An-Najah National University
Faculty of Graduate Studies

VALIDATION OF THE CHILDREN'S DEPRESSION INVENTORY SECOND EDITION (CDI-2) IN ARABIC WITHIN THE PALESTINIAN CONTEXT

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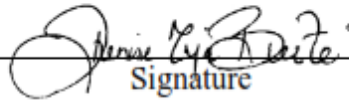
Dr. Denise Berte Co-Supervisor	 Signature
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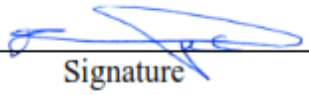
Dr. Adnan Sarhan Internal Examiner	 Signature

Dedication

I dedicate this work to my precious family, friends and colleagues whose patience, continuous prayers and perseverance led me to this accomplishment.

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A lot of thanks

Declaration

I, the undersigned, declare that I submitted the thesis entitled:

VALIDATION OF THE CHILDREN'S DEPRESSION INVENTORY SECOND EDITION (CDI-2) IN ARABIC WITHIN THE PALESTINIAN CONTEXT

The work presented in this thesis, unless otherwise referenced, is the researcher's own work and has been submitted elsewhere for any degree or qualification.

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Date: 14/09/2023

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VALIDATION OF THE CHILDREN'S DEPRESSION INVENTORY SECOND EDITION (CDI-2) IN ARABIC WITHIN THE PALESTINIAN CONTEXT

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Abstract

This study aims to identify The Validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic Language within a Palestinian Context, To achieve the objectives and answer the hypotheses of the study the researcher utilized a Description analytical approach which focus on collect the information about the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context, and describe the characteristics of CDI-2 scale and the stress scale applied on the children of Palestine, so the Description methodology is the perfect one.

The research results showed statistically significant differences in children's perspectives regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within the Palestinian context attributed to gender in favor of females. However, there were no statistically significant differences in children's perspectives regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within the Palestinian context attributed to gender in favor of females, but there were no statistically significant differences in children's perspectives regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within the Palestinian context attributed to gender in favor of females, but there were no statistically significant differences in children's perspectives regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within the Palestinian context attributed to gender in favor of females, but there were no statistically significant differences in children's perspectives regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within the Palestinian context attributed to gender in favor of females, but there were no statistically significant differences in children's perspectives regarding the validation of the Children's

Depression Inventory Second Edition (CDI-2) in Arabic within the Palestinian context attributed to age.

Keywords: Children's Expression Inventory; (Cdi-2); Rebic Palestinian Context Language.

Chapter One
Introduction

1.1 Overview

Depression is the most prevalent affective disorder, ranging from mild to severe, including psychotic features like hallucinations and delusions (Bhowmik, Sampath Kumar, Srivastava, Paswan, & Dutta, 2012) Symptoms include persistent sadness, loss of interest in daily activities, irritability, negative thinking, lack of energy, and disturbances in sleep, appetite, and concentration. Major depression is episodic and can significantly impair daily functioning. Factors such as age, gender, economic status, and cultural background can influence its presentation (Kusevic & Melsa, 2017). Severe depression can lead to suicidal thoughts and behaviors (World Health Organization, 2017).

In the past, society has discounted the possibility that a child's emotional health may be compromised. Before the 1970s, depression was usually thought of as an adult disorder because it was believed that children were too developmentally immature to suffer from it. Children's depression and psychological disorders were not included in the Diagnostic and Statistical Manual of Mental Disorders (DSM) until its third version in 1980 (Charles & Fazeli, 2017).

Research on depression in children and adolescents is relatively new. The National Institute of Mental Health (NIMH) in the United States first recognized depression in children and teenagers in 1975. Interest in studying depression during these life stages has increased over the past two decades (Bahls, 2002). Despite criticism that diagnosing depression in early childhood is premature, mounting research indicates that depression can manifest in children as young as three years old (Dietz, Silk, & Amole, 2018).

Depressive disorders in childhood and adolescence often exhibit similar characteristics to adult depression, including changes in mood, thinking, and activity that hinder personal and social functioning. However, manifestations of Major Depressive Disorder (MDD) in children can vary significantly based on their developmental stage (Charles & Fazeli, 2017). Factors such as speech and language abilities, cognitive function, level of distress or disorder, and modeling opportunities influence how well children can articulate their

symptoms and inner experiences. Depressed children often struggle to speak positively about themselves and tend to blame themselves for their problems. They are more likely to present with physical symptoms, such as headaches, abdominal and musculoskeletal pain, and fatigue, and less likely to express their emotional distress directly (Charles & Fazeli, 2017).

Multi-Health Systems (MHS) developed the Children's Depression Inventory 2 (CDI 2) to assess depressive symptoms in children and adolescents aged 7 to 17. The current version, published in 1992, evolved from the 1977 version created by (Bae, 2012). The Children's Depression Inventory (CDI) is one of the most widely used self-report tools for measuring depressive symptoms in this age group (Lee, Krishnan, & Park, 2012). Despite criticisms and assumptions about its use, the CDI remains a popular depression screener in both academic and clinical settings (Lee, Krishnan, & Park, 2012). Using the CDI can help develop a targeted treatment plan by evaluating the prevalence and severity of specific depressive symptoms in young individuals. Ratings from parents, teachers, and the children themselves provide a comprehensive view of each child's functioning. Psychologists, psychiatrists, social workers, and counselors often utilize the CDI in educational institutions, counseling centers, and pediatric medical settings (Health & Relationships, 2006).

The Children's Depression Inventory (CDI) was developed by modifying the Adult Beck Depression Inventory. It is frequently cited in literature as a valuable tool for identifying depressive symptoms in children and adolescents (Rivera, Bernal, & Rosselló, 2005). While the Beck Depression Inventory (BDI) was originally designed for assessing depressive symptoms in adults, it is also used for adolescents. However, it cannot be easily adapted to measure symptoms in children. The BDI remains a popular self-administered depression inventory with well-established psychometric properties, but it is only suitable for adults and teenagers (Rivera, Bernal, & Rosselló, 2005). Additionally, the Revised Child Anxiety and Depression Scale (RCADS) was created to assess symptoms of anxiety disorders and depression in children and adolescents aged 8 to 18 (Weiss & Chorpita, 2011). Initially, the RCADS included six subscales to evaluate separation anxiety, social phobia, generalized anxiety disorder, panic disorder, obsessive-compulsive disorder, and major depressive disorder. However, there is insufficient evidence that the RCADS has good test-retest reliability over short periods. The RCADS

is available in English and officially translated into 16 other languages, but not Arabic, limiting its use in the Palestinian context (Weiss & Chorpita, 2011).

The absence of culturally sensitive standardized screening scales and diagnostic procedures presents challenges in generalizing research and identifying and monitoring mental health issues in children from diverse cultures, backgrounds, and languages (Traube, Dukay, Kaaya, Reyes, & Mellins, 2010). Studies indicate that assuming translated metrics are equivalent or that a metric holds the same meaning across cultures can be risky. It is crucial to validate instruments across various cultural groups to ensure the scale's sensitivity to cultural diversity. Therefore, broadly defined Western scales may not be suitable for use in non-Western cultures (Traube, Dukay, Kaaya, Reyes, & Mellins, 2010).

It is evident that many Palestinian children have been exposed to numerous incidents of violence, which likely impacts them and may lead to the manifestation of symptoms associated with psychiatric disorders such as post-traumatic stress disorder (PTSD), anxiety disorders, depression, and mood disorders (Rabaia, Saleh, & Giacaman, 2014). The study on the relationship between war trauma, PTSD, depression, and anxiety among Palestinian children in the Gaza Strip by (Reubi & Sandri, 1979) found that political violence resulting from war trauma is linked to the development of PTSD and depression in these children. The study reported that 50.6% of children in Gaza suffer from depression. Exposure to traumatic events is a significant risk factor for various forms of psychological distress, including depression, in children and adolescents (Kolltveit, et al., 2012).

1.2 Significance of the study

The Second Edition of The Children's Depression Inventory (CDI-2) Scale is one of the most widely used measures in the United States, but it is unclear whether it would apply in a Palestinian context or in an Arabic translation. In order to enable pediatricians, primary care providers, and mental health professionals to recognize pediatric depression, the researcher intend to validate an Arabic version of the scale that is culturally and linguistically sensitive to the Palestinian environment. It may also be used by Palestinian special education instructors to recognize depressed kids and track their development in early intervention settings.

This research aims to expand the range of internationally standardized and validated scales, enhance general developmental knowledge, and improve understanding of early childhood depression in Palestinian children and adolescents. It seeks to identify individual and community needs and establish guidelines for appropriate diagnosis. Furthermore, the study will provide valuable insights into the usability of the Children's Depression Inventory 2 (CDI-2) in the Palestinian context.

1.3 Problem Statement

The problem of detecting depression in children and adolescents is a serious problem in Palestine, as few psychometric instruments are available in Arabic, most of which are translations of American or British tests, which have not been specific in the cultural context of the recipients verify. In a geopolitical context, there is a great need for Arabic-speaking psychologists and teachers to construct and validate psychological tests in Arabic that will be used to assess depression in children and adolescents.

This study aims to assess whether the Arabic version of the Children's Depression Inventory Second Edition (CDI-2) scale is as effective as or more effective than other scales, such as simple clinical interviews and DSM-5 symptom checklists, in measuring depression in Palestinian children.

1.4 Research Questions

Based on the above, the study problem was put forward, and the research questions can be formulated as follows:

1. What are the main differences and similarities between the characteristics of CDI-2 scale and the stress scale which applied on the children of Palestine?
2. What are the main differences and similarities between the results of CDI-2 scale and the stress scale applied on Palestinian children?
3. Based on CDI-2 and the applied depression measure results, what is the rate of depression in the selected sample?
4. Does the Children’s Depression Inventory Second Edition (CDI-2) Scale add relevant information for professionals working with clinical interview or a DSM5 checklist?

1.5 Research Objectives

The main objective of this study is to assess the suitability of the Arabic version of the Children's Depression Inventory Second Edition (CDI-2) Scale for measuring childhood depression in the Palestinian context. This involves validating the translated version to ensure its cultural relevance, productiveness, and equivalence to clinical observations. Additionally, the study aims to determine the scale's usability and acceptance within the Palestinian community.

Chapter Two

Literature Review

2.1 Childhood depression

2.1.1Childhood depression definition

Childhood depression is a mental health disorder that can affect children and adolescents. It is characterized by persistent feelings of sadness, irritability, and loss of interest in activities that were once enjoyed. Other symptoms may include changes in appetite and sleep patterns, feelings of worthlessness or guilt, and physical complaints such as headaches or stomachaches. It is important for parents and caregivers to seek professional help if they suspect a child may be experiencing depression, as early intervention can lead to better outcomes (Rao & Chen, 2009).

Early-life depression can have significant functional and developmental repercussions. So it is essential to comprehend the disorder at this developmental level in order to ascertain its etiology, course, and create efficient intervention strategies. The DSM first included depression as a diagnosis in 1980. It is a mood disorder characterized by persistent feelings of sadness, low energy, and loss of interest or pleasure in activities. Common symptoms include low self-esteem, feelings of guilt, thoughts of death or suicide, difficulty concentrating, and changes in sleep and appetite. While depression can be a recurrent and relapsing condition, individuals with milder symptoms often have a better prognosis (Wirback, 2018).

The World Health Organization defines sadness, guilt feelings, loss of interests and enjoyment, disturbed sleep and appetite, low self-esteem, fatigue, and decreased focus as the main symptoms of depression. The quality of life and one's capacity for functioning in all spheres of life are significantly impacted by depression. It's important to note that this disease frequently coexists with thoughts of suicide or self-harm (Śniadach, Szymkowiak, Osip, & Waszkiewicz, 2021).

2.1.2 Childhood Depression Assessment

A crucial part of modern clinical psychology work is psychological assessment. Assessment is essential for a client's initial assessment as well as for tracking their progress and gauging their response to therapy (Bekhit, Thomas, Lalonde, & Jolley, 2002). Psychological evaluation, which predates scientific psychology, is founded on the psychology of individual differences. Psychological evaluation was the primary function of clinical psychology at its inception, and through the 1950, the majority of clinical psychologists spent the majority of their time conducting assessments (Weiner, 2013).

Psychological evaluation of young children can provide valuable insights for clinicians, educators, and families. By understanding how behavior and cognition relate to overall development, professionals can develop better interventions and support plans. Psychologists aim to assess not just a child's overall functioning but also specific patterns of strengths and weaknesses in their skills. This information helps in developing tailored intervention plans. Combining various approaches and evaluation methods, psychologists provide a comprehensive view that aids in planning for the child's medical, social, and educational needs (Mahone & Krieger Institute, 2015).

Evaluation of depression in children and adolescents serves several purposes. It can be diagnostic, aiming to verify the presence of diagnostic criteria outlined in classification systems like the ICD (International Classification of Diseases) or DSM (Diagnostic and Statistical Manual of Mental Disorders). Evaluation can also quantify the frequency or severity of symptoms, providing a clearer understanding of the condition. Additionally, evaluation can serve as a screening tool to identify individuals who may require further assessment for depression (Working groupof the clinical practice, 2009).

Although it shares the same goals as all assessments of mental health, the evaluation of major depression in childhood and teens has some unique features. Due to a child's limited ability to identify and express feelings and negative thoughts, especially in younger children, it is essential to keep in mind that depressive symptoms are expressed differently in children than in adults (Working groupof the clinical practice, 2009).

Researchers and clinicians assess for depressive symptoms and the psychosocial impairments they may cause in children and adolescents using clinical interviews, rating

scales, and questionnaires that correspond to Diagnostic and Statistical Manual of Mental Disorders diagnostic criteria. There are currently no genetic, biological, or neuroimaging assessments available for the diagnosis of depressive disorders. Because symptom manifestations as well as children's abilities to understand and report on symptoms may differ across development (Dietz, Silk, & Amole, 2018), it is important that the chosen assessment tool is sensitive to developmental stage. It is also critical to obtain information from parents and other caregivers when available (e.g., other family members, teachers), especially for younger children. Multiple informants can contribute to a comprehensive understanding of symptoms across contexts (e.g., home, school, community) (Dietz, Silk, & Amole, 2018).

Current psychiatric diagnoses, prior psychiatric treatment, medical history, current environmental stressors (e.g., family conflict, abuse), and family medical and psychiatric history should also be inquired about during an assessment for youth depression. Differentiation between depression and other psychiatric disorders (e.g., bipolar disorder) is crucial, especially for treatment planning. Medical conditions (e.g., hypothyroidism) and medications are important to consider and rule-out given that they may mimic or cause symptoms of depression (Dietz, Silk, & Amole, 2018).

2.1.3 The Children's Depression Inventory scales (CDI)

According to the DSM-IV criteria, a diagnosis of clinical depression requires the presence of five out of the nine listed symptoms, as well as a negative impact on one's work or personal life. However, some critics argue that this cut-off point is arbitrary and lacks empirical evidence. They suggest that it can be challenging to differentiate between what is considered normal and pathological, and that the diagnostic criteria may be too rigid. Additionally, depression is often referred to as a "disjunctive" diagnosis because two individuals with depression may share only a few symptoms in common (Wirback, 2018).

Symptoms of depression may manifest differently in children and adolescents compared to adults. For example, irritability may be more common in younger individuals and considered a symptom of depression. However, symptoms generally tend to be similar across all age groups. There are several different questionnaires used to assess depression in children and adolescents, including the Center for Epidemiologic Studies Depression Scale (CES-D) (Wirback, 2018).

Depression is linked to a number of detrimental outcomes for this age group, including difficulties in school, strained social relationships, risky sexual behavior, and a 30-fold increased chance of successfully committing suicide. Teenagers with depressive illnesses are particularly vulnerable to legal issues and exposure to negative life events (Stirling, Toumbourou, & Rowland, 2015).

The most significant risk factor for depression in children and adolescents is having a parent with depression. A family history of depression increases the risk at least threefold. Other important risk factors include environmental stressors such as physical and sexual abuse, as well as experiencing the loss of a parent, sibling, or close friend (Bahls, 2002). Exposure to violence has been associated with various negative outcomes in children and adolescents, including aggression, academic difficulties, post-traumatic stress symptoms, anxiety, and depression. This exposure is considered a major risk factor for the development of psychopathology in this population (Wagner, et al., 2019). Traveling through the occupied Palestinian territories remains perilous. About 41.3% of the country's 4.05 million population are under 15 years old, highlighting the significant impact of armed conflict on children's lives and development. Children bear the brunt of the ongoing conflict, facing daily rights abuses such as killing, maiming, torture, arbitrary detention, home demolition, discrimination, and restrictions on movement and access to goods. They also face violence in their communities, homes, and schools. Socioeconomic factors exacerbate their plight, with 11% of infants under five suffering from chronic malnutrition. In 2010, 80.1% of Palestinian households had at least one child, of which 26.9% were poor, with over half living in extreme poverty (EJ-YMCA, 2012).

The results of the study on the Psychological Well-Being of Palestinian Children and Adolescents in Gaza Strip and West Bank (Aziz & Aziz Mousa Thabet, 2019) indicate that traumatic experiences, such as witnessing dismembered corpses on TV, hearing and seeing shelling, being exposed to sonic bombs, and witnessing home bombardment and demolition, are consistent regardless of the severity of violence at the time. The Palestinians' well-being is impacted by these traumatic events and acts of violence, and the incidence of psychological issues rises among the targeted population. Depression was one of the mental health issues, with rates ranging from 40.6% in minors from Gaza and the West Bank to 50.6% overall (Aziz & Aziz Mousa Thabet, 2019).

Young Palestinians in the West Bank and East Jerusalem are particularly vulnerable to exposure to various forms of violence and indirect stressors related to the conflict, including financial difficulties and mobility restrictions. It is crucial to understand how these factors relate to mental health outcomes in this population (Wagner, et al., 2019).

2.1.4 Characteristics of childhood depression in Palestine

The use of tests created and approved for use in one language and culture in other languages and cultures is becoming more and more popular. These tests can sometimes be used to further study and fill informational gaps when they are modified for use in a second language and culture, and other times they can be used to conduct cross-cultural comparative studies (Hambleton & Patsula, 1998). "Validity is an integrated evaluative judgment of the extent to which empirical evidence and theoretical justifications support the sufficiency and appropriateness of inferences and actions based on test scores or other modes of assessment," says Messick (Urbina, 2014).

When adapting an instrument, it is essential to carefully translate it from the source language into the target language, ensuring that the new version is not only appropriate for the new environment but also aligns with the original version. This process is complex and requires meticulous attention to detail (Callegaro Borsa, Figueiredo Damasio, & Ruschel Bandeira, 2012). Adapting psychological instruments is a complex task that requires careful consideration of content preservation, psychometric properties, and overall validity for the target population. Throughout this process, it is crucial to ensure both the semantic equivalence of the items and the appropriate psychometric properties of the adapted instrument. Additionally, the adaptation should have a cultural fit, meaning it should be suitable for use in different cultural contexts (Callegaro Borsa, Figueiredo Damasio, & Ruschel Bandeira, 2012).

Since 1992, the International Test Commission (ITC) has been working to propose guidelines for the cross-cultural restatement and adaption of cerebral instruments. The terms “adaption” and “restatement” are distinct, and the former has been used most frequently because it includes all the processes concerning the artistic fit of the instrument beyond bare restatement. restatement is simply the first stage of the adaption process. When conforming an instrument, artistic, private, verbal and contextual aspects

concerning its restatement should be considered (Callegaro Borsa, Figueiredo Damasio, & Ruschel Bandeira, 2012).

2.2 Theories explaining the depression

2.2.1 Chemical Theory

Scientists have noticed that some "non-psychiatric" drugs have an effect on the emotional state of a person. It has been noted that patients with high blood pressure and those who take Serbazil regularly suffer from bouts of severe depression. At the same time, others noticed that tuberculosis patients who were treated with the drug Marcillide, had bouts of euphoria and a sense of well-being. From these two observations, scientific work began, which showed that Serbazil reduces the proportion of some neurotransmitters called amino acids in the brain, especially serotonin, adrenaline, and dopamine (El-Sherbiny, 2011).

This theory supported the theory of neurotransmitters in the emergence of depression, the presence of these substances in the areas of emotion in the brain (the hypothalamus) and their presence at a higher rate than any other part of the brain. And that after careful analyzes in the brain after their death. This theory was also supported by studies conducted by scientists on patients who were being treated for depression and died for many reasons (Huang, Wei, Wu, Chen, & Guo, 2013).

2.2.2 The Analytical-Freudian Interpretation of Depression

Sigmund Freud (1939) is considered the actual founder and the legitimate father of the so-called school of psychoanalysis. Human behavior, especially mental illness. Freud mentioned that a person is born with a sexual energy that he calls libido. This energy moves the personality and pushes it in different directions towards health or disease.

This energy contains three parts and he gave them the following names (Traube, Dukay, Kaaya, Reyes, & Mellins, 2010):

1. Id: which is the instinctive aspect, and in his view represents everything related to the irrational and instinctive animal barbaric tendencies in the human personality.

2. Ego: is called the ego, and it represents the rational and conscious part that directs and corresponds to the instinctive side of a person for proper behavior that is compatible with the requirements of reality and the exigencies of the external world.
3. The Super Ego: is the conscience or the internal watchdog that directs our actions according to moral and social standards. The super ego is formed in the early stages of life thanks to the parental and social pressures on the child.

Freud showed that the relationship between these three organs is one of conflict and that the development of the personality and a large part of its diseases later occurs because of this conflict in the early stages of life. Depression can be understood in the light of the struggles between the three personal systems, and in the light of this struggle, the "super ego" is unique in victory, which represents rigor and extremism. Early childhood, and after discovering what he called the unconscious, he began to explain more about these diseases, which are the result of suppressing these conflicts in the unconscious, but unfortunately, these conflicts return and appear in different stages of life in the form of mental illnesses such as anxiety and depression, which is a symbolic subconscious recurrence. For everything that happens during the childhood years (Huang, Wei, Wu, Chen, & Guo, 2013).

Therefore, we find that depression in the light of the analytical theory is nothing but distress and anger due to frustration and disappointment in satisfying the need for love, but his anger is transformed by the unconscious defense mechanisms that the individual performs to defend himself when there is a threat to her.

Despite the criticisms directed by Beck to the psychoanalytic theory of the generality of its interpretation of a large number of mental illnesses using a number of concepts and without relying on sufficient scientific evidence, the analytical theory had the greatest impact in enriching scientific research and shedding light on some of the mechanisms and factors of depression, namely the effect early deprivation of parents and especially of our early love subjects on the growth and development of depression in individuals.

2.2.3 Social Learning Theory

As for the third theory, which explained depression, it is the social learning theory. Seligman was the first to prove that depression is a response that we learn when we find ourselves dealing with situations that threaten reassurance and safety and there is no escape from them, that is, we see them as hopeless. The following points describe this theory (Stockings, et al., 2015):

- Feeling depressed and the accompanying symptoms such as feeling tired lead to a decrease in the level of activity, and thus the sources of support are reduced.
- The decrease in the level of fortification, in turn, leads to a decrease in the level of energy and activity more and more.
- The amount of support an individual receives depends on three sources:
    1. Supports as a result of personal characteristics in the individual such as age, level of attractiveness to others, and his national and sexual affiliation.
    2. Supports from the environment, especially from the family and the amount of its support for him, as well as a sense of security and ease of living.
    3. The reinforcements resulting from what the individual has learned, such as social skills, positive interaction with others, or a social, professional or academic situation that achieves his satisfaction, and thus he is less likely to suffer psychological distress and depression than the hardened person who is unable to form a professional field that achieves his satisfaction.

2.2.4 Conclusion

Based on previous theories, it is clear to us that Freudian sees depression as a direct result of the loss of love in the early stages of life, and according to the learning theory, the lack of support and attention as a result of death, loss, or failure to give love. All this deprives us of an important source of psychological and moral support, which makes us targeted. of despair and depression, and the learning theory had the greatest impact in directing attention towards an important cause of depression, which is social and psychological pressure as one of the main factors contributing to the acquisition of depressive behavior.

2.3 Related Study

The study Cho et, al. (2022) title “Reliability and validity of the Korean version of Children’s Depression Inventory 2 Short Version as a screening tool” aimed to assess whether the Korean version of the Children's Depression Inventory 2 Short Version (CDI 2) is a reliable and valid instrument for identifying depression in young people compared to the full-length version (CDI 2). The research included 62 psychiatric patients and 714 neighborhood children. The Korean version of the Kiddie Schedule for Affective Disorders and Schizophrenia Present and Lifetime Version (K-SADS-PL-K) served as the reference benchmark for calculating receiver operating characteristic (ROC) curves. The study compared the areas under the curves (AUCs) to evaluate the ability of the CDI 2 and CDI 2 to differentiate major depressive disorders. Confirmatory factor analysis, internal consistency assessment, and examination of the CDI 2's psychometric properties were also conducted. The study found that the CDI 2 short version with a cutoff score of 20 exhibited the highest sensitivity 83% and specificity 91%. Similarly, the CDI 2 with a cutoff score of 10 showed high sensitivity 82% and specificity 93%. The results indicated that the short version is as precise and sensitive as the full-length CDI 2. Additional research confirmed the strong validity and reliability of the CDI 2. Based on these findings, the authors suggest that the CDI 2 short version, which is sensitive and condensed, may be a preferable choice in psychiatric settings with limited time.

The study Shehadeh (2021) title “The Psychological Wellbeing of Palestinian Children Living among Israeli Settlements in Hebron old City” aimed to investigate the impact of living conditions in Israeli settlements on the psychological well-being of Palestinian children and adolescents. This issue is particularly significant due to the protracted political conflict in the Palestinian Occupied Territories, where more than 300 settlements have emerged over the past century. Despite the passage of time, the conflict between Palestinians and Israeli occupation forces continues, leading to challenges for Palestinians living near these settlements. The study included 357 Palestinian children aged 8 to 18. Two self-report questionnaires were administered: the UCLA-PTSD-Reaction Index, which assessed symptoms of posttraumatic stress, and the Strengths and Difficulties Questionnaires, which focused on overall psychological problems. Responses were collected from the children themselves, as well as from their mothers and teachers. Descriptive analyses were conducted to examine mental health differences based on

variables such as gender and age, revealing important findings. The results of the study highlighted the significant impact of residing among Israeli settlements on the psychological well-being of Palestinians. Notably, girls and younger adolescents reported higher scores on both questionnaires, indicating a greater need for increased psychological care and support for family members, especially children, facing these challenging circumstances.

The study Fard et, al. (2021) title “Examination of the Psychometric Properties of the Revised Child Anxiety and Depression Scale (RCADS) among 10-18-year-old children in Golestan” aimed to assess the psychometric properties of the RCADS and its suitability as a diagnostic tool for anxiety and depression in children. The research included a sample of 399 children aged 10 to 18 from Golestan, selected using a multi-stage cluster sampling technique. The children were assessed using the RCADS, the Children's Depression Inventory (CDI), and the Youth Self-Report (YSR). Descriptive statistics, Pearson correlation coefficient, Cronbach's alpha coefficient, and exploratory factor analysis (EFA) were used to evaluate the data. The study found that the RCADS demonstrated both convergent and discriminant validity, as well as sufficient reliability. The EFA revealed a six-factor structure that accounted for 55.30% of the scale variance, which was supported by confirmatory factor analysis (CFA). Additionally, a significant correlation was found between the RCADS total score and the YSR-internalizing and YSR-externalizing subscales ($p<0.01$). Based on these findings, the RCADS can be considered a suitable diagnostic instrument for use in educational, clinical, and research settings with Iranian children. It has demonstrated the right psychometric characteristics for this population, highlighting its utility in assessing anxiety and depression in children aged 10 to 18 in Golestan..

The study Mahamid, & Berte (2020) title “Happiness, sadness, and hope for the future in narratives of Palestinian refugee children” aimed to Happiness, sadness, and hope for the future in narratives of Palestinian refugee children" to explore the self-reported measures of happiness, sadness, and hope for the future in the narratives of internally displaced Palestinian refugee youth across the West Bank. The study included a sample of 30 youth aged 14 to 16, selected from five Palestinian internally displaced (IDP) refugee camps in the West Bank. Factors contributing to youth-perceived happiness included belief in freedom and peace for the future, interactions and activities with peers, participation in

summer and winter camps, and material and emotional rewards from caretakers. Factors leading to self-reported sadness included the occupation of their homeland, negative school conditions, living conditions, and specific incidents of loss and traumatic experiences.

The study also revealed that hope for the future among Palestinian refugee children was rooted in their aspirations to pursue education, live in freedom and peace, return to their homeland, and eventually marry and start a family. The research highlights the challenges faced by Palestinian youth in deriving positive emotions from factors within their families and communities, as well as their struggle to maintain a belief in a better future through pro-social behaviors.

The study El-Khodary & Samara (2020) title "The relationship between multiple exposures to violence and war trauma, and mental health and behavioral problems among Palestinian children and adolescents" aimed to examine the impact of cumulative exposure to violence on the mental health of children and adolescents residing in the Gaza Strip.

The research involved a sample of 1029 individuals aged 11 to 17, with approximately equal representation of females and males. War-related traumatic events were assessed using the War-Traumatic Events Checklist (W-TECh), while instances of violence were gauged through the Multicultural Events Schedule for Adolescents (M.E.S.A.), covering violence at home, in the neighborhood, and at school. Emotional and behavioral issues were evaluated using the Strengths and Difficulties Questionnaire (SDQ), and PTSD and depression symptoms were assessed using the Post-Traumatic Stress Disorders Symptoms Scale (PTSDSS) and the Depression scale, respectively.

Results showed that a significant proportion of children reported exposure to violence across different contexts, with boys exhibiting a higher incidence compared to girls. The prevalence of PTSD was found to be considerable, and the cumulative effect of exposure to violence in multiple contexts was identified as a predictor of elevated levels of PTSD, social and emotional problems, depression, and overall mental health issues among children.

The study highlights the heightened risk of developing mental health problems due to cumulative exposure to violence and emphasizes the need for tailored interventions for these vulnerable populations.

The study Marie, SaadAdeen, & Battat (2020) title “Anxiety disorders and PTSD in Palestine: a literature review” aimed to systematically review existing literature and established studies on anxiety disorders and PTSD in Palestine. Anxiety disorders are ranked as the most prevalent mental health conditions globally by the World Health Organization (WHO). While many individuals recover from such experiences, those grappling with post-traumatic stress disorder (PTSD) often endure prolonged periods of profound depression and anxiety extending for months or even years post-event. Palestinians face an elevated risk of anxiety disorders and PTSD due to continuous exposure to political violence, enduring displacement, and restrictions on professional, educational, financial opportunities, and mental health services.

The study employed PubMed, Science Direct, and Google Scholar to source materials for critical analysis, considering study type, sample characteristics, and key findings. The review encompassed twenty-four studies from Palestine, covering various demographics such as children, adolescents, women, physical diseases, and gender and age differences.

The findings underscore that anxiety disorders and PTSD are prevalent mental health challenges in Palestine, arising from a complex interplay of risk factors including genetics, personality, and life events. These conditions are closely associated with a diminished quality of life and increased disability. The study reveals that a significant proportion of Palestinians face substantial challenges, compounded by barriers such as inconsistent medication availability, a lack of multidisciplinary teamwork, insufficient specialists, a fragmented mental health system, and the overarching impact of occupation..

The study Thabet (2019) title “Psychological well-being of Palestinian children and adolescents in Gaza Strip and West Bank: Review paper” aimed to explore indicators of psychological well-being among Palestinians in the Gaza Strip, delve into the causes of mental illness, assess available primary, secondary, and territorial intervention services, and propose recommendations for future research and intervention in the West Bank and Gaza Strip.

The review involved a comprehensive analysis of secondary data from previous research on the psychosocial well-being of Palestinians, utilizing autobiographies/biographies of the author and co-authors in the field, as well as web-based research including Medline, Psycho Info, and Scholar Portal.

Results from the reviewed studies, encompassing analyses of violence severity over time and types of traumatic experiences, revealed consistent patterns. These experiences included witnessing mutilated bodies on TV, exposure to shelling, hearing and seeing explosive events, and observing home bombardment and demolition. These traumatic occurrences significantly impacted the well-being of Palestinians, leading to an increased prevalence of psychological problems within the targeted population.

Notably, post-traumatic stress reactions in children ranged from 10% to 71%, with a PTSD rate in the West Bank ranging from 35% to 36%. Anxiety rates fluctuated between 28.5% and 33.9%, while depression rates varied from 40% among children in Gaza and the West Bank to 50.6%. Parents and teachers rated the general mental health of children at 20.9% and 31.8%, respectively, and up to 49.6% as per parental ratings. Among adults, PTSD rates ranged from 34% in university students to 65% among those exposed to shelling.

Risk factors influencing well-being included gender (being a boy), family size (living in larger families), low socioeconomic status, exposure to domestic and political violence, orphanhood, child labor, physical disabilities, and proximity to border areas.

The study Cox (2019) title “Thirty years with the Edinburgh Postnatal Depression Scale: voices from the past and recommendations for the future” aimed to provide insights into the Edinburgh Postnatal Depression Scale (EPDS). This ten-item self-report questionnaire was developed over 30 years ago to help identify perinatal depression and has since been translated into more than 60 languages, being widely used in many parts of the globe.

The study aims to offer updated suggestions for the ideal use of the EPDS in primary and secondary care, as well as in research settings. Future research is deemed necessary to assess the EPDS's validity and practical utility in naturalistic community groups, as well as its psychometric characteristics.

The study Binagwaho, Fawzi, Agbonyitor, Nsanzimana, & Karema (2016) title "Validating the Children's Depression Inventory in the context of Rwanda" address the coexistence of depression with chronic diseases, particularly HIV, and its impact on disease progression and life expectancy. The study aimed to validate the Children's Depression Inventory (CDI) as a quick and reliable screening instrument for depression in children living with HIV in Rwanda.

The research involved children living with HIV in Rwanda aged 7 to 14, comparing the CDI with a structured clinical evaluation as the gold standard. The study included 100 participants with an 87% response rate. The findings revealed a high rate of depression among children with HIV in Rwanda, emphasizing the urgent need to improve mental health services for this population. While the CDI showed reasonable overall accuracy, the study suggests the need for further research to develop a more sensitive depression screening tool for this at-risk population. Such a tool could enhance access to mental health services, potentially improving long-term health outcomes and quality of life as these children transition into adulthood.

The study Rashid (2015) title "Psychometric properties of the modified Arabic version of the Depression, Anxiety and Stress Scale DASS 42 among secondary school students in Al-Wadi, Algeria" aimed to verify the psychometric properties of the defective Arabic version of the Depression, Anxiety, and Stress Scale (DASS- 42) by Lovie Bond, (1995). A sample of 404 was selected, of which (266) females and 138 males were from secondary school students in Al-Wadi City. Another sample, different from the basic sample, consisting of 83 male and female students, was used to verify correlative validity and stability by re-application, and to ensure the stability of the scale, then a set of statistical methods were used, with four 04 methods: Cronbach's alpha coefficient, re-application stability, and reapplication coefficient. Guttmann, and Spearman-Brown coefficient the validity of the scale was proven through several methods, namely: apparent validity, correlative validity using the Beck scale of depression (BDI) and anxiety (HAI), and the psychological stress scale PSS-10 for Kuhn, (1983), and the scale True happiness according to "Seligman", honesty by means of internal consistency, and honesty by means of the exploratory and confirmatory factor analysis. The owner of the scale in the manual a for the original study confirmatory factor analysis was used. The results of the indicators of good conformity, including the square root index of the average association error

(RMSEA), which confirmed the conformity of the three-factor model to the scale similar to the original study, and by testing the hypotheses it was concluded that: The modified Arabic version of the Depression, Anxiety and Stress Scale (DASS) achieved high level of validity and reliability, after confirming its psychometric characteristics on a sample of secondary school students in the Algerian environment.

The study Jiang et, al. (2015) title “The reliability and validity of the center for epidemiologic studies depression scale (CES-D) for Chinese university students” aimed to address the increasing prevalence of depression among college students and the importance of identifying sub threshold depression. The study aimed to assess the psychometric properties of the CES-D among Chinese university students and analyze the demographic correlates of sub threshold depression in this population.

The research involved 2,068 university students who were asked to complete the Chinese CES-D, Beck Depression Inventory-II (BDI-II), and Positive and Negative Affect Schedule (PANAS). Structural equation modeling, exploratory and confirmatory factor analysis, and reliability analysis using Cranach's alpha were used to evaluate the Center for Epidemiologic Studies Depression (CES-D) Multiple regression analysis was employed to determine the prevalence of sub threshold depression and examine gender, grade, and other demographic correlates.

The findings indicated that the (CES-D) is a valid and reliable tool for identifying subthreshold depression in Chinese university students. The study provides valuable insights into the prevalence of subthreshold depression and its demographic correlates, highlighting the importance of early intervention for at-risk students.

The study Omaria (2010) title “Judging the depression Inventory Second Edition (CDI-2)- Beck's Depression List- on samples of both sexes in the Algerian environment” aimed to provide a measurement tool for depression in the Algerian environment that enjoys a scientific reputation and is widely used in measuring depressive symptoms, whether for the purpose of psychological research or for the purpose of clinical diagnosis. The researcher sought to arbitrate this list and identify its psychometric conditions on samples from the Algerian environment of both sexes starting from the age of 18 years, relying on a group of previous studies that showed the efficiency of this list in the field of research and clinical measurement.

This study Maamaria (2010) title “Standardization of the second Beck scale to measure depression on samples of both sexes in the picture of adults in the Algerian environment” focus on the standardization of the second Beck scale to measure underwriting on the Algerian environment.

Providing a measuring tool for depression in the Algerian environment, enjoying a scientific reputation and common use in measuring depressive symptoms, whether for the purpose of psychological research, or for the purpose of clinical diagnosis.

The legalization sample consisted of 998 individuals. Of them 473 males and 525 females, their ages ranged between 18-49 years. The total sample was drawn from the faculties of Haj Lakhdar University in Batna, and it included students, staff and professors, and from the vocational and paramedical training centers in Batna. After the application procedures, the operations resulted in the following results: With regard to the validity of the scale, it was calculated in three ways:

- Discriminatory validity: where the peripheral comparison was used, which indicated the existence of differences in the answers of males and females.
- Conventional honesty: To calculate this type of honesty, Beck's second checklist was applied to measure depression with Beck's checklist to measure despair, a perennial questionnaire to measure the feeling of despair among adults, a questionnaire to measure pessimism by Ahmed Mohamed Abdel-Khalek, a questionnaire to measure chronic fatigue by Samah Ahmed Al-Dheeb and Ahmed Mohamed Abdel-Khalek, and a list Beck to measure anxiety by Zizi Al-Sayed Ibrahim, and the correlation coefficients between these measures were characterized by high honesty
- Conflict validity: To calculate this type of validity, Beck's second checklist was applied to measure depression with the self-affirmation checklist of Arnold Lazarus and Joseph Wolpe, a questionnaire to measure happiness by Maysa Ahmed El-Nyal Magda Khamis Ali, and a questionnaire to measure optimism by Ahmed Mohamed Abdel-Khalek. It turns out that the correlation coefficients are highly reliable

As for stability, it was calculated in two ways: the re-test method and Cronbach's alpha coefficient, and it was characterized by high stability, ranging between (0.74 and 0.83).

The study Al-Badri (2010) title “Psychometric properties of the primary depression scale for adolescents of both gender” aimed to develop a foundational depression scale for adolescents of both genders. The study focused on evaluating the scale's validity and reliability. The results indicated that the validity coefficients for all statements ranged between 0.6 and 1.0, which are considered acceptable. Factor analysis using the principal components method identified six factors that accounted for 77.276% of the total variance. The stability coefficients, assessed using the test-retest method, for the scale dimensions and total score ranged between 0.715 and 0.789, indicating good stability over time. The Cronbach's alpha coefficient ranged between 0.679 and 0.758, indicating good internal consistency. Additionally, the study found statistically significant correlation coefficients between individual scores on each statement and the total score of the corresponding dimension at the 0.01 significance level. The study also calculated criteria, means, standard deviations, standard scores, and corresponding percentiles for each scale dimension.

The study Al-Juboury (2010) title “Measuring psychological depression and its relationship to some variables among the children of the Arab community residing in Denmark. Denmark” measured the psychological depression and its relationship to some variables among the Arab community residing in Denmark. The study included a random sample consisting of 140 Arab residents in Denmark, distributed over various regions of Denmark, and it included 77 males and 63 females. The study adopted a measure of psychological depression, and the results showed that both male and female members of the Arab community residing in Denmark who were included in the study suffer from psychological depression, and the results showed differences in favor of females, which indicates that females suffer from psychological depression more than males.

Chapter Three
Research Methodology

3.1 Introduction

This chapter provides an overview of the research methodology employed in this study, detailing the process of data collection and discussing aspects such as the population, sample selection, and the design of the research tools. Additionally, the chapter delves into the concepts of validity, reliability, and the methods used for statistical analysis.

The researcher adopted a descriptive analytical approach, focusing on gathering information related to the validation of the Children's Depression Inventory Second Edition (CDI-2) in the Arabic language within the context of Palestine. The aim was to describe the characteristics of the CDI-2 scale and the stress scale used for children in Palestine. This methodology was deemed appropriate for the study due to its suitability for providing a comprehensive description of the validation process and the characteristics of the scales used.

3.2 Data Collection Tools

The research utilized two main types of data: primary and secondary data.

- Primary Data: The primary data for this study were gathered using the CDI-2 scale and the stress scale. These scales were employed to validate the Children's Depression Inventory Second Edition (CDI-2) in the Arabic language within the context of Palestine. The computerized scales were designed to describe and analyze the characteristics of the CDI-2 scale and the stress scale used with Palestinian children. The data collected from the distributed scales were analyzed using statistical analysis with SPSS computer software.
- Secondary Data: Secondary data, gathered from various sources such as books, journals, reports, websites, and other relevant materials, were used to provide background information and context for the study. The literature review served to support the study's objectives and outlined the methods for interpreting and evaluating underlying meanings.

3.3.1 Research Population

The research population was the Palestinian children between (13-15) years old in the scholastic year 2022-2023.

3.3.2 Research Sample

The researcher targeted Palestinian governorate schools in the west bank as a case study and focused on Palestinian public schools that have the 13-15 years old students of both sexes, the researcher choose two different schools are: Jamil Shehadeh Secondary School for Boys and Al-Jalazoun Secondary School for Girls, the researcher chose two schools from the camp near the separation wall of tense events in the West Bank, with the aim of clarifying the indicators associated with depression and stress among children in that region.

The number of the research group should match the proper confidence level and confidence range. As a result, the 95% confidence level's confidence range will be 4%. 200 children’s make up the group overall, with similar numbers of both sexes.

3.4 Instrumentation

In the standard procedure of survey research for measuring depression, participants were provided with a self-report questionnaire. The CDI-2 was specifically designed to evaluate the extent and characteristics of depression in children aged 13 to 15 years. This instrument can be administered either individually or to a group of respondents. Each child responds to every statement by selecting one of three choices for each paragraph. One choice indicates the level of agreement if the item describes the child's feelings or actions, or generally reflects the child's perception of self.

The CDI-2 yields scores for the two main scales; emotional problems (EP) and functional problems (FP), the total scores of emotional problems consist of negative symptoms related to mood/body, and negative self-esteem, but the total scores of functional problems consist of inactivity, and problems dealing with people. Table (3.1) illustrate blueprint of CDI-2.

Table 3.1

The components of CDI-2 scale

Main scale	Subscale	Number of items	Items numbers	Positive item	Negative item
Emotional problems	Negative symptoms related to mood/body	9	1-9-10-15-16-17-18-26-27	1-9-10-15-26-27	16-17-18
	Negative self-esteem	6	2-6-7-8-13-24	6-7-13	2-8-24
Functional problems	Inactivity	8	3-4-12-14-20-22-23-28	3-4-14-22-28	12-20-23-
	Problems dealing with people	5	5-11-19-21-25	5-11-21-25	19

In order to assess responses on CDI-2, therefore three areas:

- Very optimistic: 70- 90 + points.
- Optimistic: 69 - 65 points.
- Above average: 64 - 62 points.
- Average or less: 61- 60 points.
- Depressed: 59 or less points.

3.5 The procedures

To gather statistics from the Palestinian state institutions, the researcher used stratified random selection. Stratified sampling is a sort of sampling technique that separates the population into distinct groups, or strata, and then randomly selects a sample from each stratum.

To get his/ her approval for planning this research, the head of the chosen school was met with. A parent instruction letter was provided to the chosen students, who were chosen from class rosters to engage in the study.

An informed consent document was given to children who consented to be a part of the research. After that, they took part in a questionnaire that included the Arabic Version of the (CDI-2) and other stress measure that were already in use. participants included the named kid and at least one caregiver. Through communication with the participating families by the school counselor, the interview appointment was arranged. There were no

longer than an hour for each assessment. (mean time for completion was 1 hour). The scholar administered the evaluations, scored the tests, and created a report detailing the findings for each kid.

The following section describes the procedures followed to translate and prepare the CDI-2, and to collect data:

Translation of the CDI-2 scale

The CDI-2 scale was translated using a standard procedure commonly employed in cross-cultural studies. This process includes initial translation, professional evaluation, and back translation. Since complete equivalence cannot be ensured by any single method, the translation process involves three main steps: (a) translating the test from the source to the target language, (b) translating the test back into the source language (back translation), and (c) utilizing independent teams of qualified translators to review the original, back-translated, and target language versions of the instrument to assess equivalence and address any discrepancies.

A specialist in the English language translates the CDI-2 scale and other melancholy measures from their original language, English, into Arabic. Experts in the area, including practitioners in mental health and education, evaluated the translated version. An-Najah Child Institute, a local multi-service facility for neuro-developmental issues, tried the Arabic version on kids for months (CDI-2). Lastly, the scale in Arabic was returned translated and authorized following clinical testing and numerous changes by the CDI-2 team. This study's objective is to statistically validate the CDI-2 Arabic Version.

In this study, the researcher used the translated version of CDI-2 scale and the stress scale to distribute the two scales on children of Palestinian, because Arabic is their original language and is easier to understand and answer for the children included in the study sample.

The pilot samples

The pilot study involved distributing the translated and reviewed CDI-2 scale to a sample of 20 children to assess the appropriateness of the Arabic version.

The final data collection

For the final data collection, a sample of children aged 13-15 from two schools in the Al-Jalazoun area was selected. Data collection took place over two months, with the researcher visiting the schools to collect the required information from the students, including informed consent, demographic information, the CDI-2 scale, and a stress scale.

Data analyses

Data analysis was conducted using two software programs: the Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS). A preliminary exploratory data analysis was performed to check for accuracy in data entry, missing data, univariate and multivariate normality, and outliers, ensuring that the assumptions for further statistical tests were met.

Accuracy of data entry

The researcher ensured data accuracy by checking for out-of-range and implausible values. This was achieved through calculating frequencies and descriptive statistics, including range, mean, and standard deviation.

Missing data analysis

Since a self-report questionnaire was used, the researcher checked that every question was filled out correctly with no missing answers before leaving. As a result, there were no missing data in the dataset.

Univariate and multivariate normality

Structural Equation Modeling (SEM) assumes multivariate normality, meaning that univariate distributions are normal, joint bivariate distributions of any pair of variables are normal, and linear combinations of variables are normally distributed. While it's impractical to test all aspects of multivariate normality, researchers can detect many instances of non-normality by inspecting univariate distributions.

Skewness and kurtosis can indicate non-normality in data. Researchers can test for significant skew or kurtosis by dividing the unstandardized skewness or kurtosis index by its standard error. Ratios greater than 1.96 indicate p-values less than 0.05, and ratios

greater than 2.58 indicate p-values less than 0.01, signifying significant skewness or kurtosis in the data.

Table 3.2

Skewness and Kurtosis Indices for CDI-2 Components

Subscale	Skewness	Standard error	Ratio	Kurtosis	Standard error	Ratio
Negative symptoms related to mood/body	0.321	0.202	1.32	-0.511	0.319	1.02
Negative self-esteem	0.221	0.202	1.51	-0.559	0.319	1.12
Inactivity	0.421	0.202	1.09	-0.621	0.319	1.34
Problems dealing with people	0.207	0.202	1.06	-0.447	0.319	1.36
EP	-0.119	0.202	1.26	-0.709	0.319	1.22
FP	0.319	0.202	1.34	-0.571	0.319	1.36
Total	0.410	0.202	1.11	-0.663	0.319	1.37

As indicated in the table above, all skewness and kurtosis values are below 1.96. These findings provide strong evidence of the presence of both univariate and multivariate normality.

Outliers

Outliers are data points that significantly differ from the rest of the data and can affect the accuracy of estimations and statistical tests. They can be either univariate or multivariate. Univariate outliers have extreme values on one variable and can be identified by examining z-scores; cases with z-scores exceeding 3.0 in absolute value are considered unusual and may be outliers. According to the criterion of 3.0, there were no univariate outliers, as shown in Table 6.

Table 3.3

Z-scores of CDI-2 Components

Subscale	Min value	Max value
Negative symptoms related to mood/body	-1.34	1.97
Negative self-esteem	-1.88	1.02
Inactivity	-1.81	2.20
Problems dealing with people	-2.22	2.03
EP	-1.76	1.93
FP	-1.96	2.87
Total	-2.10	2.91

On the contrary, multivariate outliers may exhibit extreme scores across multiple variables or may display an unusual combination of values, although no single variable shows extreme scores.

Following a thorough data screening process, five cases in the sample were identified as outliers. The researcher decided to retain all cases, including the outliers, to ensure realistic results. None of the subscales violated the assumptions of univariate and multivariate normality. Furthermore, since the data met the assumptions of structural equation modeling (SEM), the maximum likelihood estimation method (ML) was deemed appropriate for estimating the parameters of the study variables..

Confirmatory factor analysis

Confirmatory factor analysis (CFA) was conducted in this study using AMOS version 22, following the major steps of structural equation modeling (SEM): (a) specifying the model, (b) estimating the model, (c) assessing the fit of the model, and (d) modifying the model.

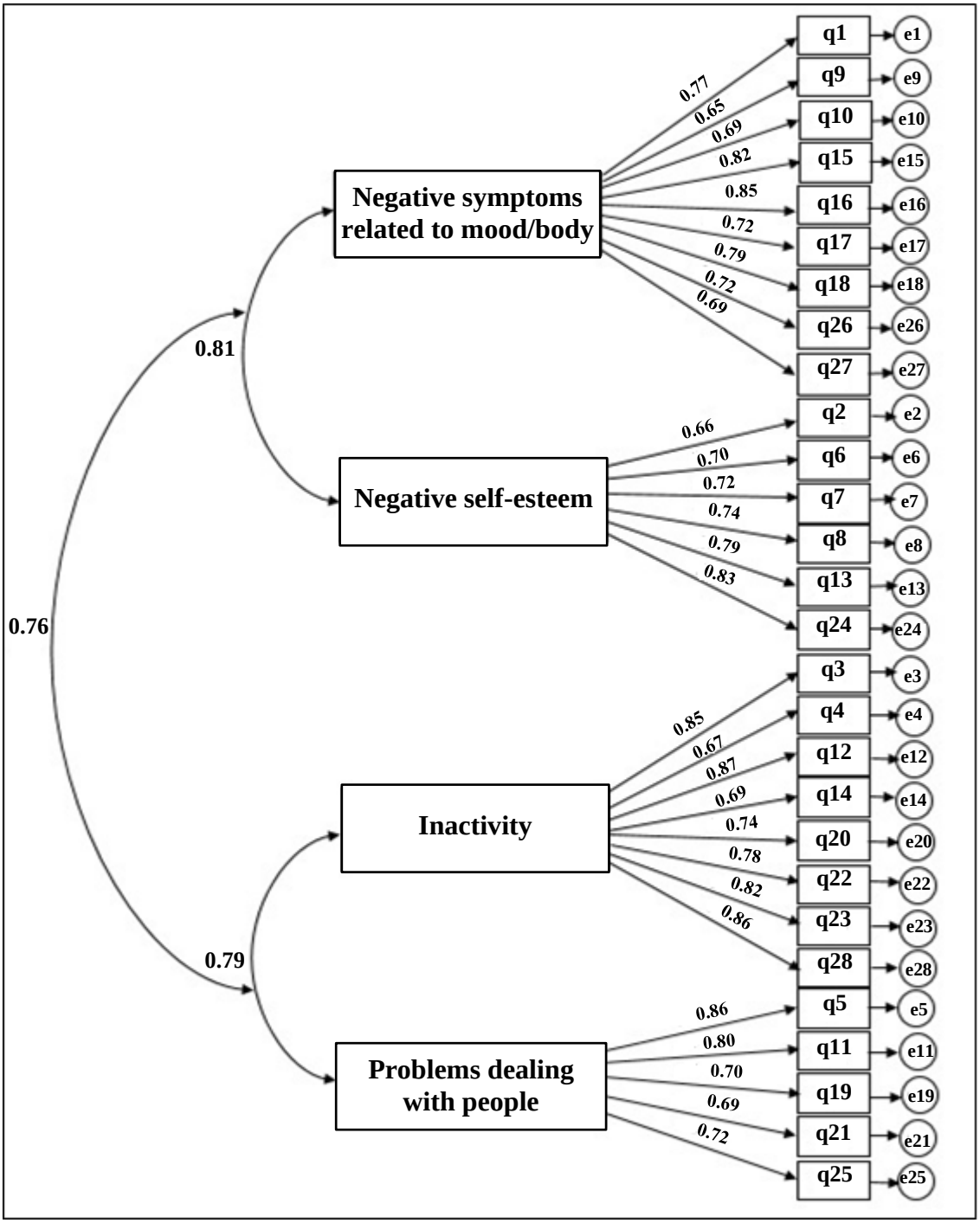
Model specification

Model specification involved using rectangular shapes in AMOS to represent the measured or observed variables. Each rectangle in Figure 1 corresponds to an item from the CDI-2. Error variances associated with each measured variable are represented by circles in Figure 1. Unobserved variables, known as latent factors, are depicted as ovals. Each oval represents the underlying factor structure of the model being tested in the current study. Lines from each factor extend towards the test items belonging to each

subscale. Covariances between factors are represented by two-way directional lines connecting the underlying factors.

Figure 3.1

The factor structure model of the CDI-2 being tested using CFA



Model identification

Model identification is a crucial step before utilizing estimation techniques to ensure that the parameters are identified. In this study, parameters for the model were estimated using the data to produce the estimated population covariance matrix. It is essential to have at least as many data points as parameters (identified model) for adequate estimation techniques. An over-identified model, which has more data points than parameters, is desirable.

The formula for calculating data points is p(p+1)/2, where p equals the number of measured variables (28 items; 28 -14 items of CDI-2 index). The number of data points in the current study is 220, and the number of distinct parameters to be estimated is 42. Since there are more data points than parameters, the model in the current study is considered over-identified.

Estimation techniques

Estimation techniques are employed to estimate population parameters while minimizing the difference between the observed and estimated population covariance matrix. Maximum Likelihood (ML) is a frequently used estimation technique, including in this study. ML is also used to identify modifications to a model to enhance its fit if the chi-square and other fit indices indicate a poor fit.

Assessing fit of model

The fit of the model was assessed through Confirmatory Factor Analysis (CFA) using AMOS 22 software on the 28 items of the CDI-2. A comparison was made between the proposed model from previous studies and the model developed in the current study. The adequacy of the model fit was evaluated by comparing the estimated population covariance matrix, produced by the parameter estimates, with the sample covariance matrix from previous studies. Various model fit indices were utilized in this study to assess the models, and these are presented in Table 3.4.

Table 3.4

Model Fit Indices and Recommended Values for SEM Analysis

Model fit index	Recommended values
CMIN (Chi-square p value)	>0.05
CMIN/df	<3
GFI (goodness-of-fit index)	>0.90
CFI (comparative fit index)	>0.90
IFI (incremental fit index)	>0.90
AGFI (adjusted goodness-of-fit index)	>0.80
RMR (root mean square residual)	<0.05
RMSEA (root-mean square error of approximation)	<0.08

Specifying an optimal cut-off

To specify an optimal cut-off, the researcher utilized the Receiver Operating Characteristic (ROC) method, which defines a cutoff value for the CDI-2 scale based on the findings of the stress scale.

3.7 Statistical Analysis

Statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 20. The researcher employed several statistical methods:

1. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to describe the research sample.
2. Independent Samples T Test was utilized to test for statistical differences between the means of two variables (gender variable).
3. One-Way ANOVA Tests were conducted to test for statistical differences between the means of three variables or more (age variable).
4. LSD Post Hoc Test was employed to specify the differences between means.
5. Skewness and kurtosis indices were computed for CDI-2 subscales and the entire scale to check for univariate and multivariate normality.
6. Z-scores for the CDI-2 components were calculated to check for univariate outliers.
7. Mahalanobis distance analysis was used to check for multivariate outliers.

Chapter Four
Data Analysis

4.1 Introduction

This chapter presents the results of the data analysis, discussing the outcomes obtained from the CDI-2 scale and the stress scale. It includes descriptive statistics and hypothesis testing conducted using the Statistical Package for Social Science (SPSS) software to validate the Children's Depression Inventory Second Edition (CDI-2) in Arabic within a Palestinian context. Additionally, the chapter examines the main differences and similarities in the characteristics of the CDI-2 scale and the stress scale as applied to Palestinian children. It also addresses the research question and hypotheses.

4.2 Description Analysis

The questionnaire design incorporates various personal information sections, leading to diverse responses regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within a Palestinian context. The following results highlight these variations.

4.1.1 Personal Information

The study includes a total of 200 children from Palestinian schools, with a response rate of 80%. The following description outlines the participants' characteristics.

Gender

The sample consisted of 100 males, accounting for 50% of the participants, and 100 females, also representing 50% of the participants. Figure 4-1 illustrates the gender distribution in this study.

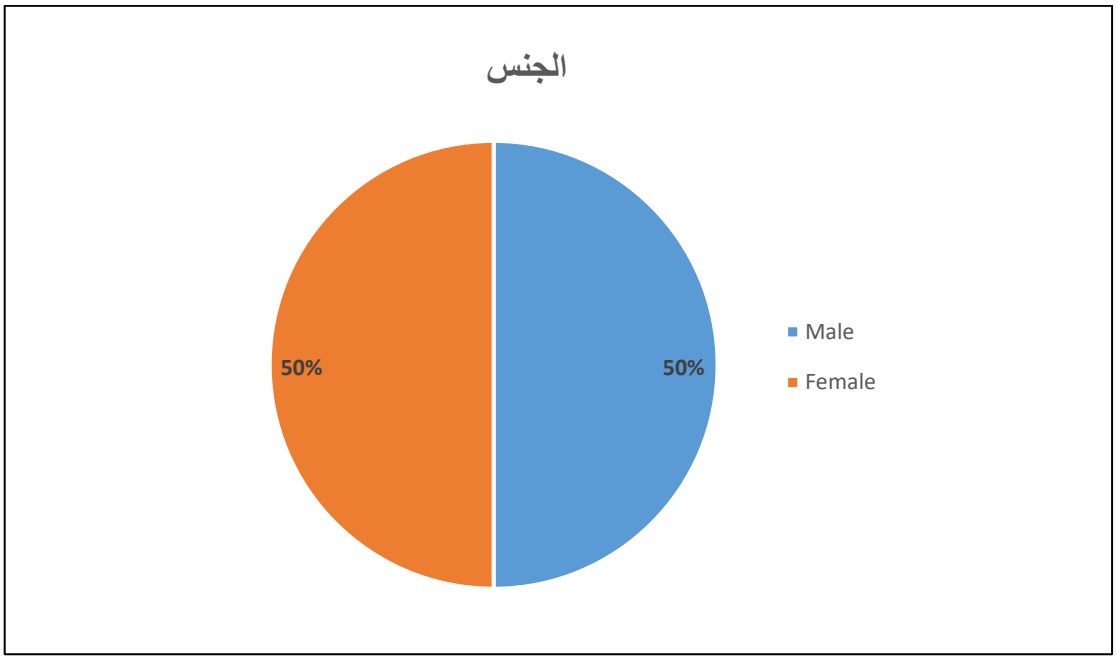
Table 4.1

Distribution of Gender

Variable	Characteristics of the Variable	Frequencies	Percentage
Gender	Male	100	50%
	Female	100	50%
	Total	200	100%

Figure 4.1

Distribution of Gender



Age

Age variable was divided into three period intervals. Table (4-2) in shows the details of the participant's age. Figure (4-2) shows the age distribution in this research.

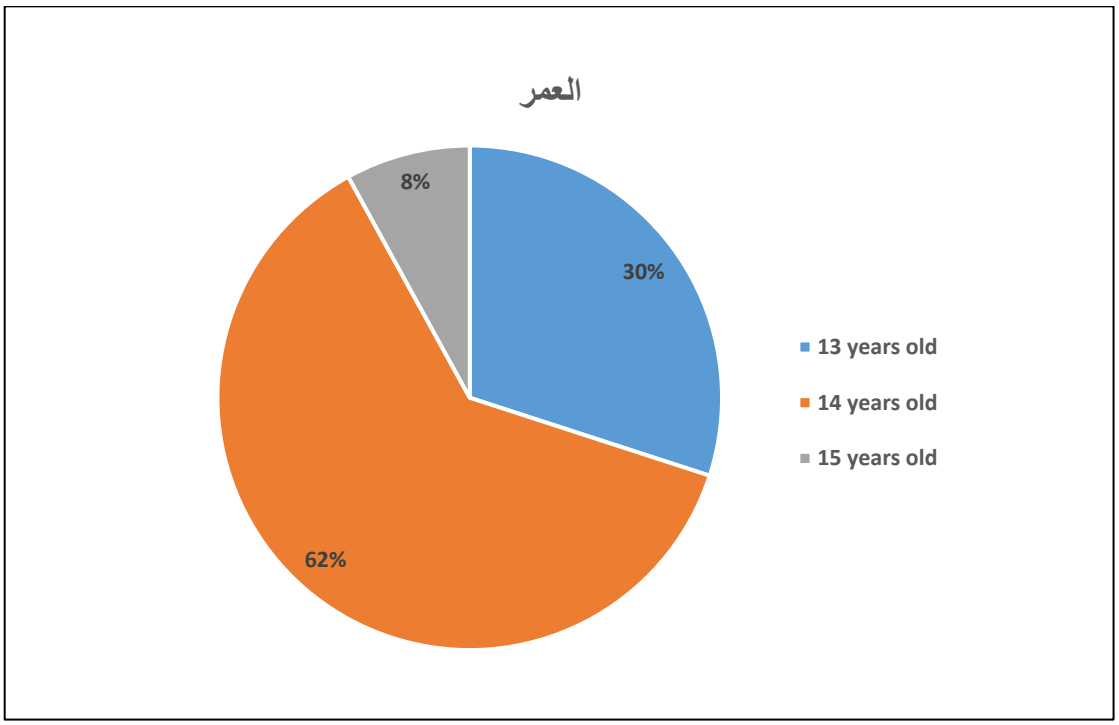
Table 4.2

Distribution of age

Variable	Characteristics of the Variable	Frequencies	Percentage
Age	13 years old	60	30%
	14 years old	124	62%
	15 years old	16	8%
	Total	200	100%

Figure 4.2

Distribution of age



The results of analysis personal information data illustrate the following facts:

1. The study consisted of an equal number of males and females 50% for each.
2. The highest percentage of participants in age field is 14 years old with 62% of research sample, then 3 years old with 30%, and last 15 years old with 8% of the sample size.

4.3 Statistical Differences among Research Scales

Factor Analysis

The concurrent validity of the CDI-2 and stress scale scales are extracted after distributing to a sample of 200 individuals from the Palestinian public schools, through:

Calculating the correlation of the scale's paragraphs with the dimension to which each paragraph belongs, as shown in table 4.3 and tables 4.4.

Table 4.3

Concurrent validity of CDI-2 scale paragraphs

			Depression		
NO.	Correlation	P-value	NO.	Correlation	P-value
1	0.776	0.00**	8	0.687	0.00**
2	0.657	0.00**	9	0.835	0.00**
3	0.781	0.00**	10	0.830	0.00**
4	0.809	0.00**	11	0.799	0.00**
5	0.711	0.00**	12	0.681	0.00**
6	0.822	0.00**	13	0.717	0.00**
7	0.796	0.00**	14	0.690	0.00**

Table 4.4

Concurrent validity of stress scale paragraphs

			Depression		
NO.	Correlation	P-value	NO.	Correlation	P-value
1	0.755	0.00**	15	0.667	0.00**
2	0.732	0.00**	16	0.835	0.00**
3	0.788	0.00**	17	0.830	0.00**
4	0.663	0.00**	18	0.898	0.00**
5	0.811	0.00**	19	0.881	0.00**
6	0.872	0.00**	20	0.797	0.00**
7	0.723	0.00**	21	0.901	0.00**
8	0.759	0.00**	22	0.822	0.00**
9	0.807	0.00**	23	0.652	0.00**
10	0.882	0.00**	24	0.809	0.00**
11	0.836	0.00**	25	0.799	0.00**
12	0.841	0.00**	26	0.776	0.00**
13	0.772	0.00**	27	0.850	0.00**
14	0.731	0.00**	28	0.792	0.00**

The previous tables that all items of the scales were related to the dimension to which they belong, between 0.652** - 0.901**, and that the level of significance was (0.000), which is smaller than 0.05. It is considered an indicator of the validity of all items of the scales, as indicated High internal consistency.

The researcher extracted the exploratory factor analysis (CFA) of the CDI-2 scale for depression, by examining the ratio of variance between the items of the CDI-2 scale, as shown in the table (4.5).

Table 4.5

CFA results for CDI-2 scale

No.	Scale	Variance	Root
1	The first factor	24.432	3.005
2	The second factor	16.324	2.463
3	The third factor	9.226	1.803
4	The fourth factor	7.509	1.371

Based on the table above, four factors were identified that explained the variance. The first factor accounted for 24.432% of the variance, with a latent root of 3.005. The second factor explained 16.324% of the variance, with a latent root of 2.463. The third factor explained 9.226% of the variance, with a latent root of 1.803. Finally, the fourth factor explained 7.509% of the variance, with a latent root of 1.371. These ratios indicate a significant contribution of these factors to the depression variables.

In order to verify these results, an exploratory factor analysis was performed to examine the saturations of the depression scale factors on the dimensions to which they belong, as shown in the table 4.6.

Table 4.6

Analyzing of CFA results for CDI-2 scale items

Item Num.	1	2	3	4
7	0.690	0.374	.324	
10	0.665			
3	0.634			
6	0.630	0.439		
14	0.537		0.478	
4	0.488	0.469	0.360	
8	0.471	0.407	0.449	
5		0.592		0.331
9	0.490	0.547		
2		0.519		
12		0.486	0.351	
13	0.541		0.601	
1		0.472		0.671
11	0.498			0.521

The previous table show that there is no saturation for any of the paragraphs with a negative saturation, and for depression it ranged between 0.331 as the lowest value for paragraph No. 5, and saturation with 0.690 as the highest value for paragraph No. 7.

Scale Analysis

This section describes the degree of CDI-2 scale and the stress for the research respondents. Moreover, the researcher adopted the following estimated to separate the degree of approval as following:

1. The percentage 84% or more has a very large degree.
2. The percentage 68% - 84% has a high degree.
3. The percentage 52% - 68% has medium degree.
4. The percentage (36% - 52.0% has a low degree.
5. The percentage less than 36% has a very low degree.

CDI-2 scale

The CDI-2 assessment scale was utilized in this study to address several research questions. It offers developmental scores in three areas, including adaptive behavior in domains such as communication, daily living skills, socialization, and motor skills, culminating in a comprehensive adaptive behaviors score. Furthermore, the CDI-2 provides gender and age scores for each domain, as well as standard scores for individual domains and the overall adaptive behavior composite.

The table 4.7 in appendix C presents the answer of the participants in CDI-2 scale.

The results of the table 4.7 illustrate the following facts:

1. The results of CDI-2 assessment scale contained five domains with very high approval degree score. The highest statement was the statements number 6, with 89.33% degree, which indicated that children love themselves. Then the statement number 7 with 88.67% degree, which indicated that bad things that happen are not usually because of the children., and the statement number 27 with 88.67% degree, which indicated that children eat food in the normal level. Then the statement number 24 with 84.67%-degree, which indicated that children are sure that someone loves them. And the last one is the statement number 23 with 84.33% degree, which indicated that children are as good as other children.
2. The lowest statement was the statement number 8 which about "children are thinking of killing themselves" with 45% degree.
3. The total percentage of participants about the CDI-2 assessment scale was mid with 64.67% degree. This indicates that the approval rate was medium on the CDI-2 scale paragraphs, and therefore the CDI-2 results was significant in terms of the arithmetic mean depending on the viewpoint of the children sample who were included in the study.

Stress scale

In this study, the stress scale was used to determine if it yielded comparable results to the CDI-2 scale across different groups of children based on gender and age. The stress scale assesses developmental levels using four scores (never, a little, sometimes, a lot). It also evaluates adaptive behavior in various domains, including children themselves, family,

and friends, resulting in a comprehensive adaptive feeling score. Similar to the CDI-2, the stress scale provides gender and age scores for each domain.

The table 4.8 in appendix C presents the answer of the participants in stress scale.

The results of the table 4.8 illustrate the following facts:

1. The results of the stress scale assessment contained eight domains with high approval degree score, and five domains with medium approval degree score, and only one domain with low approval degree score. The highest statement was the statements number (1), with 83.04% degree, which indicated that children have a lot of somethings. Then the statement number (6) with 80.64% degree, which indicated that mum and/ or dad make children feel better, and the statement number (7) with 79.44% degree, which indicated that mum and/ or dad make children feel loved.
2. The lowest statement was the statement number (12) which about "children fights your friends" with 46.32% degree.
3. The total percentage of participants about the stress scale assessment was high with 68.9% degree. This indicates that the approval rate was high on the stress scale paragraphs, and therefore the stress scale results was significant in terms of the arithmetic mean depending on the viewpoint of the children sample who were included in the study.

Therefore, in order to evaluate the children's depression inventory second edition (CDI-2) in Arabic language from children's perspectives in Palestinian context, the researcher calculated the total score of research domains as in table 4.9 in appendix C.

The results presented in the table 4.9 indicate that the total score of study scales related to evaluate the children's depression inventory second edition (CDI-2) in Arabic language ranged from medium to large, so the arithmetic averages for the second scale paragraphs related to stress scale the highest, which reached 68.64%, while the arithmetic mean for the first domain paragraphs related to CDI-2 scale reached 64.67%, and with regard to the total score, it was medium, in terms of the arithmetic mean that reached 66.65%, and this result indicates that the impact of all study scale was significant in relation to the study question and the paragraphs included in the questionnaire questions according to the answers of the study sample.

In order to prove the significance of the impact of the two study scales, one sample T-test used to show that in table 4.10 in appendix C.

The one-sample t-test results indicated that there were no statistically significant differences in the viewpoints of the children. Furthermore, the study explored whether the results obtained from the CDI-2 scale were similar to those from the stress scale across different groups of children.

To determine the level of relationship between the two scales, Pearson correlation test was used, and the results were as in table 4.11 in appendix C.

The results of the Pearson correlation test show that there is no relationship between the children viewpoint about the different two scales.

4.4 Statistical Differences among Survey Respondents

This section examines the statistical differences among participants in the study based on the data collected. The Independent Samples t-test and one-way ANOVA Test were employed to analyze these differences, as they are suitable for testing correlations between qualitative and quantitative factors.

The t-test compares means of a qualitative independent variable with two levels, while one-way ANOVA compares means of a qualitative independent variable with more than two levels. In this study, the dependent variables are quantitative.

Two hypotheses were formulated regarding the survey respondents' viewpoints, and three methods were used for analysis: t-test, ANOVA, and LSD test. The t-test was used for gender, as it has two levels (male and female), while ANOVA was used for age, which has more than two levels. The LSD test was used for further analysis when needed.

Hypothesis 1: Is there a statistically significant difference in the viewpoints of children regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within a Palestinian context based on gender?

Both male and female participants took part in the survey, making gender a variable with two levels. Therefore, the t-test method was used to determine if there were statistical differences between males and females.

The tables 4.12 & 4.13 in appendix C shows full details about this result.

To analyze the previous table 4.12 in appendix C, the researcher used T-test like table below.

T-tests of the sample demonstrate that the hypothesis "there is statistically significant differences among the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender" because the significant important less than 0.05 ($P > 0.05$) in the total score in favor of females.

On the other hand, the results indicate that there is no significant difference at (α=0.05) in the viewpoint of children regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within a Palestinian context based on gender in the stress scale. However, there is a significant difference at (α=0.05) in the viewpoint of children regarding the validation of the CDI-2 scale in Arabic within a Palestinian context based on gender, favoring females.

- Second hypothesis: there is no statistically significant differences among the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable?

According to this study, the age variable was collected as interval data. Therefore, the researcher used a one-way ANOVA test to determine the correlation between participants' age and their viewpoint regarding the validation of the Children's Depression Inventory Second Edition (CDI-2) in Arabic within a Palestinian context.

The following tables 4.14 & 4.15 in appendix C shows full details about this result.

To analyze the previous table 4.14 in appendix C, the researcher used ANOVA test like table 4.15 in appendix C.

ANOVA test shows that the hypothesis "there is no statistically significant differences among the viewpoint of children related to the validation of the children's depression

inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable" accepted because the significant important more than 0.05 (P > 0.05).

On the other hands, the results show there is no significant difference at (α=0.05) between the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable in in the stress scale. Also, there is no signified importance difference at (α=0.05) between the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable in the (CDI-2) scale.

Chapter Five

Discussion, Conclusions and Recommendations

5.1 Discussion

The purpose of this chapter is to discuss the findings presented in Chapter Four in relation to the existing literature. Subsequently, it will outline the limitations of this study and the implications of this research for Palestinian children and their families. Additionally, it will clarify future research that can be conducted based on the results of this study.

What are the main differences and similarities between the characteristics of CDI-2 scale and the stress scale applied on the children of Palestine?

The result table 3.1 illustrates blueprint of the CDI-2, which consists of 28 items divided to two main scales; emotional problems (EP) and functional problems (FP), the total scores of emotional problems consist of negative symptoms related to mood/body which contain 9 items, and negative self-esteem contain 6 items, but the total scores of functional problems consist of inactivity which contain 8 items, and problems dealing with people contain 5 items.

The stress scale in this study comprises 14 items. The research investigated whether the results of the stress scale were consistent with those of the CDI-2 scale across different groups of children based on gender and age. The stress scale assesses the developmental level using four scores (never, a little, sometimes, a lot). Additionally, it evaluates adaptive behavior across various domains, including children themselves, family, and friends, providing a comprehensive score for adaptive feelings. Furthermore, the stress scale provides gender and age scores for each domain.

The main differences between the characteristics of CDI-2 scale and the stress scale applied on the children of Palestine appeared through the number of items in each scale and the nature of the questions included. However, the two scales showed similar results related to the level of depression and emotional and functional problems among children in the Palestinian environment.

The researcher attributes the similarities and differences in the two scales to the different nature of the questions and items that each scale tries to measure, and they dealt with the most important problems and characteristics that lead to depression or the presence of

problems with them, and thus information was collected about the presence and severity of symptoms of depression in children. Therefore, it is possible to work on developing a tool that combines the paragraphs of the two scales together to obtain a comprehensive and more accurate result.

What are the main differences and similarities between the results of CDI-2 scale and the stress scale applied on Palestinian children?

The result table 4.7 indicated that total percentage of participants about the CDI-2 assessment scale was mid with 64.67% degree. This indicates that the approval rate was medium on the CDI-2 scale paragraphs, and therefore the CDI-2 results was significant in terms of the arithmetic mean depending on the viewpoint of the children sample who were included in the study.

The result table 4.8 indicated illustrated the results of the stress scale assessment contained eight domains with high approval degree score, and five domains with medium approval degree score, and only one domain with low approval degree score. The total percentage of participants about the stress scale assessment was high with 68.9% degree. This indicates that the approval rate was high on the stress scale paragraphs, and therefore the stress scale results was significant in terms of the arithmetic mean depending on the viewpoint of the children sample who were included in the study.

The researcher attributes the average result in the first scale to the multiplicity of the scale's items, which increased the accuracy of the children's answers about it and clarified the characteristics and problems they suffer from in a clearer way than the second scale. In general, the results of the two scales indicate that there is moderate depression among children in the Palestinian environment as table 4.9 results show.

Based on CDI-2 and the applied depression measure results, what is the rate of depression in the selected sample?

The results presented in table 4.9 illustrate the total score of the two scales related to evaluate the children's depression inventory second edition (CDI-2) in Arabic language which ranged from medium to large degree, so the arithmetic averages for the second scale paragraphs related to stress scale the highest, which reached 68.64%, while the arithmetic mean for the first domain paragraphs related to CDI-2 scale reached 64.67%,

and with regard to the total score, it was medium, in terms of the arithmetic mean that reached 66.65%, and this result indicates that the impact of all study scale was significant in relation to the study question and the paragraphs included in the questionnaire questions according to the answers of the study sample.

The researcher attributes this result, which indicated the presence of moderate depression among children in the Palestinian environment, to the social and political situation surrounding them. The practices of the Israeli occupation, such as killing and destruction, negatively and directly affect the lives of Palestinian children, making them feel depressed. Therefore, the average result of the study shows the existence of many problems, and the obstacles that prevent Palestinian children from living in peace and security.

Does the Children's Depression Inventory Second Edition (CDI-2) Scale add relevant information for professionals working with DSM5 checklist?

The results presented in the fourth chapter indicated that there are some emotional and functional problems in the behavior of children, in addition to the presence of moderate depression in them. The results are shown in the tables 4.7 & 4.8 explain the following some facts:

- The children love themselves.
- The bad things that happen are not usually because of the children.
- Children eat food in the normal level.
- Children don't think of killing themselves.
- Children have a lot of somethings.
- Mam and/ or dad make children feel better.
- Mam and/ or dad make children feel loved.
- Children don't fight your friends.

By comparing the results with the items in DSM5 checklist its clear that the checklist presented general diagnostic results which differed from the results of paragraphs (CDI-2) scale which was more accurate which was more accurate. Thus, the results indicate that there is a general similarity in terms of diagnosis between the scale used in the study

and the diagnostic symptoms that were mentioned in DSM5 checklist which referred to the diagnostic criteria for autism spectrum disorder (ASD) and the related diagnosis of social communication disorder (SCD).

These findings are consistent with Omaria's (2010) study, which demonstrated the effectiveness of the CDI list in both research and clinical settings. Similarly, Binagwaho et al. (2016) highlighted the need for a highly sensitive screening measure to improve access to mental health care for children. Therefore, the results of the CDI-2 scale can be trusted to inform the development and updating of the DSM-5 checklist.

Additionally, these findings align with Rashid's (2015) study, which validated the three-factor model of the scale, similar to the original study. Through hypothesis testing, it was concluded that the modified Arabic version of the Depression, Anxiety, and Stress Scale (DASS) demonstrated high levels of validity and reliability, confirming its psychometric characteristics among a sample of secondary school students in the Algerian environment. Therefore, the results of the study in the Palestinian environment were consistent with those in the Algerian environment.

Results related to research hypotheses

First hypothesis: there is no statistically significant differences among the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender variable.

The results of table 4.12 show that "there is statistically significant differences among the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender" because the significant important less than 0.05 ($P > 0.05$) in the total score in favor of females. In addition, the results show there is no signified importance difference at (α=0.05) between the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender in the stress scale. But there is signified importance difference at (α=0.05) between the viewpoint of viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender in the CDI-2 scale in favor of females.

The researcher attributes the result of differences between the answers of females and males to the different way of dealing with male children from females in the Palestinian environment. The Palestinian environment is considered a somewhat conservative society that does not provide females with the same freedom available to males. Girls are raised in a different way from males, which may cause more stress and depression for them.

These findings are consistent with Al-Badri's (2010) study, which focused on developing a foundational depression scale for adolescents of both genders. The study aimed to identify the psychometric properties, including validity and reliability, of this scale. The results indicated that all correlation coefficients were statistically significant at the 0.01 significance level, suggesting strong validity and reliability of the scale.

Second hypothesis: there is no statistically significant differences among the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable.

The results of table 4.14 show that is no statistically significant differences among the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable because the significant important more than .05 ($P > 0.05$). In addition, the results show there is no signified importance difference at ($\alpha=0.05$) between the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable in in the stress scale. Also, there is no signified importance difference at ($\alpha=0.05$) between the viewpoint of children related to the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable in the (CDI-2) scale.

The researcher attributes this result which indicate that is no statistical differences depending on the age variable, to the fact that children in the ages included in the study, which ranged from 13-15 years, live in very similar circumstances, as they need to play and have fun, and they also need to establish friendships with those around them in School or home, and therefore the results of the study came to show that there is a great similarity in the degree of depression and the problems that children may suffer from at this age.

These results were in agreements with the study by Omaria (2010), which included sample of both sexes starting from the age of 18 years and have same results. And study by Fard, Jalali, & Pourahmadi (2021), which included sample of a sample of 10-18 years old children in Golestan and have same results which indicated that CDI scale has appropriate psychometric characteristics among Iranian children and can be used as a suitable diagnostic tool for use in educational, clinical and research environments.

5.2 Conclusions

This study seeks to validate the Children's Depression Inventory Second Edition (CDI-2) in Arabic within the context of Palestine. The validation process involves using the CDI-2 scale and the stress scale on Palestinian children. The research sample comprised 100 males and 100 females, each representing 50% of the participants. The majority of participants were 14 years old, accounting for 62% of the sample, followed by 13-year-olds at 30%, and 15-year-olds at 8% of the sample size.

The results of Pearson correlation test of the hypotheses show that there is no relationship between the children viewpoint about the different two scales, and the total score of study scales related to evaluate the children’s depression inventory second edition (CDI-2) in Arabic language ranged from medium to large, so the arithmetic averages for the second scale paragraphs related to stress scale the highest, which reached(68.64%, while the arithmetic mean for the first domain paragraphs related to CDI-2 scale reached 64.67%, and with regard to the total score, it was medium, in terms of the arithmetic mean that reached 66.65%, and this result indicates that the impact of all study scale was significant in relation to the study question and the paragraphs included in the questionnaire questions according to the answers of the study sample.

Moreover, research results illustrate that is statistically significant differences among the viewpoint of children related to the validation of the children’s depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender in favor of females, but there is no statistically significant differences among the viewpoint of children related to the validation of the children’s depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age variable.

5.3 Recommendations

1. Develop assessment tool for children to detect to measure depression of children in the Palestinian context which depends on the circumstances and the environment surrounding them, which is specific to the Palestinian situation, which differs from the rest of the world.
2. Encourage Palestinian schools in different cities and village to adopt educational programs about depression, its accompanying symptoms, and how to avoid it.
3. adopt awareness programs for parents to take care of their children in critical age stages to ensure that they are raised on good behavior and accompany other normal children via TV programs or radio channel and social media pages sponsored by governmental and private agencies interested in children's issues and protecting them from psychological problems and depression
4. Preparing other researches on the benefit of the Children Depression Inventory Second Edition (CDI-2) Scale by using different sample ages and demographic characteristics.
5. Work on developing a tool for a new scale that contains new elements included in the DSM5 checklist to measure new diagnostic criteria for children in the Palestinian environment.

5.4 Limitations of the study

1. A study required long time to prepare, because the researcher attempt to collect data from children in different Palestinian regions to cover the largest geographical area, but the research did cover only the West Bank region due to the difficulty of access to the Gaza Strip.
2. The research sample should include many other children in order to ensure accurate and better results because the sample in previous studies was large.

5.5 Future research

1. Preparing more studies with different sample of children with different demographic variables such as age, place of residence and family income level to study the impact of new variables on their level of depression.
2. Preparing new studies to measure the differences in degrees of depression between males and females using large samples of children.

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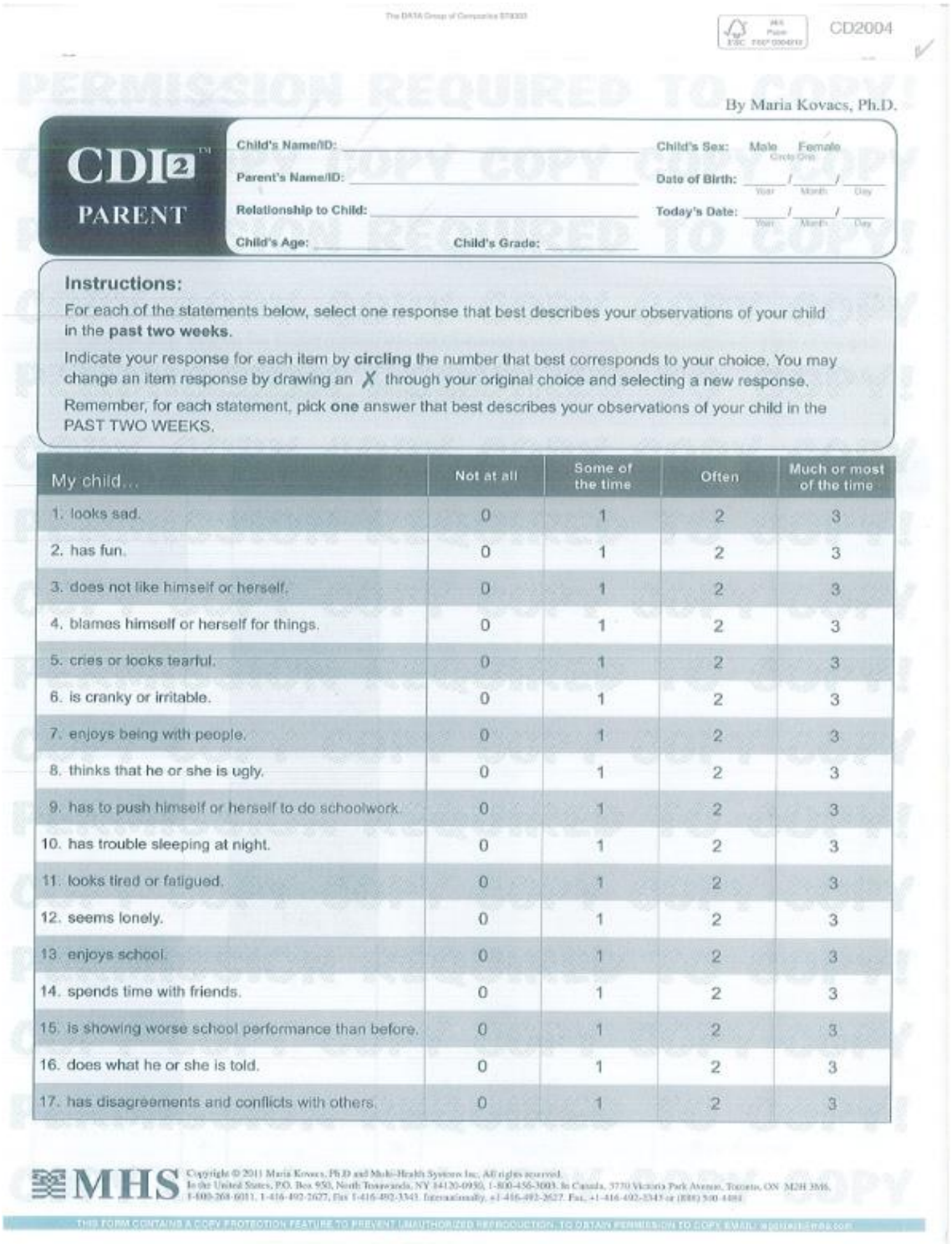
Appendices

Appendix A

Children's Depression Inventory 2™ (CDI 2)



CD2004

By Maria Kovacs, Ph.D.

CDI 2 PARENT

Child's Name/ID: _____ Child's Sex: Male Female (Circle One)

Parent's Name/ID: _____ Date of Birth: ____/____/____ (Year / Month / Day)

Relationship to Child: _____ Today's Date: ____/____/____ (Year / Month / Day)

Child's Age: _____ Child's Grade: _____

Instructions:

For each of the statements below, select one response that best describes your observations of your child in the **past two weeks**.

Indicate your response for each item by **circling** the number that best corresponds to your choice. You may change an item response by drawing an ✗ through your original choice and selecting a new response.

Remember, for each statement, pick **one** answer that best describes your observations of your child in the PAST TWO WEEKS.

My child...	Not at all	Some of the time	Often	Much or most of the time
1. looks sad.	0	1	2	3
2. has fun.	0	1	2	3
3. does not like himself or herself.	0	1	2	3
4. blames himself or herself for things.	0	1	2	3
5. cries or looks tearful.	0	1	2	3
6. is cranky or irritable.	0	1	2	3
7. enjoys being with people.	0	1	2	3
8. thinks that he or she is ugly.	0	1	2	3
9. has to push himself or herself to do schoolwork.	0	1	2	3
10. has trouble sleeping at night.	0	1	2	3
11. looks tired or fatigued.	0	1	2	3
12. seems lonely.	0	1	2	3
13. enjoys school.	0	1	2	3
14. spends time with friends.	0	1	2	3
15. is showing worse school performance than before.	0	1	2	3
16. does what he or she is told.	0	1	2	3
17. has disagreements and conflicts with others.	0	1	2	3

CD2002

By Maria Kovacs, Ph.D.

CDI 2
SELF-REPORT

Name/ID: _____ Date of Birth: ____/____/____ (Year / Month / Day)

Age: ____ Grade: ____ Sex: Male Female (Circle one) Today's Date: ____/____/____ (Year / Month / Day)

Kids sometimes have different feelings and ideas.

This form lists the feelings and ideas in groups. From each group of three sentences, pick **one** sentence that describes you best for the **past two weeks**. After you pick a sentence from the first group, go on to the next group.

There is no right or wrong answer. Just pick the sentence that best describes the way you have been recently. Put a mark like this ☒ next to your answer. Put the mark in the box next to the sentence that you pick.

Here is an example of how this form works. Try it. Put a mark next to the sentence that describes you best.

Example:
- ❑ I read books all the time.
- ❑ I read books once in a while.
- ❑ I never read books.

Remember, for each group, pick out the sentence that describes you best in the PAST TWO WEEKS.

Item 1
- ❑ I am sad once in a while.
- ❑ I am sad many times.
- ❑ I am sad all the time.

Item 2
- ❑ Nothing will ever work out for me.
- ❑ I am not sure if things will work out for me.
- ❑ Things will work out for me O.K.

Item 3
- ❑ I do most things O.K.
- ❑ I do many things wrong.
- ❑ I do everything wrong.

Item 4
- ❑ I have fun in many things.
- ❑ I have fun in some things.
- ❑ Nothing is fun at all.

Item 5
- ❑ I am important to my family.
- ❑ I am not sure if I am important to my family.
- ❑ My family is better off without me.

Item 6
- ❑ I hate myself.
- ❑ I do not like myself.
- ❑ I like myself.

Item 7
- ❑ All bad things are my fault.
- ❑ Many bad things are my fault.
- ❑ Bad things are not usually my fault.

Item 8
- ❑ I do not think about killing myself.
- ❑ I think about killing myself but would not do it.
- ❑ I want to kill myself.

Item 9
- ❑ I feel like crying every day.
- ❑ I feel like crying many days.
- ❑ I feel like crying once in a while.

Item 10
- ❑ I feel cranky all the time.
- ❑ I feel cranky many times.
- ❑ I am almost never cranky.

continued on back page...

...continued from the front page.

Remember, for each group, pick out the sentence that describes you best in the PAST TWO WEEKS.

Item 11
- ❑ I like being with people.
- ❑ I do not like being with people many times.
- ❑ I do not want to be with people at all.

Item 12
- ❑ I cannot make up my mind about things.
- ❑ It is hard to make up my mind about things.
- ❑ I make up my mind about things easily.

Item 13
- ❑ I look O.K.
- ❑ There are some bad things about my looks.
- ❑ I look ugly.

Item 14
- ❑ I have to push myself all the time to do my schoolwork.
- ❑ I have to push myself many times to do my schoolwork.
- ❑ Doing schoolwork is not a big problem.

Item 15
- ❑ I have trouble sleeping every night.
- ❑ I have trouble sleeping many nights.
- ❑ I sleep pretty well.

Item 16
- ❑ I am tired once in a while.
- ❑ I am tired many days.
- ❑ I am tired all the time.

Item 17
- ❑ Most days I do not feel like eating.
- ❑ Many days I do not feel like eating.
- ❑ I eat pretty well.

Item 18
- ❑ I do not worry about aches and pains.
- ❑ I worry about aches and pains many times.
- ❑ I worry about aches and pains all the time.

Item 19
- ❑ I do not feel alone.
- ❑ I feel alone many times.
- ❑ I feel alone all the time.

Item 20
- ❑ I never have fun at school.
- ❑ I have fun at school only once in a while.
- ❑ I have fun at school many times.

Item 21
- ❑ I have plenty of friends.
- ❑ I have some friends but I wish I had more.
- ❑ I do not have any friends.

Item 22
- ❑ My schoolwork is alright.
- ❑ My schoolwork is not as good as before.
- ❑ I do very badly in subjects I used to be good in.

Item 23
- ❑ I can never be as good as other kids.
- ❑ I can be as good as other kids if I want to.
- ❑ I am just as good as other kids.

Item 24
- ❑ Nobody really loves me.
- ❑ I am not sure if anybody loves me.
- ❑ I am sure that somebody loves me.

Item 25
- ❑ It is easy for me to get along with friends.
- ❑ I get into arguments with friends many times.
- ❑ I get into arguments with friends all the time.

Item 26
- ❑ I fall asleep during the day all the time.
- ❑ I fall asleep during the day many times.
- ❑ I almost never fall asleep during the day.

Item 27
- ❑ Most days I feel like I can't stop eating.
- ❑ Many days I feel like I can't stop eating.
- ❑ My eating is O.K.

Item 28
- ❑ It is easy for me to remember things.
- ❑ It is a little hard to remember things.
- ❑ It is very hard to remember things.

By Maria Kovacs, Ph.D.

CDI 2
SELF-REPORT Scoring Page

Name/ID: _____ Date of Birth: ____/____/____ (Year / Month / Day)

Age: _____ Grade: _____ Sex: Male Female (Circle one) Today's Date: ____/____/____ (Year / Month / Day)

Instructions

1. Make sure only one box is marked for each item.
2. To obtain the subscale raw scores, add the numbers for all the items marked **A**, and write the sum of these numbers in Box **A**. Repeat this procedure for items marked **B**, **C**, and **D**, respectively, and write each sum in the box labeled with the respective letter.
3. To obtain the raw scores for the **Emotional Problems** scale, add the values in boxes **A** and **B** and write the sum in box **A+B**.
4. To obtain the raw scores for the **Functional Problems** scale, add the values in boxes **C** and **D** and write the sum in box **C+D**.
5. To obtain the **Total Raw Score**, add the values in Boxes **A+B** and **C+D** and write the sum in box **A+B+C+D**.

Negative Mood/ Physical Symptoms: A

Ineffectiveness: C

Negative Self-Esteem: B

Interpersonal Problems: D

Emotional Problems: A+B

Functional Problems: C+D

TOTAL: A+B+C+D

Item 1 ☐0 ☐1 ☐2 **A**

Item 2 ☐2 ☐1 ☐0 **B**

Item 3 ☐0 ☐1 ☐2 **C**

Item 4 ☐0 ☐1 ☐2 **C**

Item 5 ☐0 ☐1 ☐2 **D**

Item 6 ☐2 ☐1 ☐0 **B**

Item 7 ☐2 ☐1 ☐0 **B**

Item 8 ☐0 ☐1 ☐2 **B**

Item 9 ☐2 ☐1 ☐0 **A**

Item 10 ☐2 ☐1 ☐0 **A**

Item 11 ☐0 ☐1 ☐2 **D**

Item 12 ☐2 ☐1 ☐0 **C**

Item 13 ☐0 ☐1 ☐2 **B**

Item 14 ☐2 ☐1 ☐0 **C**

Item 15 ☐2 ☐1 ☐0 **A**

Item 16 ☐0 ☐1 ☐2 **A**

Item 17 ☐2 ☐1 ☐0 **A**

Item 18 ☐0 ☐1 ☐2 **A**

Item 19 ☐0 ☐1 ☐2 **D**

Item 20 ☐2 ☐1 ☐0 **C**

Item 21 ☐0 ☐1 ☐2 **D**

Item 22 ☐0 ☐1 ☐2 **C**

Item 23 ☐2 ☐1 ☐0 **C**

Item 24 ☐2 ☐1 ☐0 **B**

Item 25 ☐0 ☐1 ☐2 **D**

Item 26 ☐2 ☐1 ☐0 **A**

Item 27 ☐2 ☐1 ☐0 **A**

Item 28 ☐0 ☐1 ☐2 **C**

Appendix B

Stress scale for children

The Perceived Stress Scale for Children: A Pilot Study in a Sample of 153 Children

Article in International Journal of Pediatrics and Child Health · December 2014
DOI: 10.12974/2311-8687.2014.02.02.4

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The Perceived Stress Scale for Children: A Pilot Study in a Sample of 153 Children

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Abstract: *Background*: The purpose of this study was to assess the utility and validity of an efficient screening tool intended for educators, clinicians and researchers who are interested in identifying perceived chronic stress and relations among home and school performance, behavior, and health in children.

Method: The *Perceived Stress Scale for Children* (PSS-C) was assessed on its ability to discriminate between children with known stress-related anxiety disorders from typically developing children without any identified stress-related conditions. The participants included 153 children from the northeastern United States (5-18 years) recruited via posted flyers, personal networks, and referral.

Results: The results suggested that the PSS-C is easy to administer, and effectively discriminates between children with and without known anxiety/stress disorders.

Conclusion: The PSS-C may be helpful for the early identification of children at risk for chronic anxiety/stress. This is important because chronic stress appears to result in increased vulnerability for poorer school outcomes and reduced home functional performance, as well as resulting in problems with overall health, mental health and body weight. An effective and efficient assessment for early identification of anxiety/stress in children assists in the development of appropriate responses.

Keywords: Assessments, children, stress, activity patterns, and health.

INTRODUCTION

Stress is part of life. Watching a scary movie, taking a test, asking for a first date, starting school, and meeting potential in-laws are all often associated with routine stress events that are short-term in duration. Daily life stress events such as these help us organize our behavior for effective outcomes. However, some events (a death, divorce, health problems, traumatic violence) have greater, longer lasting effects that can result in excessive worry or anxiety (National Institute of Mental Health, Fact Sheet on Stress available at: http://www.nimh.nih.gov/health/publications/stress/index.shtml). Chronic stress may become a burden that can result in a variety of negative physiological and emotional effects.

Stress affects both children and adults. The identification of stress that has become chronic is important, and can assist in developing appropriate responses, including interventions to develop coping strategies as well as clinical referrals when appropriate. However, there are limited options for early identification of chronic stress in children and adolescents.

Dr. C. Blair underscores, in a National Institute of Children's Health and Development (NICHD) press release [1], the importance of early identification of chronic stress in children: 'Research indicates that stress from a variety of sources—including crowded and chaotic home and classroom environments, for example, or problems with family or peers—impedes learning.'(p. 2).

This paper discusses the development of an easy to use and valid screening tool designed for use with youth from ages 5 to 18.

STRESS AND YOUTH: THE LITERATURE

Chronic Stress

Chronic stress is defined as stress that is enduring, and loaded with worry; in contrast, short-lived stress responding supports functional activity and is healthily adaptive [2]. While chronic stress has been strongly and negatively associated with health and performance across multidisciplinary research in adults [2-5], research on chronic stress effects in children has been less available. However, research that *has* focused primarily on children confirms similar associations in health and performance as found in adults. In adults, chronic dysregulation of cortisol levels related to stress has been shown to play a role in development of depression and depressive symptoms [6, 7]. Further, chronic stress in adults has been related to poorer cognitive performance [8] as well as constrained oocupational performance patterns [9]. Similarly, Blair

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and colleagues [10] found that some children experiencing chronic stress, due to poverty, show less well-organized stress hormone patterns that are associated with poorer cognitive performance. Other researchers [11] found that chronic environmental stress impacted school-related performance in children and, Maldonado and colleagues [12] also found that higher stress perception in 9-12 year olds was associated with lower cognitive performance, suggesting that chronic stress in children appears to negatively impact cognitive functioning, thus potentially reducing educational outcomes.

Assessing Stress

Associated with school-related academic performance, researchers and clinicians are also interested in measuring stress perception as it relates to children's physical and mental health, as well as daily activity participation. For example, Brown, Nobiling, Teufel, and Birch [13] studied the daily activity patterns and their relation to child stress perception based on a single question answered using hand-held devices. The researchers found that activity patterns were affected by both stress including the amount homework. Other researchers [14, 15] studied child stress perception and associations with activity, and health. Findings suggested that healthy children who are engaged in a lot of activity, especially ones that are sports and school-related, tended to have fewer colds/illnesses, and lower stress perception. Similarly, Arai and colleagues reported that active leisure activity was associated with lower stress perception and attenuated symptoms of stress associated with early trauma [16]. Other researchers explored whether children's eating patterns are affected by stress [17], similar to stress and weight control studies conducted in adults [18-20]. Their findings suggested that similar to adults, children whose eating behaviors are less driven by internal cues (e.g. eating only when hungry), are prone to eating excessive calories when feeling stressed.

Finally, chronic stress has been identified as a risk factor for anxiety and depressive disorders [21, 22]. While stress is defined as a response to a situation, or perception, in which one feels vulnerable, angry or nervous, anxiety is defined as a feeling of being fearful or apprehensive [5], and is more closely associated with chronic stress. Anxiety often stems from one or more real or imagined stressors, making chronic stress and anxiety intimately linked. Indeed, the relationship of perceived life stressors to negative thinking, anxiety and depression has been well documented in adolecents and adults [23, 24] and somewhat in children [21].

Clearly, there is an interest in assessing stress perception in children especially as it relates to school and home functional performance, overall health, body weight, and mental health. However, only two self-assessments targeting child stress perception were identified in the literature: 1) the Children's Stress Questionnaire – CSQ) recently developed by Byrne and colleagues [25], and 2) the Children Daily Stress Inventory (CDSI) [12]. Both appear well developed but lengthy, making research in this area more difficult to pursue. Indeed, the lack of an easy and efficient tool to capture stress perception may be in part why the research in this area is more limited than it is in adults. The CSQ is a 50-question tool in which children can select responses regarding how various life events affected them, using a 5-point Likert scale format, while the CDSI also contains 48-scaled questions about daily life stressors. Neither tool appeared available through open-access or purchase at the time this was written.

In contrast to the lengthy assessments noted above, one of the more robust tools available to measure stress perception in adults, the Perceived Stress Scale, is comprised of only 10 questions [26]. While also arguably tapping into a complex construct to measure (e.g. stress perception), this tool has been used widely in research for many years and is accepted as a pretty good snapshot of a person's stress perception at any one moment in time, across a wide age span and in a variety of languages [27-29].

No similar and efficient, easy to use screening measure for children could be identified through a review of the literature. The ability to screen children easily, early, and to potentially monitor their stress perceptions over time may be helpful for identifying those children who need further assessment as well as for targeting those who would benefit from intervention efforts aimed at ameliorating chronic stress effects. In addition to helping shape the delivery of various intervention approaches, regular monitoring over time of children's changing stress perceptions, among other attributes and characteristics, may also contribute to outcomes-based program evaluation.

PURPOSE OF THE STUDY

The purpose of this paper is to describe a screening tool for measuring perceived stress in children in an efficient, user-friendly format, as well as to present the

results of an initial study that looked at one aspect of the tool's construct validity, in being able to discriminate between children with known stress/anxiety problems and those without. Data on the Perceived Stress Scale-Children (PSS-C) were gathered from a typical sample of well children without known anxiety, stress and/or depressive symptoms, and compared to results from children with known anxiety and stress-related disorders. The scale was designed to be used by individuals who work with youth and for whom a screener tool would be helpful and have widespread applicability.

The primary hypothesis of the study is that there would be a significant difference between scores obtained on the PSS-C from a typical sample of children with no known stress/anxiety problems and a clinical sample of children being treated for stress/anxiety/depression. If confirmed, findings would suggest that the PSS-C could discriminate between the two populations of children, thus providing some evidence that the tool was valid as a simple, efficient, and effective screening tool for clinicians, educators, and others who work with children.

METHODS

Participants

Children, ages 5-18 years were invited to participate in the study through posted flyers, personal networks, and word-of-mouth referrals resulting in a convenience sample for the study. Flyers were posted in various locations around the university and community, and graduate students/faculty described the study to families within their personal networks. Several local day care centers and health care providers also told families about the study. Interested children were eligible to participate if they were healthy and did not have any identified or suspected anxiety or stress-related disorder. Children in the typical sample were given $5 in McDonald's gift certificates, with parent permission, to thank them for their time. Parents gave informed consent for the participation of their child. Assent was secured prior to beginning the assessment. The university's Institutional Review Board (IRB) for human subject participation approved the study.

The PSS-C was given to 153 children living in the northeastern United States between 2009-2011, 135 of who were typical developing children, based on parental report; none in the typical sample were identified with any developmental concerns or stress-related conditions and/or mental health concerns. In addition, 18 children who were identified and were currently being treated for anxiety disorders or other stress-related conditions (including depression) were asked to participate by three local mental health care providers, who were not researchers in the study but who administered the tool. Written consent of the parent or legal guardian, and child assent, were obtained through the treating mental health professional (i.e. pediatric psychiatrist or psychologist) and data were returned to the researcher with no personally identifying information included. Demographic characteristics of participants are in Table **1**.

Instruments

The development of the scale was grounded in the literature on children and adolescents and through discussion with colleagues with expertise in child development. Areas of concern included perceptions of feeling rushed or worried about not having enough time to do desired activity, perceptions of school performance, quality of friendships, relationships with parents, perceptions of conflict/anger and feeling happy, perception of having enough sleep, and perceptions of feeling loved. These areas are consistent with others describing constructs of childhood stress perception [12, 25, 30].

Table 1: Demographic Characteristics of Participants

	Age	Gender	Ethnicity
Total sample (N=153)	$\bar{X}$ = 9.4 years (SD= 3.04) Range = 5-18 years	48% males; 52% females	81% white; 19% African American, Latino/a; Asian
Typical sample (n= 135)	$\bar{X}$ = 9.13 years (SD= 3.1) Range = 5-18 years	45% males; 56% females	82% white; 18% African American, Latino/a; Asian
Clinical sample (n= 18)	$\bar{X}$ = 11.28 years (SD= 3.37) Range = 7-18 years	78% males; 22% females	73% white; 27% African American, Latino/a; Asian
Matched typical sample (n=18)	$\bar{X}$ = 11.52 years (SD= 3.7) Range = 8-18 years	53% males; 47% females	90% white; 10% African American, Latino/a; Asian

The goal of the scale is to provide a short, usable screening form for research or clinical use, with no more than 15 questions so that children would be able to answer quickly. Initially, sixteen questions emerged through discussion and the literature as contributing meaningfully to stress perception in children. These 16 questions were juried for face validity by a panel of 5 colleagues, all of who had expertise in child development. An initial question was used to teach younger children how to respond by asking them which response signified "a lot". Seven questions were developed with reverse wording and scoring in order to increase the likelihood of truthful responding. Each question was answered on a scale with 4 options ranging from never, a little, sometimes, and a lot. After wording revisions and deletion of questions believed to be redundant by the panel, 14 questions were pilot tested on approximately 20 children by graduate students participating in a research course with the author prior to using it in the study. Further re-phrasing of several questions was conducted in response to children's feedback, resulting in the final version with 14 questions, including the first one that is not scored. A higher value on the total of all 13 scored questions equated to higher stress perception (Questions 3, 6, 7, 10, 11, 13 and 14 are reversed scored). See Figure **1**.

Perceived Stress Scale (Children)

The following questions ask you about your feelings and thoughts during the last week. For each question you will be asked to circle the picture that best fits your answer.

Name: Date:

Age: Birthday: I am a: Boy Girl

1. Which one has a lot of something?

2. In the last week, how often did you feel rushed or hurried?

3. In the last week, how often did you have enough time to do what you wanted?

4. In the last week, how often did you feel worried about being too busy?

5. In the last week, how often did you feel worried about grades or school?

6. In the last week, how often did your mom and/or dad make you feel better?

7. In the last week, how often did your mom and/or dad make you feel loved?

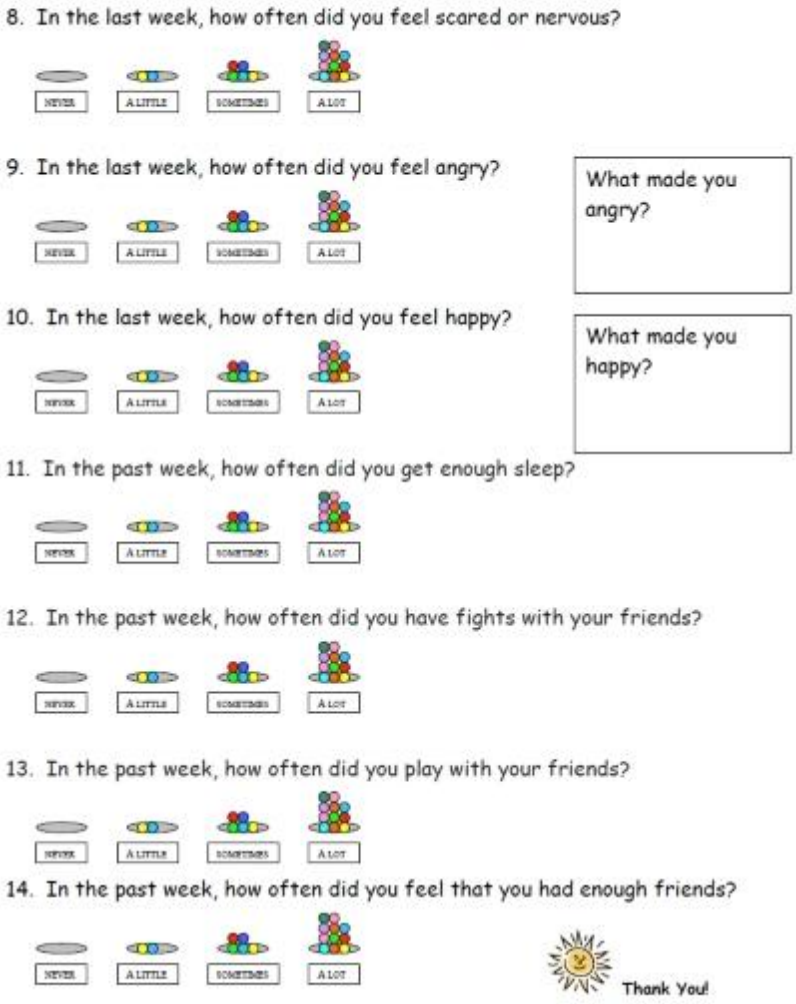

Figure 1: Children's perceived stress, occupational patterns, and health_Fall_2006 BPW.

Procedure

Participants were recruited for the study through flyers posted in areas where parents frequent (e.g. local childcare providers), personal networks and referrals. Graduate students in occupational therapy asked children to complete the perceived stress scale (PSS-C) independently; all assessments were completed either in the child's home or at daycare/preschool with adults present in the room but not assisting. Children were also asked whether they thought the scale was "easy" or "tricky/hard". Each PSS-C was scored and entered into a database by four graduate assistants not participating in administration of the questionnaires, but prepared for their portion of the study so as to ensure consistency in data collection and scoring. The mental health professionals providing clinical sample data were recruited through personal contact and agreed to participate by asking their clients

to participate with verbal consent by parent/guardian and verbal assent of the child. All responses from the clinical sample were anonymous; the three mental health professionals sent completed, unscored PSS-C forms as well as age, gender and diagnosis information for each study participant by mail to the researcher.

RESULTS

All analyses were completed using IBM-SPSS statistical software [31], with an established alpha of $p<0.05$ for group difference. The average time for a completed response across the entire sample was 3.5 minutes, (ranging from 2-5 minutes). Further, 98% of the typical children in the sample reported that the tool was "easy", validating our assumptions that children would be willing to complete the questionnaire. Anecdotally, a number of older teenagers described the tool as looking like it was designed for "younger kids", making the tool potentially less desirable for this age group.

Scores on the PSS-C for the entire sample (N=153) showed a wide range of distribution, with scores ranging from 1-31 (highest possible score is 39). The mean (11.73, SD 4.6), median (11) and mode (11) were consistent in values. The overall distribution shape was slightly skewed (*skewness* = 0.52). A stem and leaf plot showed that the skew was due to a slight tendency for scores in the lower value direction (i.e. lower stress perception) for the entire sample.

In order to address the hypothesis that differences would exist between the typical and clinical samples, independent t tests were run. The results showed significant differences between both groups on the PSS-C scores, $t = 3.23$ (151), $p = 0.002$.

The mean score on the PSS-C for the clinical group ($n = 18$) was 15.44 (SD 4.55), while the typical group ($n = 135$) mean was 11.24 (SD 5.25).

Significant age differences were found between both groups $t = 2.88$ (151) $p = 0.005$. The mean age for children in the clinical sample ($n = 18$) was 11.27 (SD 3.37), while the mean age within the typical sample ($n = 135$) was 9.13 (SD 3.1). This difference appeared due to an older group of children being seen for anxiety/stress disorders, perhaps suggesting that diagnosis and treatment occurs a bit later in childhood.

To assess whether PSS-C score differences remained between both groups while controlling for age and gender, a matched sample ($n = 18$) was selected from the typical (control) group based on similar attributes. A comparison between the matched sample and the clinical sample characteristics showed no significant differences in age and gender although there was a trend ($p = 0.07$) for gender between both groups, with more males (78%) in the clinical sample (n=18) versus the typical matched sample (53%). Applying a paired t-test, the comparison of PSS-C scores in the matched pair analysis showed that significant score differences remained between the groups ($t = 2.81$ (34), $p<0.008$). The mean PSS-C score for the clinical sample (n=18) was 15.44 (SD 4.5), while the mean score for the typical matched group (n=19) was 11.68 (SD 3.5).

DISCUSSION/CONCLUSIONS

This research paper describes a screening tool developed to capture an indication of perceived stress in children. The importance of having an easy to use and efficient tool to which children can quickly respond extends researcher, teacher, and clinicians understanding of potential stress impacts on school and home performance, risks to physical and emotional health, as well as to impacts on body weight and daily activity patterns. As noted previously, there exists a small but diverse research literature that poses a variety of implications and interests for researching and appreciating stress perception in children. However, the potential implications of child stress perception on performance, health and activity patterns remain understudied. Indeed, Maldonado *et al.* [12] noted that there is surprisingly little systematic study on children's daily stress perception in typical life ---not including trauma--- that broadens our understanding of how chronic stress perception may have a broader impact on children's functional performance.

In part, the paucity of research described above may be due to very few practical tools available to assess stress perception in children. As noted earlier, only two self-assessments targeting child stress perception were identified in the literature, both of which are lengthy. In contrast, the PSS-C provides an easier and shorter alternative that could have multiple applications in stress screening, helping target at-risk children for lengthier assessment, research, and intervention planning and monitoring.

The results from the current study described in this paper suggest that the PSS-C is well accepted by children ages 5-18 years, can capture a snapshot of stress perception in children, and can discriminate between children who have no known stress/anxiety

disorder from those who do. The use of this tool by therapists, educators, and allied health professionals could promote research in various disciplines interested in including child stress perception as a variable, help shape interventions in school, home and community settings, and monitor child progress in intervention programs. Most importantly, the PSS-C may serve well as a screen for children whose results might warrant further and more extensive assessment.

Limitations

Several limitations exist, including a relatively small sample of both typical children and children diagnosed with anxiety/stress-related disorders all within the same geographic area and predominantly white. In addition, there was a wide age spread (5-18 years) of participants in the sample. Further study of the tool should include assessing responses across more diverse samples, and among age clusters. In addition, further analysis of the psychometric properties of the tool should be conducted, including test/re-test reliability.

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Appendix C

Tables

Table 4.7

Degree of CDI-2scale

No.	Statement	Mean	SD	Percentage	Degree
1	Feeling sad	1.45	0.717	48.33	Low
2	Things happen	2.15	0.787	71.67	High
3	Doing things	1.37	0.658	45.67	Low
4	Enjoy works	1.75	0.657	58.33	Mid
5	Family attention	1.41	0.687	47.00	Low
6	Self-love	2.68	0.670	89.33	V- High
7	Bad events	2.66	0.638	88.67	V- High
8	Kill myself	1.35	0.596	45.00	Low
9	Wanting to cry	2.43	0.785	81.00	High
10	Feeling nervous	2.26	0.794	75.33	High
11	Being with people	1.61	0.757	53.67	Mid
12	Decision making	2.35	0.691	78.33	High
13	Outward appearance	1.28	0.575	42.67	High
14	Pressure myself	2.15	0.833	71.67	High
15	Sleep problems	2.34	0.800	78.00	High
16	Feeling tired	1.55	0.768	51.67	Low
17	Food love	2.38	0.793	79.33	High
18	Anxiety from pain	1.64	0.736	54.67	Mid
19	Loneliness	1.64	0.780	54.67	Mid
20	Enjoying school	1.99	0.703	66.33	Mid
21	Having friends	1.39	0.623	46.33	Low
22	Study mode	1.46	0.685	48.67	Low
23	Compared to children	2.53	0.688	84.33	V- High
24	Others love	2.54	0.676	84.67	V- High
25	Interact with friends	1.44	0.656	48.00	Low
26	Sleep during the day	2.25	0.831	75.00	High
27	Eating level	2.66	0.645	88.67	V- High
28	Remember things	1.72	0.733	57.33	Mid
	Total	1.94	0.171	64.67%	Mid

Table 4.8

Degree of the stress scale

No.	Statement	Mean	SD	%	Degree
1	Have a lot of somethings	3.46	0.878	83.04	High
2	Feel rushed or hurried	2.65	0.949	63.60	Mid
3	Have enough time to do what you wanted	2.75	1.005	66.00	High
4	Feel worried about being too busy	2.68	0.973	64.32	Mid
5	Feel worried about grades or schools	2.69	1.086	64.56	Mid
6	Mam and/ or dad make you feel better	3.36	0.931	80.64	High
7	Mam and/ or dad make you feel loved	3.31	0.976	79.44	High
8	Feel scared or nervous	2.34	1.045	56.16	Mid
9	Feel angry	2.85	1.005	68.40	High
10	Feel happy	3.06	0.982	73.44	High
11	Enough sleep	2.76	1.008	66.24	Mid
12	Fights your friends	1.93	1.071	46.32	Low
13	Play with your friends	3.07	1.097	73.68	High
14	Have enough friends	3.28	0.992	78.72	High
	Total	2.68	0.402	68.9%	high

Table 4.9

Degree of the questionnaire domains

No.	Domain	mean	SD	Percentage	degree
1	CDI-2 scale	1.94	0.172	64.67	Mid
2	Stress scale	2.86	0.402	68.64	High
	Total degree			66.65%	Mid

Table 4.10

One sample T-test for research scales

NUM	Scale	T	DF	P- value
1	CDI-2 scale	157.757	195	0.00
2	Stress scale	100.091	196	0.00

Table 4.11

Pearson correlation test for research scales

NUM	Scale		CDI-2	Stress scale
1	CDI-2	Pearson Correlation	1	-0.008
		P- value (2-tailed)		0.913
		N	196	193
2	Stress scale	Pearson Correlation	-0.008	1
		P- value (2-tailed)	0.913	
		N	193	197

Table 4.12

Description of the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender

		N	Mean	Std. Deviation
CDI-2 scale	Male	96	1.93	0.215
	Female	100	1.95	0.118
Stress scale	Male	97	2.80	0.427
	Female	100	2.92	0.367
Total degree	Male	100	2.37	0.276
	Female	100	2.44	0.183

Table 4.13

T-test for the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the gender

	F	df	F	P- value
CDI-2 scale	-0.717	194		
	-0.709	146	7.169	0.008
	-2.160	195		
Stress scale	-2.155	189		
	-2.046	198	2.462	0.118
	-2.046	171		
Total degree	-0.717	194		
	-0.709	146	9.344	0.003
	-2.160	195		

Table 4.14

Description of the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age

		N	Mean	Std. Deviation
CDI-2 scale	13 years old	57	1.92	0.239
	14 years old	123	1.94	0.138
	15 years old	16	1.97	0.125
	Total	196	1.94	0.172
Stress scale	13 years old	58	2.83	0.400
	14 years old	123	2.89	0.417
	15 years old	16	2.80	0.272
	Total	197	2.86	0.402
Total degree	13 years old	60	2.38	0.259
	14 years old	124	2.42	0.233
	15 years old	16	2.38	0.156
	Total	200	2.40	0.236

Table 4.15

ANOVA test for the validation of the children's depression inventory second edition (CDI-2) in Arabic language within a Palestinian context due to the age

		Sum of Squares	df	Mean Square	F	P- value
CDI-2 scale	Between Groups	0.028	2	0.014	0.470	0.626
	Within Groups	5.743	193	0.030		
	Total	5.771	195			
Stress scale	Between Groups	0.187	2	0.094	0.578	0.562
	Within Groups	31.416	194	0.162		
	Total	31.603	196			
Total degree	Between Groups	0.065	2	0.032	0.582	0.560
	Within Groups	10.982	197	0.056		
	Total	11.047	199			

جـامعـــة النجاح الوطنية
كليـــة الدراســـات العليـــا

مؤشرات صدق قائمة الاكتئاب الثانية للأطفال في اللغة العربية ضمن السياق الفلسطيني

إعداد
تمارا صالح ابو رجب

إشراف
د. فايز محاميد
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قدمت هذه الرسالة استكمالاً لمتطلبات الحصول على درجة الماجستير في علم النفس الإكلينيكي، من كلية الدراسات العليا في جامعة النجاح الوطنية، نابلس – فلسطين.

2023

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الملخص

تهدف هذه الدراسة إلى التعرف على التحقق من صحة مقياس الاكتئاب لدى الأطفال الإصدار الثاني (CDI-2) في اللغة العربية في السياق الفلسطيني، ولتحقيق أهداف الدراسة والإجابة على فرضياتها استخدمت الباحثة المنهج الوصفي التحليلي الذي يركز على جمع البيانات معلومات حول التحقق من صحة مقياس اكتئاب الأطفال الإصدار الثاني (CDI-2) باللغة العربية في السياق الفلسطيني، ووصف خصائص مقياس CDI-2 ومقياس القلق المطبق على أطفال فلسطين، لذا فإن المنهجية الوصفية هي المنهجية المناسبة للدراسة.

أظهرت نتائج البحث وجود فروق ذات دلالة إحصائية في وجهة نظر الأطفال تتعلق بالتحقق من حصر الاكتئاب لدى الأطفال الطبعة الثانية (CDI-2) في اللغة العربية ضمن السياق الفلسطيني تعزى للجنس لصالح الإناث، ولكن لا توجد فروق ذات دلالة إحصائية بين وجهة نظر الأطفال في التحقق من صحة حصر الاكتئاب لدى الأطفال الطبعة الثانية (CDI-2) في اللغة العربية ضمن السياق الفلسطيني تعزى للجنس لصالح الإناث، ولكن لا توجد فروق ذات دلالة إحصائية بين وجهة نظر الأطفال في التحقق من صحة حصر الاكتئاب لدى الأطفال الطبعة الثانية (CDI-2) في اللغة العربية ضمن السياق الفلسطيني تعزى للجنس لصالح الإناث، ولكن لا توجد فروق ذات دلالة إحصائية بين وجهة نظر الأطفال في التحقق من صحة حصر الاكتئاب لدى الأطفال الطبعة الثانية (CDI-2) في اللغة العربية ضمن السياق الفلسطيني

تعزى للجنس لصالح الإناث، ولكن لا توجد فروق ذات دلالة إحصائية بين وجهة نظر الأطفال في التحقق من صحة حصر الاكتئاب لدى الأطفال الطبعة الثانية (CDI-2) في اللغة العربية ضمن السياق الفلسطيني تعزى للجنس لصالح الإناث، ولكن لا يوجد لا توجد فروق ذات دلالة إحصائية بين وجهة نظر الأطفال في التحقق من صحة جرد الاكتئاب لدى الأطفال الطبعة الثانية (CDI-2) في اللغة العربية في السياق الفلسطيني تعزى لمتغير العمر.

الكلمات المفتاحية: الاكتئاب، اكتئاب الاطفال، مقياس (Cdi-2)؛ مقياس القلق، اطفال فلسطين.