

DOI: 10.12731/2658-6649-2022-14-2-104-122

UDC 616.379-008.64

## **BUILDING THE FUTURE VISION IN THE ADOLESCENTS WITH DIABETES MELLITUS**

*I.A. Ralnikova, M.V. Shamardina, A.A. Kislykh*

*The paper aims to examine the peculiarities of the vision of the future of adolescents with diabetes mellitus. The research methods include (1) comparative analysis, (2) questionnaire, (3) psychodiagnostic testing, and (4) mathematical and statistical processing (Mann-Whitney U-criterion, factor analysis). The research relevance is due to the fact that the number of adolescents with diabetes mellitus is growing. There is also an escalating need to study the phenomenon of the disease and its representation in the individual aspects of the person and further psychological support of the target audience. In adolescence, the first ideas about life prospects are formed, and a future vision is constructed. Adolescence is an unsteady period in the development and evolution of the personality, which can be complicated by chronic illness. Adolescents may require help and professional support from adults. The scientific novelty of the research lies in obtaining new knowledge about the future vision among adolescents with diabetes mellitus. The way adolescents see their future determines their responses in the present time. Differences in the future vision from healthy peers were displayed. Life perspectives of adolescents with diabetes mellitus have peculiarities because of this chronic disease. Differences in the value-meaning, cognitive, and emotional-evaluation dimensions of adolescents' life prospects were reported. The study of the cognitive dimension of the life perspective system revealed the events that adolescents with diabetes mellitus fill their future with (health-related situations in their future were mentioned). The study of the emotional dimension indicated that adolescents with diabetes see their future as more distant than adolescents without chronic diseases. The values "health," "friends," and "love and family relationships" were significant for adolescents with diabetes. The future seems to be valuable for ill adolescents. Adolescents with diabetes have a more responsible approach to planning and constructing a vision of their future, which may be due to the priority value of "health." The study revealed differences in the values of adolescents with different periods of illness. Adolescents with five or more years of illness have a higher value of "health" than ill adolescents with a shorter period of illness. Diabetes mellitus affects the construction of adolescents'*

*life prospects and the formation of the vision of their future. The obtained data can be applied in individual counseling, group work, and work with parents of ill adolescents.*

**Keywords:** *diabetes mellitus; psychological processes of diabetes mellitus; turning point; adolescence; vision of the future; crisis; personality*

**For citation.** *Ralnikova I.A., Shamardina M.V., Kislykh A.A. Building the Future Vision in the Adolescents with Diabetes Mellitus. Siberian Journal of Life Sciences and Agriculture, 2022, vol. 14, no. 2, pp. 104-122. DOI: 10.12731/2658-6649-2022-14-2-104-122*

## **ФОРМИРОВАНИЕ ВИДЕНИЯ БУДУЩЕГО У ПОДРОСТКОВ С САХАРНЫМ ДИАБЕТОМ**

***И.А. Ральникова, М.В. Шамардина, А.А. Кислых***

*В статье ставится задача изучить особенности видения будущего у подростков с сахарным диабетом. Методы исследования включают сравнительный анализ, анкетирование, психодиагностическое тестирование и математико-статистическую обработку (U-критерий Манна-Уитни, факторный анализ). Актуальность исследования обусловлена тем, что число подростков, больных сахарным диабетом, растет. Также обостряется потребность в изучении феномена болезни и ее репрезентации в индивидуальных аспектах личности и дальнейшем психологическом сопровождении целевой аудитории. В подростковом возрасте формируются первые представления о жизненных перспективах, конструируется видение будущего. Подростковый возраст является неустойчивым периодом в развитии и эволюции личности, который может осложняться хроническими заболеваниями. Подросткам может потребоваться помощь и профессиональная поддержка взрослых. Научная новизна исследования заключается в получении новых знаний о видении будущего у подростков с сахарным диабетом. То, как подростки видят свое будущее, определяет их реакцию в настоящее время. В статье отражены отличия в видении будущего от здоровых сверстников. Жизненные перспективы подростков с сахарным диабетом имеют особенности, в связи с этим хроническим заболеванием. Сообщаются различия в ценностно-смысловом, когнитивном и эмоционально-оценочном измерениях жизненных перспектив подростков. Изучение когнитивного измерения системы жизненных перспектив выявило события, которыми подростки с сахарным диабетом наполняют свое будущее*

*(были упомянуты связанные со здоровьем ситуации в их будущем). Изучение эмоционального аспекта показало, что подростки с диабетом видят свое будущее более отдаленным, чем подростки без хронических заболеваний. Ценности «здоровье», «друзья», «любовь и семейные отношения» оказались для них значимыми. Будущее кажется ценным для больных подростков. Подростки с сахарным диабетом более ответственно подходят к планированию и построению видения своего будущего, что может быть связано с приоритетной ценностью «здоровье». В ходе исследования были выявлены различия в ценностях подростков с разными периодами болезни. Подростки с периодом заболевания в пять и более лет имеют более высокую ценность «здоровье», чем подростки с более коротким периодом болезни. Сахарный диабет влияет на построение жизненных перспектив подростков и формирование видения их будущего. Полученные данные могут быть использованы в индивидуальном консультировании, групповой работе, работе с родителями больных подростков.*

**Ключевые слова:** сахарный диабет; психологические процессы при сахарном диабете; поворотный момент; подростковый возраст; видение будущего; кризис; личность

**Для цитирования.** Ральникова И.А., Шамардина М.В., Кислых А.А. Формирование видения будущего у подростков с сахарным диабетом // *Siberian Journal of Life Sciences and Agriculture*. 2022. Т. 14, № 2. С. 104-122. DOI: 10.12731/2658-6649-2022-14-2-104-122

## **Introduction**

Being diagnosed with diabetes poses severe challenges for the adolescent's adaptive abilities, which can become crucial in the person's construction of life prospects and determine the change of life plans and goals that the adolescent set for themselves earlier. The restructuring of the future by an adolescent is accompanied by a disruption of the self-organization of the individual in response to uncertainty, a change in lifestyle associated with the disease [20].

Nowadays, this scientific problem is widely represented in numerous works, but the specificity of the vision of the future among adolescents with a diagnosis of diabetes to date remains understudied. Thus, constructing the future vision in adolescents with such a diagnosis combines value, semantic, cognitive, and emotional components.

The total number of patients with diabetes mellitus [DM] involves children and adolescents who became ill before 16. Diabetes disease itself often imposes several limitations, which primarily change the quality and style of life; it can also affect professional preferences and raise uncertainty about their future [1].

For an adolescent, the disease of DM creates an unnormalized crisis that does not allow them to meet current needs. At present, scientific research does not sufficiently cover how adolescents with diabetes build a vision of the future and how their life prospects, including value orientations, change [3]. Some studies show that under the influence of diabetes, the personal characteristics change, and this means that adolescents can change and become sensitive, prone to fantasies, vulnerable, at times withdrawn, unbalanced, excitable, restless, emotionally unstable, and have poor control over their condition [4].

The retrospective analysis highlights features of adolescents' emotional sphere diagnosed with diabetes, such as anxiety, fear and loneliness, and mood swings with a predominant depressive background. Behavioral changes in adolescents with diabetes are sometimes manifested in capriciousness, sudden mood swings, aggressiveness, conflict, negativism, and violation of interpersonal relationships [9]. In Russian and international science, different aspects of the topic under study are covered. There are several approaches to understanding life prospects: motivational, event, typological, educational, and prognostic [2].

The life prospects of adolescents at the onset of various life situations have been studied and described in the works of different authors, such as A.S. Kosovtseva et al [5], R.O.Begmatov [15], D.S. Yeager et al [19], R. Khalfina and O. Shevchuk [17] and others. Psychological features of adolescents with diabetes were presented by M. V. Shamardina and I. A. Ralnikova [8], T.A. Ajibewa et al [12; 13], S. Hadad, M.M. Ali, T.A. Sayed [16], A.M.A. Ansari et al [14], S.P. Stein and E.S. Charles [ 18] and others.

The disease of DM implies a way of life to which the patient must adequately adapt, along with changing interests, social circle, and position in society. Diabetes in adolescence can often change life intentions, and characterized by profound emotional experiences (e.g., fear, shame, guilt, resentment), which can violate personal self-organization, altering the system of personal values, goals, and plans. The illness itself and the changes occurring in the adolescent's life due to the diagnosis can influence the restructuring of their vision of the world, an integral component of representations of time of life, particularly representations of the future: life prospects.

We interpreted life prospects as a set of interconnected perspective lines forming the future vision [6]. It becomes possible to look at this psychological entity from different angles by comprehending life perspectives. Life prospects are a systemic phenomenon, which is included in the system of "person" through various connections. The sides of the study encompass the measurement system of value, semantic, motivational, emotional, cognitive, and other

aspects of life prospects. From the point of view of the value and semantic dimension, the psychological system of a person's life prospects can be studied as a set of values, value orientations, motives, and personal meanings [11].

From the perspective of the cognitive dimension, this system can be studied as a set of expected and planned life events, including goals, plans, means, and strategies for achieving goals. From the emotional dimension, the psychological system of life prospects can be viewed as a person's attitude to their future project, implying the evaluation and emotional response to the future vision.

The organizational-activational dimension of the psychological system of life prospects entails the study of lifestyles, behavioral strategies of a person in the actual period of life, and stage-by-stage realization of the project of life prospects.

### **Materials and Methods**

This study aims to investigate the content features of the vision of the future of adolescents with insulin-dependent DM type 1.

Research objectives are as follows:

- Conduct a comparative analysis of the features of life prospects in two groups of subjects: adolescents diagnosed with DM and adolescents without chronic diseases;
- Identify and analyze the features of life perspectives of adolescents diagnosed with DM, namely, value and meaningful field, event and purposefulness;
- Establish the emotional attitude of adolescents with DM in the future.

Research methods include the analysis of theoretical sources; comparative analysis; collection of scientific information (questionnaire); M. Rokich's test "Value orientations"; "Lifelines" method (A.A. Kronik, B.M. Levin, A.L. Pazhitov); method of life choice "Persoplan" by A. G. Shmelev; "Scale of temporal settings" by J. Nuttgen, aimed at the study of the value and semantic, cognitive and emotional dimensions; mathematical and statistical processing (Mann-Whitney U-criterion, factor analysis using the SPSS v. 22.0 software [7; 10].

The "Value Orientations" test was used to study the structure of the value and semantic content of a person's life prospects. The "Life Lines" method was used to study the eventfulness of the life prospects of adolescents with diabetes. The method "Persoplan" by A. G. Shmelev was applied to study goal-oriented planning of life prospects. J. Nutten's "Time Attitude Scale" was used to study the emotional attitude of adolescents with diabetes towards their future. The application of the Mann-Whitney U-criterion revealed significant differences in the main components of the life perspectives of adolescents diagnosed with

diabetes and adolescents without chronic diseases. Factor analysis of the data was applied to examine the emotional-evaluation dimension of the life perspectives of adolescents with DM.

The sample involved 93 16-year-old adolescents who were interviewed during the study. Among them, 43 were young men and women with DM (empirical group). Besides, 24 adolescents had a history of the disease of 0–4 years, and 19 adolescents had a history of 5 years or more; 40 were boys and girls without diabetes (control group).

The research involved (with personal voluntary consent) 93 16-year-old adolescents of the Altai Krai. Among them, 43 are adolescents with diabetes (an empirical group), of which 24 people have experienced the disease from 0 to 4 years, and 19 people have experienced it for 5 or more years. Among participants, 40 people are adolescents who do not have chronic diseases (control group).

The empirical group consisted of 20 males and 23 females (age 16) with type 1 diabetes.

The control group included school students of 9–10 grades from educational organizations in Barnaul. The group consisted of 20 males and 20 females (age 16).

The empirical and control groups had an equal ratio of subjects by age and gender. The empirical group was also equalized by the disease duration.

A comprehensive study of adolescents with type 1 diabetes (empirical group) was conducted on the basis of the Altai Regional Center for Maternal and Child Health (Department of Endocrinology). Adolescents undergoing planned treatment in a hospital were offered a questionnaire describing the treatment methods; they were asked to give an honest answer. After that, each participant had an individual conversation using the observation method.

A turning point event divides a person's life into "before" and "after" and determines the history of personality change: the experience gained after living the turning point event becomes valuable for the individual. Usually, the experience is rejected. Senior adolescence is a sensitive period of formation of the system of life plans; if the time perspective of the future during this period is not formed or is transformed for any reason, it will cause severe consequences for the development of the adolescent's personality.

## Results

The Mann-Whitney U-test allowed us to identify significant differences in the value structure of adolescents with DM and healthy adolescents. Differences refer to the increased importance of the value of health by adolescents with diabetes and the decrease in the value of "having good and faithful friends."

This point may be related to the fact of having the disease. The value of health becomes especially important for adolescents with diabetes. The disease can also hurt relationships with others and having friends. Often adolescents do not accept peers with any distinctive characteristics in appearance, behavior, or health into their social circle.

Considering the value-meaning dimension of adolescents' life perspectives, we found that for adolescents with diabetes and their peers without the disease, the significant value-goals were "health" and "having good and loyal friends." Diabetic adolescents also emphasized the values "love" and "happy family life," and healthy adolescents noted "active life." The "health" value can be explained by the fact that children are constantly promoting the importance of preserving health in society. The emphasis on the value of having good friends can be explained by the fact that the leading activity is intimate and personal communication with peers in adolescence.

The values of "entertainment" and "creativity" are insignificant for the two samples. Adolescents with diabetes find the beauty of nature, art, and social recognition insignificant, while adolescents without diabetes do not find the happiness of others valuable. This tendency is explained by the fact that adolescents focus more on themselves than on the people around them; they are mainly concerned about issues related to the educational and professional spheres of activity.

Significant values-means relative to the two samples are the values of politeness, cheerfulness. Adolescents with diabetes highlighted the value of "neatness," while healthy adolescents emphasized "education." Two groups of adolescents found "high demands" and "intransigence to shortcomings in themselves and others" insignificant. For adolescents, the values that promote communication are crucial. This trend can be explained by the need to communicate with peers during adolescence. Ethical values that play an essential role in human relationships were also significant. Values that can disrupt relationships in the environment were deemed insignificant.

Considering the cognitive aspect, we noted the events with which adolescents with diabetes associate their future, such as graduation from school, exams, university studies, employment, travel, love relationships, marriage, children, improved financial situation, health, leisure time, birthday, old age, death.

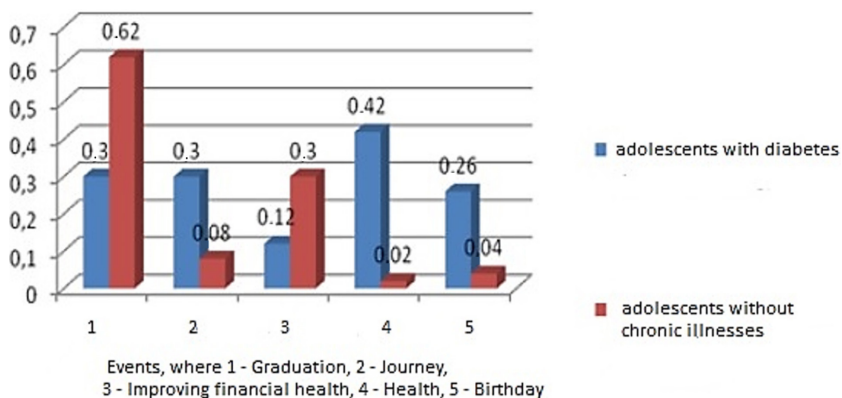
Thus, 42% of adolescents diagnosed with diabetes noted health-related events ("get cured of diabetes," "get out of the hospital," "go to the hospital") and employment-related events ("find a job," "get a job") in their future. Then 40% note events related to education in higher education ("I will enter higher education," "I will get an education"). The third most common future events



for adolescents with diabetes were marriage-related events (35%) (“getting married”). A smaller number of people mentioned events in their future related to improving their financial situation (12%) (“I will buy a car,” “I will buy a house”), death (9%), and old age (7%) (“I will retire”).

A large group of adolescents without diabetes was graduating from high school (62%). Next, 52% of adolescents highlighted events related to employment and marriage. Furthermore, 46% of the group mentioned events related to higher education. The least frequent events noted by healthy adolescents in their future were “travel” events (8%), “love relationships” (8%), “old age” (8%), “birthday” events (4%), and health-related events (2%).

The non-parametric Mann-Whitney U-criterion proved the reliability of differences between the future events of adolescents diagnosed with DM and those without chronic diseases in the categories “health,” “graduation,” “birthday,” “travel,” and “improved financial situation” (Fig.1). Diabetic adolescents are less likely than healthy adolescents to mark “school graduation” and material well-being events in their future and more likely to mark health and travel events, as well as the “birthday” event. Since healthy adolescents do not need constant treatment and monitoring of their health status, they are more concerned about learning activities, which are very important at this age. Also, planning for adolescents’ future is influenced by society broadcasting the importance of material well-being. On the contrary, adolescents diagnosed with diabetes see events that affect their health in the first place when planning their future. At the same time, various trips and birthday celebrations may help get positive emotions and take their minds off their serious illness.



**Fig. 1.** Significant differences in adolescents’ future events



To examine the cognitive dimension, we identified a hierarchy of goals in two groups of adolescents. Adolescents with diabetes distinguished the following life goals: “finishing school well,” “passing exams,” “education,” “career,” “travel,” “marriage,” “improved financial status,” “health,” and “leisure time.” For adolescents with diabetes, the dominant goals were represented by the categories of “health” (30%), “career” (23%), “finishing school well” (23%), and “education” (23%).

In the group of adolescents without chronic diseases, the leading goals were “leisure time” (42%), “education” (38%), “finishing school well” (32%), and “improving material well-being” (32%).

The non-parametric Mann-Whitney U-criterion proved significant differences between the goals of adolescents with DM and adolescents without chronic diseases in the “health” and “leisure” categories. Thus, one can observe that for adolescents with diabetes, in comparison with adolescents without diseases, life goals are focused primarily on the preservation and improvement of health, and only then on achieving success in educational and professional activities and various entertainment.

The non-parametric Mann-Whitney U test proved the accuracy of differences in the future events of adolescents diagnosed with diabetes and adolescents without chronic diseases in the categories “health” ( $p < 0.000$ ), “graduation” ( $p = 0.002$ ), “birthday” ( $p = 0.003$ ), “journey” ( $p = 0.006$ ), “improving material health” ( $p = 0.032$ ).

The non-parametric Mann-Whitney U test proved the accuracy of differences in the goals of adolescents diagnosed with diabetes and adolescents without chronic diseases in the categories “health” ( $p < 0.000$ ) and “leisure” ( $p = 0.031$ ). Thus, it should be noted that for adolescents diagnosed with diabetes, compared with healthy adolescents, life goals are primarily aimed at maintaining and improving health, and only then at achieving success in educational and professional activities and various entertainments.

To study the emotional and evaluative dimensions of life perspectives of adolescents with DM, we applied factor analysis. The factor model of emotional attitudes toward the own future of adolescents with diabetes has four factors explaining 63.1% of the variance.

The first factor, which explains 34.3% of the variance, included the following characteristics of adolescents’ future: valuable (0.908), interesting (0.898), enjoyable (0.837), full of hope (0.788), bright (0.781), beautiful (0.750), warm (0.736), attractive (0.704), approachable (0.669), complete (0.665), certain (0.601), problem-free (0.591), structured (0.577). This factor was named “valuable future.”

The second factor, which describes 9.8% of the variance, included the following characteristics regarding adolescents' future: coming from a person (0.831) and helpful (0.629). This factor was named "the future coming from the person."

The third factor, describing 9.7% of the total variance, was associated with the following characteristics of the future: dependent on the person (0.712), fast (0.711), and orderly (0.648). The factor was named "the future dependent on me."

The fourth factor, which describes 9.3% of the total variance, comprised the following characteristics of the future: simple (0.782), easy (0.650), close (0.566), conflict-free (0.536). This factor was named "simple future." The future is conceptualized primarily through value, responsibility, and the importance of one's activity in life achievements.

Factor analysis among adolescents without diabetes identified four factors explaining 52.2% of the variance.

The first factor, describing 20.8% of the variance, included the following characteristics: easy (0.803), simple (0.781), beautiful (0.724), certain (0.697), orderly (0.646), problem-free (0.605), structured (0.555), planned (0.534), full of hope (0.508). The factor was named "easy future."

The second factor, which described 11.6% of the total variance, included the following values: pleasant (0.697), conflict-free (0.672), complete (0.534). The factor was named "pleasant future."

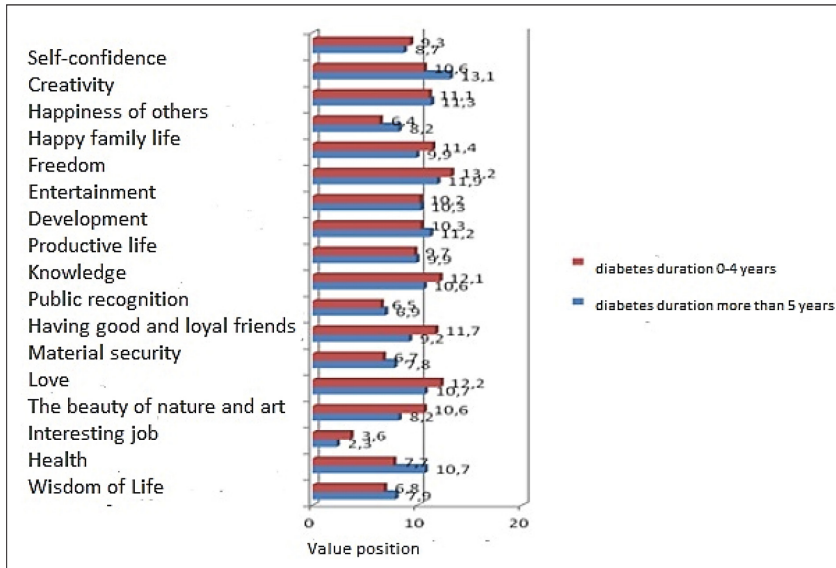
The third factor, which accounts for 10.5% of the variance, was composed of characteristics: close (0.722), helpful (0.699), and approximate (0.569). This factor was called "close to the future."

The fourth factor, explaining 9.3% of the total variance, included the following values: coming from a person (0.724), slow (-0.648), delayed (-0.555), dependent on me (0.540). This factor was named "distant future, coming from a person." The future is conceptualized primarily through an emotional assessment of possible life events. This emotional assessment is dominated by unrealistic, all-encompassing optimism and illusiveness.

Comparing the emotional assessments of adolescents' future with and without diabetes using a Mann-Whitney U-criterion comparative analysis revealed significant differences on the distant-approximate scale. Adolescents with diabetes considered their future more distant than adolescents without the disease.

We also compared the values, events, goals, and emotional evaluations of the future of adolescents with DM who had been ill from 0 to 4 years and 5 years or more.

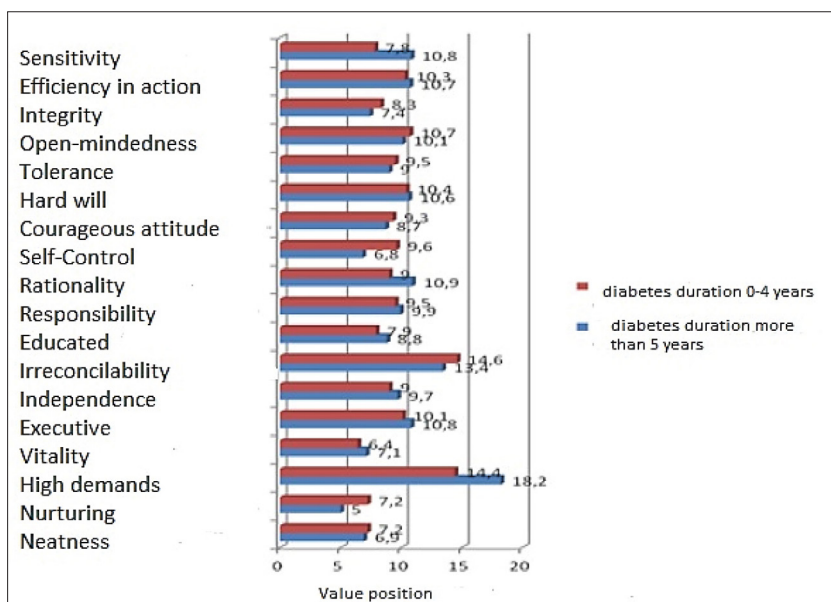
The study of the value and meaning dimension of adolescents' life perspectives revealed that for adolescents with a history of illness from 0 to 4 years, and adolescents with a history of 5 years or more, the significant values-goals were health, good, and faithful friends. Adolescents with a shorter history of diabetes highlighted the value of a "happy family life." Adolescents with a long history of diabetes highlighted the value of "love." The values of "entertainment" are irrelevant for both groups. Adolescents with a history of illness from 0 to 4 years also rejected the values "beauty of nature and art," "social recognition," "happiness of others," and "productive life" were denied by adolescents with a history of illness of 5 years or more (Fig. 2).



**Fig. 2.** Terminal values (values-goals) of adolescents with a history of illness from 2 to 4 years and 5 years and more.

The Mann-Whitney U test helped us reveal the significant differences (at the level of significance  $p < 0.05$ ) in the hierarchical structure of terminal values of adolescents with different duration of experiencing diabetes. The differences relate to the increased importance of the "health" value among adolescents with a disease experience of 5 or more years. Possibly this is due to the greater likelihood of late complications of diabetes among adolescents who have been ill for a longer time.

The priority instrumental values (means-values) for both groups of adolescents were the values “neatness” and “niceness.” Adolescents with a lesser degree of illness also noted the value of “cheerfulness” and “responsiveness.” For comparison, adolescents with a greater degree of illness mentioned the value of “self-control.” High demands” and “irreconcilability with shortcomings in oneself and others” were devalued by both groups. Adolescents with 0 to 4 years of experience also rejected “broadmindedness,” while adolescents with five or more years of experience denied “rationality” (Fig. 3).



**Fig. 3.** Instrumental values (values-means) of adolescents with a history of illness from 0 to 4 years and five years and more.

The Mann-Whitney U-criterion revealed significant differences in the hierarchical structure of terminal values of adolescents with different years of DM experience. The differences relate to the increased importance of the value of “health” by adolescents with the disease experience from 5 years and more. This trend may be associated with a greater likelihood of late complications of diabetes in adolescents with a longer duration of the disease.

Significant differences in the structure of instrumental values were also discovered. Differences refer to the increased importance of the values of “ra-

tionality” and “sensitivity” among the adolescents with a history of the disease from 0 to 4 years. It was significant for adolescents with diabetes to be thoughtful and considerate about their state of health for a short period. These qualities help them monitor the deterioration of health in time and, if necessary, take appropriate measures.

When comparing events, life goals, and emotional evaluations of the future, no significant differences were found between adolescents with a history of illness from 0 to 4 years and adolescents with a history of illness of 5 years or more.

### **Discussion**

The research results indicate the peculiarities of the vision of the future and life prospects of adolescents with DM and adolescents without chronic diseases. All future activities for adolescents with DM were focused on the long term, which may indicate a positive attitude towards the vision of their future. All future events of ill adolescents were health-related.

Adolescents with a history of illness of 5 years or more were more concerned about their health than adolescents with a history of illness from 0 to 4 years. However, adolescents who were ill for a short time show greater sensitivity and rationality to their state of health. This situation may be due to the fact that adolescents with a long period of illness get used to their condition over time and feel less anxious about illness.

The future seemed valuable for ill adolescents. Thus, we can assume that adolescents with DM, guided primarily by the value of “health,” approach the planning and construction of the vision of their future differently from their healthy peers. Such adolescents are much more reverent and responsible about their future.

### **Conclusion**

The study shows that DM in adolescence is a predictor of future vision; it can play a significant role in forming such vision. During the empirical study, we identified significant characteristics of life perspectives and the vision of the future of adolescents with DM.

A pronounced dominance of the value of “health” represents value orientations of adolescents with DM, which is the leading factor determining the formation of life prospects; it determines the formation of ideas about their future: events, plans, life goals, and emotional evaluations.

Furthermore, 42% of adolescents diagnosed with DM noted health-related events in their future, possibly because the disease becomes a way of life of the

adolescent, a part of their life into which they built all other elements.

A comparison of emotional evaluations of the future of adolescents with and without diabetes shows that adolescents with diabetes consider their future more distant than adolescents without the disease.

The present study addresses the need to study DM to construct a vision of adolescents' future with this endocrine disorder. During the research, knowledge about the peculiarities of adolescents with DM vision of their future and life prospects was obtained. The way adolescents see their future and themselves determines their actions and compensation for their disease in the present. We presented the differences in the future vision from peers without the disease. Life perspectives of adolescents with DM have peculiarities because of this chronic disease. Differences in the value-meaning, cognitive, and emotional-evaluation dimensions of adolescents' life prospects were revealed.

Psychologists, psychiatrists, psychotherapists, social workers, and teachers can use these data to implement psychological support for adolescents with diabetes and their families. These results will be helpful for those who have difficulties building their future, problems in the sphere of communication, and mutual understanding.

**Acknowledgments.** The paper was done as part of the grant from Altai State University, "Building a Life Perspective for Adolescents with Type 1 Diabetes Mellitus."

### *References*

1. Bochaver A.A. Issledovaniye zhizni puti cheloveka v sovremennoy zarubezhnoy psikhologii [Research of human life path in modern foreign psychology]. *Psikhologicheskiy zhurnal* [Psychological Journal]. 2008, vol. 29, no. 5, pp. 54-62.
2. Vinogradova I.A., Vinokurova G.A., Golubushina K.K., Danilova G.I., Dvoynin A.M., Klyuchko O.I., Kondrashina Yu. Yu., Samosadova Ye. V., Sukhareva N.F., Sukhonosov A.P., Chekalina A.A., Yashkova A.N. *Zhiznennyye perspektivy uchashcheyasya molodezhi: tsennosti i smysly bytiya* [Life prospects of students youth: values and meanings of being]. Moscow, Moscow City Pedagogical University, 2015, 224 p.
3. Gurovich O. V., Stakhurlova L. I., Snegireva G. I., Dotsenko A. V. Otdelnie psikhologicheskiye kharakteristiki podrostkov s sakharnym diabetom 1 tipa [Selected psychological characteristics of adolescents with type 1 diabetes mellitus]. *Materialy mezhdunarodnoy zaachnoy nauchno-prakticheskoy konferentsii sovremennoy meditsiny: issledovaniya razvitiya* [Materials of the international

- correspondence scientific and practical conference modern medicine: development trends]. [Edited by R. I. Zakharov]. Novosibirsk, Siberian Association of Consultants, 2012, pp. 52-58. [https://sibac.info/sites/default/files/archive/2011/medicina\\_30.01.2012.pdf](https://sibac.info/sites/default/files/archive/2011/medicina_30.01.2012.pdf)
4. Pavlova L.B. Psikhologicheskiye problemy i lichnostnyye osobennosti podrostkov s sakharnym diabetom [Psychological problems and personal features of adolescents with diabetes]. *Izvestiya rossiyskogo gosudarstvennogo pedagogicheskogo universiteta im. A.I. Gertsena* [News of the Russian State Pedagogical University named after A.I. Herzen]. 2008, no. 76-2, pp. 191-197.
  5. Kosovtseva A.S., Kolesnikova L.I., Rychkova L.V., Polyakov V.M., Bairova T.A. Psikhologicheskiye osobennosti podrostkov s essentsial'noy arterial'noy gipertenziyey [Psychological features of adolescents with essential hypertension]. *Acta biomedica scientifica*, 2018, vol. 3, no. 2. pp. 56-62. <https://doi.org/10.29413/ABS.2018-3.2.10>
  6. Ralnikova I.A. Zhiznennyye perspektivy lichnosti v nauchnoy paradigme psikhologicheskogo znaniya [Life prospects of personality in the scientific paradigm of psychological knowledge]. *Izvestiya altayskogo gosudarstvennogo universiteta* [News of Altai State University]. 2011, vol. 2-1, no. 70, pp. 53-60.
  7. Ralnikova I.A. Psikhologicheskoye zdorov'ye i zhiznennyye perspektivy lichnosti [Psychology of the human life path]. *Zdorov'ye cheloveka, teoriya i metodika fizicheskoy kul'tury i sporta* [Human health, theory and methods of physical culture and sport]. 2019, vol. 4, no. 15, pp. 121-126.
  8. Ralnikova I.A., Shamardina M.V., Pershina N.A. Zabolevaniye sakharnym diabetom v podrostkovom vozraste kak perelomnoye zhiznennoye sobytiye [Diabetes mellitus in adolescence as a turning point in life]. *Mir nauki, kul'tury, obrazovaniya* [World of science, culture, education]. 2016, vol. 2, no. 57, pp. 295-299.
  9. Rakhmatullina E.N. Emotsional'noye sostoyaniye podrostkov s sakharnym diabetom 1 tipa s prodolzhitel'nym stazhem zabolevaniya [Emotional state of adolescents with type 1 diabetes mellitus with various medical experience]. *Aktual'nyye problemy gumanitarnykh i dopolnitel'nykh nauk* [Topical problems of humanities and natural sciences]. 2012, no. 8, pp. 252-255.
  10. Rokich M. Metodika "Tsennostnyye oriyentirovki" [Value orientations methodology]. *Bol'shaya entsiklopediya psikhologicheskikh testov* [Great encyclopedia of psychological tests]. Edited by A.A. Karelin. Moscow, Eksmo, 2009, pp.26-28. <http://lib.mgppu.ru/opacunicode/app/webroot/index.php?url=/notices/index/IdNotice:107378/Source:default>



11. Hlybova E.V. Osobennosti predstavleniy o budushchem u podrostkov [Features of ideas about the future in adolescents]. *Vestnik Tambovskogo universiteta. Seriya: Gumanitarnyye nauki* [Bulletin of the University of Tambov]. 2008, vol. 9, no. 65, pp.242-245.
12. Ajibewa T.A., Toledo-Corral C., Miller A.L., Sonnevile K.R., Robinson L.E., Lee J., Hasson R.E. Racial differences in psychological stress and insulin sensitivity in non-Hispanic Black and White adolescents with overweight/obesity. *Physiology & Behavior*, 2022, vol. 245, e113672. <https://doi.org/10.1016/j.physbeh.2021.113672>
13. Ajibewa T.A., Zhou M., Barry M.R., Miller A.L., Sonnevile K.R., Leung C.W., Hasson R.E. Adolescent stress: A predictor of dieting behaviors in youth with overweight/obesity. *Appetite*, 2020, no. 147, e104560. <https://doi.org/10.1016/j.appet.2019.104560>
14. Ansari A.M.A., Janahi M.I., Al Tourah A.J., Jahrami H.A., Rajab M.B. Self-reported psychological disorders among the mothers of children with autism spectrum disorder, type 1 diabetes mellitus, and typically developed children // *Journal of neurodevelopmental disorders*, 2021, vol. 13, no. 21. <https://doi.org/10.1186/s11689-021-09369-y>
15. Begmatov R.O. Psychological features of the manifestation of aggression in adolescents // *Asian journal of multidimensional research*, 2021, vol. 10, no. 2, pp. 170-176. <https://doi.org/10.5958/2278-4853.2021.00068.9>
16. Hadad S., Ali M.M., Sayed T.A. Psychological and behavioral complications in children and adolescents with type 1 diabetes mellitus in Sohag. *Middle east current psychiatry*, 2021, vol. 28, no. 37. <https://doi.org/10.1186/s43045-021-00117-5>
17. Khalfina R., Shevchuk O. Psychological features of the level of subjective control in drug addicts in adolescence. *Personality in norm and in pathology* / Edited by M. Ovchinnikov, I. Trushina, E. Zabelina, S. Kurnosova. 2021, vol. 112, pp. 315-320. <https://doi.org/10.15405/epsbs.2021.06.04.36>
18. Stein S.P., Charles E.S. Emotional factors in juvenile diabetes mellitus: a study of the early life experiences of eight diabetic children. *Psychosomatic medicine*, vol. 37, no. 3, pp. 237-244. <https://doi.org/10.1097/00006842-197505000-00002>
19. Yeager D.S., Lee H.Y., Jamieson J.P. How to improve adolescent stress responses: insights from integrating implicit theories of personality and biopsychosocial models. *Psychological science*, 2016, vol. 27, no. 8, pp. 1078-1091. <https://doi.org/10.1177/0956797616649604>
20. Zimbardo FJ. Psychology of time perspective, 2018. URL: [https://www.ted.com/talks/philip\\_zimbardo\\_the\\_psychology\\_of\\_time/transcript](https://www.ted.com/talks/philip_zimbardo_the_psychology_of_time/transcript)

### *Список литературы*

1. Бочавер А.А. Исследования жизненного пути человека в современной зарубежной психологии // Психологический журнал. 2008. Т.29. №5. С. 54-62.
2. Жизненные перспективы учащейся молодежи: ценности и смыслы бытия / Виноградова И.А., Винокурова Г.А., Голубушина К.К., Данилова Г.И., Двойнин А.М., Ключко О.И., Кондрашина Ю.Ю., Самосадова Е.В., Сухарева Н.Ф., Сухоносков А.П., Чекалина А.А., Яшкова А.Н. М.: Московский городской педагогический университет. 2015. С. 224.
3. Отдельные психологические характеристики подростков с сахарным диабетом 1 типа / Гурович О. В., Стахурлова Л. И., Снегирева Г. И., Доценко А. В. // Материалы международной заочной научно-практической конференции современная медицина: тенденции развития [Под ред. Р. И. Захаров]. Н.: Сибирская ассоциация консультантов. 2012. С. 52-58. [https://sibac.info/sites/default/files/archive/2011/medicina\\_30.01.2012.pdf](https://sibac.info/sites/default/files/archive/2011/medicina_30.01.2012.pdf)
4. Павлова Л.Б. Психологические проблемы и личностные особенности подростков с сахарным диабетом / Известия российского государственного педагогического университета им. А.И. Герцена. 2008. №76-2. С. 191-197.
5. Психологические особенности подростков с эссенциальной артериальной гипертензией / Косовцева А.С., Колесникова Л.И., Рычкова Л.В., Поляков В.М., Баирова Т.А. // Acta biomedica scientifica. 2018. Т.3, №2. С. 56-62. <https://doi.org/10.29413/ABS.2018-3.2.10>
6. Ральникова И.А. Жизненные перспективы личности в научной парадигме психологического знания / Известия алтайского государственного университета. 2011. Т.2-1, №70. С. 53-60.
7. Ральникова И.А. Психологическое здоровье и жизненные перспективы личности / Здоровье человека, теория и методика физической культуры и спорта. 2019. Т.4. №15. С. 121-126.
8. Ральникова И.А., Шамардина М.В., Першина Н.А. Заболевание сахарным диабетом в подростковом возрасте как переломное жизненное событие // Мир науки, культуры, образования. 2016. Т. 2, №57. С. 295-299.
9. Рахматуллина Э.Н. Эмоциональное состояние подростков с сахарным диабетом 1 типа с различным стажем заболевания / Актуальные проблемы гуманитарных и естественных наук. 2012. №8. С. 252-255.
10. Рокич М. Методика «Ценностные ориентации» / Большая энциклопедия психологических тестов [Под ред. А.А. Карелин]. М.: Эксмо. 2009. С. 26-28. <http://lib.mgppu.ru/opacunicode/app/webroot/index.php?url=/notices/index/IdNotice:107378/Source:default>

11. Хлыбова Е. В. Особенности представлений о будущем у подростков / Вестник Тамбовского университета. Серия: гуманитарные науки. 2008. Т. 9, №65. С. 242-245.
12. Ajibewa T.A., Toledo-Corral C., Miller A.L., Sonnevile K.R., Robinson L.E., Lee J., Hasson R.E. Racial differences in psychological stress and insulin sensitivity in non-Hispanic Black and White adolescents with overweight/obesity // *Physiology & Behavior*, 2022, vol. 245, e113672. <https://doi.org/10.1016/j.physbeh.2021.113672>
13. Ajibewa T.A., Zhou M., Barry M.R., Miller A.L., Sonnevile K.R., Leung C.W., Hasson R.E. Adolescent stress: A predictor of dieting behaviors in youth with overweight/obesity // *Appetite*, 2020, no. 147, e104560. <https://doi.org/10.1016/j.appet.2019.104560>
14. Ansari A.M.A., Janahi M.I., Al Tourah A.J., Jahrami H.A., Rajab M.B. Self-reported psychological disorders among the mothers of children with autism spectrum disorder, type 1 diabetes mellitus, and typically developed children // *journal of neurodevelopmental disorders*, 2021, vol. 13, no. 21. <https://doi.org/10.1186/s11689-021-09369-y>
15. Begmatov R.O. Psychological features of the manifestation of aggression in adolescents // *Asian journal of multidimensional research*, 2021, vol. 10, no. 2, pp. 170-176. <https://doi.org/10.5958/2278-4853.2021.00068.9>
16. Hadad S., Ali M.M., Sayed T.A. Psychological and behavioral complications in children and adolescents with type 1 diabetes mellitus in Sohag // *Middle east current psychiatry*, 2021, vol. 28, no. 37. <https://doi.org/10.1186/s43045-021-00117-5>
17. Khalfina R., Shevchuk O. Psychological features of the level of subjective control in drug addicts in adolescence // *Personality in norm and in pathology* [Edited by M. Ovchinnikov, I. Trushina, E. Zabelina, S. Kurnosova]. 2021, vol. 112, pp. 315-320. <https://doi.org/10.15405/epsbs.2021.06.04.36>
18. Stein S.P., Charles E.S. Emotional factors in juvenile diabetes mellitus: a study of the early life experiences of eight diabetic children // *Psychosomatic medicine*, vol. 37, no. 3, pp. 237-244. <https://doi.org/10.1097/00006842-197505000-00002>
19. Yeager D.S., Lee H.Y., Jamieson J.P. How to improve adolescent stress responses: insights from integrating implicit theories of personality and biopsychosocial models // *Psychological science*, 2016, vol. 27, no. 8, pp. 1078-1091. <https://doi.org/10.1177/09567976166649604>
20. Zimbardo FJ. *Psychology of time perspective*, 2018. URL: [https://www.ted.com/talks/philip\\_zimbardo\\_the\\_psychology\\_of\\_time/transcript](https://www.ted.com/talks/philip_zimbardo_the_psychology_of_time/transcript)

**ДАННЫЕ ОБ АВТОРАХ****Ирина А. Ральникова**

*Алтайский Государственный Университет  
просп. Ленина 61, г. Барнаул, 656049, Российская Федерация  
irinarnikova@yandex.ru*

**Марина В. Шамардина**

*Алтайский Государственный Университет  
просп. Ленина 61, г. Барнаул, 656049, Российская Федерация  
marav\_sh@mail.ru*

**Анна А. Кислых**

*Алтайский Государственный Университет  
просп. Ленина 61, г. Барнаул, 656049, Российская Федерация  
kislykh1994@mail.ru*

**DATA ABOUT THE AUTHORS****Irina A. Ralnikova**

*Altai State University  
61, Lenin Ave., Barnaul, 656049, Russian Federation  
irinarnikova@yandex.ru  
ORCID: <https://orcid.org/0000-0001-9411-8787>*

**Marina V. Shamardina**

*Altai State University  
61, Lenin Ave., Barnaul, 656049, Russian Federation  
marav\_sh@mail.ru  
ORCID: <https://orcid.org/0000-0003-3224-0810>*

**Anna A. Kislykh**

*Altai State University  
61, Lenin Ave., Barnaul, 656049, Russian Federation  
kislykh1994@mail.ru  
ORCID: <https://orcid.org/0000-0002-4460-5955>*

Поступила 03.02.2022

После рецензирования 08.02.2022

Принята 22.02.2022

Received 03.02.2022

Revised 08.02.2022

Accepted 22.02.2022