the mentor provides. The Cronbach's alpha for this scale was 0.68

Table 5: Mentoring relationship indicators

Scale (Cronbach's alpha)	Composite items
Positive relationship with mentor(0.88)	3.Mentor gives you good advice
	5.Mentor understands your feelings
	10.When with mentor, feel happy
	16.Have learned a lot from mentor
	17.When with mentor, feel having a value
	18.Mentor helps you feel more confident
	21.Trust your mentor
Amount of time with mentor (0.80)	2.Mentor visits you enough
	9*.Mentor seems in a rush to leave
	19.When mentor visits, have enough time to talk
	24[1].Mentor visits only when you have a problem
Negative response to mentor (0.72)	7.When with mentor, feel angry
	15.When with mentor, feel bored
	20.When with mentor, feel sad
Results (0.68)	6.mentor has given you things to help your household
	11.Your mentor helps you access the help you need
	14.Your mentor helps protect you

* the order was reversed

3.2.1.2. Confirmatory factor analysis

The current study used a Confirmatory Factor Analysis (CFA) to further explore the underlying structure of the quality of YHH mentoring instrument. Like EFA, CFA is used to identify latent factors that underlie instrument scores. However, the two procedures differ with respect to the number and the nature of specifications that the researcher makes in advance. EFA is a data-driven, exploratory approach that does not require a prior specification of researcher's expectations. In contrast, CFA requires a priori specification of the number of factors, linkages among items and factors, and relationships among the factors. EFA is typically used in initial stages of instrument development to determine an appropriate number of factors and to

determine which items are [i]indicative of which latent factors. CFA, in contrast, is typically used in later stages of instrument development, after the underlying structure of instrument scores has been tentatively established based on EFA findings and conceptual considerations. Hence, CFA provides a test of how well a specified factor model fits the data.

Using SAS 9.1, a CFA was conducted to examine dimensionality and the fit of the model specified through EFA. The covariance matrix was used as the input for analysis. Several fit indices were used to evaluate the global fit of original and re-specified models. These included chi-square (χ^2), the ratio of chi-square to degrees of freedom (χ^2/df), Non-normed Index (NNFI), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and root-mean-square error of approximation (RMSEA). Additionally, indices of local fit were examined to ensure that all indicators specified to measure a given underlying factor had relatively high structure coefficients and that estimated factor correlations were not excessively high.

Structural equation modeling (SEM) analyses were performed using data from 201 children. Initially, 17 items were included in the model. A four-factor model of relationship, namely Positive relationship with mentor, amount of time with mentor, negative response to mentor, and result was hypothesized. Variables that served as indicators for each factor are given in the table10. The three factors were hypothesized to covary with one another. Parameters were estimated using maximum likelihood (ML) estimation.

3.1.2.3 Model development

Table 6 below includes the measures of model fit for the baseline YHH mentoring quality model.

The chi-square test was significant (P <0.0001), suggesting a rejection of the baseline model. In addition, all the alternative fit indices indicate that the model does not provide an acceptable fit (GFI: 0.7907; CFI: 0.7995; NNFI: 0.7699; RMSEA: 0.1001).

To improve the baseline model, we examined pattern and structure coefficients, the standardized residual covariance matrix, the squared multiple correlations, and the modification indices.

We eliminated three items within the positive relationship factor that had large (>2.0) standardized residual covariance and that crossloaded; this left us with four indicators for the positive relationship factor. An inspection of the modification indices revealed that the model fit would improve if one item on the amount factor were also eliminated. Following these specifications, the fit of the model was greatly improved. The results of the final model resulting from these specifications are displayed in the table 6 below.

The inspection of the chi-square for the final model suggests a rejection of the model. The Chi-square value for the final model (129.5585 with df=59) is still statistically significant (P<0.0001). However, the chi-square/df ratio for this model is about the desired 2.0 level (χ^2/df = 2.1). The inspection of the RMSEA (0.0773) and its associated 90% confidence interval (0.0593 to 0.0954) suggests fair approximate fit. Furthermore, the final model showed an acceptable fit as evidenced by alternative fit indices: GFI=0.9142, CFI=0.9341 and NNFI=0.9128, which exceeded 0.9

Table 6: Alternative measures of model fit for YHH mentoring quality indicator model: maximum likelihood results

	χ^2	df	p	GFI	CFI	NNFI	RMSEA	RMSEA 90% CI
Baseline model	321.3574	113	<0.0001	0.8372	0.8742	0.8486	0.0960	0.0838 - 0.1084
Final model	129.5585	59	<0.0001	0.9142	0.9341	0.9128	0.0773	0.0593 - 0.0954

GFI: Goodness of Fit Index; CFI: Comparative Fit Index; NNFI: Non-normed Fit Index; RMSEA: Root-Mean-Square Error of Approximation

3.1.2.4. Properties of the final model

The final model, including significant coefficients in standard form and the measures of reliability and validity is presented in table 7 below. The results reveal that all standardized loadings were relatively large (all of them are greater than 0.5 except one equals to 0.3) and significantly different from zero at 0.01 significance level. The final model showed relatively high levels of reliability of constructs. Composite reliability estimates were 0.846, 0.688, 0.718, and 0.642 for positive relationship with mentor, amount of time with mentor, negative response to mentor, and result factors respectively. Amount of time with mentor captured 45% of the variance, positive and negative relationship captured 58% and 47% of the variance respectively while result captures 38% of the variance extracted.

Table 7: Properties of final YHH mentoring quality indicator model

Construct Indicator	Standardized Factor Loadings	t-value[a]	Reliability	Variance Extracted Estimate
Positive Relationship with mentor. (F1)			**0.846135[b]**	**0.580528**
5.Mentor understands your feelings	0.7906	12.9594	0.625048	
10. When with mentor, feel happy	0.6611	10.1335	0.437053	
18.Mentor helps you feel more confident	0.8281	13.8834	0.68575	
21.Trust your mentor	0.7578	12.1914	0.574261	
Amount of time with mentor (F2)			**0.688276[b]**	**0.451671**
2.Mentor visits you enough	0.7604	12.0316	0.578208	
9.Mentor seems in a rush to leave	0.3269	4.4832	0.106864	
19.When mentor visits, have enough time to talk	0.8185	13.2406	0.669942	
Negative Response to mentor. (F3)			**0.718372[b]**	**0.465615**
7.When with mentor, feel angry	0.5444	7.2160	0.296371	
15.When with mentor, feel bored	0.6736	8.9924	0.453737	
20.When with mentor, feel sad	0.8042	10.6558	0.646738	
Results. (F4)			**0.642082[b]**	**0.379979**
6.mentor has given you things to help your household	0.5104	7.2978	0.260508	
11.Your mentor helps you access the help you need	0.5772	8.3836	0.33316	
14.Your mentor helps protect you	0.7391	11.1273	0.546269	

a. all t-value tests were significant at p<0.01
b. Denotes the composite reliability

The correlations among the factors F1 and F2, F1 and F4, and F2 and F4 were so high (Table 8) that it was reasonable to question whether we were really measuring four different constructs at all. Because high factor correlations call into question discriminant validity, it is possible that indicators measuring factors F1 and F2 or F1 and F4 or F2 and F4 do not represent two completely distinct constructs. That is, it is possible that these items assess themes within the same latent construct. Thus, we conducted several tests to assess the discriminant validity of different factors.

Table 8: Correlations among exogenous variables

Factor	Correlation estimate	Standard errors
F1 F2	0.91331	0.03423
F1 F3	-0.50610	0.07125
F2 F3	-0.31602	0.08580
F1 F4	0.94878	0.04284
F2 F4	1.00462	0.04632
F3 F4	-0.38737	0.09008

F1: positive relationship with mentor; F2: amount of time with mentor; F3: negative response to mentor; F4: result factors respectively

Table 9 provides the results of discriminant validity for every possible pair of factors. In each case, we performed the analysis when fixing the relative covariance at 1. The chi-square differences were not significant at 0.001 for two pairs of factors: F1; F4 and F2; F4. This indicates that the measurement model in which these factors were viewed as distinct but correlated constructs provided a fit that was significantly better than the fit provided by the unidimensional models. The chi-square difference tended to be significant at 0.001 for two the model including F1 and F2 while it was not significant for the remaining pairs of factors that involved F1 and F2. We performed also the confidence interval test and the variance extracted test.

The confidence interval test did not support the discriminant validity of factors F2 and F4 (The confidence intervals did include one). The discriminant validity of factors F1 and F2, F1 and F4, and F2 and F4 were not supported by the variance extracted tests because the variance extracted estimates for each of these pairs were less than the square of their respective interfactor correlation.

Table 9: Tests of discriminant validity

	Final model	factors for which discriminant validity is assessed					
		F1,F2[1]	F1,F3[1]	F1,F4[1]	F2,F3[1]	F2,F4[1]	F3,F4[1]
Chi-square	129.5585	137.1223	202.1398	131.0780	258.7946	129.5676	263.8652
Df	59	60	60	60	60	60	60
Chi-square difference	-	7.5638	72.5813	1.5195	129.2361	0.0091	134.3067
P-value	-	0.006	0.000	0.218	0.000	0.924	0.000
95% CI of the correlation	-	0.912138; 0.914482	-0.51118; -0.50102	0.946945; 0.950615	-0.32338; -0.30866	1.002474; 1.006766	-0.39548; -0.37926
Square of the correlation		0.834135	0.256137	0.900183	0.099869	1.009261	0.150056

F1: positive relationship with mentor; F2: amount of time with mentor; F3: negative response to mentor; F4: result

To determine whether the data structure could better be explained by an alternative model, we developed a competing model. Because interfactor correlations were high for some factors, we

decided to collapse pair with high inter-factor correlations into one factor that is combining factor 1, 2 and 4 into a single factor. A comparison of the competing models is presented in Table 10. The proposed model is a four-factor model, whereas the competing model is a two-factor model in which three factors, namely F1, F2 and F4 are collapsed into a single factor. As results in Table 10 show despite the high inter-factor correlations, the proposed four-factor model provides the best fit to the data.

Table 10: Competing model

	χ^2	df	P	GFI	CFI	NNFI	RMSEA
4-factor model	129.5585	59	<0.0001	0.9142	0.9341	0.9128	0.0773
2-factor model (F1, F2 and F4 collapsed)	151.1753	64	<0.0001	0.8527	0.9185	0.9007	0.0825

GFI: Goodness of Fit Index; CFI: Comparative Fit Index; NNFI: Non-normed Fit Index; RMSEA: Root-Mean-Square Error of Approximation
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3.2.2. **YHH Psychosocial wellbeing scale properties**

3.2.2.1. Introduction

Adult support and three scales including depression, grief and marginalization were used to measure the psychosocial wellbeing of YHH. While the depression were tested and validated in previous studies, grief, marginalization and adult support scales were developed and piloted in the Gikongoro mentorship study. Table 11 displays the properties of the YHH psychosocial wellbeing as measured during the Gikongoro survey.

 Adult support: A four-item scale was created to characterize the level of adult support experienced by youth heads of household. Each item was scored using a 5 point likert scale from "strongly agree" to "strongly disagree" with "don't know" scored in the middle (alpha=0.85). Variables included presence of: a trusted adult to offer advice and guidance; an adult who would assist in going to authorities for help; an adult who provides comfort when you are sick or sad; and an adult who you can always depend on. Scale scores ranged from 1 – 5 and a higher score indicates greater adult support.

Marginalization: this was a six-item scale created to characterize the level of marginalization experienced by youth heads of household. Each item was scored using the same 5 point likert

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scale (alpha=0.77). Variables included: people in this community would rather hurt you than help you; you feel isolated from others in the community; no one cares about you; people make fun of your situation; people speak badly about you or your family; the community rejects orphans. Scale scores ranged from 1 – 5 and a higher score indicates greater marginalization.

Grief: Grief was measured using a 7 item scale created and applying the same 5 point likert scale described above (alpha=0.66). Variables included: you think about the death of your loved one(s) almost all the time; you feel angry when you think about the death(s); you still can't believe your loved one(s) is/are really dead (or gone); your faith in God is shaken since the death of your loved one(s); since the death of your loved one, you have lost confidence in people; since the death of your loved one, life is meaningless. Scale scores ranged from 1 – 5 and a higher score indicates greater levels of grief.

Table 11: The properties of the YHH psychosocial wellbeing as measured during the Gikongoro survey

Scale (Cronbach's alpha)	Composite items
Adult support (alpha=0.85):	1.a trusted adult to offer advice and guidance
	2. an adult who would assist in going to authorities for help
	3. an adult who provides comfort when you are sick or sad
	4. and an adult who you can always depend on
Marginalization (alpha=0.77):	1.Community reject orphans
	2. No one cares about you
	3.Feel isolated from others in the community
	4.People in the community rather hurt than help
	5.People speak badly about you or your family
	6.People make fun of you situation
Grief (alpha=0.66):	1.think about death all the time
	2.feel angry when think about death
	3.still can't believe loved one is gone
	4.faith in God shaken since death
	5.lost confidence in people since death
	6.life is meaningless since the death

Depression: To measure depression, the complete Centers for Epidemiologic Studies-Depression (CES-D; Radloff, 1977) scale were used. The original measure applies a five point likert scale from "never" to "always." However, the Rwandan local language does not clearly distinguish between the mid-range points of "rarely" and "sometimes" utilized within the original scale, so

the likert scale options were collapsed to a 4 point scale (alpha=0.86). The range of possible scores is 0–60; a higher score indicates greater depressive symptoms.

3.2.2.2. Confirmatory factor analysis

Using SAS 9.1, a CFA was conducted to examine dimensionality and the fit of the psychosocial model specified through EFA. The covariance matrix was used as the input for analysis and examined the global fit of original model using the same indices as in the above analysis.

Structural equation modeling (SEM) analyses were performed using data from 201 children. Initially, 38 items were included in the model. Depression, grief, marginalization and adult support scales were included in the analysis. Variables that served as indicators for each factor are given in the table 12. The three scales were hypothesized to covary with one another. Parameters were estimated using maximum likelihood (ML) estimation.

Although structure coefficients were statistically significant for all the indicators, the specified model provided a marginal fit to the hypothesized data structure. The inspection of the chi-square for the model suggests a rejection of the model. The Chi-square value for the model (χ^2(588) =1010.83) is statistically significant (P<0.0001). However, the chi-square/df ratio for this model is below the desired 2.0 level (χ^2/df =1.72). The inspection of the RMSEA (0.06) and its associated 90% confidence interval (0.05 to 0.07) suggests fair approximate fit. Furthermore, all other alternative fit indices: GFI=0.78, CFI=0.80 and NNFI=0.78, were below the desired level (0.9).

Table 12: Alternative measures of model fit for YHH psychosocial wellbeing model: maximum likelihood results

	χ^2	df	P	GFI	CFI	NNFI	RMSEA	RMSEA 90% CI
Model	1010.832	588	<0.0001	0.7844	0.7987	0.7843	0.0607	0.0543- 0.0670

GFI: Goodness of Fit Index; CFI: Comparative Fit Index; NNFI: Non-normed Fit Index; RMSEA: Root-Mean-Square Error of Approximation

We examined factor intercorrelations to gain further insight into the structure of the YHH psychosocial wellbeing scores. The analysis revealed relatively low correlations among the factors: factors 1 and 2, r = 0.48; factors 1 and 3, r = -0.24; factors 2 and 3, r = -0.14; factors 1

and 4, r=0.32; factor 2 and 4, r=0.29; factor 3 and 4, r=-0.28. This finding indicates that different measurements used for psychosocial wellbeing are measuring different construct.

Table 13: Correlations among exogenous variables

Factor		Correlation estimate	Standard errors
F1	F2	0.48451	0.07061
F1	F3	-0.23635	0.07842
F2	F3	-0.13556	0.08866
F1	F4	0.31815	0.07649
F2	F4	0.29508	0.08530
F3	F4	-0.27572	0.08124

F1: depression; F2:grief; F3: adult support; F4: marginalization

Reliability and variance extracted

Composite reliability and variance extracted estimates of YHH psychosocial wellbeing indices are provided in the table 14 below. Although the psychosocial wellbeing construct exhibited high level of reliability as group, its validity was very low for most of its indicators. Indeed, composite reliability was above the required 0.70 for depression (0.88), grief (0.73) and adult support (0.83) scales. It was only 0.50 for the marginalization scale.

With regards to variance extracted, all indices did not exceed the 0.50 criteria recommended by Fornell and Larcker [15], except for the adult support index, for which the variance extracted estimate was 0.56.

Table 14: Variance Extracted Estimate

	Construct Indicator	Composite Reliability	Variance Extracted Estimate
	Depression. (F1)	**0.88**	**0.28**
	Grief (F2)	**0.73**	**0.32**
	Adult support(F3)	**0.83**	**0.56**
	Marginalization (F4)	**0.50**	**0.36**

3.3 Youth psychosocial wellbeing outcomes' predictors factors

Introduction

The analysis were conducted using STATA (version 10), the depression symptoms score from CES-D scale, grief, and marginalization were the dependent variables.

Bivariate Analysis was done after frequency distribution analysis. Bivariate analysis was used to compare how outcomes and independents variables correspond with one another. The multivariate analysis was used to see how the outcome variable changes with respect to the predictors. During multivariate analysis we were verifying if they are variables that are statistically related or not to the outcomes and conclude accordingly. In brief we explored the association of potential predictors to dependents variables using: Chi2, T-test, one-way ANOVA and regressions.

3.3.1. Psychosocial outcomes and demographic characteristics

At bivariate level, the analysis shows that gender (p=0.0368) and physical health (p=0.0378) were significantly associated with depression. However, there was no significant relationship between depression and other socio-demographics characteristics at 5% significant level.

Furthermore, a significant relationship was found between Grief and place of residence (p=0.0042) and between marginalization and gender (p=0.0468) while whether or not a YHH was in school was significantly associated with marginalization (0.0006)

Table 15: Psychosocial outcomes and basic demographic characteristics

VARIABLES (n, p.value)	Depression		Grief		Marginalization	
	F*/ ttest	P. Value	F*/ ttest	P. Value	F*/ ttest	P. Value
PLACE (ADP), (n=201) Nyamata Ngenda Gashora	1.42*	0.2445	5,62*	0.0042	0.72*	0.4877
AGE, (n=201) 11-16 17-20 21-24	0.46*	0.6348	0.86*	0.4254	2.81*	0.0627
gender (n=201) Male Female	-2.1026	0.0368	- 2.0006	0.0468	-0.5120	0.06092
Currently in the school Yes Non	0.3245	0.7459	0.0599	0.9523	3.50	0.0006
Education, (n=197) None Some primary Completed primary post primary	1.18*	0.3174	0.26*	0.8538	0.22*	0.8855
Physical health, (n=201) Excellent/g ood Fair/poor	2.0913	0.0378	0.6864	0.4933	-0.3926	0.6957

F is the F test which id used.*

Psychosocial outcomes and socio-economic characteristic

As shown in table 16, among socio-economic background, depression is associated with adult support (p=0.0045). Marginalization was also highly associated with adult support (p=0.0001) and Grief was significantly associated with source of water (p=0.0017)

Table 16: Psychosocial outcomes and socio-economic characteristic

VARIABLES (n)	Depression		Grief		Marginalization	
	F (Fisher) or ttest*	P. Value	F (Fisher) or ttest*	P. Value	F (Fisher) or ttest*	P. Value
Living alone, (n=200) Yes No	**-0.2356**	**0.8140**	**-1.7212**	**0.0868**	**-0.6997**	**0.4850**
Parent died during genocide, (n=201) Yes No	-0.9577	0.3394	0.2344	0.8150	0.2344	0.8150
Eat more than one meal per day, (n=201) Yes No	1.043	0.2982	0.8561	0.3930	0.1598	0.8732
Satisfied with amount of food, (n=201) Yes No	**1.6273**	**0.1053**	**0.3006**	**0.7640**	**1.0768**	**0.2829**
Source of water, (n=201) public tap well stream/river/rain	1.98	0.1413	6.58	0.0017	2.41	0.0922
light	0.9443	0.3462	1.3565	0.1765	0.3640	0.7163
Household owns livestock, (n=201) Yes No	1.1206	0.2638	0.9172	0.3602	1.0834	0.2800
Variable	*r*	*P. Value*	*r*	*P. Value*	*r*	*P. Value*
Time being YHH, y (n=201)	**0.1026**	**0.1474**	**0.0440**	**0.5383**	**0.0077**	**0.9143**
Number of assets owned, (n=199)	0.0380	0.5938	0.0783	0.2756	- 0.0671	0.3487
Number of material support received, (n=199)	0.0104	0.8835	-0.1038	0.1457	0.0042	0.9528
Adult support (n=199)	0.1865	0.0045	-0.0597	0.4059	-0.2746	0.0001

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Psychosocial outcomes and Quality of mentoring

In general the quality of mentoring does not influence the depression and marginalization at 5% significant level. There is a significant relationship were found between negative response to mentor and grief (p= 0.0006).

Table 17: Psychosocial outcomes and Quality of mentoring

VARIABLES (n, p.value)	Depression		Grief		Marginalization	
	r	P. Value	r	P. Value	r	P. Value
Positive relationship (201)	**-0.0967**	**0.1721**	**0.2423**	**0.0006**	**- 0.1233**	**0.0827**
Negative response to mentor (201)	0.0930	0.1890	**-0.0165**	0.8180	0.0510	0.4745

3.3.2 Multivariate analysis.

A. Grief and associated variables

Multiple linear regression models were used to evaluate the predictors of grief. We used stepwise selection with a probability of 0.05 to enter the model and a probability of 0.20 to be removed from the model. All variables described in section 3.1 were initially included in the model. Table 18 provides coefficients, their standard error and p-values for the variables retained in the final model. The results show that negative response to mentor (P=0.025), possession of means of light during night (p=0.048) and getting water from stream/river/rain (p=0.001) were associated to grief. An increase of one unit in negative response is associated with an estimated increase of 18% of grief. Getting water from stream increase 32% of depression compared to those who get water at the public tap. However, we did not find a significant relationship between grief and other variables.

Table 18: Grief and associated variables

Variables associated to Grief	Coefficient	SE	P.value
Time being YHH	0.0179938	0.0120228	0.136
Negative response to mentor	0.1805147	0.0797061	**0.025**
Living alone	0.1934768	0.1043969	0.066
Possession of means of light during night(=1)	0.2564768	0.1289158	**0.048**
Source of water(1=public tap): getting water from stream /river/rain	0.3288314	0.0978421	**0.001**
Being female(=1)	0.1780549	0.0933037	0.058
Being satisfied by amount of food eaten(=1)	0.1405694	0.1036454	0.177
Eat two meals per day(=1)	-0.18055	0.1118246	0.108
_cons	2.15304	0.2085217	0

B. Marginalization and associated variables

Marginalization was measured by 6 items, (alpha=0.77) to explore perceptions of isolation and stigma from the surrounding community. After controlling for all variables, analysis revealed that high level of adult support was associated with low levels of marginalization (p=0.001) and being currently in school (p=0.007).

Table 19: Marginalization and associated variables

Variables associated to marginalization (n)	Coefficient	SE	P.value
Source of water(1=public tap): getting water from well(=2)	0.264245	0.1552463	0.090
Being currently in school(=1)	-0.460006	0.1679024	0.007
Adult support	-0.2229212	0.0637748	0.001
Source of water(1=public tap): getting water from stream/river/rain(=3)	0.1555949	0.1172099	0.186
_cons	3.664174	0.2448981	0

C. Depression and associated variables

Gender, physical health and adult support were associated with depression. On one hand, being female was associated with high level of depressive symptoms (p=0.015). On the other hand, a good or excellent health (p=0.040) or high level of adult support (p=0.005) were associated with lower level of depressive symptoms.

Table 20: Depression and associated variables

VARIABLES (n)	Coefficient	SE	P.value
Gender Female(=1)	2.878	1.171	0.015
Source of water (1=public tap): Well (=2)	2.644	1.677	0.116
stream/river/rain (=3)	2.339	1.284	0.070
adult support	-2.015	0.709	0.005
Health(0= fair/poor): excellent/good(=1)	-2.690	1.303	0.040
Constant	29.175	2.804	0.000

IV. RESULTS DISCUSSION

4.0 Introduction

Youth Headed Households in Bugesera have been identified for our research in their mode of life as orphans and vulnerable youth. Standardized, reliable and valid measures of psychosocial mentoring measures for YHH population are essential. In Rwanda the present study is the first research in the assessment and validation of youth psychosocial mentoring measures among YHH.

The purpose of the research was to assess the psychometric characteristics of youth psychosocial mentoring measurement tool. The study assessed the reliability and the validity of measurements of the unique relational experiences of youth and their mentors and investigated how these experiences influence youth outcomes. The subsequent sections highlight the findings of research.

4.1. Socio-demographic characteristics of respondents

The first specific objective of this study was to describe the social-demographic characteristics and economic situation of Bugesera YHH in mentorship program. According to our research, more than half of YHH surveyed were females estimated at 55%; while males were estimated at 45%. Compared to RDHS results, the number of females is similarly greater than that of males which gives a picture of Rwanda situation. However, female YHH are more vulnerable than males YHH given the fact that they are more exposed to risks and dangers of HIV AIDS, pregnancy, sexual transmitted diseases, prostitution, poverty and many others.

The results of the survey indicated that the minimum age of respondents was 11 years. However, the majority of respondents (more than a half) were between the age of 21 years and 24 years. This can be explained by the fact that the majority of YHH lost their parent during 1994 Genocide (16 years ago). The YHH that are of particular interest are respondents between 11 years and 14 years which is 6.47% comparing to other groups. These youth need particular attention since they are still very young to care for other children or to be head of their

households. To get what to eat for survival is very difficult for them compared to other youth with the age above of 18 years.

The majority of YHH surveyed has attended school but more than a half didn't complete primary school; one out of four YHH completed up to 6 years of primary school and only one out of 12 YHH have reached post primary school. Even if the government of Rwanda opted for universal education YHH are still facing challenges as far as education is concerned. Thus youth under 24 years must be in school or the majority has to be in school but for YHH it is a different issue. These results are similar to those found during Gikongoro mentoring impact evaluation. However, Bugesera district has more YHH who completed primary school compared to YHH in former Gikongoro, where only 7% attended school for 6 years or more. The reasons of not attending or continuing the school in Bugesera district are similar to those founded in Gikongoro [4]. The main causes are lack of school fees and scholastic materials and domestic responsibilities.

A big number of YHH surveyed, reported living with other children whom they have to take care of. Average of children living with YHH is tree, this lead to that one third of YHH do not eat in favor of their siblings; however comparing to YHH at Gikongoro, statistics from Gikongoro mentoring program evaluation show that more than a half sacrificed their meals in favor of their siblings [4].

One YHH out three live alone. These youth face many problems of being alone in the house. This makes them spending much time thinking on themselves and finding themselves isolated. Normally, youth have many questions to discuss with adults persons. YHH living alone in the house misses someone to share with on different experience, to ask question, someone to listen carefully to them. These YHH have many questions on a number of issues they need to understand in the life. Actually, they need someone to whom they can identify themselves with. And since they live alone, they do not find their model-person to imitate in the life and their education is limited. Many YHH surveyed reported that they lost their parents or one of them due to 1994 genocide. Comparing to RDHS 2005 findings, 21 % of youth in Rwanda have lost one or both parents; this proportion is much higher in Bugesera District YHH [2]. Bugesera

District was one of the most affected regions that why many of youth surveyed were head of households.

One third of YHH surveyed in Bugesera district eat once a day or never eat the whole day. To grow up, the children must eat enough food of good quality. In general YHH are poor to the extent that they cannot find quality and enough food, and this is a very big challenge for their development and wellbeing. On average, a resident from Bugesera District eats twice a day, but it is difficult to find YHH eating twice. The lack of Food was not only observed in Bugesera District but also in the former Gikongoro. In Gikongoro, where almost a half of YHH reported eating only once a day in the last week preceding the survey [4]. YHH need support to satisfy their primary needs like food, clothes, etc. In Bugesera District, even those YHH who ate were not satisfied with the amount of food eaten; one of three was not satisfied with the quantity of food taken. One out twenty had not eaten the day before the survey. Bugesera district is one of districts that often face the problem of food shortage due to insufficient rain. Interventions to be taken to improve living standards of these children should focus on the problem of food shortage. Most of them being aged between 21 years to 24 years enrol vocational skills jobs or small trade to increase their incomes that will allow them getting food and other primary needs.

Hygiene is also an important issue that requires much attention among children in YHH. There is a big number of YHH who do not have pit latrine (two out five). This was not only observed in Bugesera Ditrict, the same problem was also reported among YHH in Gikongoro, where one YHH out three YHH don't have pit latrine [4]. As far as sanitation is concerned, the YHH in Bugesera face the problem of accessing adequate and clean water and those who can access it do not boil it. Seven YHH out of ten Youth never drink boiled water, this youth are at risk of low hygiene-related diseases. Areas that do not have access to clean water, people use water from dams, and rain (this is Bugesera case). Thus any strategy aimed at protecting water and sanitation for Bugesera district will prevent these youth from low hygiene-related diseases.

YHH in Bugesera District are very poor and the support they receive is not sufficient as compared their poverty. They have mainly been supported in two main ways: these are psychosocial support rarely and health insurance. Concerning asset possession like having mattress, blanket, clothes, shoes… the average is 4 assets per YHH. More than a half of YHH

surveyed don't have livestock. The lack of animals to breed leads to the lack of fertilizers and all these contribute to low agricultural production. The main source of income for Bugesera YHH is Faming-selling produce, which is done by majority (more than a half) of YHH surveyed. In brief the YHH in bugesera district have very low income (they are poor). In additional to mentorship program a project designed to increase their income would help them to improve their living.

4.2. The psychometric properties of youth psychosocial mentoring measurement tools

The second specific objective of this survey was to assess the psychometric properties of youth psychosocial mentoring measurement tools. In this section, using data collected from YHH in Bugesera mentorship program, we investigated the psychometric properties of quality of mentoring and psychosocial measurements used in the 2006 study on the impact of YHH mentoring on their psychological wellbeing conducted in Gikongoro, former province of Rwanda.

After exploring the underling structure of quality of YHH mentoring instrument using a confirmatory factor analysis(CFA); the new instrument developed was composed by 4 items for positive relationship and 3 items for each of the other factors (amount of time with mentor, negative response to mentor and results). For positive relationship with mentor scale tree items were removed in the previous scale used in Gikongoro study, and to amount of time spent with mentor scale one item was removed but for the rest (negative response to mentor, r and results) was remaining the same as used in Gikongoro study.

The results provide support for the four-factor structure as well as initial evidence for internal consistency reliability of YHH mentoring quality scores. The final model showed relatively high levels of reliability of constructs. Composite reliability estimates were 0.846 for Positive Relationship with mentor, o.688 for Amount of time with mentor, 0.718 for Negative Response to mentor and 0.642 for Results. However, the correlation between some of the factors is high, which calls into question into these factors. It is important to note that the analyses of alternative factors supported this four-factor model.

For Psychosocial outcomes and adult support, CFA was conducted to examine dimensionality and the fit of the psychosocial model specified through EFA. Although the psychosocial

wellbeing construct exhibited high level of reliability as group, its validity was very low for most of its indicators.

4.3. YHH mentoring outcomes' predictors.

The third specific objective was to evaluate the effect of youth and mentor relationship experience, socio-demographics characteristics, living conditions and economic situation on youth psychological wellbeing outcomes. It was found that the youth and mentor relationship experience does not have an effect on depression, grief and marginalization. But, the small effect of mentoring on those psychosocial outcomes was found in Former Gikongoro study.

The survey among YHH in mentorship program revealed a high level of depression symptom. After controlling for all social demographics and economic situation variables, the high levels of depression was associated to the fact of being female and low levels of adult supports. These results are the same as what found in Gikongoro survey where, depression was associated to being female. For this research(done in Gikongoro) the factors associated to depression were include also high level of education, living with others, having parent killed during 1994 genocide, poor health, having few assets, and eating one per day [4]. But these factors in Bugesra YHH in mentoring program were not significant associated to depression. However there is no significant relation between depression and other socio-demographics characteristics**.** Also the level of depression among YHH in Bugesera was the same as they are for YHH in Gikongoro where the mean score on the Center for Epidemiologic Studies Depression scale was 24.4, exceeding the most conservative published cut-off score for adolescents. This is similar for YHH in bugesera district where the mean is 24. The factors associated with depressive symptom for Bugesera YHH are different with those associated to depression among YHH in Gikongoro [4]. A youth may rate their support as poor due to perceived depression levels if they feel the burden of responsibility upon them. In general, older young may feel that as part of the culture it is their task to take care of younger siblings in the absence of a parent or caregiver in the home. This burden of responsibility may mean that school youths are forced to abandon their education and this may have an impact on the child's impression of what the future implications will be. In addition, abandoning studies may also mean that a youth loses his comrades and support system that was in place when he was attending school. A youth (especially a female) may also have to

take up work that is harder than expected and puts a great strain on the physical and emotional well-being of the youth such as farm work, gardening, household chores such as fetching water, and even manual labor for pay.

Marginalization was measured to explore perceptions of isolation and stigma from the surrounding community. After controlling for all variables, analysis revealed that high level of adult support was associated with low levels of marginalization (p.value=0.001) and being currently in school (p=0.001). Where support is not provided by adults to youth, a Youth headed household may feel abandoned and disassociated from the community. He /she may feel manipulated and robbed of his childhood as he will generally be forced to do work not generally required of children. He may experience stress associated with the responsibility put upon him to support the household and younger siblings. He may feel low self-worth due to the fact that nobody has come to assist him and his family – and therefore, in his own eyes, he feels less valued as a person and as a child. He may even feel anger associated with having no right to a childhood, no time to play; especially when seeing his counterparts going to school or playing together in the school yard.

Youth may feel marginalized where they are not in school, and are aware that there is a separation between themselves and the other youth in the community. As youths are forced to head households, the tasks and activities of their daily routine must take on more adult roles and therefore opportunities to play and interact with other children may elude them. In addition, children who are heading households, especially those taking on adult roles and caring for younger children may come to feel that they have little in common with their counterparts who have their parents caring for their needs and who can focus on the affairs of childhood without overwhelming responsibilities.

Likewise, for those children who have greater adult support; in those cases, children may have more of an opportunity to live a childhood and not enter prematurely the realm of adult life and responsibility. This support from other adults in the community will allow for them to live more as 'normal' children live, without stepping out of the childhood role prematurely into an adult role within the community. This support and lack of need to take on a new role may assist a child to not feel marginalized by the children in the community.

The results show that there is a significant relationship between high levels of grief and negative response to mentor (p.value =0.02), source of water (p. value= 0.044) and light meaning (0.036). However this result was not similar to any other results for different study done on grief. Because of few visits conducted by mentor, mentoring do not contributed to the decrease of grief. Impression of grief may be increased where the youth have more difficulty accessing water than where water is readily available. Since water is such an important commodity, the more time a youth spends seeking water, the more he/she will feel despair as the task takes up the hours of the day. Depending on the family's practice in accessing water when the parents were in the household, the increase in the level of difficulty in securing water after the death of the parents may elevate the grief and stress levels of the child. For example, if the family was well able to pay for water delivery, or pay at a village pump, but now, due to lack of funds the youth is forced to access water from a local mare or open water source, this can have a profound effect on the child, even as he understands the increased demand on him to provide water, the difficulty in securing it, and the quality of the water itself.

Female children may have reported higher levels of grief as an association with culture. Since many cultures dictate that boys are to be strong, not cry and not express their emotions, female children are generally more open with expression emotions and sharing their difficulties. It may not be known what level of grief a male child may be suffering as he may avoid conventional ways of expressing grief such as discussion personal issues or crying outwardly.

In bivariate analysis grief was associated to negative response to mentor. Negative response to an assigned mentor may also have an impact on grief. In some programs like mentoring youths are encouraged to choose their own community care givers to assist in the bonding process between the mentor and the children in the home. Where a child feels uncomfortable or not adequately supported by a caregiver or mentor, the child may experience a greater degree of grief noticing in particular the differences in the way they are treated by their parents versus a mentor with whom they do not feel comfortable or loved.

 It was observed that mentoring relationship experience does not contribute to the reduction/ decrease of psychosocial outcomes: depression, grief and marginalization of YHH in mentoring program in Bugesera District. This may be explained by the fact that the counseling/

psychosocial support and other support processes that were initiated by mentoring program, was not well implemented or stopped suddenly leaving unhealed scars among them. Initially, mentoring program was designed in a way that each area in which it is being implanted has a staff in charge of it, to monitor the mentors' work. But this was compromised by the restructuring that took place in WV leaving those positions unfilled at ADP level as well as at national level. Thus the YHH who were in program waiting support from mentors and world vision, were high disappointed/ saddened/dissatisfied. The usual person who took care for them were relaxing thinking that these YHH have someone else trained to take care of them. So they were more vulnerable than those who were not in program.

V. CONCLUSION AND RECOMMANDATION

General Conclusion

According to Rwanda National Policy for Orphans and Vulnerable Children [5], the YHH in Bugesera mentoring program are considered to be at risk and require particular and special protection and/or assistance than psychosocial support given in mentoring. Because these youth are living with other children in households, they are sexually abused especially girls, they work (before the legal working age) for getting what to eat and are in very poor households, etc.

Our analysis revealed that Bugesera YHH in mentorship program, yet the support given by mentors more than a half of them, present depressive symptoms. Only eight percent have attended secondary level of education. The main reasons of dropping out the school were lack of schools fees and materials; and being in charge of domestics activities. They have a very low level of economics. Majority of YHH surveyed (63.83%) reported living with other children whom they have to take care of. Average of children living with YHH is 3 this lead to that thirty-nine percent of YHH do not eating in favour of their siblings. A non-negligible number of YHH live alone 36.17%. More than a half (57.71%) of youth surveyed was heading households for more than 3 years (before the mentorship program in Bugesera).

It was confirmed that grief and marginalization measurement are valid in Bugesera YHH: the reliability coefficient>=0.72 After exploring the underling structure of quality of YHH mentoring instrument using a confirmatory factor analysis (CFA); the new instrument developed is composed by 4 items for positive relationship and 3 items for each of the other factors (amount of time with mentor, negative response to mentor and results). This final model showed relatively high levels of reliability of constructs.

We also found that mentoring quality does not have effect on psychosocial wellbeing outcomes: The results show that negative response to mentor, possession of means of light during night and getting water from stream/river/rain were associated to grief. However, we did not find a significant relationship between grief and other variables.

Marginalization was measured by 6 items, (alpha=0.77) to explore perceptions of isolation and stigma from the surrounding community. After controlling for all socio-demographic characteristics variables, analysis revealed that adult support was associated with low levels of marginalization and being currently in school.

Gender, physical health and adult support were associated with depression. Being female was associated with high level of depressive symptoms and a good or excellent health or high levels of adult support were associated with lower level of depressive symptoms.

Recommendations

The main causes of not attending or discontinuous the schools are lack of school fees and scholastic materials and domestic responsibilities. Thus any intervention or project proposal for their well being should consider those reasons to help or assist these YHH. In addition to psychosocial support, world vision mentoring program should be more helpful if they add on this, the provision of school fees, materials and look how to assist their siblings by creating for them the Early Childhood developments centers or by advocating for these children living in households headed by youth; so that these YHH be able to continue with their studies.

We recommend to World vision that mentoring program would be integrated into ADP project and coordinated or monitored as other projects in the area. Do not consider mentoring as a separate project which need own staff.

WV Rwanda would make sure that what is promised to youth is done in good way with quality. To help these YHH in mentoring WV would integrate them among OVC project beneficiaries, so that they can benefit to vocational training and graduation kit which will support them to start the with small income generating activities. YHH have to be added in target group of community health workers/ home visitors or caregivers who normally was targeting families with people living with HIV and AIDS.

We recommend to world vision, especially Bugesera ADPs, to ensure that mentors have a person to whom they will report to the dairy life of YHH, who monitor the activities done by mentors. And these mentors have to have more training on child right, advocacy for vulnerable youth, etc.

WV would have a mechanism to emphasize on other important component for good success of mentoring, which is amount of contact- more contact is better- between mentor and YHH. Because many of YHH reported that their mentors visit them once by month or by two months or by more months.

There is general agreement that mentoring programs potentially offer the greatest benefits for at-risk youth [14]. However, there have not been enough studies conducted to determine what risks are most strongly caused by mentoring programs: what is the negative effect of mentoring. So the dup research can be carried out to found out the negative effect of mentoring program and the cost of establishment of a sustainable mentoring program. We recommend an advanced study in other population to confirm the model or validate of mentoring quality scales.

We reviewed the Quality of mentoring measurement so we recommend to researchers an advanced study in other population to confirm the model or validate the scale.

YHH living alone in the house misses someone to share with on different experience, to ask question, someone to listen carefully to them. These YHH have many questions on a number of issues they need to understand in the life. Actually, they need someone to whom they can identify themselves with. And since they live alone, they do not find their model-person to imitate in the life and their education is limited. They are in need of companionship. So we recommend to research, to world vision or other organization concerned by wellbeing of children to carry out a research on attitudes of youth towards living in settlements. And sensitize neighbors on YHH care; on how they can contribute by sending one of their children to help them or live with the YHH even to pass only one night with them; this would help YHH get out of loneliness and give them opportunity to have someone to share their joy and sorrow.

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APPENDIX

Appendix1: Research variables definition

Table 21: Research variables definition

N0	Variable	Variable definition
	I. Youth psychological wellbeing measures / Mentor psychosocial measures	
1	**Depression (a 20-item Index; range: 0-3);**	The scale contains 20 items, which assessed the depression level of youth. Scores range from zero to three. High scores indicate higher levels of depression symptoms. Youths reported on how during the past week they felt on the 20 items. Example: being bothered by things that don't usually bother them, did not feel like eating …
2	**Grief (a 6-item index, range: 1-5)**	Is measured by a 6 item scale. Scores are ranged from one to five. High scores indicate higher levels of grief. The items included: 1.thinks about death all the time, 2. feels angry when thinks about death, 3. Still can't believe loved one is gone, 4. Faith in God shaken since death of loved one, 5. Lost confidence in people since death of loved one and 6. Life is meaningless since the death.
3	**Marginalization (6-item index, range: 1-5);**	The scale contains 6 items which are (1) Community rejects orphans, (2) No one cares about you, (3) Feel isolated from others in the community, (4) People in community rather hurt than help, (5) People speak badly about you or your family, (6) People make fun of your situation. The score ranged from 1-5 and higher score indicate high levels of marginalization.
4	**Adult support (4 item scale)**	Is a four item scale, which characterizes the level of adult support experienced by YHH. Variables included presence of: a trusted adult to offer advice, guidance, adult who would assist in advocacy...
	II. Quality of mentoring relationship measures:	
5	**Positive relationship with mentor**	Youth participating in the survey rated the quality of their mentoring experience. After factor analysis the final model was composed by 4 items: Mentor understands your feelings, When with mentor you feel happy, Mentor helps you feel more confident and Trust your mentor. The scores are ranging from 0 to 4; high score indicate higher positive relation levels with mentor.
6	**Amount of time with mentor**	Scale is composed of 3 items assessing the adequacy of the frequency and length of the visits. YHH rated the amount of time with mentor during the mentoring experience: Mentor visits you enough, Mentor seems in a rush to leave, and when mentor visits have enough time to talk. Scale score range 0 to 4, high score indicate higher frequency of visits.

N0	Variable	Variable definition
7	**Negative response to mentor**	This was measured by 3 items: When with mentor, feels angry; feels bored; When with mentor feels sad. Scale score range from 0 to 4, high score indicate higher levels of feeling angry, sad and bored when a YHH is with mentor.
8	**Results**	This is a 3-item scale assessing the amount of help and protection that the mentor provides: Your mentor has given you things to help your household, Your mentor helps you access the help you need, and Your mentor helps protect you. The scale scores range from 0 to 4, high scores indicate higher level of protection and amount of help provided by a mentor.

III. Social - demographic characteristics

9	**Place (ADP)**	Is the Area in Bugesera District where the mentorship program is implemented, in WVR's Areas Development Program named Nyamata, Ngenda and Gashora ADP
10	**Age**	Age of responders classed in 4 groups: 11-16years, 17-20years, and 21-24 years
11	**Sex**	It is about gender of participants in the study: Male or female
12	**Education**	This was defined an educational level: None (Ever attended school); Some primary (between 1 and5 year of primary school); completed primary, (those who *achieved all required* years of primary school); post primary (those who were able to attend secondary level).
15	**Time being YHH**	Duration of time the youth has been head of household from the time both parents left, either by death, prison or left in search of better life: This ranges from 1 to 16 years.
16	**Genocide orphaning**	This is the status of children who lost their parents during the genocide. It is a categorical variable with four options: (1) Parent did not die during genocide, (2)Both parents died during genocide, (3)Mother died during genocide, (4)Father died during genocide.
19	**Sexual and risk behaviors**	Among YHH surveyed, we assessed the knowledge of way of HIV & AIDS prevention and we asked if the YHH drunk alcohol (once a month, more or never drink alcohol).
21	**Religion**	Any, Catholic, Muslim, Adventist, protestants (of all types), and other religions.
22	**Matrimonial status**	Is the situation of being either Single, married regalement, illegally married, separated, divorced, widowed(for mentors)

Appendix2: YHH questionnaire

CHH
questionnaire.doc