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PSYCHO-EMOTIONAL DEVELOPMENT OF CHILDREN WITH DIABETES MELLITUS

Speciality: 511.02. – Development and educational psychology

Summary of the Doctoral Thesis in Psychology

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The thesis was developed within the Doctoral School of Psychology at ”Ion Creangă” State Pedagogical University of Chisinau

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The defense of the doctoral thesis will take place at December 08, 2025, 11 a.m. during the meeting of the Doctoral Committee of the Doctoral School of Psychology and Social Work at Ion Creangă State Pedagogical University of Chisinau.

The doctoral thesis in psychology and the abstract can be consulted at the Scientific Library of the "Ion Creangă" State Pedagogical University of Chisinau and on the ANACEC website. (www.anacec.md)

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CONCEPTUAL LANDMARKS OF THE RESEARCH

Relevance and Significance of the Topic. The issue of diabetes mellitus (DM) in children is particularly timely, given the alarming global increase in incidence and its impact on children's lives. According to data from the International Diabetes Federation (IDF), over 1.1 million children currently live with this condition, with estimates projecting an increase to 2.5 million by 2040 [34]. Europe records the highest incidence rates, while countries with medium levels of development report the fastest growth. Romania monitors over 3,440 pediatric cases, whereas the Republic of Moldova shows an upward trend in DM among children aged 0–14 years. Diabetes mellitus is not merely a medical condition; it also represents a major challenge for the psycho-emotional development of the child, with significant consequences for families and communities. Nevertheless, national strategies in both countries predominantly focus on the medical dimension, largely neglecting the psychological aspects and the need to strengthen children's resilience. In the absence of integrated psychological intervention programs, support for children with DM remains insufficient. In this context, the present research is highly relevant and necessary, as it proposes a holistic and multidisciplinary approach to DM that incorporates psychological, educational, and family dimensions. This innovative perspective aims to foster resilience and enhance the quality of life for children. The study provides both scientific and practical contributions, offering new directions for public policy and integrated psychosocial interventions tailored to the real needs of children with DM and their families.

Description of the Research Field and Identification of the Research Problem. The complexity of the psychological profile of a child with DM is influenced by a multitude of genetic, psychological, environmental, and contextual factors, underscoring the need for comprehensive assessment and tailored interventional support [9, 14]. The psychosocial impact of diabetes from childhood affects not only the child but also the family, school, and society at large, necessitating integrated approaches within public health policies to support the harmonious development of affected children [10]. Early diagnosis and timely intervention are essential for preventing complications and maintaining a life as close to normal as possible. However, the burden of the disease extends beyond the medical dimension, profoundly affecting the child's emotional, social, and behavioral well-being, as well as impacting the family, school, and community. Psychological support plays a crucial role in diabetes management by enhancing resilience and improving quality of life. Therefore, a comprehensive assessment of the quality of life of children with diabetes is required, taking into account not only physical symptoms and disease management but also psycho-emotional development, with a focus on building resilience [15, 32]. Children with DM face numerous emotional and psychological challenges due to the chronic nature of the disease, including stress related to glucose monitoring, fear of hypoglycemia, additional responsibilities, dietary restrictions, and difficulties adapting to daily demands. These challenges may manifest as apathy, withdrawal, hostility, or even problematic behaviors [16]. Support from the medical team, specialists, and family is essential for the well-

being of children with chronic illnesses [27, 18]. While children cannot manage stress as effectively as adults, their adaptive capacities can develop much earlier, improving stress-coping abilities [29]. Specialized literature indicates that early psychological and educational interventions can enhance glycemic control, resilience, and quality of life in children. However, in national practice, these approaches remain fragmented and insufficiently integrated. In this context, the central research problem lies in the lack of multidisciplinary and systemic interventions that evaluate and support the development of resilience in children with DM, addressing the four key dimensions: medical, psychological, educational, and social. The present thesis aims to address this gap by identifying and implementing intervention strategies and programs tailored to the specific needs of children, with the goal of strengthening their resilience, improving emotional well-being and quality of life, and, by extension, supporting the entire family unit involved in the care of a child with DM.

The research aim: *the theoretical and experimental substantiation of the psycho-emotional development of children with diabetes mellitus, focusing on the identification of maladaptive characteristics that lead to distress and the associated risk factors, as well as the development of a resilience-assisted psychological intervention program aimed at acquiring a set of resilient skills necessary in the front of future adversities.*

Throughout the scientific endeavor, the following **research objectives** guided the study:

1. To examine and substantiate the conceptual framework regarding the psychological characteristics of the psycho-emotional development of children with DM and to determine the impact of diabetes on the emotional and social life of school-aged children.

2. To implement an assessment methodology and comparative criteria between children with DM and non-diabetic peers, in order to identify significant differences and outline a specific psycho-emotional profile of diabetic children, highlighting characteristics that generate distress.

3. To identify clinical internalizing and externalizing disorders, stressors, and coping mechanisms, and to analyze the relationships among them and their impact on the development and daily life of children with DM.

4. To identify the main risk factors that may negatively influence the psycho-emotional development of children diagnosed with DM.

5. To design a psychological intervention plan aimed at enhancing resilience in children with DM, evaluating the program's effectiveness in developing adaptive mechanisms and strategies that facilitate coping and change, thereby providing a supportive framework for overcoming adversities.

6. To formulate conclusions and identify directions for future theoretical and empirical research, as well as to develop practical recommendations for parents, educators, psychologists, other specialists, and medical staff involved in the care of children with DM.

The General Hypothesis of the Research. The general hypothesis of the study was based on the assumption of a significant differentiation between the psycho-emotional developmental profile of children with DM and that of non-diabetic children, presuming that the former is strongly influenced by psychological and physical vulnerability factors as well as by the presence of a greater number of risk factors.

Research Methodology. The scientific research methodology was structured and based on the following approaches: a) Theoretical Methods: This included the study of existing research and specialized literature, which enabled the identification of unexplored areas in the field and the refinement of the research objectives. b) Empirical Methods: Data were collected through the administration of standardized tests and questionnaires, including the Multidimensional Anxiety Scale for Children (MASC®), Children's Depression Inventory (CDI®), Strengths and Difficulties Questionnaire (SDQ), Children's Automatic Thoughts Scale (CATS), KIDCOPE Questionnaire, KID-KINDLR Questionnaire, Parental Styles Questionnaire, and an Emotional Intelligence test. These instruments facilitated the collection of participant data and the identification of research variables. c) Statistical Methods: Research data were processed using statistical techniques such as distribution analysis, measures of central tendency, evaluation of deviations, sample homogeneity assessment, correlation tests, comparative analyses of variables, and differentiation tests. These methods provided a solid evidence base for drawing reliable research conclusions. d) Analytical Methods: Interpretation and integration of the results allowed for an in-depth understanding of the relationships among the studied variables and the formulation of relevant conclusions. This approach enabled the identification of significant patterns and connections, contributing to the validation of hypotheses and the development of evidence-based recommendations. The sample consisted of 200 children selected from schools across Romania, ensuring good national representativeness. The study included 100 school-aged children (8–14 years) without diabetes and 100 children with DM, balanced by age and gender. The participants' age range was selected to observe differences in emotional and social development. The research also incorporated an intervention program applied to the formative group, followed by a comparison of results and assessment of the program's effectiveness using children from the general experimental group.

Novelty and Scientific Originality. The novelty and scientific originality of the study lie in the theoretical and experimental substantiation of the differences between the psycho-emotional profile of children with diabetes mellitus and that of non-diabetic children in Romania, through a unique nationwide comparative analysis, and the development of a resilience-based intervention program specifically designed for children with DM. This addresses the absence of interventions that comprehensively target their psycho-social needs, in a context where current Romanian policies focus almost exclusively on medical aspects. The implementation of a psycho-applied program aimed at enhancing psychological resilience, which can be integrated with the medical monitoring and treatment plan for diabetes, represents a significant

innovation in both pediatric clinical psychology and the management of chronic childhood illnesses. This approach contributes not only to improving children's emotional well-being but also to the development of early adaptive strategies for coping with the disease and associated challenges, thereby fostering psychological resilience. The study is original in its integrated approach across multiple psychological dimensions, providing exploratory value and the potential for replication in other contexts.

Theoretical Significance. Highlighting the maladaptive characteristics specific to children with diabetes mellitus and identifying risk and vulnerability factors in their psychological development that contribute to expanding existing knowledge in the field by introducing new perspectives on the psychological impact of chronic illness in childhood. The development of a comprehensive psychological profile of children with DM provides an in-depth understanding of the factors influencing affective disposition, academic performance, social functioning, and overall quality of life. Although medical interventions are fundamental in disease management, the literature emphasizes that they cannot fully address the complexity of daily life for children with DM [6]. This research makes a significant contribution by integrating psychological and social dimensions into a comprehensive intervention model aimed at fostering resilience. Thus, the study proposes an extension of the dominant medical paradigm by complementing it with empirically grounded data relevant for psychological intervention. Through this integrative approach, new directions for research and intervention are opened, with potential impact on educational policies, public health strategies, and family support systems.

Practical Significance. The practical value of this work consists in outlining a framework for understanding the psycho-emotional development of children with diabetes and developing a psychological intervention program based on assisted resilience that would improve children's emotional adaptation, contributing to the development of essential strategies in early overcoming the adversity associated with diabetes. The proposed psychological intervention complements the diabetes monitoring and treatment plan and provides an interdisciplinary model of intervention with practical applicability, constituting a valuable reference for professionals involved in the care and counseling of children with DM, especially in the field of juvenile diabetology and child psychology. The dual-component psychological intervention, targeting both the child and the family, can serve as a methodological model for specialists, providing a coherent structure for organizing interventions aimed at improving quality of life and supporting balanced development in the context of a chronic illness.

Scientific Contribution of the Research. The scientific contribution of this study lies in integrating a systemic perspective into the assessment and intervention of psycho-emotional difficulties encountered by children with DM, providing psychological support to both the child and the family to enhance resilience, emotional regulation, and quality of life. The study offers an innovative perspective on psychological vulnerability, demonstrating that DM does not necessarily increase anxiety or depression and may even promote resilient mechanisms and self-esteem. Empirical evidence challenges the stereotype that

chronic illness in childhood is automatically associated with elevated psychological risk. Furthermore, the research highlights the role of family support and multidisciplinary interventions in the development of emotional resources in children with DM, providing a foundation for differentiated psychological interventions that focus not only on reducing vulnerabilities but particularly on strengthening protective factors (resilience, healthy coping, and emotional regulation). The study clarifies the relationship between DM and coping mechanisms by demonstrating the predictive role of the disease on patterns of psychological adaptation and by identifying subtle differences between adaptive and maladaptive coping in children with DM. It emphasizes the need for psychological interventions that foster problem-solving and active coping. The research reinforces the idea that psychological support should be integrated into multidisciplinary care for children with DM, not only to reduce vulnerabilities but also to strengthen adaptive resources, and highlights the correlation between emotional regulation and metabolic control—supporting the inclusion of emotional intelligence screening in pediatric diabetology practice. The results align with existing literature showing that pediatric chronic illnesses affect quality of life, particularly in functional and social domains (school activities, relationships, autonomy), even if global self-image and overall affect remain relatively stable due to coping mechanisms and support. While some studies report broader declines in emotional well-being among children with DM, this study proposes a model of selective vulnerability, helping reconcile discrepancies in the literature (some studies measure QoL globally, others via functional subscales). Additionally, this study contributes to the specialized literature by providing data specific to the pediatric DM population in Romania, highlighting cultural and social particularities in adaptation and complementing the predominantly international body of research.

Implementation of Scientific Results. The scientific findings were disseminated through publications in specialized journals, scientific communications, and theses, contributing to a deeper understanding of the psychological dimensions associated with diabetes mellitus (DM) in childhood. These results were also presented at conferences, hospitals, and schools, supporting increased awareness of the psycho-emotional vulnerabilities of children with chronic illness and the importance of fostering resilience. The intervention program has been successfully applied in the practice of psychologists working in hospitals, diabetes centers, and assessment, counseling, and psychotherapy offices for children. It also provides valuable resources for the training and guidance of parents, teachers, and healthcare professionals.

Volume and Structure of the Thesis. The thesis includes: annotations (in Romanian and English), a list of abbreviations, an introduction, three chapters, general conclusions and recommendations, a bibliography comprising 282 sources, 10 appendices, 155 pages of main text, 18 tables, and 76 figures. The research findings have been disseminated through 8 scientific journals and presented at 3 national and international conferences.

Keywords: children, diabetes mellitus, psycho-emotional development, resilience, chronic illness, distress, coping, parental style, intervention program, assisted resilience, stressors, risk and protective factors, quality of life

Field of Study: Developmental Psychology

CONTENT OF THE THESIS

The Introduction presents the relevance, necessity, and significance of the research topic, based on the current scientific context of the issue under study. It outlines the general aim, research objectives, and hypotheses, as well as the central problem the study seeks to address. The conceptual theoretical framework and research methodology are presented, along with a description of the research context and identification of the research problem. Emphasis is placed on the novelty and originality of the study, as well as its practical and applied value.

Chapter 1: Theoretical Framework on the Psycho-Emotional Development of Children with Diabetes Mellitus and Definition of General Concepts. Chapter 1 provides the theoretical foundation for the psycho-emotional development of school-aged children with diabetes mellitus (DM) and defines the essential concepts necessary for understanding the general issues under study. It examines the extent to which diabetes affects children's development and explains the key concepts from major developmental theories and contemporary research, including vulnerability-stress frameworks and assisted resilience. The psycho-emotional development of school-aged children is a complex process influenced by the interaction of biological, psychological, and social factors [23]. In analyzing this process, several relevant concepts from fundamental human development theories were considered: Alfred Adler (inferiority complex), Erik Erikson (self-efficacy, sense of competence, and social comparison), Lawrence Kohlberg (conformity to rules), Jean Piaget (concrete-operational thinking), Urie Bronfenbrenner (socialization and environmental interactions), B.F. Skinner (behavior formation through modeling, reinforcement, and motivation), as well as concepts of emotional intelligence, stress, and resilience developed by Daniel Goleman and other researchers, and attachment theory by John Bowlby. These provide a comprehensive framework for understanding how school-aged children develop social and emotional skills [28]. The chapter aims to define these key concepts, contributing to an integrative understanding of children's emotional and social needs, while also considering current studies and research. The analysis of fundamental concepts related to the psycho-emotional development of children with DM emphasizes the importance of comprehensive assessment, which identifies not only risk factors but also protective factors and the essential skills that support resilience development. Such evaluation is crucial for understanding how different psycho-emotional dimensions are interconnected and how they influence children's adaptation to the challenges associated with the disease.

This process underscores the importance of interventions that consider the complexity of interactions among these factors. It is important to note that the psycho-emotional development of children with diabetes mellitus (DM) can differ significantly from that of non-diabetic children, primarily due to the additional challenges associated with managing a chronic condition. Understanding these differences helps in the development of dedicated interventions and programs that address the specific needs of children with DM, promoting healthy and adaptive development in the face of disease-related challenges. Studies have shown that emotional resilience—sometimes referred to as emotional regulation or affective regulation—is involved in children's ability to prevent dysfunctional negative emotions and maladaptive behaviors [24]. Bernard [3] defined resilience as the development of capacities to employ coping strategies (distraction, cognitive restructuring, seeking social support, etc.) to help children regulate the intensity of negative emotions while also gaining the ability to remain calm when confronting adverse events. Psychiatrist and psychoanalyst Boris Cyrulnik [8] argued that resilience can be developed from one's own resources through the acquisition of a secure attachment style, whereby the child builds self-confidence based on interactions with adult models. This concept was later incorporated by John Bowlby in attachment theory, which posits that in adverse situations, a secure attachment fosters the development of self-confidence and the ability to seek support. Resilience has also been approached from the perspective of positive psychology, represented by Martin Seligman [26], shifting from a focus on deficits to a focus on competence and adaptive behavior, emphasizing skills, values, and positive attributes rather than weaknesses and pathologies. Resilience integrates emotional and social competencies oriented toward the future. Emotional competencies include positive self-concepts, an internal locus of control (self-regulation and emotion management), personal autonomy, and a sense of humor. The locus of control is a key determinant of resilience. There is also a strong association between high self-esteem—a resilience-related variable—and personality traits such as extraversion, agreeableness, and openness to experience. Basic psychological qualities, such as self-esteem and efficacy, can buffer adversity, enabling the development of positive behaviors. Social competence is defined by the ability to maintain stable social relationships; thus, empathy, communication, and a sense of belonging are relevant to resilience development. The OECD [35] emphasizes the importance of resilience in children, encompassing multiple internal protective factors, which are particularly relevant for children managing chronic illnesses such as diabetes. Well-being is also an indicator of resilience, reflecting an individual's capacity to adapt and maintain positive mental and emotional health even in the face of challenges or extreme stress. Resilience can be modulated by risk and protective factors. Risk factors represent personal and environmental variables that increase the likelihood of negative reactions in adverse situations, whereas protective factors encompass variables that enhance the capacity to withstand conflicts and manage stress (supportive family relationships, healthy habits, good health, material resources) [19]. These factors operate in the presence of risk, acting in a compensatory and protective manner. Parental style also plays a crucial role in child development, influencing a wide range of aspects, from emotional and

social development to personality formation and behavior [1], as well as the management of chronic illnesses such as childhood diabetes. Studies have shown that children's emotional and social development is strongly influenced by parental style, and that the development of effective coping strategies—such as problem-solving or seeking social support—can significantly improve the well-being of children with DM [30].

The psycho-emotional development of children with diabetes mellitus (DM) is strongly influenced by their capacity to develop resilience. Resilience theory emphasizes that through interventions supporting psycho-emotional development and the strengthening of protective factors, children with DM can successfully face challenges, thereby developing adaptive and resilient skills that will benefit them throughout their lives. In conclusion, stress, resilience, attachment, inferiority, self-efficacy, parental style, coping, emotional intelligence, and competence are essential concepts for understanding the psycho-emotional development of children with DM. These factors are interconnected and play a critical role in how children and their families adapt to the challenges of a chronic illness such as diabetes. A holistic approach integrating these concepts is essential for supporting the development of resilience and coping skills in children with DM. In this regard, evidence-based interventions can improve not only the mental health of these children but also their quality of life, facilitating successful social integration [25].

Chapter 2: Experimental Research on the Level of Psycho-Emotional Impact in Children with DM.

Chapter 2 presents the aim, hypotheses, exclusion criteria, and a detailed description of the research sample in terms of representativeness and homogeneity, as well as a thorough description of the assessment instruments administered to children and parents during the data collection phase. It also includes the statistical analysis of the data through comparison, correlation, presentation, and interpretation of the results from the observational experiment. The observational experiment included 100 non-diabetic children aged 8 to 14 years and 100 children with DM from across the country, aged 8 to 14 years, registered with the National Health Insurance House, physicians at the "Sanamed" Diabetes Hospital, the "Sănătatea Ta" Clinic, and the "Cristian Șerban" Medical and Rehabilitation Center for Children and Adolescents in Buziaș. Given the total reported population of 3,440 children with DM in the Romanian National Diabetes Program of CNAS [36], the randomly selected research sample is considered representative, reflecting the characteristics of the school-aged DM population, while also accounting for the mandatory inclusion criteria regarding participants' age and gender. The ages of the children ranged from 8 to 14 years, with a mean age of approximately 11 years ($M = 10.71$; $SD = 2.10$), a near-symmetrical distribution ($Sk = 0.19$), and high heterogeneity ($K = -1.27$), ensuring a balanced representation across different ages.

Age Distribution of the Research Participants

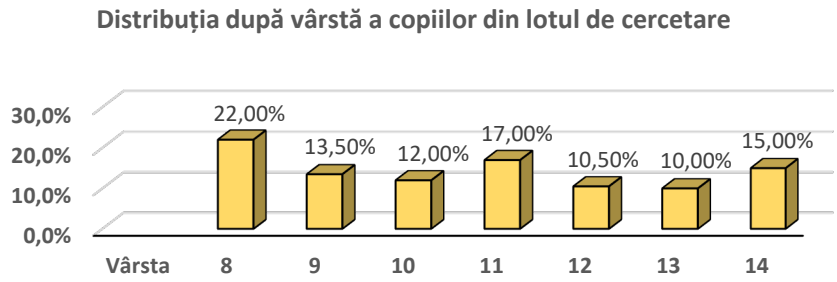

Figure 1. *Age Range Distribution of the Research Sample*

Table 1. *Distribution of the Sample by Age*

	N	*Min*	*Max*	*m*	*sd*	*Sk*	*K*
Child's Age	200	8.00	14.00	10.71	2.10	0.19	-1.27

In terms of gender, the two groups are approximately equally represented ($\chi^2(df = 1) = 0.50$; $p = 0.480$). This balance is also maintained when differentiating based on the presence or absence of diabetes mellitus ($\chi^2(df = 1) = 0.50$; $p = 0.286$).

Gender Distribution of the Research Participants

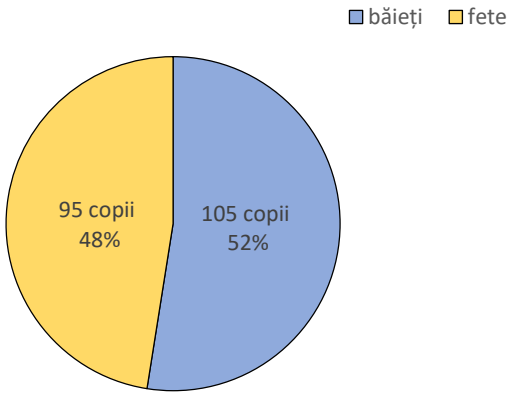

Figure 2. *Gender Distribution According to the Presence/Absence of DM*

The experimental aim of the research on the psycho-emotional development of children with diabetes mellitus (DM) focused on identifying maladaptive psychological characteristics that lead to distress, analyzing the associated risk factors, as well as the protective factors that shape their overall psychological profile.

The research objectives were as follows: **1.** To identify internalizing (affective) and externalizing (behavioral) problems in children with diabetes mellitus and non-diabetic children; **2.** To determine the psychological characteristics of children with DM and the coping methods they employ; **3.** To identify the relationships among measured components, such as demographic factors, diagnostic information, coping strategies, parental style, emotional intelligence, etc., and how these influence the life of a child with DM; **4.** To outline a psycho-emotional profile of children with DM by identifying relevant developmental

characteristics; **5.** To conduct a comparative analysis between children with DM and non-diabetic children to highlight differences.

The general hypothesis of the research was based on the assumption of a significant differentiation between the psycho-emotional developmental profile of children with diabetes mellitus and that of non-diabetic children, positing that it is strongly influenced by psychological and physical vulnerability factors as well as the presence of a higher number of risk factors. In this study, we aimed to test the following operational hypotheses:

H1. Children with diabetes mellitus were hypothesized to exhibit significantly higher levels of anxiety and depression compared to non-diabetic children. However, the study results did not identify significant differences between the two groups regarding depressive symptoms, general anxiety, or their specific components. Nonetheless, children with DM displayed moderate symptoms of tension, restlessness, or somato-vegetative manifestations, though these did not reach statistical significance. Interestingly, children with DM showed a lower risk of social anxiety ($B = -0.47$, $t = -2.12$, $p = 0.035$), including performance-related fear ($\chi^2(df = 3) = 10.73$; $p = 0.013$), compared to non-diabetic children. Regression analysis confirmed that the presence of DM is a negative predictor of anxiety, with children with DM generally less predisposed to manifest anxiety than their non-diabetic peers. No significant differences were found between the two groups regarding anxious coping and perfectionism ($\chi^2(df = 3) = 10.49$; $p = 0.015 < 0.050$), although multivariate analysis revealed a subtle effect of diabetes on perfectionism as a positive predictor. On the other hand, children with DM exhibited lower levels of negative affect ($\chi^2(df = 3) = 7.56$; $p = 0.050$), higher self-esteem ($\chi^2(df = 3) = 19.74$; $p < 0.001$), reduced self-devaluation and inefficacy, and fewer difficulties in interpersonal relationships. These findings are supported by multivariate analysis, which indicates that the presence of DM is a negative predictor of both depression and social anxiety, suggesting that, unlike non-diabetic children, those with DM benefit from better emotional resources and adaptive mechanisms. In conclusion, although Hypothesis 1 was rejected, the results align with current studies and research suggesting that family support, open communication, resilience developed by children with DM, and multidisciplinary assistance contribute to a lower risk of anxiety and depression compared to non-diabetic children.

H2. Children with diabetes mellitus possess fewer adaptive coping strategies and predominantly use maladaptive methods compared to non-diabetic children. A comparative analysis of coping mechanisms, conducted using the chi-square test of independence, revealed significant differences between children with and without DM. On one hand, children with DM rely less on problem-solving as a strategy to manage stressful situations. Regression analysis indicated that the presence of DM is a negative predictor for problem-solving, reducing the likelihood of employing this strategy compared to non-diabetic children. This suggests a decreased capacity to actively approach stressful situations. On the other hand, diabetes emerged as a positive predictor for emotional regulation, wishful thinking, or prayer, indicating a tendency among children with DM to rely on emotion-focused or spiritual-religious coping strategies. This pattern reflects a reduced capacity to actively manage stress. For other coping mechanisms, no significant differences were observed between the two groups, with their use being approximately similar. Hypothesis 2 was partially confirmed: children with DM employ a combination of strategies, some adaptive and others less adaptive. Overall, it can be concluded that DM influences the distribution of coping strategies, favoring

emotion-centered approaches over problem-solving, social support, or cognitive restructuring. This pattern highlights a polarization of coping mechanisms, which may explain certain psychological vulnerabilities as well as specific adaptive resources.

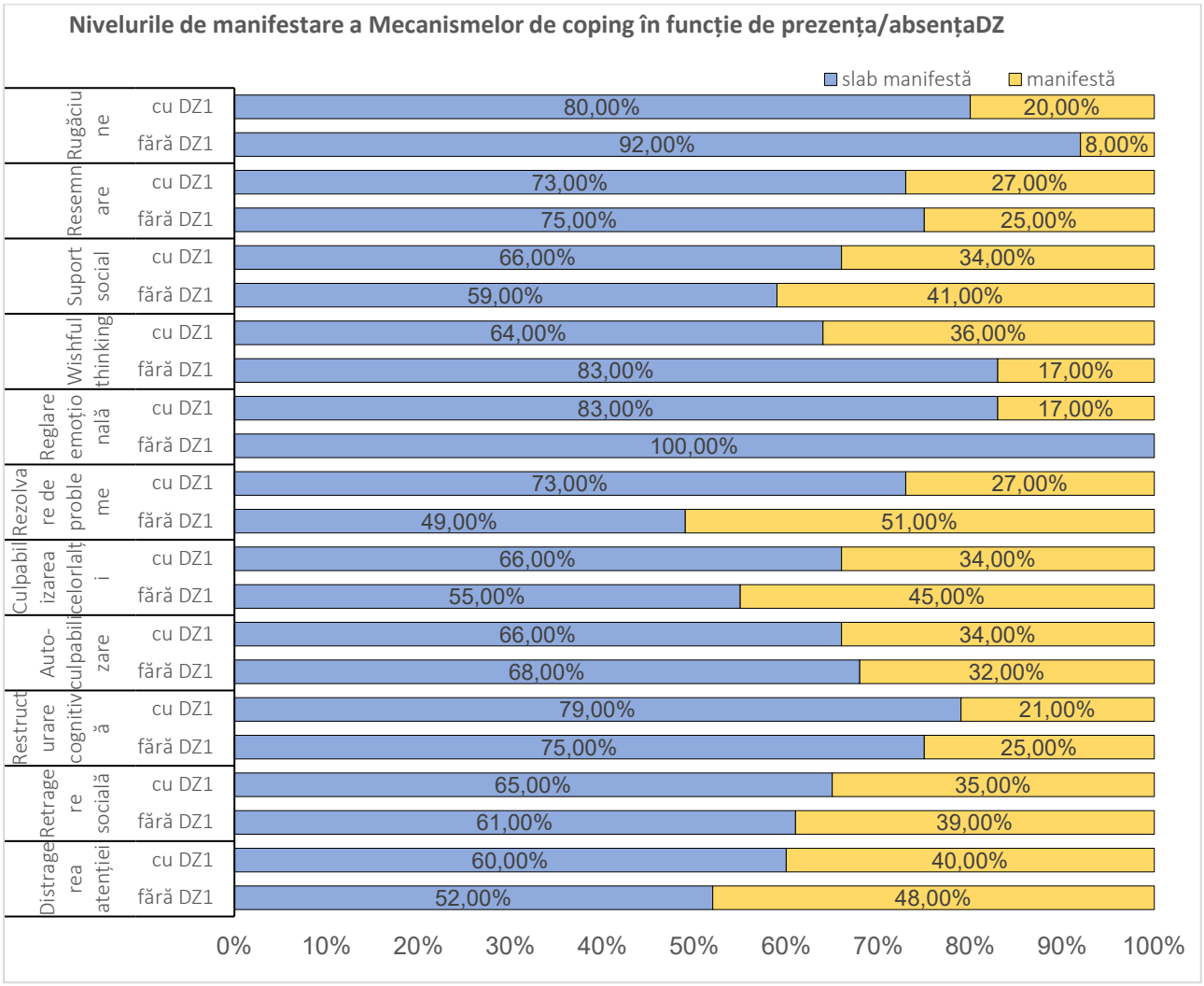

Figure 3. *Levels of Coping Mechanisms According to the Presence/Absence of Diabetes Mellitus*

Studies by Compas, B.E., Jaser, S.S., et al. [7] have also shown that children with diabetes mellitus (DM) often use emotion-focused coping strategies, unlike healthy children, who rely more on problem-solving. This tendency can be explained by the fact that diabetes, as a chronic condition, may limit children's ability to manage situations through problem-solving, leading them to adopt emotional or avoidant coping strategies. Another study by Jaser S.S. & White L.E. (2010) highlighted a greater reliance on emotion-focused coping in adolescents with diabetes compared to their non-diabetic peers, suggesting that chronic illness can influence coping style by steering it toward emotional strategies. Grey, M., and Jaser, S.S., et al. [11] emphasize that problem-focused coping strategies are associated with better metabolic control, whereas children who predominantly use emotion-focused or wishful-thinking strategies face more difficulties in adaptation. Our analysis makes a substantial contribution by clearly identifying diabetes as a negative predictor for problem-solving and a positive predictor for emotional coping, thereby reinforcing the causal relationship between chronic illness and coping styles.

H3. Children with diabetes mellitus (DM) experience higher levels of psychological distress and face greater difficulties and challenges compared to non-diabetic children. The results indicate that children with DM exhibit a significantly higher level of psychological distress than children without DM, fully confirming Hypothesis 3. This distress manifests as emotional difficulties experienced as discomfort or emotional suffering, as well as concentration problems ($\chi^2(df = 2) = 6.68$; $p = 0.035 < 0.050$), physical threats, and feelings of personal failure, with a greater prevalence in children with DM, predominantly internalizing and somatic symptoms. Regarding emotional distress, a high proportion of children with DM (75%) were observed at moderate or abnormal levels, compared to non-diabetic children. However, the chi-square test did not reach statistical significance ($\chi^2(df = 2) = 4.98$; $p = 0.083 > 0.05$). This suggests that the higher proportion of emotional difficulties in children with DM may reflect a trend toward vulnerability, which, with a larger sample or more sensitive measurement methods, could become statistically significant. For the total Difficulties score, children with DM showed a significantly higher proportion of moderate and abnormal levels, with a cumulative percentage of 70%, compared to 50% observed in children without DM, a difference that was statistically significant ($\chi^2(df = 2) = 8.97$; $p = 0.011 < 0.050$). This highlights the chronic impact of DM on the psycho-emotional functioning of children.

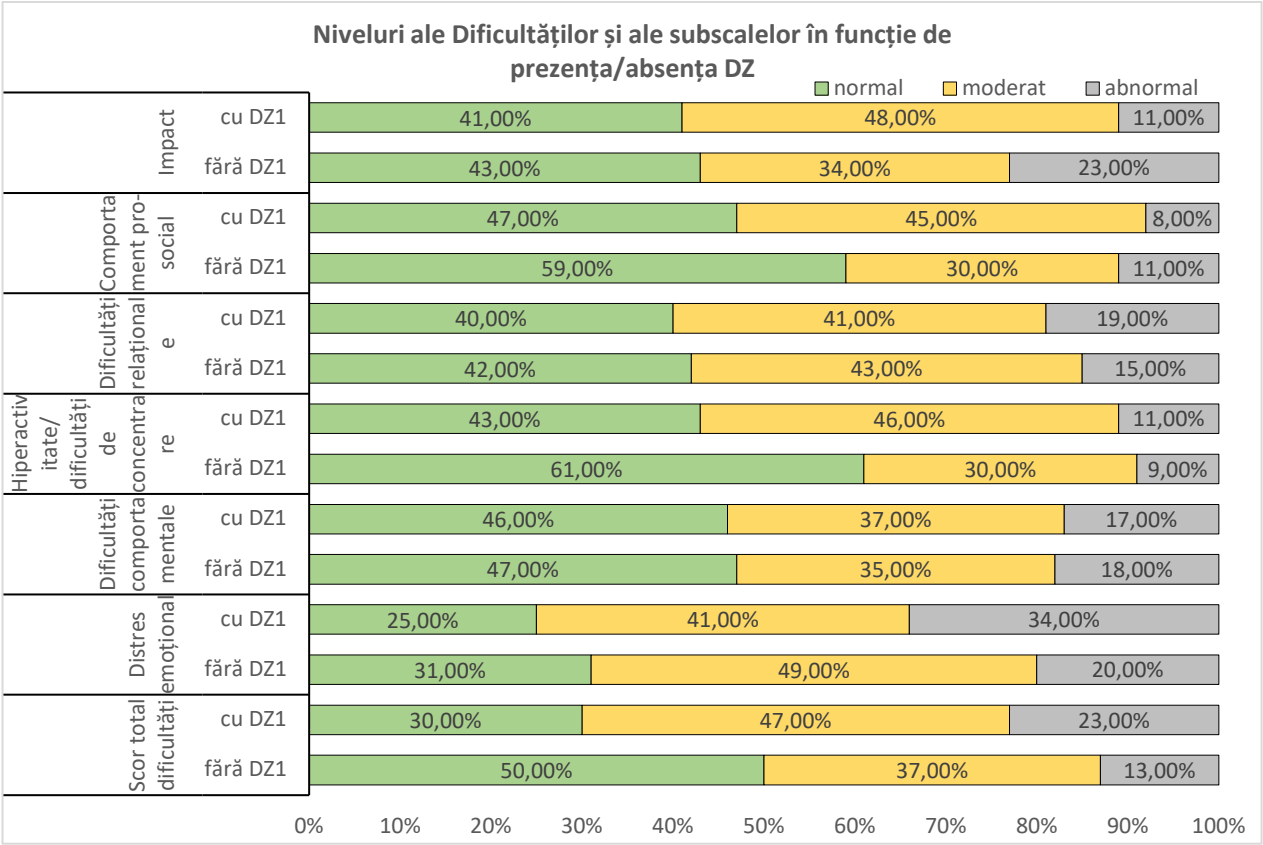

Figure 4. *Levels of Difficulties and Their Subscales According to the Presence/Absence of DM*

Multivariate analysis identified diabetes mellitus (DM) as a positive predictor for the emergence of these difficulties, increasing the likelihood of experiencing high overall distress and elevated levels of physical threat. In contrast, the dimensions of social threat and hostility, prosocial behavior, and behavioral

or relational difficulties do not appear to be significantly influenced by diabetes, suggesting that DM primarily amplifies internal burden rather than external behavior or relational problems.

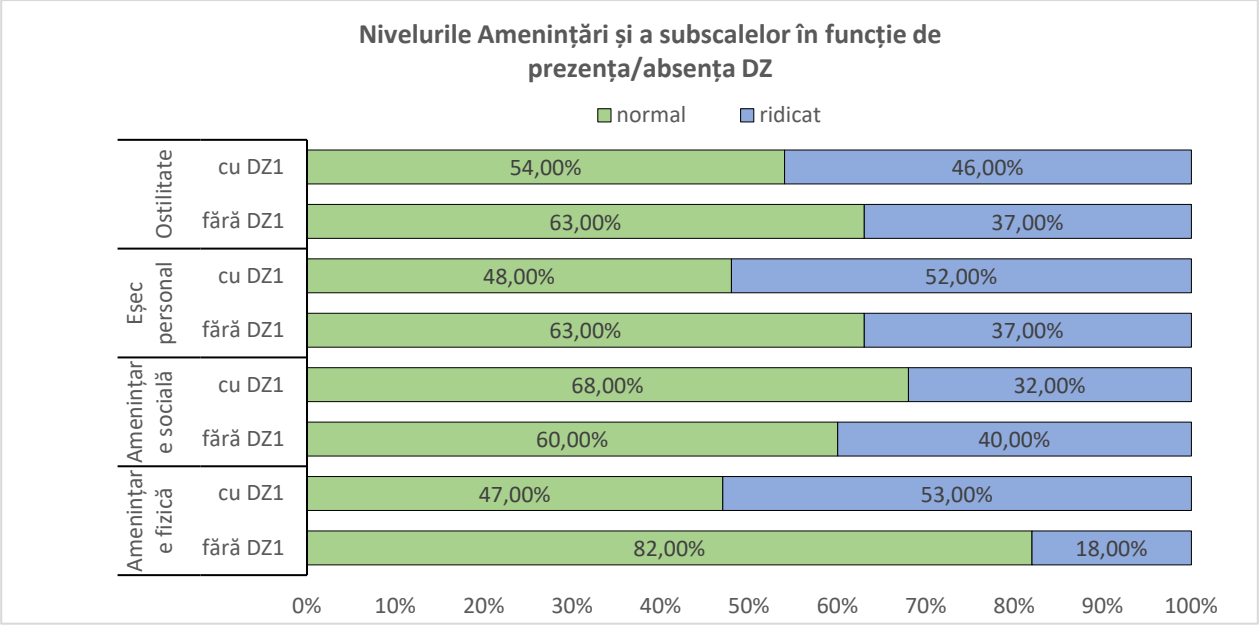

Figure 5. *Levels of the Threats Subscale and Its Components According to the Presence/Absence of DM*

H4. Children with diabetes mellitus (DM) exhibit lower levels of emotional regulation compared to non-diabetic children. The data suggest a slight shift in the distribution of emotional intelligence (EI) toward lower levels among children with DM (more children classified as "below average," fewer as "exceptional"), although this difference is not statistically significant ($\chi^2(2) = 2.26$; $p = 0.323$). Although the overall effect is modest, the presence of DM appears to be associated with more cautious emotional control, indicating increased vulnerability to emotional regulation difficulties in certain subgroups of children with DM. The absence of a significant group-level difference suggests that not all children with DM exhibit deficits in EI — there is heterogeneity, with probable moderating factors including age, disease duration, family support, and prior psychological interventions. These results partially confirm Hypothesis 4, which posited that children with DM would, on average, display lower levels of EI compared to healthy children. Thus, the presence of DM is associated with more precarious emotional control, making children with DM more vulnerable to emotional regulation difficulties. Such difficulties may have consequences for metabolic control (elevated hemoglobin A1c) and overall quality of life, contributing to a more challenging adaptation to chronic illness.

Table 2. *Distribution of Emotional Intelligence Levels*

Nivel	n	%	Cumulat %
Sub medie	29	14.5	14.5
Medie	64	32.0	46.5
Peste medie	98	49.0	95.5
Excepțional	9	4.5	100

The obtained data emphasize the importance of developing emotional intelligence (EI), both in educational settings and through psychological interventions, to support healthy emotional and social balance. The impact of emotion regulation can be observed in the increased ability to manage stressful situations, improved relationships, and greater control over one's actions and reactions (Pânișoară, 2024) [21]. Studies focusing on the importance of EI and emotion regulation in children with diabetes mellitus (DM) have concluded that EI serves as a protective factor and a predictor of psychosocial adaptation as well as glycemic control [12]. The results support the idea that EI development should be targeted selectively, particularly in children with DM who fall within the "below average" range — in order to prevent negative effects on metabolic control and psychosocial adaptation.

H5. The parental style adopted for children with diabetes mellitus (DM) is more involved compared to that of children without DM, positively influencing emotional development and the formation of coping strategies. In our study, Hypothesis 5 was partially confirmed. A comparative analysis of the distribution of parental styles according to the presence of DM revealed a significant differentiation ($\chi^2 = 19.33$; df = 4; p = 0.001). Significant differences were identified in the uninvolved parental style, which had a higher proportion (32.0%) among children without DM, whereas the perfectionist (23.0%) and democratic (44.0%) styles were more prevalent among children with DM. The permissive style appeared slightly more frequently in children without DM (20%) compared to those with DM (17%), while the authoritarian style remained relatively low in both groups (6–7%) without showing a significant difference.

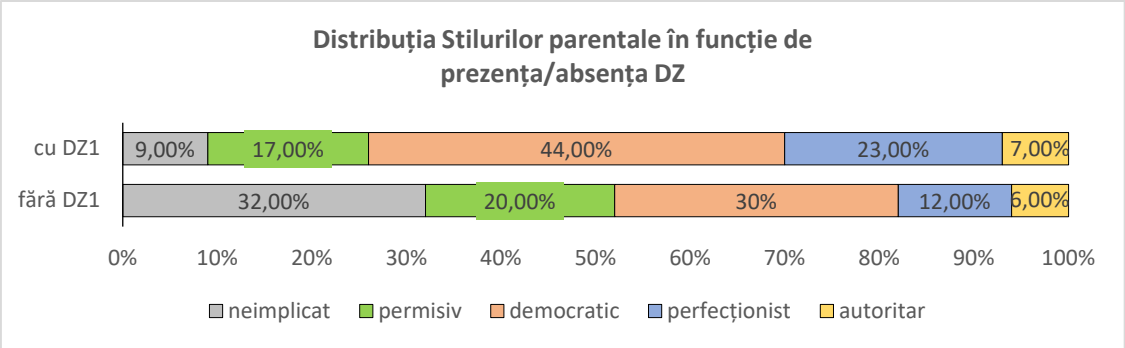

Figure 6. *Distribution of Parental Styles According to the Presence/Absence of DM*

In managing their child's illness, parents tend to adopt more structured strategies focused on careful support and monitoring, as a response to the additional demands imposed by managing a chronic condition such as diabetes. At the same time, the perfectionist parenting style observed among parents of children with DM can be explained by the need to enforce high standards and maintain strict control over health-related routines, due to the disease's requirements. A disengaged parenting style indicates that parents of non-diabetic children tend to be less involved in managing their child's daily life, likely because there are fewer medical challenges requiring close supervision. The democratic style, which is predominant in this group, reflects a balanced approach, where parents support their children in managing difficulties while simultaneously fostering autonomy and providing consistent guidance. Perfectionist and democratic

parenting styles may limit children's use of problem-solving strategies, as they face a chronic, difficult-to-control condition that can generate feelings of helplessness. The role of parental style is critical in either amplifying or mitigating these tendencies. The results indicate that the presence of DM, when coupled with a perfectionist parenting style, can inhibit problem-solving strategies, whereas a democratic style may support emotional regulation but may also encourage wishful thinking as a form of passive coping. On the one hand, children with DM tend to use emotion-focused strategies more frequently; however, these strategies reflect precarious emotional control and a difficulty in coping with stress through constructive actions.

Moreover, the development of emotional intelligence (EI) in children is closely linked to the quality of the parent-child relationship and the predominant parenting style within the family [17]. Above-average EI is observed to be 0.6 times less likely in children with DM ($B = -0.46$; $SE = 0.19$; $Wald = 5.78$; $df = 1$; $p = 0.016$; $Exp(B) = 0.63$) compared to non-diabetic children when a perfectionist parenting style is present. This indicates that excessive demands from perfectionist parents undermine the child's self-confidence and their ability to understand and regulate emotions. In contrast, a democratic parenting style, characterized by warmth, flexibility, and open communication, can support the development of adaptive emotional regulation mechanisms, contributing to higher EI. Conversely, authoritarian, perfectionist, disengaged, or permissive styles may represent risk factors [2], being associated with lower emotional intelligence, adaptation difficulties, increased vulnerability to stress, and the emergence of less effective coping strategies [31].

H6. Children with DM exhibit a lower overall quality of life compared to non-diabetic children. This finding suggests that, despite the diagnosis of DM, children do not perceive themselves as having low self-esteem, nor do they report a significant deterioration in their general emotional or physical well-being compared to non-diabetic peers. It is possible that through adaptive mechanisms, family support, or internal resources, they manage to maintain a relatively positive self-image, emotional stability, and a perception of physical health comparable to that of children without chronic illness. Notably, among children with DM, the majority (52%) report a moderate level of well-being, whereas a much smaller proportion (13%) report a normal level of well-being. This indicates an impairment in overall well-being, as most children with DM do not reach a "normal" threshold of well-being, positioning themselves in a zone of difficulty or vulnerability. In summary, children with DM show significant deficits in certain key dimensions of quality of life, such as family relationships, peer relationships, and daily functioning, yet they do not exhibit noticeable difficulties in self-esteem, emotional well-being, or physical well-being. This profile reflects selective vulnerability, where the most affected areas are social interactions, autonomy, and integration, without deterioration of self-perception or affective-physical state. Statistically significant dimensions highlight an impact on the quality of life of children with DM, manifested through difficulties in social integration, maintaining friendships, adapting to daily demands, or coping with challenging situations.

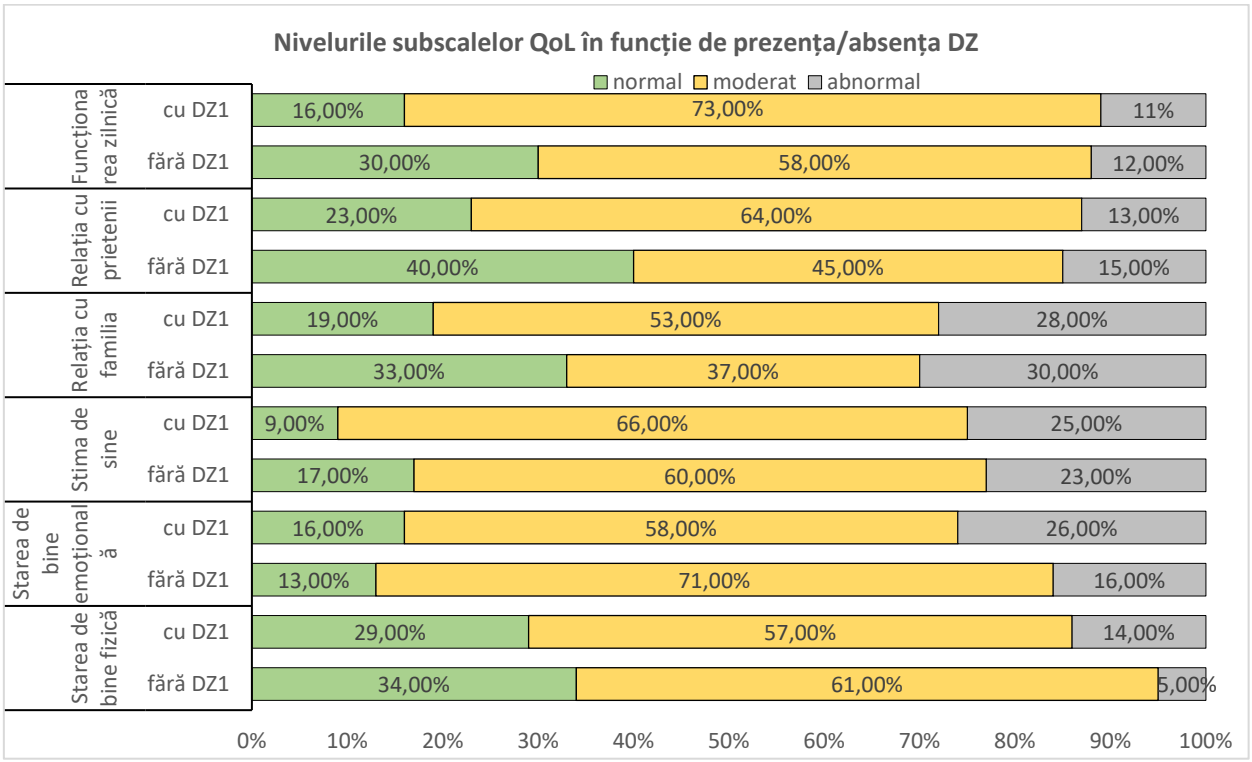

Figure 7. *Distribution of QoL subscale levels according to the presence/absence of DM*

A statistically significant difference was observed ($\chi^2(2) = 22.94$; $p < 0.001$) in the well-being levels of children with diabetes, showing a higher proportion at the moderate level (52.0%) and a lower proportion at the normal level (13.0%). The proportion at the abnormal level (35.0%) is significantly higher than at the normal level, but lower than at the moderate level. This distribution highlights that, for a considerable number of children with diabetes, psychological well-being is affected, falling either at a moderate level (with potential risk) or already in the problematic range. The large proportion of children in the "moderate" well-being category (52%) emphasizes that interventions should target not only those in the "abnormal" range but also those "at risk" as a preventive measure.

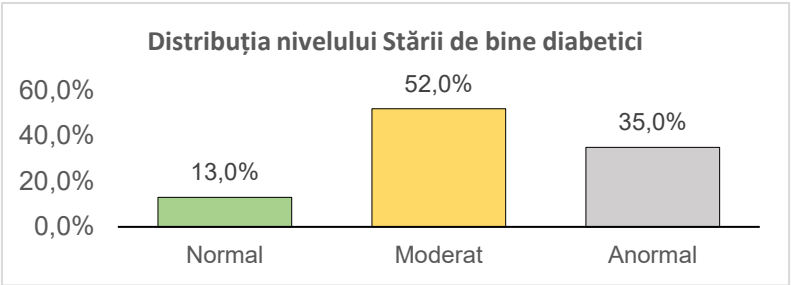

Figure 8. *Distribution of Well-Being Levels in Children with DM*

Chapter 3, titled **"Psychological Intervention Program through Assisted Resilience for Children with Diabetes Mellitus"**, describes the formative experiment, including the methodology and the data obtained from implementing the program on the targeted group of children with diabetes. The chapter presents the objectives, principles of the intervention program, techniques and procedures, stages, and overall framework. The program's effectiveness was assessed by comparing and highlighting differences between

children in the control test group and the experimental test group; children in the experimental test group and those in the experimental retest group; children in the control test group and those in the control retest group. Based on the nature, characteristics, and individual factors analyzed earlier, the following general objectives were established for the formative experiment: **1.** Development of a psychotherapeutic program of assisted resilience specifically designed for children with diabetes; **2.** Evaluation of the program's effects through three methods: a) Methodological – evaluation includes pre- and post-intervention measurements; b) Instruments – self-report questionnaires, interviews with parents, and standardized psychological assessments; c) Validation – comparative analysis of results obtained before and after the program implementation to confirm the intervention's effectiveness; **3.** Formulation of general conclusions based on the obtained data regarding the program's efficacy and the development of recommendations for its implementation by other specialists. These recommendations include practical guidance for psychotherapists, medical staff, and educators working with children with diabetes, emphasizing interdisciplinary collaboration.

The specific objectives of the research focused on:

- Developing emotional management skills through emotional self-regulation;
- Enhancing stress management and fostering a positive mindset through optimism, positive thinking, resilience to frustration, and learning from failures;
- Cultivating healthy interpersonal relationships via social connection and strengthening the sense of belonging;
- Promoting independence through behavior modeling, reinforcement of effort, practicing gratitude, and supporting personal values and a sense of competence;
- Supporting autonomy and self-discipline through decision-making and goal-setting.

These components are interconnected and collectively contribute to the development of a resilient child, capable of coping with the challenges of living with diabetes in a healthy and adaptive manner. Through this approach, children learn to confront difficulties, adapt to changes, and recover from adversities, thereby building a robust foundation of resilience for the future.

The formative research was conducted with the participation of 24 children diagnosed with diabetes mellitus, evenly divided into two groups: the Experimental Group (EG), consisting of 12 children with an equal gender distribution of 6 boys and 6 girls, who participated in the resilience-enhancement intervention program; and the Control Group (CG), also consisting of 12 children, statistically comparable to the experimental group in terms of age and gender. Children in the control group did not receive the psychotherapeutic intervention but were monitored to enable comparison of the intervention effects.

The assisted resilience-based psychological intervention program, adapted for children with diabetes mellitus, focused on the following **key aspects**:

Development of diabetes self-management skills through: personalized education tailored to the child's age and level of understanding; fostering autonomy—children were encouraged to actively participate in the diabetes management process, gradually developing self-management skills under adult supervision.

Development of personal resources through: cultivating a sense of competence and self-efficacy; promoting positive thinking and optimism.

Emotional support and stress management through: coping techniques – the program included relaxation strategies, such as deep breathing, to help children manage stress and anxiety related to the disease; emotional expression – children were encouraged to express their emotions and discuss their feelings regarding diabetes in a safe and supportive environment, thereby facilitating the recognition and healthy management of negative emotions.

Enhancement of self-esteem and confidence through: focusing on strengths – the program included activities and exercises that highlighted the children's achievements and competencies, both in managing diabetes and in other areas of their lives, contributing to the development of a positive self-image; discouraging comparisons – efforts were made to reduce negative comparisons with healthy peers and to promote self-acceptance and recognition of personal value.

Social support and supportive relationships through: active family involvement in the program, providing consistent support and adapting the home environment to foster the child's resilience development; promoting social inclusion, with children encouraged to participate in social and extracurricular activities tailored to their needs, to prevent social isolation and to enhance a sense of equality, belonging, and integration.

Problem-solving skills development through: targeted exercises aimed at enhancing children's ability to identify and implement effective solutions to daily challenges; flexible thinking, encouraging children to adopt adaptable and open-minded approaches, accept changes, and generate alternatives when facing obstacles.

Promotion of family resilience through: creating a resilient environment by helping the family develop healthy coping strategies and establish a setting that fosters resilience for both the child and other family members. This includes approaches such as maintaining a positive outlook, recognizing and celebrating small successes, and encouraging the child's autonomy; modeling resilient behavior, where parents are trained to serve as role models of resilient behavior for their children, demonstrating how to face stress and challenges in a healthy and adaptive manner.

These components of the assisted resilience-based psychological intervention program were essential for supporting children with diabetes in developing the skills necessary to face the challenges of their condition, maintain emotional well-being, and build a healthy and balanced life as close to normalcy as possible.

Through this approach, therapy does not focus solely on alleviating symptoms or addressing immediate problems, but on fostering long-term capacity to cope with change and stress, promoting personal development and emotional well-being. The psychotherapeutic intervention was implemented along three main directions, each playing a crucial role in supporting the child with diabetes.

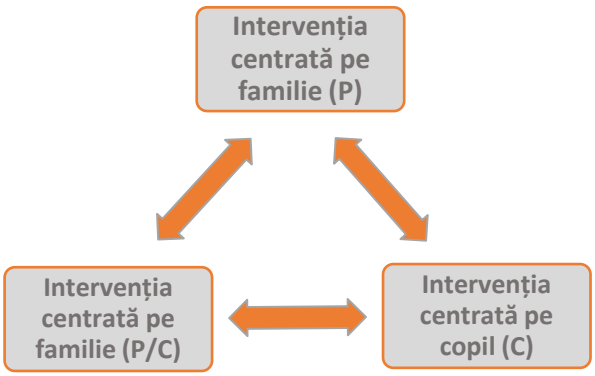

Figure 9. *The three-dimensional approach of the therapeutic intervention*

1. The diagnosis of diabetes can be overwhelming not only for the child but also for the parents, making family involvement in the therapeutic process essential. Family therapy facilitates improved communication, understanding of the child's emotions and challenges, and the development of a shared support plan. Through therapy, the family collaborates to establish clear rules and responsibilities, ensuring a supportive environment for the developing child [20]. The therapist provides parents with a space to express fears, frustrations, and concerns related to the child's care. Additionally, the therapist teaches the family conflict-resolution techniques, such as negotiation and active listening, and strategies to reduce tensions associated with suboptimal diabetes management. This support enables the family to adapt more effectively to the changes that diabetes brings to the lives of all members.

2. The parent–child intervention aimed to actively involve parents in the therapeutic process by providing support and practical strategies for implementing exercises at home, monitoring the child's progress, and adhering to the therapeutic plan. Additionally, these sessions were designed to offer continuous feedback and address any questions or challenges encountered by the parents.

3. Children require positive approaches to foster their social-emotional development and overall functioning. School-age child psychotherapy incorporates techniques and activities designed to support emotional, cognitive, and social development. These techniques were adapted to the child's age and developmental level, aiming to improve emotion regulation, enhance coping skills, and facilitate social adaptation [13]. The intervention program included behavioral, psychoeducational, relaxation, mindfulness, stress management, behavior modeling, social skills training, cognitive restructuring, and rational analysis techniques. These activities were designed to address the child's emotional, social, and behavioral difficulties, promoting healthy and balanced development. Cognitive restructuring techniques helped children identify and reframe automatic negative thoughts, while mindfulness and emotion-

awareness exercises improved frustration tolerance and acceptance of unpleasant feelings. Therapeutic play provided safe symbolic contexts for exploring and expressing emotions. Crucially, the therapeutic relationship created a secure emotional environment in which the child could learn self-regulation through modeling. During the sessions, resources were identified ranging from external resources (social support, technological tools, financial means) to internal resources (motivation, self-esteem, optimism, aspiration levels). Since children were generally more aware of external resources than internal ones, the program emphasized the development and conscious utilization of internal resources, which they initially struggled to recognize and integrate.

To assess the effectiveness and utility of the assisted resilience psychological intervention program, an experimental design was implemented, comparing the experimental group (EG) and the control group (CG) using a test–retest methodology based on baseline and post-intervention assessments. To objectively capture the changes resulting from the formative psychological program, the same validated psychometric instruments were administered at both assessment points (T1 – pre-intervention; T2 – post-intervention) across both groups. This protocol ensured score comparability and enabled objective monitoring of changes induced by the intervention. The design facilitated a test–retest comparative analysis aimed at identifying significant variations in psychological dimensions pertinent to the research objectives. By maintaining consistency in the instruments and administration conditions, methodological rigor was preserved, minimizing the risk of systematic errors and allowing for valid interpretation of the observed differences between the two assessment points. Consequently, this design provided a precise evaluation of the intervention's impact on resilience development.

The formative intervention yielded positive effects on anxiety symptoms across physiological, relational, and social domains. Reductions in physical symptoms and tension indicate enhanced stress-response regulation, reflecting improved control over emotional reactivity and regulatory mechanisms. Additionally, decreases in social and separation anxiety suggest improved perceptions of safety and strengthened interpersonal relationships. Overall, the intervention effectively mitigated anxiety symptoms with immediate functional benefits, which are crucial for daily functioning and overall quality of life. Nonetheless, anxious coping and perfectionism demonstrated greater resistance to change. The absence of significant effects in these dimensions underscores the need for more intensive or prolonged interventions that target deeper cognitive processes.

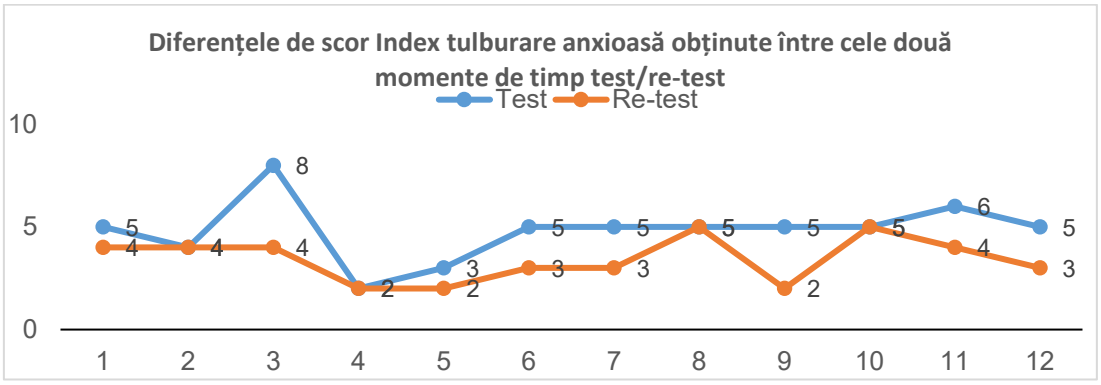

Figure 10. *Anxiety Analysis (Anxiety Disorder Index) Test–Retest for the Experimental Group (EG)*

The formative intervention did not significantly reduce overall depression levels, but it had a clear positive effect on perceived personal efficacy and the capacity to experience pleasure. These dimensions are critical in the clinical profile of depression, and their improvement indicates enhanced emotional and motivational functioning. In conclusion, the implemented formative intervention positively influenced specific components of depression, demonstrating the usefulness of structured and targeted psychological interventions, even in small samples. However, the relative stability of deeper affective and cognitive dimensions, such as negative mood and self-devaluation, remained largely unchanged, suggesting that the intervention requires optimization and extension to achieve more comprehensive changes. Additionally, the intervention did not focus on behavioral activation and lacked a sufficiently robust cognitive restructuring component to modify these deeper dimensions. Long-term monitoring is essential to assess the durability of effects and potential relapses.

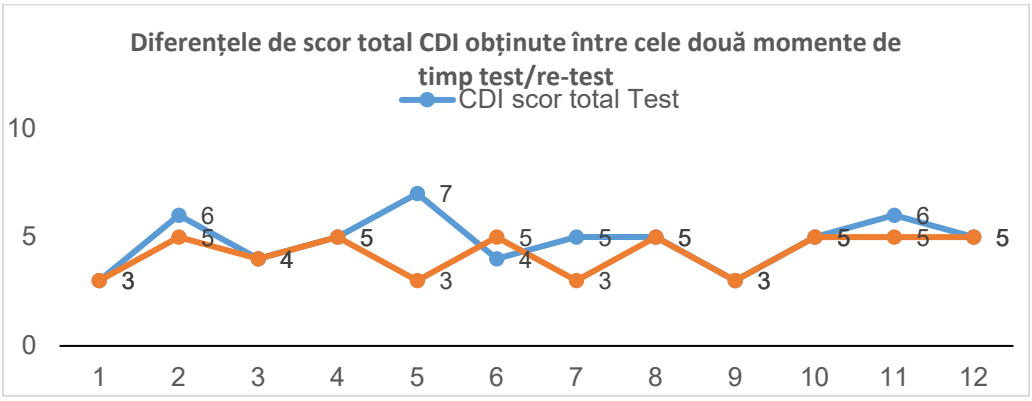

Figure 11. *Depression Analysis (Total CDI Score) Test–Retest for the Experimental Group (EG)*

Thus, the hypothesis that the psychotherapeutic program improved emotional regulation mechanisms through the training of emotional intelligence (EI) is confirmed. The significant increase in EI within the experimental group (EG) contributed indirectly but critically to the consolidation of emotional regulation competencies, supporting the children's mental health and adaptation to the challenges of the disease. These findings are supported by specialized literature highlighting the essential role of EI in facilitating psychological adaptation to chronic stress. Compas et al. (2012) demonstrated that training this

psychological dimension can significantly enhance emotional regulation skills and functional coping strategies [7]. The results corroborate the hypothesis that structured psychological interventions can foster the development of EI, particularly in educational or preventive contexts. This effect is particularly valuable given the established links between EI and reduced anxiety and depression symptoms, increased emotional resilience, improved interpersonal relationships, academic performance, and social adaptation [33]. Furthermore, psychotherapeutic interventions focused on developing self-regulation skills and providing emotional support, according to current research, can decrease emotional vulnerability and promote better adaptation to the challenges posed by chronic illness [5].

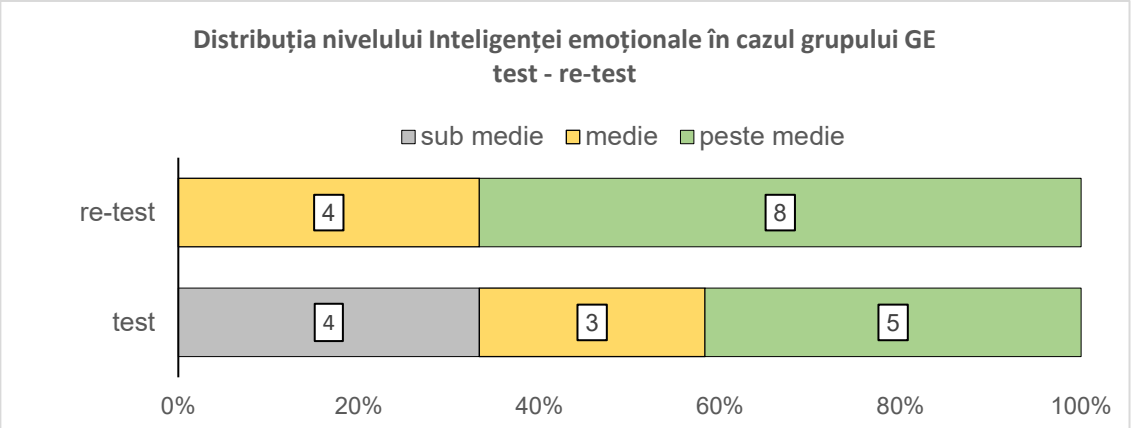

Figure 12. *Test–Retest Analysis of Emotional Intelligence for the Experimental Group (EG)*

The formative intervention had a positive impact on children in the Experimental Group (EG), particularly in enhancing adaptive coping strategies, including Emotional Regulation, Social Support, and Cognitive Restructuring. The reduction in Social Withdrawal is an important indicator of emotional well-being and social integration. Children with chronic conditions tend to rely more on emotional and spiritual coping strategies, reflecting a continuous need for emotional support. The results indicate positive changes at emotional, behavioral, and cognitive levels, validating the effectiveness of the implemented intervention. According to Piaget's theory of cognitive development, school-aged children are in the concrete operational stage, where logical thinking begins to emerge but abstract reasoning is limited. Complex coping strategies, such as Problem Solving or Cognitive Restructuring, require developing abstract mental operations. At this stage, avoidance strategies may serve as temporary adaptations until analytical and planning capacities mature. According to Bowlby's attachment theory, children seek emotional security in response to stress. Strategies such as Wishful Thinking or Prayer may reflect a need for comfort and protection rather than dysfunctional avoidance. The significant increase in Social Support in EG ($\chi^2 = 4.80$, $p = 0.028$) suggests that children are beginning to replace passive strategies with relational ones, indicating a transition toward seeking help and engaging in supportive relationships. Cognitive Restructuring was also more frequently employed in EG ($\chi^2 = 4.44$, $p = 0.035$), demonstrating an enhanced use of adaptive mechanisms for re-

evaluating stressful situations positively. This reflects a positive effect of the intervention on cognitive flexibility and adaptive coping capacity. These strategies are considered functional and healthy, associated with improved emotional regulation and psychological resilience. Concurrently, there was a marked decrease in maladaptive coping mechanisms such as Social Withdrawal in EG, highlighting greater social openness and integration. Emotional Regulation and Distraction showed higher levels in EG, though not statistically significant, suggesting a trend toward improved temporary regulation and development of functional coping strategies. Resignation showed higher levels in EG, indicating a nuanced distinction between active acceptance and passive resignation. The presence of maladaptive (Resignation) and passive/avoidant strategies (Wishful Thinking, Distraction) suggests transitional stages in children's coping development rather than rigid or pathological patterns. The processual model of coping demonstrates that coping is dynamic, influenced by situational appraisal and available resources. The experiment's results indicate that passive and maladaptive coping strategies, such as Resignation, Wishful Thinking, and Distraction, should not be interpreted as psychological vulnerability but as natural, transitional manifestations within development. School-aged children are developing a sense of competence and autonomy, and failure to achieve positive outcomes in challenging situations may lead to lower self-efficacy, fostering resignation. In line with cognitive and emotional development theories, these strategies represent intermediate stages in forming more effective and enduring adaptive mechanisms. The significant increase in adaptive strategies in EG supports the potential for transforming coping abilities in childhood through appropriate interventions.

The intervention applied within the Experimental Group (EG) produced a clear positive effect, reflected in reductions in emotional, relational, and behavioral difficulties. These results support the overall positive impact of the psychological intervention in alleviating difficulties associated with diabetes in children. The absence of changes in the Control Group (CG) indicates that natural development alone was insufficient to reduce these difficulties, highlighting the need for a structured intervention. Following the intervention, all four analyzed dimensions—Personal Failure, Physical Threats, Hostility, and Social Threats—showed more pronounced decreases in perceived threats in EG compared to CG, with clear transitions from high to normal levels that cannot be explained solely by natural development. In the absence of intervention, children in CG exhibited only modest improvements in tolerance to certain perceived threats. This "natural normalization" reflects a stabilization or slight reduction in threat perception without any active intervention. Interventions incorporating emotional regulation techniques, social skills development, and cognitive restructuring significantly reduce the perception of threats, demonstrating the effectiveness of targeted psychological support in enhancing adaptive functioning and resilience in children with diabetes.

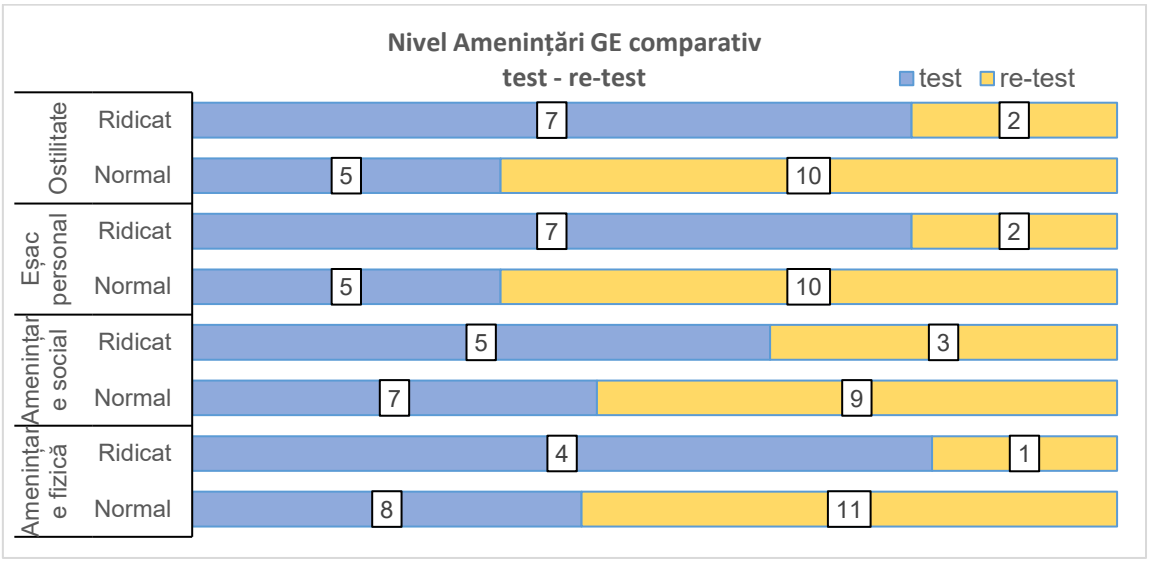

Figure 13. *Comparative Analysis of Perceived Threats in the Experimental Group (EG) – Test–Retest*

This progression suggests that the implemented psychological intervention had a positive impact on restructuring the negative perceptions of children in the experimental group (EG). Specifically, experiences previously perceived as threatening were reinterpreted, accompanied by an increased sense of internal psychological safety and a reduction in perceived stress. These results support the effectiveness of the intervention program in fostering emotional and cognitive resilience in participating children. According to Lazarus and Folkman's stress and coping theory, threat perception is closely linked to the cognitive appraisal of a situation. The intervention can modify this appraisal, transforming a perceived threatening situation into a manageable one. At the school-age stage, the brain is highly responsive to educational and emotional interventions. A well-structured program can produce lasting changes in how children process emotions and stress. The specific effect of the intervention is evident, as the reduction in threat perception in the EG exceeds that of the control group (CG) and occurs alongside improvements such as decreased emotional distress and increased social support. In this context, the intervention not only accelerated the natural adaptation process but actively modified the children's responses to stress and perceived threats. These results underscore that early interventions can significantly enhance children's emotional health and accelerate natural adaptive processes.

The psychological intervention implemented in the experimental group (EG) proved to be effective, leading to significant improvements across all analyzed quality-of-life factors. Emotional wellbeing showed a significant enhancement ($Z = -3.05$; $p < 0.010$). Physical wellbeing also tended toward normal levels, though in a smaller proportion of cases (5/12), with marginal statistical significance ($Z = 2.07$; $p = 0.063$), suggesting a moderate effect of the intervention on this factor. Regarding social dimensions, family relationships and friendships exhibited substantial trends toward normal levels (11/12 for family relationships and 7/12 for friendships), with statistically significant changes ($Z = -3.07$; $p < 0.010$ for family; $Z = -2.81$; $p < 0.010$ for friends). Daily functioning tended toward normal in 9/12 cases, with significant statistical support ($Z = -2.89$; $p < 0.010$). Self-esteem also increased toward normal levels in

9/12 cases, showing significant improvement ($Z = -2.81$; $p < 0.010$). Diabetes-specific wellbeing demonstrated a positive trend toward normal levels in 9/12 cases, with a statistically significant change ($Z = -2.74$; $p < 0.010$).

These results underscore the importance of integrating systematic psychological interventions into the comprehensive care of children with diabetes. School-aged children undergo rapid development in cognitive, emotional, and social functions, which can lead to spontaneous improvements in wellbeing even without external interventions. Compared to the control group (CG), which did not show comparable changes, children in the experimental group (EG) exhibited consistent positive trends across all wellbeing dimensions. Although not all differences reached statistical significance, the clear direction of change indicates a favorable effect of the intervention on emotional, social, and functional wellbeing. These findings support the notion that psychoeducational interventions can enhance children's quality of life, particularly in social relationships, daily functioning, self-esteem, and chronic disease management.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The present research aimed to investigate the psycho-emotional and social characteristics of children diagnosed with diabetes mellitus (DM) through a mixed-methods approach, combining an in-depth theoretical study with a comparative descriptive study, followed by an applied psychological intervention. This methodology enabled the formulation of relevant conclusions regarding the emotional, behavioral, and adaptive profiles of these children. In this context, the study focused on identifying both risk and protective factors. The findings obtained contribute to addressing the scientific problem concerning the psycho-emotional development of children with DM, providing an in-depth understanding of the specific challenges faced by this population.

A retrospective overview of our investigative approach yielded ***the following conclusions***:

1. Children with diabetes mellitus (DM) do not exhibit elevated levels of global anxiety or depression compared to population norms, yet they display specific emotional vulnerabilities. The results indicate that DM does not automatically lead to major emotional disorders but fosters subtle susceptibilities, such as perfectionism, heightened awareness of physical symptoms, or somato-vegetative responses. The implemented psychological intervention significantly reduced the physical symptoms of anxiety, suggesting improved stress-response regulation. However, rigid dimensions, such as perfectionism, remained relatively stable, highlighting the need for more complex and longer-term intervention programs. Regarding depressive symptoms, the intervention had a beneficial effect on perceived personal efficacy and the capacity to experience pleasure—key protective factors in preventing clinical depression.

2. The presence of diabetes mellitus (DM) significantly influences children's coping strategies, orienting them more frequently toward emotion-focused strategies—such as emotional regulation, wishful thinking, or prayer—and less toward problem-focused strategies, which are associated with more functional adaptation and optimal metabolic control. Implementation of the intervention program led to a significant

increase in adaptive strategies—emotional regulation, cognitive restructuring, and seeking social support—while reducing maladaptive or passive strategies, such as social withdrawal, resignation, and distraction. These findings confirm the dynamic nature of coping, as emphasized by Lazarus & Folkman, demonstrating that mechanisms initially considered passive can evolve into functional forms when supported by appropriate intervention. Our study shows that emotional coping strategies are not fixed; consequently, coping can be reshaped through a structured formative intervention, promoting the development of resilience resources, emotional health, and overall quality of life. The originality of this study lies in highlighting behavioral plasticity and underscoring the importance of early intervention in fostering effective coping skills, providing both a theoretical framework and a practical, applied perspective valuable for children with DM.

3. Children with diabetes mellitus exhibit significantly higher levels of psychological distress compared to non-diabetic peers, manifested through emotional difficulties, concentration problems, heightened perception of physical threats, and feelings of personal failure. Multivariate analyses confirmed that DM is a predictor of overall distress and perceived physical threats, whereas social dimensions, hostility, and prosocial behavior are not significantly influenced by the presence of DM. These findings highlight a selective vulnerability, identifying areas where children with DM require psychosocial support, including emotional regulation, stress management, and functional adaptation in daily life. The psychological intervention proved effective in enhancing emotional regulation mechanisms and cognitive restructuring, reducing anticipatory anxiety, increasing the sense of psychological safety, and fostering resilience. By reinterpreting experiences previously perceived as threatening, the intervention strengthened resilience and emotional well-being in children with DM. Overall, the results underscore the importance of integrating structured psychological programs into clinical and educational practice, reinforcing theoretical frameworks on stress and coping in the context of chronic illness, and emphasizing the critical role of assisted support in promoting psychological adaptation and emotional health in children with DM.

4. The results highlight that emotional intelligence (EI) plays a crucial protective role in the psychological adaptation of children with diabetes mellitus (DM) by supporting affective self-regulation and reducing emotional tension associated with chronic stress. Although baseline levels of EI do not significantly differ from those of non-diabetic children, difficulties in emotional regulation are more pronounced among children with DM. The implemented psychological intervention proved effective, increasing EI, reducing emotional reactivity, and improving quality of life. These findings suggest that integrating emotional intelligence development into psychological and educational support programs represents a priority strategy for promoting resilience and emotional health in children with DM.

5. Parental style functions as a moderating factor. Analysis of parenting styles indicates that the democratic style is the most conducive to the emotional and adaptive development of children, particularly in the context of managing diabetes mellitus (DM). When combined with a positive family climate, empathy, and consistent support, this style fosters emotional self-regulation, autonomy, and self-efficacy—core competencies for resilience. In contrast, uninvolved, permissive, perfectionist, and authoritarian styles may

contribute to emotional vulnerabilities, adaptation difficulties, or additional pressures on the child, thereby limiting the development of active coping strategies. Significant differences observed between child groups suggest that the presence of a chronic illness prompts parents to adopt more structured strategies, with tendencies toward perfectionism and control, while also increasingly embracing democratic approaches to balance medical demands with emotional support. These findings underscore the importance of cultivating a democratic parenting style as a protective factor for resilience and emotional well-being in children with DM and highlight the relevance of parental support programs aimed at developing emotional education skills and effective disease management.

6. Children with diabetes mellitus (DM) experience difficulties in daily functioning and adapting to routine demands, which negatively impact their quality of life. The observational study identified emotional, social, and functional challenges, highlighting a selective vulnerability that affects autonomy, daily integration, and social relationships, without compromising self-esteem or overall physical and emotional well-being. This finding suggests that, although DM poses significant challenges, most children maintain positive perceptions of themselves and their general health status. Despite the absence of global deterioration, children with DM do not reach optimal levels of well-being, indicating the need for psychological support, counseling, and programs aimed at developing adaptive coping strategies. The experimental study demonstrated that the psychological intervention produced significant improvements across all dimensions of well-being: emotional, social, and functional. These results underscore the importance of integrating systematic psychological interventions into the care of children with DM, showing that such programs enhance quality of life and help prevent emotional and social difficulties. The study's contribution lies in empirically demonstrating the positive impact of interventions on daily functioning and overall well-being, providing evidence to support the implementation of psychological support strategies in pediatric diabetes care.

These conclusions underscore the importance of a multidisciplinary approach in supporting children with diabetes mellitus (DM), incorporating regular psychological assessments and interventions tailored to the specific needs of this vulnerable population. The psychological intervention demonstrated positive effects on reducing anxiety symptoms, enhancing adaptive coping strategies, increasing emotional intelligence and resilience, decreasing perceived threats, and improving quality of life and daily functioning. This study makes a significant contribution to the specialized literature, showing that when DM is managed within an appropriate family and psychological support framework, valuable adaptive skills can be developed. The results provide robust empirical evidence for the effectiveness of preventive and therapeutic psychological interventions in pediatric settings and extend existing literature by highlighting specific risk and protective factors.

Recommendation.

- The assessment and intervention procedure can be implemented in all healthcare centers that provide services for children with diabetes mellitus (DM), as well as in school counseling offices.

- The approach may be integrated and coordinated at the national level within the existing healthcare system through a support program for all families with diabetic children, upon recommendation by medical professionals.
- The theoretical and practical information included in this research may serve as the foundation for a practical guide designed for professionals working in the field of pediatric diabetology, encompassing both care and intervention domains (physicians, psychologists, psychotherapists, teachers, and school counselors).
- The materials presented in this study can be utilized in professional training courses for psychologists, psychotherapists, teachers or social workers concerned with the field, facilitating the implementation of resilience-building programs for families of children with diabetes and/or other chronic conditions by providing resources and education.
- The implementation of the program is beneficial for enhancing resilience among families of children with diabetes mellitus and/or other chronic conditions, by providing them with appropriate resources and education.
- It promotes initiatives aimed at supporting children with chronic diseases by raising awareness of their needs and facilitating access to relevant resources.
- The program may also be extended and applied to other categories of children affected by chronic illnesses.

Challenges and limits.

Ensuring the long-term continuity of intervention programs represents a significant challenge, given the limited resources and the need for sustained involvement from trained professionals. Although support should ideally be accessible regardless of location, in practice, access to specialized programs is often limited in certain regions, particularly rural or isolated areas. Furthermore, restricted availability of specialized interventions and qualified personnel within schools and local communities constitutes a major barrier to the development of integrated care for children with chronic conditions.

Suggestions for Future Research.

This study aims to open new avenues in the investigation of the psychology of children with chronic illnesses through the following directions:

1. **Program Expansion:** Extend the intervention program to target deeper cognitive and affective dimensions, implement long-term monitoring, and integrate psychological interventions into the clinical management of diabetes.
2. **Longitudinal Research:** Conduct longitudinal studies on early interventions to monitor children's well-being and evaluate the impact of interventions on subtle, long-term changes in quality of life.
3. **Development of Intervention Standards:** Establish reference intervention standards for addressing the specific needs of children with chronic illnesses, providing a framework for clinical and educational practice

LIST OF ABBREVIATIONS

CDI® – Children Depression Inventory

MASC® – Multidimensional Anxiety Scale for Children

CATS – Children's Automatic Thoughts Scale

SDQ – Strengths and Difficulties Questionnaire

KINDLR - Health-Related Quality of Life

KIDCOPE – The KidCope Questionnaire

QoL – Quality of Life

DZ – Diabetes mellitus

EQ – Emotional intelligence

GD – Diabetic children group

GnD – Non-diabetic children group

GE – Experimental group

GC – Control group

N – Number of subjects

SPSS – Statistical Package for Social Sciences

WHO – World Health Organization

CNAS – National Health Insurance House

OECD – Organization for Economic Cooperation and Development

IDF – International Diabetes Federation

WHO – World Health Organization

APA – American Psychological Association

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ANNOTATION

Cucui, Corina. "The psycho-emotional development of children with diabetes", Doctoral thesis in psychology. Chisinau, 2025

Thesis Structure. The thesis includes: annotations (romanian and english), list of abbreviations, introduction, three chapters, general conclusions and recommendations, bibliography of 282 sources, 10 appendices, 155 pages of main text, 18 tables and 76 figures. The research results are presented in 8 scientific journals and 3 national and international conferences.

Keywords: children, diabetes, psycho-emotional development, resilience, chronic illness, distress, coping, parenting style, intervention program, assisted resilience, stresors, risk and protective factors, quality of life

Research aim: assessing the psycho-emotional development of children with diabetes in Romania in order to identify maladaptive patterns that lead to distress and to develop a psychological intervention program based on assisted resilience, aimed at acquiring a key set of skills for coping with future adversities

Research objectives: studying and substantiating the conceptual benchmarks regarding the psychological particularities of the psycho-emotional development of school-aged children with diabetes mellitus (DM), and determining the impact of diabetes on their emotional and social life; designing and implementing a methodology for the comparative investigation of the psycho-emotional profile in children with and without DM, with the aim of identifying relevant differences and maladaptive traits associated with chronic illness; identifying clinical disorders, stressors, and coping mechanisms, and analyzing the relationships among them; identifying the main risk factors that may negatively influence the psycho-emotional development of children diagnosed with DM; developing a psychological intervention program based on assisted resilience to provide children with DM a supportive framework for overcoming adversity; and formulating empirically grounded practical recommendations for parents, teachers, and healthcare professionals to optimize educational, psychological, and care-related interventions

Scientific novelty and originality: development of a national program based on assisted resilience for school-aged children with diabetes, in response to the absence of interventions that address their psycho-emotional needs in an integrated manner, in a context where current policies in Romania focus almost exclusively on medical aspects. The program proposes a holistic and systemic approach, providing psychological support to the child and family, to increase resilience, emotional regulation and improve quality of life. The proposed model contributes to the specialized literature by recognizing the psychological dimension as being as important as the medical one and essential in long-term adaptation

The results obtained which contribute to solving the scientific problem consist in the development of a psycho-emotional profile of children with diabetes, taking into account both risk and protective factors that influence their specific characteristics in comparison to children without chronic illnesses. These findings provided an in-depth understanding of the particular difficulties faced by this group, facilitated the identification of explanatory variables for individual differences, and enabled the effective implementation of a psychological intervention program focused on resilience development.

Theoretical significance: highlighting the maladaptive characteristics specific to children with diabetes, as well as identifying risk and vulnerability factors in their psychological development, contributes to expanding existing knowledge in the field, by introducing new perspectives on the psychological impact of chronic illness in childhood

Applied value of the work consists in outlining a framework for understanding the psycho-emotional development of children with diabetes and developing a psychological intervention program based on assisted resilience. This approach not only improves children's emotional adaptation, but also contributes to the development of essential strategies in early overcoming the adversity associated with diabetes. The intervention, in addition to the diabetes monitoring and treatment plan, offers an interdisciplinary intervention model with practical applicability, constituting a valuable reference for specialists involved in the care and counseling of children with diabetes, especially in the field of juvenile diabetology and child psychology.

Implementation of scientific results has been concretized through the publication of 8 articles in peer-reviewed journals and 3 scientific communications or theses, contributing to a deeper understanding of the psychological dimensions associated with diabetes in childhood. These findings were presented at conferences, as well as in hospitals and schools, supporting increased awareness of the psychosocial and emotional vulnerabilities of children with chronic illness, and emphasizing the importance of resilience development. The program is applied in the practice of specialized psychologists working in hospitals, diabetes centers, and child evaluation, counseling, and psychotherapy clinics, and it provides valuable resources for the training and education of parents, teachers, and healthcare professionals.

CUCUI CORINA

PSYCHO-EMOTIONAL DEVELOPMENT OF CHILDREN WITH DIABETES MELLITUS

511.02. – DEVELOPMENTAL AND EDUCATIONAL PSYCHOLOGY

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