ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

Validation of Amharic Version Coping Health Inventory for Parents (CHIP- Am) Among Parents of a Child with Cancer at Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2021.

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VALIDATION OF AMHARIC VERSION COPING HEALTH INVENTORY FOR PARENTS (CHIP AM) AMONG PARENTS OF A CHILD WITH CANCER AT TIKUR ANBESA SPECIALIZED HOSPITAL, ADDIS ABABA, ETHIOPIA. A VALIDATION STUDY, 2021 2021.

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I would like to declare that this thesis work is my own work. All the sources of information I have used in this thesis cited in the reference section fully. In addition, this project work not submitted to another institution or journal for purpose of any award.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAU- Addis Ababa University

Am- Amharic

AMOS- Analysis moment of structure

CFA- Confirmatory factor analysis

CFI- Comparative fit index

CHIP- coping and health inventory for parents

CI- Confidence interval

CP- coping pattern

DF-Degree of freedom

EFA-exploratory factor analysis

EFC- emotion-focused coping

FA- Factor Analysis

IARC- International Agency for Research on Cancer

LMICs- low-income and middle-income countries

PA- Parallel analysis

PAF- Principal Axis Factoring

PCA- Principal Component Analysis

PFA –principal factor analysis

PFC- problem-focused coping

QoL- the quality of life

RMSEA- Root mean square error approximation

SPSS- Statistical Package for Social Sciences

SRMR- Standardized root mean residual

TASH-Tikur Anbesa specialized hospital

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Abstracts

Background: Coping Health Inventory for Parents (CHIP) was developed to measure parents' coping patterns in chronically ill care. It evaluates parents' understanding of their coping responses when they have a severely and critically ill child to cope with family life. Effective parental coping mechanism during childhood cancer enables parents to avoid psychopathological problems that could have adverse psychosocial effects on patient care and interactions with healthcare providers. CHIP has a 45-item tool designed to measure parents' response to family life management and was commonly used in pediatric chronic diseases.

Objectives: To assess the Amharic version validity of coping health inventory for parents

Methods: Institutional-based cross-sectional study design was applied to validity of coping health inventory for parents, Amharic version (CHIP Am) among parents of a child with Cancer. Purposive and consecutive sampling techniques ware used to recruit the participant. The tool translated to Amharic by individuals' who are experts by translating English to Amharic and commented by mental health expert. Analyses done by using SPSS version 26.0. In addition, AMOS version 24 Descriptive statistics was used to report socio-demographic characteristics, medical characteristics, and CHIP performance status. Data adequacy for EFA was assessed by Kaiser-Meyer-Olkin (KMO) sample adequacy was 0.75 and Bartlett's sphericity test was at ($\chi 2$ = 2103.85, d.f =378, $p < .001$). Validity of the scale evaluated with EFA and CFA. For each of the factors, Cronbach's alpha, composite reliability and AVE values computed to determine the internal consistency of the Amharic version of CHIP

Result: The factor structure of the Amharic version CHIP-45 examined using principal axis factoring with Varimax rotation to explore the factor structures. Twenty-five items removed from the original CHIP-45 items, and 20 items were loaded into five factors. The resultant five -factor model explained 65% of the variance in the Amharic version CHIP-20. Cronbach's alpha and composite reliability calculated to determine the internal consistency reliability of the factors in the Amharic version CHIP-20 and shows good internal consistency with Cronbach's alpha value of .70. EFA and AVE, indicates the convergent validity. CFA suggests that measuring indices of the five-factor structure of CHIP-20 had an acceptable fit model.

Keywords: Childhood cancer, coping, parental coping, family caregiver burden, CHIP validity, and cross-cultural validation of Psychometric tools.

1. Introductions

1.1 Background

When selecting measurement instruments for clinical practice, and research studies, reliability and validity are key psychometric property considered by advanced nurse practitioners and researchers. Instruments must be reliable and produce valid results so that clinical assessments, project evaluations, and research results are trustworthy(1)

The Translation and cross-cultural adaptation of research tools or measurement scales is common practices in the nursing to decrease shortage of measurement tools. Moreover, it gained attention within the scope of current scientific research, as a means for the development of practice and science in nursing (2) Scales are indicators of latent constructs; “that measure behaviors, attitudes, and hypothetical scenarios we expect to exist because of theoretical understanding of the world, but cannot assess directly”(3)

Coping assessment and the promotion of adaptive coping strategies are important in clinical practice as pediatric cancer diagnosis and treatment decisions are associated with stress, anxiety, and depression among parents, which result in adverse psychological, socio-economic, and family functioning outcomes (7,8). They also face serious challenges, including increased medical-related costs, difficulties with childcare, and inhibited employment prospects. These challenges are linked to adverse social and mental health outcomes, proving the need to recognize and help parents cope successfully(6–8). Effective coping after a child is diagnosed with cancer predict favorable results for a child patient, siblings, and parents (9,10).

Coping is described by Lazarus, Richard S, et al. (19 87) As "'Cognitive and behavioral efforts that are continually evolving to manage specific external and internal requirements evaluated as exhausting or exceeding the person's resources'" (11). The suggested two theories were (a) Active coping, which incorporates positive thinking, logical analysis, and relaxation. And (b) the transactional model "represents the person's changing cognitive and behavioral efforts to manage or tolerate the external or internal demands perceived as taxing the person's resources" (12,13).

Identifying parents' coping patterns and quantifying their coping performance with valid and reliable tools is necessary to help successfully cope. Coping Health Inventory for Parents (CHIP) is one of the tools that assess parents' coping pattern. The CHIP developed to measure parents' coping patterns in the care of chronically ill children. CHIP, initially published in 1983

by Hamilton McCubbin and his associates, evaluates parents' understanding of their coping responses when they have a severely and critically ill child to cope with family life(14).

Research shows the necessity of reliable and valid tools cross validated among varied cultural sections of the population and other languages. Confirmation of the Validity and reliability of tools is a prerequisite for assuring the integrity of study findings (20, 21). Therefore, the goal of this study is to validate the psychometric property of the Amharic version of coping health inventory for parents of a child with Cancer at Tikur Anbesa Specialized hospital

1.2. Statement of the problem

One of the primary sources of support for children with cancer is their parents, but it is dependent on how they manage to cope with diagnosis and outcomes. Childhood cancer negatively affects parents' physical, psychological, socio-economical, behavioral, and family functioning(5,15).

Principally pediatrics care is family-centered; parents act as surrogate decision-makers regarding their child's care. This increases parental distress, directly related to a greater degree of anxiety, depression, and increased family conflicts(16). Psychopathologies, such as depression, are prevalent among these parents.

For instance, 23.3% of parents caring for their child at the pediatric oncology and hematology unit of TASH suffer from depression (17). Psychopathologies affect the quality of care given to the child due to communication difficulties and parents' Quality of Life(8,10,18).

Since parental coping during childhood cancer enables parents to avoid psychopathological problems(8), it contributes to the child's psychological well-being and healthy outcome (19,20). Besides this, the epidemiologic trained childhood cancer in sub-Saharan Africa is changing and increasing (4), and the prognosis of remaining poor in Ethiopia(21). The Ethiopian ministry of health laid strategies to upscale essential positive family-centered health practices(22). However, in Ethiopia coping pattern of parents related to childhood cancer and other chronic illness not broadly studied. This may be due to the unavailability of reliable and validated tools.

A valid psychometric tool easily understood by the patient in the language he/she speaks is required to measure and identify coping patterns of parents in the context of child's chronic illness(23). Tools validated in English and elsewhere should not be used as cultural differences; social structure, philosophical and religious beliefs play a role in coping which in turn determine the psychometric property of the tool and its underlying content. Thus translating and validation of psychometric tools is necessary before utilization(23,24).

Cross-cultural validation creates a version of the original scale in a target language that ensures the resulting measure describing the impact of a disease or its treatment in the context of different cultures but in a similar manner(25).

Knowledge and evaluation of parents' coping patterns with proper tools help the healthcare teams to provide holistic family-focused care, design-focused, and personalized interventions and enhances better-coping skills that improve well-being and quality of life for both the child

and parents. Besides, it also improves the care provider and family communication and addresses parents' psycho-social needs (23,26,27).

The CHIP was developed by McCubbin et al. (1983), a 45-item tool designed to measure parent's response to the management of family life when they have a child who is seriously or chronically ill(14). CHIP validated in several languages, including English, German, Hindi, Japanese, Kannadan (Karnataka State - South India), Korean, Malay, and Spanish, for which psychometric properties have been established(28). The (CHIP) is the most used in pediatric chronic diseases(27).

After doing an extensive search, and could not find a psychometric tool validated in the Ethiopian social and cultural context to assess parental coping. Despite the usefulness and reputation of CHIP as coping measurement tool for parents to date, no version of the CHIP validated in Amharic with an accompanying report of its psychometric properties. Also, Amharic is the working language of the federal democratic republic of Ethiopia. Considering this, the Study will evaluate the Validity of CHIP to determine whether parental coping behaviors acknowledged in this measure are appropriate to parents' coping activities in the care of their children diagnosed with Cancer at Tikur Anbesa specialized hospital, Addis Ababa.

1.3 Significance of the Study

Validation of the Amharic version (CHIP Am) is vital for cancer ill children and parents to assess and identify their coping patterns. This Study's finding may help researchers and program managers use validated tools to measure Parental coping in childhood cancer and other childhood chronic illnesses in different studies of similar settings. This study may contribute to the body of knowledge on the psychometric tool validity across different cultures and countries. Having validated tools may also benefit parents, the ill child, and families to get comprehensive care and communicate problems to health care providers. Additionally, these tools may help to collect information that can be communicated to future parents caring for their ill child to enable them to anticipate and understand the consequences of their child's illness.

Furthermore, having validated tools assists in determining concealed problems that make parents worry and increase care provider parent communication. Moreover, these tools may help nurses, social workers, and physicians to consider parents' perspectives while deciding on interventions and treatment options.

2. Literature Review

Literature searched using PubMed, Google Scholar, and Google search engines. Childhood cancer incidence, coping, parental coping, family caregiver burden, CHIP validity, and cross-cultural validation of Psychometric tools are used as a keyword to search the literature. Relevant works written in English reviewed. The first section of this literature review focuses on coping. The second section deals with CHIP and its usability. The third section focuses on the Psychometric property of CHIP.

2.1. Coping and Parental Coping overviews

Cancer is a type of chronic illness that causes a significant challenge for parents. The disease has physical, psychological, socio-economic, and behavioral effects on patients and their parents, making them vulnerable to a high degree of stress, anxiety, depression and decreasing their quality of life and family functioning(29). An effective coping mechanism during chronic disease allows parents to avoid psychopathological problems that could have negative psycho-social consequences on patient care and interactions with medical service providers(30)

Lazarus, Richard S, et al.(19 87) define coping as the person's changing cognitive and behavioral efforts to manage, reduce, or tolerate the external or internal demands perceived as challenging the person's resources(11). They also propose two strategies of coping, (I) problem-focused coping (PFC), (II) emotion-focused coping (EFC). The choice of specific coping strategies depends on the stressor's controllability and the degree of challenge, harm, threat, or loss posed by the stressor before deciding what type of coping strategy to use in a specific situation (13,31,32).

Both coping strategies include approaches to minimize stressors or emotions caused by internal or external requirements. PFC method often used when people believe a situation is likely to change. PFC methods include active awareness of stressors, acceptance, and cognitive analysis, planned problem solving, and seeking social support. Studies relate PFC to positive outcomes such as psychological well-being, increased self-care, and improved health-related quality of life.(33,34)

Emotion-focused coping include escape-avoidance, distancing, minimization, mental and behavioral disengagement, venting, and denial. The EFC strategies associated with adverse outcomes, such as psychological distress, decreased health-related quality of life(33,35)

Evidence has shown a link between PFC and overall well-being and decreased perceived stress. Parental problem-focused and socially supported coping strategies are protective against the psychologically healthy problem of parent and their child. Despite being adversely affected, a process of positive adaptation involves developing strength and skills to overcome the disease's adverse effects (19,36).

As coping behaviors positively impact both children's and parents' well-being, there is a compelling need to identify meaningful ways to evaluate how parents respond to children's challenges with cancer (37). Coping scales can be utilized to measure parents' stressors for a child with an illness or other impairments. The CHIP is a situation-specific tool developed to measure parents' coping patterns in chronically ill children's care(27).

2.2. Coping Health Inventory for Parents (CHIP)

CHIP is a widely used psychometric tool that evaluates parents' coping patterns in the context of pediatric chronic diseases (27). The CHIP developed by McCubbin et al. (1981). It was an 80-item checklist developed to measure the effectiveness of parents' coping responses to family life management when they have a chronically sick child. A revised version of the CHIP with 45 items self-report inventory for assessing coping patterns was validated by McCubbin et al. (1983).

The items divided into three main categories: Coping Pattern I Focus on maintaining family integration, co-operation, and optimistic definitions of the situation (19 items);

Coping Pattern II deles with maintaining social support, self-esteem, and psychological stability (18 items); and

Coping Pattern II understanding the medical situation by communicating with other parents and consulting medical staff (8 items) Each item is rated from 0 to 3 based on the helpfulness of the coping behavior(14,28)

In several studies, the CHIP was used to measure coping patterns of parents of a child with different diagnoses and health conditions, for instance, autism spectrum disorders(38), Cancer(24,39), Disabilities(40), Mitochondrial disease (41), and chronic diseases and cystic fibrosis (14). Despite the usefulness and importance of a coping measuring tool for parents and health care providers, no version of the CHIP validated in Amharic with an accompanying report of its psychometric properties reported to date.

2.3. Psychometric property of coping health inventory for parents (CHIP)

Psychometrics is a field that focuses on how latent variables such as cognition, knowledge, and personality is correctly measured. It is concerned with the objective and subjective measurement of the interests, values, and attitudes. Psychometric property conventionally involves assessing reliability and validity (42). Assessing reliability involves demonstrating that the measurement tool generates consistent and hence reproducible results. The tool produces the same results each time it is used in the same setting, with the same subjects. Which includes inter-rater reliability, test-retest reliability, and internal reliability. Assessing validity is answering whether the tool is measuring what it is intended to measure. Includes content validity, criterion validity, and construct validity. In evaluating a reported set of research data and its analyses, similarly, it is crucial to assess the overall internal validity of the attendant study design and the external validity (generalizability) of its findings(43)

The original version of the coping health inventory for parents developed by McCubbin HI et al. (1983). It validated using classic test theory reported that each of the subscales shown to possess adequate internal reliability (Cronbach alpha = 0.79, 0.79, and 0.71 respectively) and validity(14).

The Chinese version of the CHIP contains 45 items, each corresponding to a coping behavior in three subscales the same as the original version has a Cronbach's an of .91 and a content validity index of .82, thereby indicating that it was reliable, valid, and applicable to China(39). The Korean version of CHIP contains 36 items with three subscales, and the reported that The overall reliability coefficient 0.88 and Cronbach's alpha for the 36-item scale was 0.92 (44).

Aguilar-Vafaie (2008), validating and adopting CHIP in Iranian social, cultural, and religious contexts in adolescents diagnosed with cancer, reported that exploratory factor analysis yielded a 13-item, 3-factor model conceptually replicated the dimensional structure of the original CHIP tool with internal reliabilities ranged from .91 to .79. The 3-factor adapted CHIP measure offers preliminary evidence for generalizability of the dimensional structure of the CHIP(24). The Portuguese version contains one less item than the original version (44 items) organized in the same three sub-scales Maintaining Family Integration, Maintaining Social Support, and Understanding the Medical Situation - with the internal consistency of .80, .82, and .76, respectively and adapted to use in Brazil(30)

The Spanish version of the CHIP contains 16 items five subscales that have a factorial load greater than 0.50 used to determine the number of factors converged was reduced to 16 items (CHIP-16) with factorial loads greater than .50. The empirical criteria used to determine into five sub-scales: belief and trust, spouse/partner relationship, home care, family involvement, and security/stability. The overall internal consistency was good ($\omega = .88$). The five-sub scale model showed satisfactory fit indices and high parsimony(45).

2.4. Conclusion

As literature showed, the psychometric studies conducted in a different part of the world with different sociocultural contexts show good reliability and validity. In addition, most of them have three subscales the same as the original CHIP. However, the Spanish version of the Mexican CHIP has five subscales. As a result, validating CHIP in the Ethiopian cultural context is necessary.

3. Objective of the Study

3.1. General objective

This study aims to assess the validity of coping health inventory for parents, Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021

3.2. Specific objective

- To evaluate the internal consistency reliability of the coping health inventory for parents' Amharic version (CHIP Am)
- To evaluate the construct and concurrent validity of the coping health inventory for parents' Amharic version (CHIP Am)

4. Methodology

4.1. Study setting and period

This study conducted at the pediatrics hematology-oncology unit from May 1 -30/2021.TASH is the biggest teaching hospital in the nation established in 1972. Currently, it has 800 beds from these 26 beds in the pediatric ward and 16 at “Amestgna” oncology satellite clinic deducted for childhood cancer.

Totally, 1240 clinical staffs were available; from these 800 nurses were devoted to providing different health care services. Around 28 nurses assigned to provide health service in the hematology-oncology unit. It also has more than 950 administrative and contractual staff that supports the delivery of quality care. Based on the registry from the oncology outpatient unit there were about 130 children visiting the hospital for cancer follow up and treatment each week. And, 65 to 75 admissions a month.

4.2 Study design

The cross-sectional study design is considered the most efficient way of testing and validating a measurement tool (46). This Method was use to check the validity of coping health inventory for parents, Amharic version (CHIP Am) among parents of a child with Cancer.

4.3 Source and Study Population

All parents in the inpatient and outpatient oncology unit of TASH with a child diagnosed and treated for cancer was included as a source population.

4.4 Sampling

3.4.1 Sample Size Determination

There is no universally accepted standard regarding the sample size needed for factor analysis. 150-200 subjects are acceptable for explanatory factor analysis(25).A minimum of 150-250 recommended for confirmatory factor analysis. Others recommend the standard of a "participant to variable" ratio of 5-10 to 1 (23,47). Sample size of 300 considered ideal. Taking in to account a 20% dropout rate, data collected from 360 participants and after excluding 11 questionnaires with inappropriate responses 349 questionnaires analyzed.

4.4.2 Sampling Technique

Convenience sampling techniques was used to recruit the participants(48). . The sampling method was based on the readiness of participants. A face-to-face interview technique was used as the method for data collection to increase the response rate and to give the data collectors the

chance to explain the questions to the respondents. Data collectors given a short description on some of the items, and all items in the scale were clarified to them to guarantee consistency. Some flexibility was allowed to shorten the question and simplify the language.

The total sample size proportionally allocated in to each unit based on the monthly patient flow data that has been obtained from the head nurses. After allocation, samples taken consecutively to collect data.

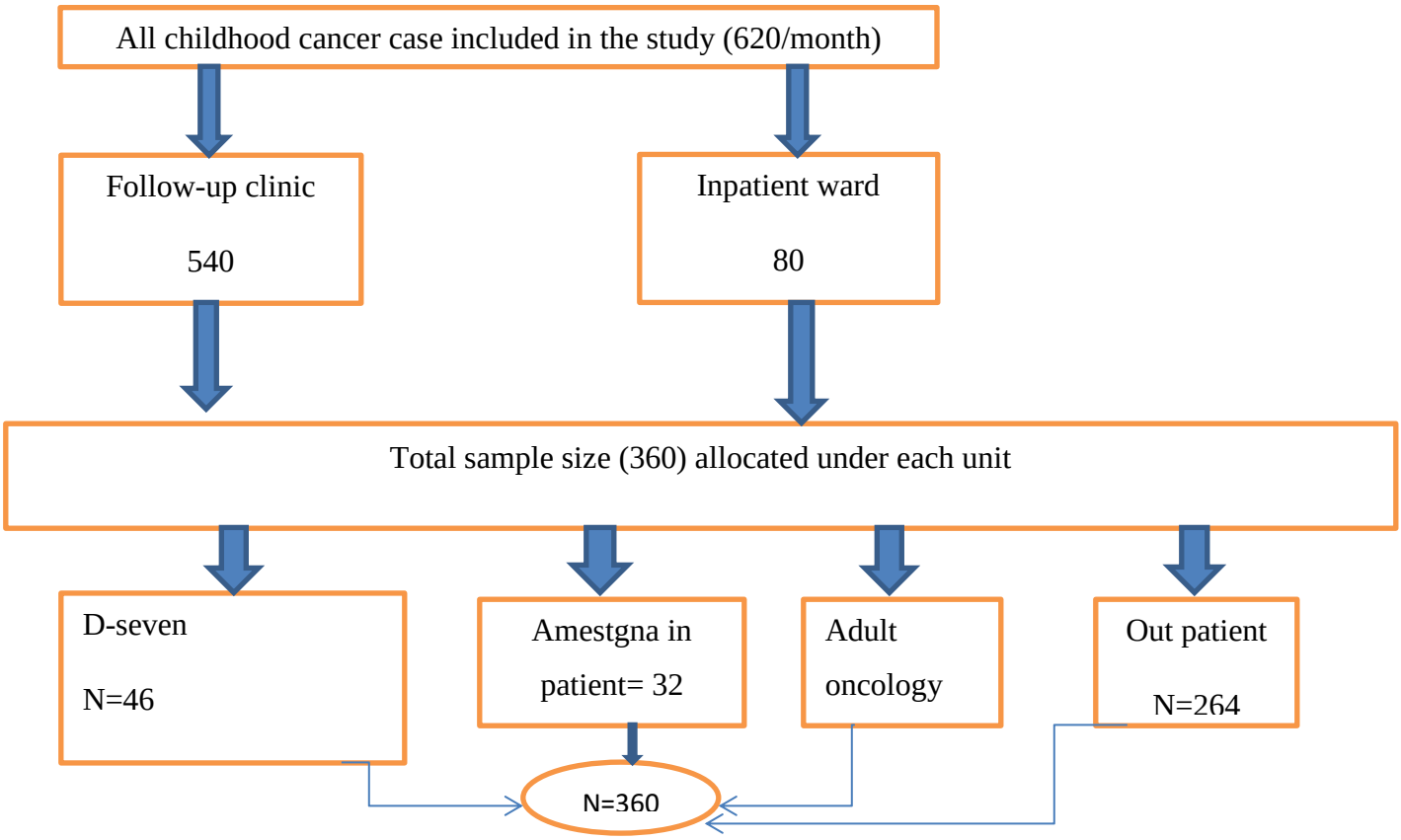

Figure 1:- Schematic presentation of sampling procedure for validation of Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021

4.5. Eligibility criteria

4.5.1. Inclusion criteria:

Mentally capable consenting biological fathers or mothers or close relative who is most frequently taking care of their child for greater than weeks or who came for follow up at the oncology ward or outpatient clinic and who can speak Amharic will be included.

4.5.2. Exclusion criteria:

Parents excluded from the Study if they were not willing to participate and parents who suffer from mental or cognitive disorders.

4.6. Study Variables

4.6.1 Dependent Variable

- Reliability of CHIP
- Validity of CHIP

4.6.2 Independent Variables

- Socio demographic characteristics such as age, sex, marital status, educational status, employment status, and religion of Parents
- Medical characteristics such as current type of anticancer treatment and age and sex of the child

4.6. Data Collection and Management

4.6.1. Tools

Two tools utilized to collect data from the participants. The tools were:

A Socio-demographic variables questionnaire which contain 19 items that evaluate demographic, medical, and family characteristics (49) (Annex I) and CHIP-Am (Annex II). Coping was measured by the Coping Health Inventory for Parents (CHIP) (McCubbin et al.) The CHIP is a 45-item checklist designed to assess the types of coping strategies that parents use to manage family life when their child is seriously and chronically ill Respondents were asked to respond on a 4-point scale ranging from 1 ("not helpful" at one end of the scale) to 4 ("extremely helpful"). CHIP scores obtained by summing across all items, with higher scores indicating parents more substantial coping efforts to increase family growth, stability, and functioning

The CHIP 45 scale translated into Amharic. First, a forward translation of the original questionnaire into Amharic done by a bilingual person who speaks Amharic and English fluently and understands the Ethiopian culture. Then, a second bilingual translator who had not seen the original English version back translated the instrument from the Amharic version into English. After one week, the second bilingual translators reviewed both the translations. A final step was reversing the translated Amharic questionnaire into English by a third expert. Then a discussion

held between the two independent translators and the third expert. Inconsistencies were resolved in an agreement meeting, and a final version of the questionnaire was established. Lastly, a final check of the questionnaire was done by the clinical psychologist, and her comment on the Amharic translations on CHIP item #22, #23, and #24 was integrated(50).

4.6.2. Data Quality Assurance

To maintain the quality of the data, structured Amharic version questionnaires and validated tools utilized.

Pretests carried out in 5% (17) participant eight men and nine women partaken. The pilot study conducted from April 27 to May 1, 2021. Participants asked about items that were hard to understand or answer and about the time required to respond. There were problems with clarity on items # 15, and 37, upon consultation with the translator correction measures taken by keeping the context and semantic of the original tool.

Data collected by trained clinical nurses and interns working in the oncology clinic. One-day training given for nurses and interns focused on; the contents of the questionnaire, patient identification based on inclusion/exclusion criteria and, how to obtain consent. In the process, the principal investigator ensured continuous supervision and follow-up of data for completeness, accuracy, and consistency.

4.7. Operational Definition

Acceptable the tools- the tools are said to be acceptable if the response rate is more than 70 %,(51)

Overlapping items - if all correlation coefficients between subscales and CHIP Am scales and items stood greater than 0.4, an overlap is considered.

Convergent Validity- is supported if the item domain correlation is at least 0.40(52).

Divergent Validity- is satisfied if the value of correlation coefficients between the item and its domain is higher than other domains. That is no cross-loading greater than 0.3(53)

Reliability- is assumed to be fulfilled if the calculated Cronbach's alpha coefficient is greater than 0.70(54)

4.8. Data Analysis

Data collected, completeness of the questionnaires checked and entered in to Epidata version 4.6.0.4. Analyses were done using the SPSS version 26.0.and, supported by SPSS Amos (Analysis of Moment Structures) version 24.0.Schoolers recommend EFA and CFA should be done on distinct samples ,349 participants recruited for this study were randomized into an EFA or a CFA group (174 in each) using the random case sampling feature of SPSS(55–57)

The data cleaned up using case screening, followed by variable screening to ensure no missing values in the dataset. Variables further screened with Means, Kurtosis, and Central Limit Theorem, to collect information on data distribution and normality.

Descriptive statistics (frequency, percentage, mean, SD) used to report socio-demographic, medical characteristics, and CHIP performance status.

Item analysis done for examining the mean, kurtosis, and a skewness and item-to-total correlations coefficient of each item. Extremes of mean score, Kurtosis values greater or less than 1 or -1 and an item-total correlation coefficient less than 0.3.This shows poor performance, low reliability and discriminate validity of items , thus items with this property ware deleted (58).

Sampling adequacy and factorability of the inter correlation matrix was assessed after preliminary PAF. The following parameters were used to assess factorability (a) R-matrix inspected to check pattern of relationship and shows that most of items has correlation coefficient between 0.20 and 0.80 and the determinate value of >0.00001 used to evaluate multi collinearity in the data set. (b) The KMO measure of sampling adequacy used to quantify sufficiency of item correlation to perform and factor analysis. The KMO index ranges from zero to one, the minimum acceptable value is 0.60. (c) Bartlett test of sphericity test the presence of correlations among the variables. significant value ($p < 0.05$) indicates appropriateness of exploratory factor analysis(59,60). (d) Measure of sampling adequacy (MSA) of individual items; diagonal of the anti-image correlation matrix was above 0.50 (61). Generally, these results indicate strong factorability and supports conducting an EFA.

The factor extraction analysis done using the principal axis factoring (PAF) for retaining the number of factors

(a)The Guttmann- Kaiser Greater-Than-One Rule which recommends that only those factors with eigenvalues greater than 1.0 be retained, (b) Cattell scree test, that involves constructing

plot of extracted factors against their eigenvalues in descending order of magnitude a (c) Monte Carlo Parallel analysis rule which compares the factor eigenvalues to a set of eigenvalues generated from random data. In addition, recommends retaining those eigenvalues that exceed the corresponding values from the random data. And, (d) the amount of total variance explained the communality of each of the variables were used to determine the number of factors to be preserved (62)

PAF together with the a varimax rotation method was chosen in place of oblique rotation (direct oblimin) because many items were loaded under the first factor and the correlation between the factor becomes lower (<0.3) (63)

Items were deleted from the EFA if cross-loaded is 0.40 or above on more than one factor, single, and do not load into any factor(61)

In the CFA the model fitness assessed by

(a) All Over model fitness, a with the Chi test $\chi 2$ (p) ($p > 0.05$) and normed (Chi-square and d.f ratio) $\chi 2$ (CMIN/d.f) ≤ 3.

(b) Incremental fitness with comparative fit index (CFI) and normed fit index (NFI) ≥ 0.90 and, (c) Absolute fitness with ,goodness-of-fit index (GFI), adjusted GFI (AGFI) ≥ 0.80 ,root mean square residual (RMR) ≤ 0.05, and root mean square error of approximation (RMSEA) ≤ 0.10 [50].

The criteria for convergent validity were as follows: FL ≥ 0.50; composite reliability (CR) $\geq \pm 1.97$ ($p < 0.05$); average variance extracted (AVE) ≥ 0.50; and composite construct reliability (CCR) ≥ 0.70. The discriminant validity tested using AVE and square of the correlation coefficient between variables. The criterion for discriminant validity was AVE > square of the correlation between the two factors(63)

The psychometric properties of the CHIP-Am assessed as follows

Construct Validity

The degree to which a scale or collection of measurements accurately represents a topic of interest is known as construct validity. EFA and CFA utilized to assess the construct validity of the scale based on the following characteristics. Convergent Validity of the tool (factor loadings of 0.5 or higher, average variance extracted of 0.5 or higher, and reliability of 0.7 or higher) and discriminant validity of the tool (AVE estimates for two factors should also be greater than the square of the correlation between the two factors to provide evidence of discriminant validity)(63).

Reliability

Reliability is the extent to which each items scores correlated with the scores of all other items. The reliability assessed by determining the Cronbach's alpha and composite reliability coefficient, which measures the internal consistency of responses. The value of both measures ranges from zero to one, with higher values indicating good reliability. A low value suggests that some item has either very high variability or not measuring the same construct. A value of 0.70 or greater is considered an adequate level of correlation between items(54).

4.9 Ethical Consideration

Ethical clearance and approval letter obtained from the Institutional Review Board (IRB) of the College of Health Sciences of Addis Ababa University. A formal letter from the school of Nursing and Midwifery submitted to TASH research and community service office to obtain their co-operation. A formal letter from the pediatrics and child health department of TASH distributed for each of the pediatric oncology units. Informed consent taken from the participants in written form/orally for those who cannot read or write after the aim and significance of the study explained fully to each parent before collecting the data.

If the parent agrees to participate, informed consent taken. The rights to refuse to interviewed, to ask any unclear question, or withdraw at any particular point during the data collection process without frustration explained for study participants. Those who had not willing to participate given the right to do so.

Permission to use the CHIP obtained from Hamilton I. McCubbin, University of Wisconsin-Madison School of Human Ecology. (Annex IV)

4.10. DISSEMINATION PLAN

This Study's findings presented to Addis Ababa University, College health sciences school of Nursing and Midwifery, and the hard copy will be available at the AAU library. It will be published in peer-review journals.

5. Results

5.1. Socio-Demographic Characteristics of the Participants

From 360 eligible samples, about 349 Parents and Caregivers participated in this inquiry, attaining a 96.94% response rate. The age of parents rang 19-66 years with mean age (±SD) of the participants was 36.07±9.3, and the median was 34 years from the participants 149(49.3%) males and 153(50.3%) females were married.

One hundred fifty-five (44.2%) individuals who participate in this study never attend school, followed by 108(30.6%) who attend secondary school. Concerning their occupation110 (31.2%0) were employed 65 (67%) of Males were farmers. Most of the mothers were housewives 71(21.8%). One hundred (28.5%) of parents have income ranging between 500-1500birr. About 134(38.2%) study participants said they obtain support from one form of insurance, and insignificant proportions have support from the government in fee waiver or exemption. The greater part of the participants, 147(41.9 were Orthodox Christians. There were no significant differences in the general characteristics between the EFA and CFA groups (Table 1 a, b

Table 1a socio demographic characteristics parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021 (n=349)

Variables	category	Total N 349		Group 1 for EFA(n=174)		Group 2 for CFA(n=175)		T or $\chi 2$ (p)
		N(%) Or Mean(SD)						
Parent age		36.07±9.3		36.83±9.75		34.90±8.30		2.15(.033)
Parent's sex	Male	167	47.6	81	46.6	77	44.0	4.11(.049)
	female	182	51.9	93	53.4	98	56.0	
Marital status	Maried	321	91.5	163	93.1	159	90.9	
	Single	21	6.0	8	4.6	13	7.4	3.60(.73)
	Divorced,	4	1.1	1	.6	3	1.7	
	Widowed	3	.9	3	1.7	-	-	
Famillystructure	One parent	32	9.1	16	9.1	16	9.1	
	Tow parent	314	89.5	157	89.7	158	90.3	.843(.65)
	Perent less	3	.9	2	1.1	1	.6	
Family type	Neuclaer	268	76.4	134	76.6	134	76.6	
	Conjigated	55	15.7	25	14.3	30	17.1	2.80(.51)
	Extended	26	7.4	16	9.1	10	5.7	
Relation with child	Father	130	37.0	65	16.5	65	16.5	5.43(.48)
	Mathor	154	43.9	74	42.5	82	46.9	
	Borther/sister/Relative	66	18.8	37	21.3	32	18.3	
Educational status	Never gone	155	44.2	74	42.5	71	40.6	
	primary	52	14.8	26	14.9	29	16.6	
	secondary	108	30.8	61	35.1	56	32.0	.296(.50)
	College/univrsit graduate	29	8.3	11	6.3	14	8.0	
	Poste graduate	7	2.0	2	1.1	5	2.9	

Table 1b socio demographic characteristics parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021 (n=349)

Variables	category	Total N 349		Group 1 for EFA(n=174)		Group 2 for CFA(n=175)		T or $\chi 2$ (p)
		N(%) Or Mean(SD)						
Number of children	1-3	235	67.0	120	69.0	122	69.7	
	4-6	97	27.6	43	24.7	45	25.7	1.93(.74)
	>7	19	5.4	11	6.3	8	4.6	
Religion	Orthodox	147	41.9	69	39.7	87	49.7	
	muslim	105	29.9	57	32.8	39	22.3	
	Protestant	85	24.2	39	22.4	40	22.9	11.8(.45)2
	Catholic	13	3.7	8	4.6	9	5.1	
	Other	1	.3	1	.6	-	-	
Occupation	Farmer	97	27.6	43	24.7	36	20.6	27.9(.03)
	Howsewife	77	21.9	45	25.9	46	26.3	
	employed	110	31.3	52	29.9	58	33.1	
	Merchant	60	17.1	31	17.8	32	18.3	
	other	7	2.0	3	1.7	3	1.7	
No. people living in house	1-3	93	26.5	42	24.1	51	29.1	
	4-6	196	55.8	98	56.3	97	55.4	1.9(.78)
	7-10	44	12.5	23	13.2	18	10.3	
	>10	18	5.1	11	6.3	9	5.1	
Other source of support	Relatives /friends	97	27.6	53	30.5	60	34.3	
	Employer	14	4.0	4	2.3	5	2.9	
	Any for of insurance	134	38.2	64	36.8	61	34.9	27.9(.03)
	Goverments/fee waiver	103	29.3	52	29.9	47	26.9	
	Other	3	.9	1	.6	2	1.1	
Per/Month income /Birr	500-1500	100	28.5	46	26.4	50	28.6	
	1501-2500	66	18.8	28	16.1	30	17.1	
	2051-3500	54	15.4	31	17.8	34	19.4	20.1(.21)
	3501-4500	50	14.2	24	13.8	24	13.7	
	>4501	81	23.1	45	25.9	37	21.1	

5.2. Clinical conditions of patients

Large number of 149(42.7 %) of children diagnosed with cancer were aged between two and five years and 108 (30.9%) were aged between 6-10 years.The mean duration after diagnosis was 8.04±6.9 months. Leukemia (myeloproliferative diseases, myelodysplastic diseases, lymphoid and acute myeloid leukemias) was found the prevalent type of childhood cancer account 98(28.1%) followed by Lymphomas (reticuloendothelial neoplasms, Non-Hodgkin's lymphomas and Burkitt lymphoma 75 (21.5. %) and 51(14.6%) Soft tissue and other extra osseous sarcomas

Table 2 Clinical condition of childhood cancer patients at Tikure Anbessa Specialized Hospital, Ethiopia, 2021 (n=349)

Variable	Category	total		Group 1 for EFA		Group 2 for CFA		t or X^2 (P)
		N(%) or Mean ±SD						
Child age	0-23 month	30	8.6	59	33.7	13	7.4	21.191 (.171)
	2-5 years	149	42.7	39	22.3	77	44.0	
	6-10 years	108	30.9	24	13.7	57	32.6	
	11-15 years	55	15.8	16	9.1	23	13.1	
	16-18 years	7	2.0	13	7.4	5	2.9	
sex	Male	205	58.7	101	57.7	83	47.4	.585(.444)
	Flame	144	41.3	73	41.7	92	52.6	
Confirmed Dx	Leukemias	98	28.1	59	33.7	39	22.3	53.57(.030)
	Lymphomas	75	21.5	39	22.3	36	20.6	
	Soft tissue and other	51	14.6	24	13.7	27	15.4	
	renal tumors	31	8.9	16	9.1	15	8.6	
	Retinoblastomas	25	7.2	13	7.4	12	6.9	
	Malignant bone tumors	23	6.6	12	6.9	11	6.3	
	other childhood cancers	46	13.2	11	6.3	35	20.0	
Treatments	chemotherapy	187	53.6	96	54.9	96	54.9	58.78(.001)
	radiotherapy	3	.9	2	1.1	2	1.1	
	surgery	5	1.4	3	1.7	4	2.3	
	RT & surgery	13	3.7	8	4.6	40	22.9	
	CT &surgery	76	21.8	32	18.3	15	8.6	
	RT,CT&surgry	32	9.2	16	9.1	18	10.3	
	Not started Yet	33	9.5	17	9.7	96	54.9	
Duration after Dx		8.04±6.9		8.55±6.704		7.7±7.07		16.81(.00)

5.3 Validity and Reliability of CHIP-Am

5.3.1. Analysis of items

The objective of validity and reliability test is to identify items that efficiently measure the underlying construct. Hence, items are analyzed to identify items with low variance which similar responses to the item that hints the items poor performs, extremes of mean score which leads to low reliability and, Corrected item-total correlations

Analysis involves a combination of reliability analysis and, PAF with varimax rotation. The mean score for each item examined and ranged from .56 to 2.96, with SD of 0.21–1.38. and this is followed by evaluation of Item-to-total correlations Coefficient below 0.30 18 items were deleted(63) (#5, #15, #19, #21, #22, #23, #,24 #25, #26,#,27 #,28 #30, #33, #40, #41) , And 3 items contribute for not positive definite matrix(zero variance) #9 # 25,#35 were removed(60). Factor analysis performed on the 27 items.

5.3.2. Construct Validity of CHIP-*AM*

The construct validity of the tool evaluated with EFA and CFA using the random case-sampling feature of SPSS for each EFA and CFA group

5.3.2.1, Explanatory factor analysis

Before the EFA analysis, the data evaluated for normality, and the data violate the assumption of multivariate normality. Principal Axis Factoring(PAF) used as a factor extraction method to ensure construct validity(62). At the start, the factorability of the 27 *CHIP_Am* items examined. First, items correlated at least 0.3 with at least one other item was inspected, suggesting rational factorability of the data. Second, the Kaiser-Meyer-Olkin measure of sampling adequacy was .74, above the frequently endorsed value of 0.6. In addition, Bartlett's test of sphericity was significant at ($\chi 2 = 2103.85$, DF =378, $p < .001$). The diagonals of the anti-image correlation matrix, Measures of Sampling Adequacy (MSA) of the correlation matrix were also all over 0.5 supporting the factorability of the dataset and the determinate was 3.273E-04(0.0003273) which is >0.00001 (63).

Initial PAF performed and shown the presence of six factors with eigenvalues above one, explaining 15.6%, 13.2%, 11.5%, 8%, 6.6%and 5% of the variance, respectively. A review of the scree plot revealed a clear break before the seven factors. Supporting Catelli's scree test, with Monete Carlo parallel analysis showed five factors with eigenvalues surpassing the

corresponding criterion values for a randomly generated data matrix of the same size as ample for EFA (figure…)

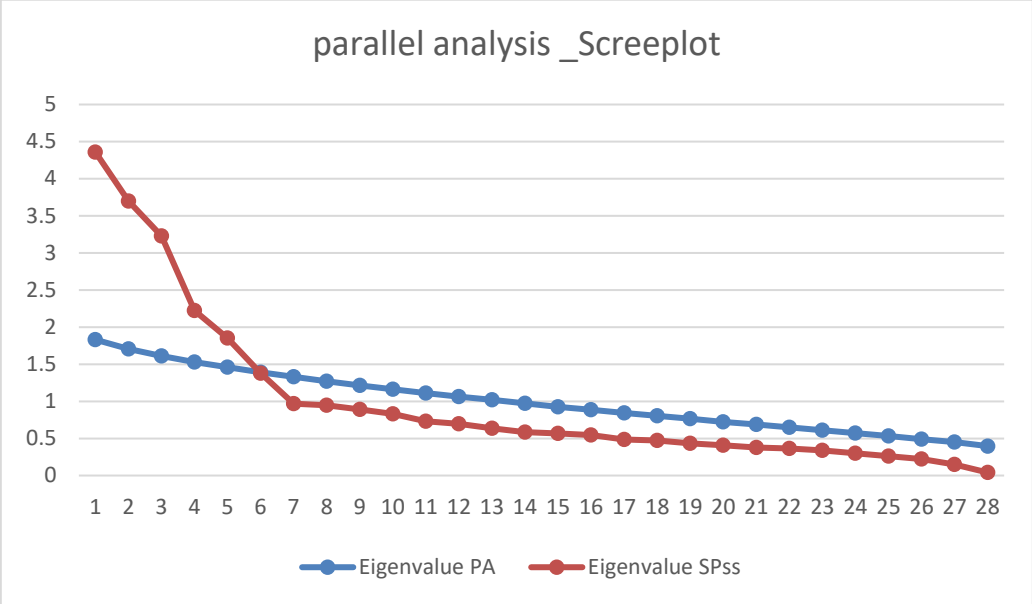

Figure 2: Eigenvalue and factor number of Amharic version (CHIP Am_27) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021

A total of seven items were eliminated based on factor loading lower than 0.3, a cross-loading item that loaded at 0.4 or higher on two or more factor, and a commonality of below 0.40

Four items with communality below 0.4 were deleted (#10, 11, 18, 20), one item with FL of below 0.50 (# 36), two item found to had manifestation of cross loading above 0.4 on two factors was deleted (#42, 39). Following deletion of the above items, EFA was executed with 20 items the Kaiser-Meyer-Olkin measure of sampling adequacy was .75, above the frequently endorsed value of 0.6, and Bartlett's test of sphericity was significant ($\chi 2 = 1659.95$, df=(231) $p < .001$). The factor loading was above 0.50 for all items; thus, no additional items deleted. Factors had an eigenvalue of 1.00 or above, and there were five significant factors per intersection point of the Scree plot and PA. Besides, the explained cumulative variance of these factors was 65.9%, based on which the number of factors was set to five. The first factor explained 19.6%, the second 15.8%, the third 13.7 %, the fourth 9.08%, and the fifth 7.9%; thus, the PAF result demonstrated the unidimensionality of CHIP_*Am*.

The five factors of CHIP_ Am 20 resulting from PAF named for a study population the names of the factors adopted from the original CHIP-45 factor names and previous literature. The name was given based on the strongly loaded items under the factor compared to the original and. The first actor containing six behavers or practices related to family relationship named as family relation and optimism the six items in the factor had FL range 0.564-0.806, internal consistence 0.836 and AVE 0.775.

The second factor contains four items related to supposal relationship and maintain family stability labeled as supposal relationship and endurance this factor has internal consistence 0.885 and convergent validity 0.767. The third factor deles with self-reliant and development and incorporates four items with factor loading that range from 0.764-0.891 and Cronbach alpha 0.83 and AVE 0.542 nominated as self-reliant

The fourth factor has three items that indicates investing on the child and communication with nonprofessional counselor. This factor named as investing on the child, has AVE 0.507 and alpha of 0.872. The last factor was deals with care and communication with professional care providers. It has internal consistence of 0.86 and AVE 0.633 and named as Care and communication

Convergent Validity

Assess the degree to which two measures of the same concept are correlated large correlations indicate that the CHIP-*AM* 20 measuring parents coping. Pattern Matrix indicts Convergent validity loadings greater than 0.5 and Discriminant Validity no cross-loadings, which affirmed the contract validity(53)

In addition, Average variance extracted (AVE) summary measure of convergence between items and latent construct. And AVE is calculated as square each standardized factor loading, sum them, and divide by the total number of loading ,convergent validity of the CHIP AM with 20 items and five factors were confirmed with AVE (>0.5) and composite reliability >0.7 (63) (table 3)

Table 3: Factor loading for explanatory factor analysis with Varimax rotation Amharic version (CHIP Am-20) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021

Item		F1	F2	F3	F4	F5
8	Investing myself in my child (ren).	.806				
16	Doing things together as a family (involving all members of the family).	.716				
13	Believing that my child will get better	.714				
6	Doing things with family relatives	.675				
1	Doing things with my children	.644				
3	Building a closer relationship with my spouse	.5637				
12	Trusting my spouse (or former spouse) to help support my child and me.		.940			
4	Trying to maintain family stability		.906			
14	Believing that things will always work out.		.800			
7	Talking over personal feelings and concerns with spouse		.676			
34	Engaging in Relationships and Friendships, Which Help. Me to Feel Important and Appreciated			.851		
32	Investing time and energy in my job.			.847		
37	Develop myself as a person.			.778		
29	Becoming more self-reliant and dependent			.539		
31	Talking to someone (not a professional counselor/doctor) about how I feel.				.891	
17	Investing myself in my child (ren).				.846	
2	Having my child with the medical condition seen at the clinic/hospital regularly.				.764	
45	Talking with Doctor about my concerns about my child (ren) with the medical condition.					.845
43	Being sure prescribed medical treatments for the child(ren) are carried out					.805
44	Talking with other individual/parents in my situation					.796

Note, N = 174. Factor loadings > .5 only presented.

5.4. Reliability of CHIP-20

To check internal consistency Cronbach's alpha and composite reliability coefficients calculated for the five factors. In addition, Average Variance Extracted (AVE) estimated to assess convergent Validity. Both Alpha and composite reliability ≥ 0.70 and AVE ≥ 0.5 reflect adequate internal consistency and convergent Validity. For the entire tool, Cronbach's alpha was 0.73. As displayed in table 4, all of the items except one had an alpha value greater than or equal to 0.7. Cronbach's alpha, composite reliability and AVE for each factor were calculated, and all of the subscales have good value. As shown in the table

Table 4: Reliability of Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021 (N=174, number of items =20)

	CHIP_Am	Cronbach's α if item delete
1.	Getting other members of the family to help with chores and tasks at home.	.710
2.	Doing things together as a family (involving all members of the family).	.701
3.	Believing that my child will get better	.703
4.	Doing things with family relatives	.696
5.	Doing things with my children	.711
6.	Building a closer relationship with my spouse	.700
7.	Trusting my spouse (or former spouse) to help support my child and me.	.728
8.	Trying to maintain family stability	.726
9.	Believing that things will always work out.	.725
10.	Talking over personal feelings and concerns with spouse	.731
11.	Engaging In Relationships And Friendships Which Help Me To Feel Important And Appreciated	.718
12.	Investing time and energy in my job.	.712
13.	Develop myself as a person.	.722
14.	Becoming more self-reliant and dependent	.722
15.	Talking to someone (not a professional counselor/doctor) about how I feel.	.726
16.	Investing myself in my child (ren).	.722
17.	Having my child with the medical condition seen at the clinic/hospital regularly.	.726
18.	Talking with Doctor about my concerns about my child (ren) with the medical condition.	.724
19.	Being sure prescribed medical treatments for the child(ren) are carried out	.717
20.	Talking with other individual/parents in my situation	.723

Table 5 Cronbach's alpha, composite reliability and AVE for each factor of Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021

Factor name	No items	α; Cronbach	CR	AVE
Family relation and optimism	6	0.836	0.815	0.775
Spouse relationship and endurance	4	0.885	0.929	0.767
Self-reliant	4	0.835	0.824	0.542
Investing on child	3	0.872	0.750	0.507
care and communication	3	0.860	0.723	0.633

Note (N=174), CR, composite reliability, AVE Average Variance Extracted

5.5. Confirmatory Factor Analysis (CFA)

Based on EFA that was conducted out in the initial phase, Confirmatory factor analysis was done with 20 items on randomly allocated of the sample(N=175) which offers valuable evidence about scale stability (64).

Maximum like hood ratio (MLR) used to estimate model fitness. χ^2 test was used as a measure of fit between the sample covariance and fitted covariance matrices, $\chi 2$ =244.1, d.f =160 ($p > 0.05$), normed $\chi 2$ (244/160) =1.56 ($p< 0.05$) which is ≤ 3, goodness-of-fit index (GFI) =0.852, and adjusted GFI (AGFI) =0.887 both were acceptable they ≥ 0.80

In addition to the Chi2 test, other fit indices were used to evaluate model fitness, including comparative fit index (CFI) = 0.937 and normed fit index (NFI) = 0.841(≥ 0.90,) root mean square residual (RMR) =0.015 (≤ 0.05,) and root mean square error of approximation (RMSEA) =0.055 ≤ 0.10 [50].

The model fit, showed an acceptable fit, except for the NIF. With all indices within limits and with a significant fit. Generally, the goodness-of-fit of model teste done summarized with Gaskin, J. & Lim, J. (2016), "Model Fit Measures," AMOS Plugin, an excellent model, fit as shown in the table below.

Table 6 Goodness fit indices of Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021

Measure	Estimate	Threshold	Interpretation
CMIN	223.246		
DF	142.000		
CMIN/DF	1.572	Between 1 and 3	Excellent
CFI	0.939	>0.95	Acceptable
SRMR	0.063	<0.08	Excellent
RMSEA	0.057	<0.06	Excellent
PClose	0.196	>0.05	Excellent

Note, normed $\chi 2$ (CMIN/df) ≤ 3, goodness-of-fit index (GFI), and adjusted GFI (AGFI) ≥ 0.80 comparative fit index (CFI) and normed fit index (NFI) ≥ 0.90, root mean square residual (RMR) ≤ 0.05, and root mean square error of approximation (RMSEA) ≤ 0.10

Correlation between the factor score of each construct has a positive relationship to one another. Each item to the construct correlated expressively at ≥ 0.5 except for one item (shown in the diagram below). In this study, removing the item fail to improve the fitness and kept for its theoretical importance. For the study population of a study, the item to factor correlation shows a valid construct of the Amharic version of CHIP-20.

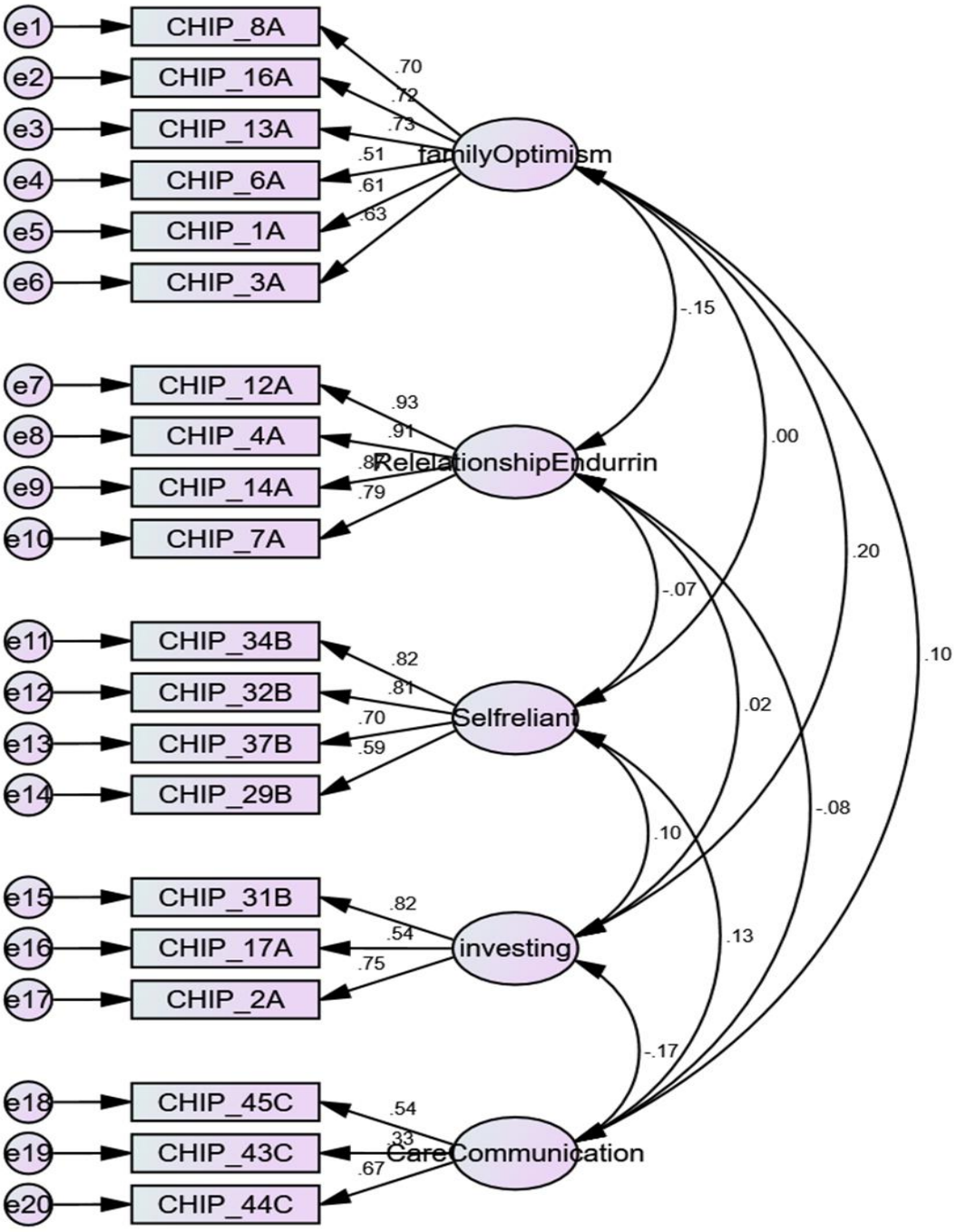

Figure:-three CFA diagrammatic illustration of five-factor structure of the Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia 2021

6. DISUSSION

This study evaluated the psychometric properties of the CHIP in an Ethiopian population. The results help to improve our understanding on which coping pattern are adopted by parents of Ethiopian child with cancer in order to manage, families everyday life, the care their child need. The result also contribute to the enhancement of literature on parental coping and on how it relates to the mental processes involved in families of a child with cancer.. The objectives of this study was, to determine the construct validity of CHIP Am. The translation process was carried out according to guidelines for cross-cultural adaptation of self-report tools(50).

It is necessary to demonstrate validity and reliability of the tool among different languages, culture and disease conditions with the expectation of a similar outcome. In this study, the validity and reliability of the Amharic version of CHIP AM among parents of children with childhood cancer were investigated.

Evaluation of the factor structure of the CHIP using exploratory factor analysis and confirmatory factor analysis in a sample of Ethiopian parents of children diagnosed with cancer provide an input to the cross-cultural coping literature.

Furthermore, the study providing evidence of the generalizability of the CHIP factorial structure to the Ethiopian social and cultural context.

The availability of such a measure and preliminary knowledge of its psychometric properties is important to understanding the mechanisms of adjustment and coping among parents in the care of a cancer child and how it is possibly related to child psychological processes and outcomes.

The original CHIP had three factor structure with 45 items, in contrast this study shows five factor structure CHIP- am with 20 item, both the EFA (N=174) and CFA(N=175) resulted five factors implying that each factor may be considered independently when conceptualizing Ethiopian parents' adjustment and coping with cancer illness of a child. However, the extracted factors in this study did not contain most of coping behaviors described in the Original CHIP measure, suggesting that the Ethiopian parents may use their coping behaviors and beliefs differently. A large number of parents consider most items CHIP as not helpful for instance item #22(Getting away by myself), #23(Eating) #24 sleeping and #26(Purchasing gifts) had a mean value range from 0.56-0.76 which suggests cross-cultural differences in the importance of each coping pattern. The EFA of the (CHIP _am 20) factor structure, the correlated items in the factors was condensed to 20 items to attain a good-to-acceptable fit, which is better than the fit

of the original model. The EFA with the 20 selected items has Very good or high factor loads and the number of factors converged to five factors. Therefore, CHIP AM _20 seems to be appropriate for the data obtained from the Ethiopian sample of parents of children with childhood cancer. The original CHIP (14) included 19 items in the first factor concerning with "maintaining family integration, cooperation, and an optimistic definition of the situation". 10 of the 20 items were generated from this factor and distributed in factor1, 2 and 3 of this study.

The second original factor focused "social support, self-esteem, and psychological stability", comprising 18 items was reduced in to four.

The third original factor dealing with "understanding the medical situation through communication with other parents and consultation with medical personnel". Originally eight indicators were included was summary to three indicators

The five-factor model of CHIP –AM clearly highlights the role of the family in coping with a childhood cancer. The first factor in the original CHIP regarding family integration and cooperation is explained by four factors (home care, the spouse/partner relationship, family involvement, and security and stability) and includes an item about belief in God. However item # 9(Believe in Gad) were removed from the potential list of PAF due to low variance, Most of respondent answer as extremely helpful. Although there are no studies that indicate the role of Ethiopian families in parents coping related articles indicate the importance of the family in coping (10,65)

A number of studies reduce the number of items. For instance, a study conducted in Iran reported 13-item, 3-factor model conceptually replicated the dimensional structure of the original CHIP tool (24).In contrast this study this study shows five factor structure with 20 item. This is line with the study conducted Mexico(66)

The internal consistency of the CHIP-am and its factors, the convergent validity of each factor, and the discriminant validity between the factors were good. Both Alpha and composite reliability were ≥ 0.70 and AVE ≥ 0.5 .In previous studies, the overall internal consistency of the original 45-item CHIP has shown to possess adequate internal reliability of the three factors (Cronbach alpha = 0.79, 0.79, and 0.71 respectively)

The Chinese version of the CHIP 45 has a Cronbach's of .91 and a content validity index of .82. The Korean version of CHIP contains 36 items with three subscales, and the reported that The overall reliability coefficient 0.88 and Cronbach's alpha for the 36-item scale was 0.92. The

Iranian version of CHIP had internal reliabilities ranged from .91 to .79 And also the internal consistency of .80, .82, and .76, reported Brazil version

Construct validity of the Amharic version of CHIP- Am was acceptable for five -factor scales. Each scale has a good to high correlation coefficient; this indicates items were highly related to its scale. Even though, there was a difference in the number of items and factor structure from the original CHIP_45, confirmatory factor analysis was done to ensure whether the EFA five -factor measurement is appropriate for the study population. CFA reveals that each item has acceptable loading with its factor. All factors had a good inter-factor correlation and measured similar concepts.

7. Conclusion

The CHIP-Am 20 in the current sample of 349 Ethiopians parents of child with cancer showed the following five-factor structure: Family relation and optimism, Spouse relationship and endurance, Self-reliant, Investing on childcare, and communication. Its overall internal consistency was good based on Cronbach's alpha coefficient and composite reliability the five factors exhibited convergent and discriminant validity. The modified version of CHIP – am had good psychometric measure to evaluate coping pattern in the Amharic language among parents of children with child hood cancer and other chronic disease.

8. Recommendation

Efforts need to be made from program managers to have more measurement tools in health facilities for assessing parents coping. Since CHIP items were used to measure parent's response to the management of family life in the face of child hood illness, other tools also need to be validated to measure parental coping.

The original CHIP was uses the children with Cystic fibrosis other studies test CHIP validity among children with chronic disease, and also some studies use specific disease like autism spectrum disorders, Cancer, Disabilities, Mitochondrial disease, in this study, parents of children with childhood cancer were used to collect data. This might have an effect to differ the responses of parents. For further study it is better to use CHIP am for specific diseases to have similar response and better psychometric measure of parental coping

CHIP am being an easy instrument, however; researcher should take caution while asking the questions and words used to capture information from caregivers for further study to avoided

social desirability bias and it's better to test stability of the tool over a while. And also health professional should give attention to use CHIP-AM for evaluating parents coping Interested scholar shall do cross-validate the CFA models tested in a different dataset to prevent overfitting and Measurement Invariance across Age and/or Gender.

9. Limitation

The study conducted using non-probability samples. The test-retest reliability, was not established in this study

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ANNEXs

ANNEX I: Participant Information Sheet

Greeting: Good morning/afternoon. My name is _____I am working on behalf of research conducted by **Abraham Adane** student of Addis Ababa University, College of health science, school of nursing and midwifery. I would like to ask a few questions, which take around 20 minutes. The genuine responses that you are going to give are critical to assess coping ability. You are selected randomly to be a participant of this Study if you give me consent after you have understood the following information sheet:

Title of the Study is a validation of coping health inventory for parents, Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia ,2021

The objective of the study, assess the validity of coping health inventory for parents, Amharic version (CHIP Am) among parents of a child with Cancer at Tikur Anbesa Specialized hospital, Addis Ababa, Ethiopia.

Benefits of the Study: If you participate in this research, there may not be a direct benefit to you and your child, but your participation is likely to help us assess the validity coping ability of parents among children with cancer. Ultimately, this will help us identify the gap and take the appropriate intervention by the authorized stakeholder. you will not be provided any incentive or payment to participate in this study.

Risk of the Study: If you participate in this research, it has no risk for the participants, and the interview will be private to make safe participants from any fear.

Rights of participants: In this study, the participant has full rights to refuse participation and can ask any question that is not clear. You have the right to unanswered any questions that you do not want to answer, and you may end this interview at any time you want to.

Confidentiality: Any information forwarded will be kept private your name will not be specified.

ANNEX II: Consent Form

I have read this form or read to me in the language I comprehend and understand all conditions stated above.

Do you have any questions? If, no

Are you willing to participate in this study?

1. No (Say Thank you)

2. Yes, participant's signature ……

Continue your interview I certify that nature and purpose, the potential benefits and possible risks associated with participating in this study have been explained to the volunteer

._____ _____

Date Signature of the interviewer

Result of the interview:

1. Completed
2. Respondent not available
3. Refused
4. Partially completed

Checked by supervisor, name _____Signature _____Date_____

ANNEX III: Questionnaires

3.1 Questionnaire in English for coping health inventory for parents

Inclusion criteria

Biological fathers or mothers or close relative who is most frequently taking care of the child for greater than weeks or who came for follow up at the oncology ward or outpatient clinic and who can speak or read the Amharic language

Exclusion criteria

Patients who are unwilling to participate or parents who suffer from mental or cognitive disorders cannot speak Amharic.

Hospital card no ---------

Part one

1. **A Socio-demographic**

1.1 parents related

1.	Age	
2.	sex	1=Male
		2=female
3.	Marital status of the Parent: 1=Married, 2= Divorced, 3= Widowed	1=Married, 2= Divorced, 3= Widowed
4.	Family structure: /	1= One parent family, 2= Two parent family
5.	composition of your family at home	1=Mom, dad, and children 2=Parents, children, and grandparents 3=Parents, children, grandparents, aunts/uncles, and cousins
6.	Relationship with the child:	1= Father, 2= Mother, 3= Caregiver
7.	Type of caregiver	1= Biological parent, 2= Step parents, 3= Adoptive parent
8.	No of children in the family	
9.	Education of the parent	1= Never gone to school, 2= Literate

10.	If literate:	1= 1 to 5th, 2= 6th to 12th, 3= Graduation, 4= postgraduation & beyond
11.	Occupation	1=Frame 2=Housewife 3=Employed 4=Merchant 5= Other(specify)
12.	Primary source of support:	1=Family & friends, 2=Religion org. &NGo
13.	No. of people living in the house	
14.	Family income:	1= <3000, 2=3001-5000, 3=>50000

1.2 child related

15	Child age in years	
16	Child gender:	1=Male, 2=Female
17	Diagnosis	1= Leukemias 2=Lymphomas, 3=neoplasms of CNS 4=Neuroblastoma, 5=Renal tumors 6= Malignant bone tumors 7=Soft tissue and other extraosseous sarcomas, 8=other
18	Child age at diagnosis in years	
19	Duration after diagnosis in years	
20	No of children living in the house	

21	Type of RX;	1=chemotherapy 2=radiotherapy 3=surgery 4=RT & surgery 5= CT &surgery 6=RT&CT

3.2. COPING HEALTH INVENTORY FOR PARENTS RATING SCALE

To complete this inventory, you are asked to read the list of "coping Behaviors" below, one at a time**.** For each coping behavior you used**,** please indicate by circling a number how helpful this belief or action is for you in managing family life right now with your child who has undergone cancer diagnosis and treatment.

0 = Not helpful,1 = Minimally helpful 2 = Moderately helpful 3= Extremely helpful

S.No	Coping Behaviors	Not helpful	Minimally helpful	Moderately helpful	Extremely Helpful
1.	Trying to maintain family stability.	0	1	2	3
2.	Engaging In Relationships And Friendships Which Help Me To Feel Important And Appreciated.	0	1	2	3
3.	Trusting my spouse (or former spouse) to help support me and my child(ren).	0	1	2	3
4.	Sleeping.	0	1	2	3
5.	Talking with the medical staff (nurses, social worker, etc.) when we visit the medical center.	0	1	2	3
6.	Believing that my child will get better	0	1	2	3
7.	Working, outside employment	0	1	2	3
8.	Showing that I am strong.	0	1	2	3
9.	Purchasing gifts for myself and/or other family members.	0	1	2	3
10.	Talking with other individual/parents in my situation	0	1	2	3
11.	Taking good care of all the child's special needs at home**.**		1	2	3
12.	Eating	0	1	2	3
13.	Getting away by myself	0	1	2	3
14.	Getting other members of the family to help with chores and tasks at home	0			
15.	Believing in God.	0	1	2	3
16.	Talking with Doctor about my concerns about my child(ren) with the medical condition.	0	1	2	3

17.	Believing that the medical center/hospital has my family's best interest in mind.	0	1	2	3
18.	Building a closer relationship with people.	0	1	2	3
19.	Develop myself as a person.	0	1	2	3
20.	Talking with other parents in the same type of situation and learning about their experiences.	0	1	2	3
21.	Doing things together as a family (involving all members of the family).	0	1	2	3
22.	Investing time and energy in my job.	0	1	2	3
23.	Believing that my child is getting the best medical care possible.	0	1	2	3
24.	Entertaining friends in our home	0	1	2	3
25.	Reading about how other persons in my situation handle things.	0	1	2	3
26.	Doing things with family relatives.	0	1	2	3
27.	Becoming more self-reliant and dependent.	0	1	2	3
28.	Telling myself that I have many things I should be thankful for.	0	1	2	3
29.	Concentrating on hobbies (art, music, jogging, etc.)	0	1	2	3
30.	Explaining our family situation to friend and neighbors so they will understand us.	0	1	2	3
31.	Allowing myself to get angry.	0	1	2	3
32.	Explaining our family situation to friend and neighbors so they will understand us.	0	1	2	3
33.	Allowing myself to get angry.	0	1	2	3
34.	Encouraging child(ren) with medical condition to be more independent.	0	1	2	3
35.	Keeping myself in shape and well groomed.	0	1	2	3
36.	Involvement in social activities (parties, etc.) with friends.	0	1	2	3

37.	Going out with my spouse on a regular basis	0	1	2	3
38.	Investing myself in my child(ren).	0	1	2	3
39.	Being sure prescribed medical treatments for child(ren) are carried out at home on a daily basis	0	1	2	3
40.	Building a closer relationship with my spouse	0	1	2	3
41.	Talking to someone (not professional counselor/doctor) about how I feel.	0	1	2	3
42.	Reading more about the medical problem which concerns me.	0	1	2	3
43.	Talking over personal feelings and concerns with spouse.	0	1	2	3
44.	Being able to get away from the home care tasks and responsibilities for some relief.	0	1	2	3
45.	Having my child with the medical condition seen at the clinic/hospital on a regular basis.	0	1	2	3

ANNEX IV: AMHARIC VERSION OF INFORMATION SHEET AND CONSENT FORM

4.1 የተሳታፊዎች መረጃ ቅፅ

መግቢያ

ጤና ይስጥልኝ ስሜ ……የተባልኩ ዛሬ እዚህ የተገኘሁት በአዲስ አበባ ዩኒቨርሲቲ በነርስና ሚድዋይፍ የትምህርት ተማሪ የሆነዉ ጥናት እያደረገ ሲሆን ጥናቱም የማስትርስ ዲግሪ ለማግኘት የሚያስችለውን በመወከል ሲሆን ጥናቱም የ Coping health inventory for parents (CHIP) የአማርኛ ትርጓሜ ተገቢነት እና ተአማኒነት ካንሰር ያለባቸው ለጆችን የሚያስታምሙ ውላጆች ላይ የሚደረግ ጥናት ነዉ።

አላማ፡- የCoping health inventory for parents (CHIP) የአማርኛ ትርጓሜ ተገቢነት እና ተአማኒነት ካንሰር ያለባቸው ለጆችን የሚያስታምሙ ውላጆች ላይ የሚደረግ ጥናት ነዉ።

ቅደም ተከተል፡- የስምምነት ወረቀቱን ከፈረሙ በኋላ የተዋቀሩና አግባብ ያላቸውን ጥያቄዎች መረጃ ሰብሳቢው

ይጠይቆታል ምላሽዎም ወረቀቱ ላይ ይሰፍራል መጠየቁም ቢበዛ 20 ደቂቃ ይወስዳል።

ለተጠያቂው የሚሰጠው ጥቅም፡ ተጠያቂው ቀጥታ የሚያገኘው ጥቅም የለም ግን ተአማኒነትያለዉመጠይቅ ለማግኘት ይረዳል።

የሚያስከትለው ጉዳት፡- መረጃ ሰብሳቢው ሲጠይቆት ምቻት ላይሰማዎ ይችላል ግን የሶ ተሳትፎ በጣም ይጠቅመናል።

ተሳትፎዎፈቃደኝነት ላይ የተመሰረተ ነዉ፡- ለመሳተፍም ሆነ ላለመሳተፍ ሙሉ መብት አሎት፣ መጠየቁን ጀምረው ከመሀል የማቆምም ሆነ ያልፈለጉትን ጥያቄ ያለመመለስ ሙሉ መብት አሎት።

ይህ የሚሰጡን ግላዊ መረጃ ሚስጥራዊነቱ የተጠበቀ ነው ። ይህ መረጃ በኮምፒውተር በሚስጥር ከተመዘገበ በኃላ ስምዎት አይጠቀስም እናም በምንም አይት መንገድ ሊታወቅ አይችልም። በኮምፒውተር ውስጥ ያለው መረጃ በሚስጥር ኮድ ታስሮ ይቀመጣል።የሚሰጡን ሁሉም መረጃ ከተባለለት አላማ ውጪ አይውልም።

ሰለምርምሩ ተጨማሪ መረጃ ከፈለጉ ከታች የተቀሰዉን ሰዉ ማናገር ይችላሉ።

የጥናት አድራጊዋ ስም፡- አብረሃም አዳነ

ስልክ ቁጥር፡- +251912095803

4.2 የስምምነት ቅፅ

የጥናቱ አላማ ተረድቻለሁ። ከላይ የጥናቱ አላማ፣ ጥቅሙ ፣ ጉዳቱ፣ እንዲሁም ሚስጥራዊነቱ በሚገባኝ እና በምረዳው ቋንቋ ተገለፆልኛል። በጥናቱ ላይ ያለመሳተፍም ሆነ ከጀመርኩ በኃላ በፈለኩት ጊዜ አቋርጬ የመሄድ ሙሉ መብት አለኝ፡ ፡የጠየኩት ጥያቄ ሁሉ ተመልሶልኛል። በዚህ ጥናት ላይ ተሳትፎዬ ፈፅሞ በፍላጐት ላይ የተመሰረተ ነው ።

የምላሽ ሰጪ

ፊርማ_____ ቀን _____

የጠያቂው

ስም _____ ቀን _____

የመጠይቅ መለያ ቁጥር_____

የጠየቁበት ቀን _____ የተጀመረበት ሰአት_____ ያለቀበት ሰአት_____

4.3.አማርኛ መጠይቅ

. ማህበራዊና ቤተሰባዊ ጥያቄዎች

1.1.ወላጅ/አሳዳጊነ የሚመለከት ኮድ_____

1.	ዕድሜ	
2.	ፆታ	1. ወንድ
		2. ሴት
3.	የጋብቻሁ ኔታ	1. ያገባ/ች
		2. ያላገባ/ች
		3. የተፋታ/ች
		4. የሞተበት/ባት
4.	የቤተሰብ መዋቅር/ ሁኔታ/	1. ሁለቱም ውላጆች ያሉብት ቤተሰብ
		2. አነንደ ውላጅ ብቻ ያልበት ቤተሰብ
5.	በቤትዎ ውስጥ የሚኖሩ የቤተስብ ስብጥር	1. አባት፤እናት ልጆች
		2. ወላጅች፣ልጆች፤አያት
		3. ወላጅት፤ልጆት፤አያት፤አክስት/አጎት
6	ከታማሚው ልጅ ግር ያልውት ዝምድና	1. አባት/እናት
		2. ወንድም/እህት/ የስጋ ዘምድ
		3. ሞግዚት
		4. ሌላ
7	ቤት ውስጥ ያሉ ልጆች ብዛት	
		1. ያልትማረ/ች
		2. አንድኛ ደረጃ
		3. ሁለትኛ ደረጃ
		4. ከከፍተኛ የት/ም ትቋም የትምርቀ/ች
		5. ድህር ምሩቅ 6.
8	ሃይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ካቶሊክ 4. ፕሮቴስታንት 5. ሌላ ከሆነ ይጥቅሱ---------
11	ስራ	1. ገበሬ
		2. የቤት እመቤት
		3. ተቅጣሪ ሰራተኛ
		4. ነጋዴ
		5. ሌላ ከሆነ ይጥቅሱ---------

የቤተስብ ብዛት	
ወራዊ ግቢ በ ኢት ብር	1. 500-1500
	2. 1501-2500
	3. 2501-3500
	4. 3501-4500
	5. ≥ 4501
ልጅዎትንሲስታምሙ ድጋፍ ከማን ያገኛሉ/የድጋፍ ም	1. ከዘመድ/ከጓድኛ
	2. ከቀጣሪ መ/ቤት
	3. ከኢንሹራንሰ ካምፓኒ
	4. ከመንግስት/የነጻ ህክምና
	5. ሌላ_____

1.2. የታማሚውን ልጇ የሚመለከት

1.	የልጁ እድሜ	
2.	ፆታ	1. ወንድ
		2. ሴት
3.	የተረጋገጠው የካንሰር ዓይነት	
4.	ህመሙ ከታውቀ እና ህክምና ከጀምር ምን ያህል ጊዜው ነው/ በወራት/	
5.	የህክምናው አይነት	1. ኬሞቴራፒ/ኬቴ/
		2. ጨረር
		3. ቀዶ ጥገና
		4. ጨረርና ቀዶ ጥገና
		5. ኬቴ እና ቀዶ ጥገና
		6. ጨረር እና ኬቴ
		7. ኬቴ ቀዶ ጥገና እናጨረር

2. የወላጆችን የመቋቋም ባሕሪዎች የጤና ጥናት (CHIP) ልኬት

የልጅዎ ህመም እና ህክምና የቤተሰብ ሕይወትዎን ከማስተዳደር ከመምራት አንጻር የሚግጥምዎትን ፈትና/ችግር/ጭንቀት/ ለመቋቋም እና ለማልፍ የሚጠቀሙበት ባህሪ፡ድርጊት ወይም እምንት ምን ያህል ጠቃሚ እንደሆነ ቁጥርን በማክበብ ያሳዩ ።

1= ምንም ጠቀሜታ የለውም 2=ጥቂት ጠቀሜታ አለው 3=ጠቀሜታ አለው 4=በጣም ጠቀሜታ አለው

ተ'ቁ	የመቋቋም ባሕሪዎች	ምንም ጠቀሜታ የለውም	ጥቂት ጠቀሜታ አለው	ጠቀሜታ አለው	በጣም ጠቀሜታ አለው
1.	የቤተሰብን መረጋጋት ለመጠበቅ መሞከር ።	0	1	2	3
2.	አስፈላጊ እና ጥሩ ስሜት እንዲሰማኝ በሚረዱኝ ግንኙነቶች እና ጓደኝነት መሳተፍ።	0	1	2	3
3.	የትዳር ጓደኛዬ (ወይም የቀድሞ የትዳር አጋሬ) እኔእና ልጄን እንድሚደገፍን እና በሚያስፍልግዉ ሁሉ እንሚረዳኝ ማመን።	0	1	2	3
4.	የልጄ ህምመ ሲያስጨንቀኝ እተኛለሁ.	0	1	2	3
5.	ከሕክምና ማዕከሉንከ ባልደረቦች (ነርሶች ፣ ማህበራዊ ሰራተኛ ፣ ወዘተ) ጋር በልጄ ጤና ዙሪያ መነጋገር ።	0	1	2	3
6.	ልጄ እንደሚሻለዉ ማመን	0	1	2	3
7.	እራሴን በሰራ መወጠር/ ተጨምሪ ሥራ መሥራት።	0	1	2	3
8.	እኔ ጠንካራ እንደሆንኩ ማሳየት ።	0	1	2	3
9.	ለራሴ እና / ወይም ለሌሎተ የቤተሰብ አባላች ስጦታዎት መግዛት ።	0	1	2	3
10.	ባለሁበት ሁኔታ ካሉ ሌሎች ግለሰቦች / ወላጆች ጋር መነጋገር	0	1	2	3
11.	በቤት ውስጥ የልጁን ልዩ ፍላጎቶች ሁሉ በደንብ ማሟላት መንከባከብ ።	0	1	2	3
12.	እርካታ/ እርፍት /የሚስጠኝ ምግብ መምግብ	0	1	2	3
13.	እራሴን le mashes መሞክር	0	1	2	3
14.	ሌሎች የቤተሰብ አባላትን በስራ ላይ እንዲረዱ ማድረግ እና ተግባራት በቤት ውስጥ	0	1	2	3
15.	በእግዚአብሔር / በአመላከ/ ማመን.	0	1	2	3
16.	ከሕክምናው ሁኔታ ጋር ስለልጄ ስጋት ከዶክተር ጋር ማውራት ።	0	1	2	3
17.	የሕክምና ማዕከል / ሆስፒታል የቤተሰቤን ፍላጎት ያገናዝበ አገለግሎት እንድሚስጠኝ ማምን ።	0	1	2	3
18.	ከሰዎች ጋር የጠበቀ ግንኙነት መገንባት ።	0	1	2	3
19.	እራሴን እንደ ሰው ለነግሮች ማዝጋጀት።	0	1	2	3

20.	በተመሰሳይ ሁኔታ ውስጥ ካሉ ሌሎት ወላጆች ጋር መነጋገር እና ስለ ልምዶቻቸው መማር	0	1	2	3
21.	ነገሮችን ከቤተሰብ ጋር አንድ ላይ ማከናወን (ሁሉንም የቤተሰብ አባላት ማሳተፍ)።	0	1	2	3
22.	በሥራዬ ጊዜየን እና ጉልበት ኢንቬስት ማድረግ ።	0	1	2	3
23.	ልዴ የሚቻለውን ሁሉ የተሳለ የህክምና እርዳታ እያገኘ ነው ብሎ ማመን ።	0	1	2	3
24.	በቤታችን ውስጥ ጓደኞችን ማዝናናት	0	1	2	3
25.	በእኔ ሁኔታ ያሉ ሌሎት ሰዎት ነገሮትን እንዴት እንደሚይዙ ማንበብ።	0	1	2	3
26.	ነገሮችን ከቤተሰብ ዘመድ ጋር ማድረግ ።	0	1	2	3
27.	የበለጠ በራስ መተማመን እና ጥገኛ አልመሆን።	0	1	2	3
28.	አመስጋኝ መሆን ያለብኝ ብዙ ነገሮት እንዳሉ ለራሴ መንገር	0	1	2	3
29.	በትርፍ ጊዜ ማሳለፊያዎት (ስነ-ጥበባት ፣ ሙዚቃ ፣ የስፖርት እንቅስቃሴ .. ወዘተ) ላይ ማተኮር	0	1	2	3
30.	የቤተሰባትንን ሁኔታ ለጓደኖ እና ለጎረቤቶት በማስረዳት እነሱ እኛን እንዲርዱን ማድርግ	0	1	2	3
31.	እራሴን እንድቆጣ መፍቀድ/ እበሳጫልሁ	0	1	2	3
32.	ከህክምና ሁኔታ ልዴ የበለጠ ገለልተኖ እንዲሆን ማበረታታት	0	1	2	3
33.	እራሴን በቅርጽ እና በጥሩ ሁኔታ እጠብቃለሁ ።	0	1	2	3
34.	በማህበራዊ እንቅስቃሴዎት ውስጥ ከጓደኞች ጋር መሳትፎ (ፓርቲዎች ፣ ወዘተ.) ።.	0	1	2	3
35.	በመደበኛነት ከባለቤቴ ጋር ለምዘናናት መውጣት ።	0	1	2	3
36.	እራሴን በልጄ ውስጥ ኢንቨስት ማድረግ ፡ ፡.	0	1	2	3
37.	ለልዴ የታዘዙ ሕክምናዎት በየቀኑ በቤት ውስጥ እንደሚከናወኑ እርግጠኛ መሆን	0	1	2	3
38.	ከባለቤቴ ጋር የጠበቀ ግንኙነት መገንባት	0	1	2	3
39.	ስለ እኔ ስሜት ከሌላ ሰው ጋር መነጋገር (የባለሙያ አማካሪ / ዶክተር አይደለም) ።.	0	1	2	3
40.	እኔንስለሚመለከተኝየሕክምናችግርየበለጠ ማንበብ።.	0	1	2	3

41.	ከትዳር ጓደኛ ጋር በግል ስሜቶች እና ጭንቀቶች ላይ ማውራት	0	1	2	3
42.	ለተወሰነ እፎይታ ከቤት እንክብካቤ ተግባራት እና ኃላፊነቶች መራቅ መቻል።	0	1	2	3
43.	ልጄን በመደበኛነት በክሊኒኩ / በሆስፒታል እንዲታከም ማድረግ ።	0	1	2	3
44.	ነገሮች ሁል ጊዜ እንደሚሰምሩ ማመን ።	0	1	2	3
45.	ከልጆቼ ጋር ነገሮችን ማድረግ ።	0	1	2	3

Annex V

Permission letters

permission to translate CHIP to Amharic and validating the Amharic version Inbox

Abraham Adane Jun 2

Dear Sir/Madam This Abraham Adane M.Sc Nursing student from Addis Ababa University College of Health Science School of nursing and Midwifery,Ethiopia writing my

Jason Sievers Jun 2

to me

Abraham --

Abraham --

You have our permission to use the CHIP measure for your research. If you translate the measure into a language other than English, please send us a copy.

Let us know if you have any questions.

Laurie "Lali" McCubbin, PhD

Jason A. Sievers, PhD

Hamilton I. McCubbin, PhD

Table 1

Resilience, Adaptation and Well-Being Project

Email: mccubbinresilience@gmail.com

Website: www.mccubbinresilience.org

Document Information

Analysed document	[illegible]
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