



# Mental Health Status of the Population of a Hungarian Disadvantaged Region

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## ABSTRACT

Lifestyle and health culture significantly determines people's health status. Several demographic studies have proved the correlation between disadvantaged social situation, unfavorable socio-economic status and health status. Deprivation and disadvantaged situation have become important, which should be treated as the root of difficulties on several fields since they have great impact on health behavior and -culture. Families living in lagging areas require special attention because of their social and economic backwardness and mental disadvantages. Childhood is an especially important period since skills learned before the age of 14 have a determining role in future life chances and adult health status: satisfactory psychosomatic development, loading capacity and the developing unfavorable habits influence adult health. As the part of the Creative Region program, our goal is to explore the mental health status of people living in the Hungarian Abaúj region by monitored data. 516 persons from 25 settlements and 7 primary schools of the region were included. We used the Beck Depression Inventory (filled under the age of 12) and the Spielberg State-Trait Anxiety Inventory (filled by all participants) by the help of measuring commissioners. Among children, a significant difference could be detected between genders ( $p=0.007$ ). Body image seems to be a really important factor in youngsters' life. Body weight ( $p=0.022$ ) and physical exercises ( $p=0.02$ ) significantly occur in the manifestation of depression symptoms in young people. The level of adult's depression is influenced by the education level ( $p=0.00012$ ), labour market status ( $p=0.003$ ), alcohol consumption ( $p=0.007$ ), subjective bad financial situation ( $p=0.022$ ), sedentary lifestyle ( $p=0.001$ ) and obesity ( $p=0.002$ ). 5.5% of youngsters and 1.3% of adults are victims of domestic violence. It is important to highlight that negative future vision, unemployment and hopelessness cause anxiety and depression increasing by age, and it will manifest in endangering health behavior (inappropriate eating, sedimentary lifestyle, addictive disorders).

**Keywords:** *Disadvantaged Situation, Mental Health Status, Depression, Anxiety*

## Introduction

Both the workers of the health, economic or social sectors and legislators should pay special attention on those settlements which are economically, socially or infrastructurally beneficiary ones and/or fight with significant unemployment. In these settlements, it must be considered that

the smallest change can significantly influence the habitants' life chances and future life prospects in a negative way. In 2020, the most affected Hungarian region was the North-Hungarian region: 25.69% of all the Hungarian beneficiary settlements could be found here, and 26.46% of the population of all the Hungarian beneficiary settlements lived here. The different parts of the region also showed significant differences: there were exponentially more beneficiary settlements in Borsod-Abaúj-Zemplén County than in the other counties of the territory. It should also be noticed that, on national level, the ratio of beneficiary settlements in Hungary is 17.97%, while 18.94% of the population lives in them (Perge & Veresné, 2021).

Our research goal is the survey of the health status, focusing on the population's mental health status, built on the monitored data of the population living in a highly disadvantaged region of Hungary. The research program called Creative Region consists of several parallel elements, and its basis is the health survey and screening program performed among the population aged 10-14 and the adult population over the age of 18, and their data totally complement each other and explain their results.

The aim of this current study is to describe the level of depression and anxiety of the population by the measured data of different demographic features (gender, age, education, settlement type) and health behaviour (physical activity, body weight, eating habits, the time spent by sleeping) with the intention of using these data as the basis of targeted prevention and intervention. This study contains partial results of a greater complex study that covers the examination of the health status of the deprived population.

### **Literature review**

According to the well-known definition of the World Health Organization (WHO) on health, it is *"A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"* (WHO, 1948). The definition of health has been expanded by novel approaches in the recent years. According to one of these approaches, health is a dynamically changing condition depending on culture, age, life cycle and the requirements defined by these (Bircher, 2005). A disease or disability exists if the person is unable to meet the requirements resulting from age and social situation. Health status can be interpreted as such a power resource on which the person can rely when coping with the requirements of life.

According to another suggestion, health means the ability to adapt and self-control when facing with physical and emotional challenges (Huber et al., 2011). In this approach, not just what we consider to be health is essential, but also that how we can recognize health and among what indicators it can be described. By asking the representatives of groups affected in the topic of health (patients, physicians, nurses, public health specialists, researchers), six health-indicator groups have been identified: physical function, mental well-being, spiritual/existential dimension, quality of life, social and societal participation, and everyday function (Huber et al., 2016).

The definition suggestions mentioned above are in correlation with the approach according to which mental health is *"the condition when mental functions work well that results in*

*productive activities, the completion of relationships with people, and the ability of adapting to changes and coping with difficulties”* (USDHHS, 1999, p. 4).

Mental health involves numerous skills and abilities among which these are the most important ones: the ability of mental, emotional, intellectual and spiritual development and the maintenance of well-being; creating and maintaining mutually satisfactory social and community relationships; the ability of coping with stress accompanying life, and the tendency for utilizing challenges from the aspect of personal development. It can be seen that the definition of positive mental health refers to such a personality functioning process and the presence of such skills and abilities that ensure the unfolding of the person's individual abilities and social relationships. That is why the treatment of mental diseases does not necessarily result in the completion of personal and social well-being and creativity in its own, however, the recognition and treatment of mental diseases is an important condition of the improvement of mental health.

Mental health and the impairment of mental health are important issues not just from the individual's aspect, but from the society's and economy's point of view as well. The direct and indirect costs accompanying mental diseases can be compared to the costs caused by physical diseases (Smit et al., 2006). This provides a serious argument for that the improvement of mental health and the prevention of mental diseases should get a central role in public health and serious attention at the division of the resources. Decreasing the incidence of depressive and anxiety disorders can result in serious economic savings (Smit et al., 2006).

Because of the above-mentioned facts, besides the definition of mental health, it is also important to outline the factors which promote or deteriorate mental health. One of the most comprehensive systems is suggested by MacDonald and O'Hara (1998) and MacDonald (2006), according to which the factors promoting or deteriorating mental health can be separated from each other. Factors promoting mental health include quality environment, self-assessment, emotional processing, and self-managing and coping skills. Deprived environment, emotional abuse, emotional indifference, stress and social exclusion are deteriorating factors (MacDonald & O'Hara, 1998).

Over the psycho-social factors, behavioural factors also have an important role in the development of diseases and early mortality. Sociology grabs behavioural factors by the definition of lifestyle. In this approach, lifestyle is such a permanently consistent pattern of behaviour that is based on cultural heritage, social relationships, geographical and socio-economic situation, and personality (Green & Kreuter, 1991).

The mostly examined health protecting behaviour form is the behaviour associated with doing sports and eating habits (Luszczynska et al., 2004). Over the favourable physiological effects, it deserves attention that better well-being, greater emotional stability and better intellectual performance is more typical in people performing physical activities regularly (Brown & Wang, 1992; Landers & Petruzzello, 1994). Physical activity has double advantage: on the one hand, it balances physical problems, including cardiovascular risks or even obesity, caused by mental problems by the improvement of physical health; on the other hand, physical activity causes improvement in mental symptoms as well, among which depression and

depressive symptoms are the most commonly examined ones. A meta-analysis has indicated the serious therapeutic effect of doing exercises in the treatment of depression, and at the same time, the therapeutic effect of exercise seems to be effective in the treatment of alcohol abuse and anxiety disorders as well (Stathopoulou et al., 2006). Studies about physical activity suggest that doing exercises has a favourable effect on clinical and sub-clinical depression and anxiety, it increases the quality of life by the improvement of self-esteem and mood, it decreases anxiety, it makes the person more resilient against stress, and it improves the quality of sleep (Babyak et al., 2000; Jones & O'Beney, 2004).

From the aspect of prevention, it is an important finding that, in case of adolescents, the natural occurrence of physical activity is in a negative connection with depressive symptoms, so, more active adolescent people report about a lower level of depressive (Motl et al., 2004) and anxiety symptoms (Steptoe et al., 1989).

Another especially researched health protecting behaviour is eating control. As the result of the factor analysis performed by including the examination of several health-related behaviour forms, Neumark-Sztainer et al. (1997a) proved empirically that eating control was the part of the preventive behaviour structure related to health. The common aetiology of different risk behaviours was proved, among which unhealthy eating behaviour can also be found besides the abuse with psychoactive agents, crime, the risk of suicide and the non-protected sexual intercourse (Neumark-Sztainer, 1997b). At the same time, the results of longitudinal studies and meta-analyses have proved that depression and obesity are in a two-way connection with each other, so, obesity increases the risk of the occurrence of depression, while the presence of depression increases the risk of the development of obesity (Mannan et al., 2016; Xu et al., 2011). Similarly, to depression, a two-way connection can be supposed between anxiety and obesity as well, and such moderator factors play role in the formation of the strength and direction of this correlation as gender, the level of obesity, and the type of the anxiety disorder (Lykouras & Michopoulos, 2011; Garipey et al., 2010).

While the studies researching the protective factors influencing the health behaviour of adolescents focus mostly on the risk factors, numerous researchers agree with that, besides the risk factors, the identification of the protective factors has a significant role as well (Blum & Ireland, 2004). Among the protective factors, self-efficacy is an essentially important socio-cognitive predictor of health behaviour (Motl et al., 2002). Competence, and the feeling of self-esteem in connection with this, as one of the most important person-related abilities of self-fulfilment (Deci & Ryan, 2000) shows a positive correlation with physical activity (Barr-Anderson et al., 2007), healthy eating behaviour (Luszczynska et al., 2004; Pikó, 2002) and other health-protecting behavioural forms (Boney-McCoy et al., 1999).

## **Methods**

### *Participants*

The studies conducted by the Creative Region research group at the University of Miskolc as the part of the Higher Education Institutional Excellence Program (in Hungarian: Felsőoktatási

Intézményi Kiválósági Program, hereinafter: FIKP) launched in 2018 in Borsod-Abaúj-Zemplén County mean a determinate part of the researched area.

The research, which has been in progress for more than three years at this time, includes 25 disadvantaged settlements from the Abaúj region that is one of the most disadvantaged areas of Hungary. The main focus of this multi-stage study was primarily the children's group, and then it has been extended to the adult population as well. (Rucska et al., 2020)

The settlements of this region which participate in the project are socio-economically and infrastructurally beneficiary and/or they are suffering from the high level of unemployment that exceeds the national average.

The University of Miskolc has set the goal to get know the health status of the population of the Abaúj region based on monitored data, focusing on the population's mental state.

The first part of this current research covered the age group between 10 and 14 years, then it was extended to the adult age group as the part of the Creative Region research group. Our program consists of several parallel elements, the basis of which is the health survey and screening program performed among the population aged 10-14 and the adult population over the age of 18, and their data totally complement each other and explain their results. So, our research goal is the monitored mapping of the health status of the population living in this disadvantaged region, from which this current study focuses on the population's mental state.

The participants in the sample live in one of the 25 included settlements, and the youngsters study in one of the 7 primary schools of the region. We priorly sent written information about the program for the children's parents/guardians, and, following this, they could fill the declaration of consent.

Totally, 516 persons took part in the research.

### *Measures*

The questions focusing on mental state were examined by the Beck Depression Inventory and the Spielberg State-Trait Anxiety Inventory by the help of measuring commissioners. The anxiety questionnaire was filled by all the age groups, while Beck's inventory was filled by participants only over the age of 12 (Class 6-8.). At the evaluation, 0-9 points mean normal status, 10-18 is mild depression, 19-25 is moderately severe depression, while points above 26 show severe depression (Kovács et al., 2017).

The Spielberg State-Trait Anxiety Inventory is a survey examination used for measuring the level of anxiety. It measures anxiety as a current general condition. The questionnaire is for measuring anxiety as a personality trait, and it also indicates the strength of the tendency for developing anxiety. We used an abbreviated questionnaire containing 20 items, and the fillers of the questionnaire could give points from 1 to 4, rating how much a certain statement was typical for them. The level of anxiety is evaluated according to the total score, and it is compared to a standard value (Kovács et al., 2017). Children's and adults' data are shown together in this study. Data analysis was performed by a SPSS 20.0 software.

## Results

### Mental health

Disadvantages caused by social inequalities and their consequences influence young people's school successes and, later, their prosperity in life. Protecting the mental health of people living in the disadvantaged region is a key element of the social labour market integration, since people who are mentally healthy and able to adapt to the social changes will be able to meet with the expectations of the labour market. Under this, in our research, the effect of protective factors also occurs besides the diagnostic condition survey in the examination of mental health.

At first, students were asked about how relaxed they woke up in the mornings (Table 1). Most students usually wake up relaxed, however, 13.5% does not rest enough at night, and they wake up tired. This shows an essentially different image in adults, because there are significantly more adult people who wake up already tired.

*Table 1. Rest at night.*

	child	adult
Yes, I always sleep enough	45,5%	23,5%
I feel myself tired occasionally	40,5%	53,%
I always wake up tired	13,5%	23,5%

Among children, a weak correlation can be experienced between age and morning fatigue ( $r=0.324$ ). It is rather typical for older girls to wake up tired in the morning. Body weight also influences night rest, as youngsters with higher body weight ( $p=0.007$ ) and adults as well ( $p=0.018$ ) are more tired in the mornings.

In youngsters, the number of meals also influences night rest ( $p=0.03$ ), because the rest of students eating more than three times a day, snacking and consuming sparkling juices (usually coke and energy drink) regularly is not appropriate, which tendency cannot be experienced in the adult population. Based on the research, a child who eats not just in the evening and does not spend his/her whole day in front of the television or computer will wake up more relaxed ( $F=1.751$ ;  $p=0.038$ ).

### Depression inventory

We used the Beck Depression Inventory (Susánszky et al., 2006) and the Spielberg State-Trait Anxiety Inventory for screening mental health. The Beck Depression Inventory was completed by students over the age of 12 (Class 6-8).

In connection with data recording, children's mean value was 14.3 points, while the adults' value was a bit lower, 12.7, that shows mild depression; the dispersion of the values was increased in both cases ( $SD_{child}:4.5$ ;  $SD_{adult}:4.7$ ). In children, 8 is the minimum value and 29 is the maximum that shows severe depression. In case of adults, also 8 is the lowest, but 36 is the highest score. Based on the survey, the value of severe depression occurs in 3.6 % of the adult population. In adults, the level of depression correlates with the education level ( $r=-0.34$ ) and unemployment ( $r=-0.404$ ), so the depression value of unemployed respondents with lower

education level is higher. We found significant difference in the depression values of smokers ( $p < 0.0001$ ), alcohol consumers ( $p < 0.007$ ) and people living in crowded flats ( $p < 0.048$ ). In case of children, significant difference could be experienced in case of genders ( $p = 0.007$ ): we found higher values in case of girls than in boys (Table 2). No such significance could be detected in adults ( $p = 0.3$ ).

*Table 2.* The mean of the results of the Beck's inventory by genders

gender	children mean	SD	adult mean	SD
boy	13,3816	3,9	13,2763	5,5
girl	15,3086	4,8	12,5297	4,3
Total	14,3758	4,5	12,7328	4,7

Quite a lot of factors can influence the well-being status of 10-14 years old children. Body image is a really essential factor in youngsters' life in this age. Body weight ( $p = 0.022$ ) and doing exercises (0.02) are significantly present in the occurrence of depression symptoms of young people living in these settlements. Young people with higher body weight and doing fewer exercises are more prone to be depressed.

It can be observed from the examination that mood is also influenced by, among others, the living conditions, because in this case, significant deviations could be found in case of children as well ( $p = 0.038$ ). So, not just the adults' mental state is influenced negatively by the crowded living conditions.

#### Anxiety inventory

Anxiety as a tension state has become a permanent element of people's life. It can often be noticed only as an interim symptom, but sometimes anxiotic diseases inhibiting activities and thinking processes develop. Among others, negative life events and difficulties belong to the causes triggering anxiety (Oatley & Jenkins, 2001). Anxiety disorders are often triggered by future events involving danger (such as the diagnosis of a disease, threat etc.). The individual factors predisposing anxiety should be searched in early childhood experience (parental love), attribution style (cognitive vulnerability), self-esteem, evaluation-based thinking (positive evaluation is the precondition of further well-being), social support, genetic effects and social-environmental effects.

The mean values of both youngsters and adults (youngsters: 38.7, adults: 43.42) are below the mean value of the test (45.3), so, the majority of the population is not anxious<sup>1</sup> (Table 3). However, the dispersion of the students' answers is high (SD: 14.6), because the minimum value is 6, but the maximum is 69. This value shows more serious anxiety. 23% of the students are above the mean value (45.3), but 6% of the students are above the threshold value of 53. The values increase by the progression of age ( $p = 0.012$ ), and a significant difference can be experienced in case of genders as well ( $p = 0.00012$ ): girls are more anxious than boys (Table 4).

<sup>1</sup> Values above 53 points mean serious anxiety.

In case of adults, the dispersion of the answers is lower (SD: 7.9). Here, the lowest value is also 6, and the highest is 65 that also shows strong anxiety. 50% of the adult respondents are above the mean value (45.3), but 7.6% of the adult respondents are above the threshold value of 53. Adults' anxiety is stronger compared to children.

*Table 3.* The mean values of the results of anxiety by genders

gender	children mean score	adult mean score
boy	36,2614	43,2000
girl	41,1910	43,5000
Total	38,7401	43,4246

Moderate and weak correlation can be experienced between anxiety and night sleeplessness (children:  $r=0.373$ ; adults:  $r=0.26$ ). Living conditions also influence anxiety: crowded, inappropriate living conditions have a significant impact on the development of anxiety (children:  $p=0.073$ ; adults:  $p=0.7$ ). A moderate strength correlation can be detected between depression and anxiety (children:  $r=0.47$ ; adults:  $r=0.35$ ). Financial situation is a factor influencing anxiety in adults ( $p=0.048$ ), and they often use alcohol to relieve their anxiety ( $p=0.038$ ).

On the basis of their own declaration, 5.5% of the youngsters and 1.3% of the adults are the victims of domestic violence. There are more persons among both children and adults who are afraid of a person who may hurt them physically. These persons are mostly in the children's direct environment or the adults' homes (Table 4).

*Table 4.* The abuser's residence

	students %	adults %
school/workplace	32,7	8,3
home	16,3	22,9
friends	27,2	2,1
other	23,6	8,3

Victims are mostly girls or women.

It can be observed that students suffer from mainly school violence, but the presence of domestic violence is also not negligible. Boys are mostly the victims of school violence, while girls are mostly the victims of domestic violence. In case of the adult population, domestic violence is clearly dominant. Anxiety ( $p=0.035$ ) and depression ( $p=0.001$ ) significantly occur among the abused people.

## Discussion

Based on the results of the research, the indicators of social and health status, and the parameters of mental state within it, are worse in all comparable dimensions in the highly disadvantaged Abaúj region than in the majority society of Hungary. Our research performed in disadvantaged

settlements proves that the issue of the mental health of the population living there requires special attention. As the data recording of the adults was performed during the COVID-19 pandemic, this factor strongly influenced the mental condition assessment of the population.

The lack of restful sleep at night could be detected among more people in both the younger and the adult population that manifested along different dimensions as well. In case of children, a weak correlation could be found between age and morning fatigue: sleeplessness was more typical among older girls. Along the dimension of body weight, it can be told that the quality of sleep of youngsters and adults with greater body weight is not satisfactory, it is not appropriate. In case of young students, the number and quality of meals and the amount of time spent in front of infotechnological devices also influence the quality of their rest at night in a negative way. As the presence of restful sleep in appropriate quality and quantity is one of the basic elements of good health status, its deficiency influences it in a negative way, and it almost predicts the deterioration of health.

The occurrence of depression could be experienced in both children and adults in the examined region. In case of the adult population, low educational level, the high level of unemployment in the region, smoking, alcohol consumption and crowded home have negative effects on the level of depression. Living conditions significantly determine children's mood as well. In case of genders in children, girls showed higher depression level values than boys. Researching along the dimension of body image, it can be felt well that there is a connection between body weight, doing exercises and the occurrence of depressive symptoms of youngsters.

The anxiety values of students change along the dimensions of age and genders. Adults' anxiety is stronger compared to children that is created by mainly the lack of a future image, hopelessness and desperation. Violence and aggression markedly occur in the institutions and families of the region. Boys are mainly victims of school violence in the educational institutions, while the victims of domestic violence are mostly girls and women.

The examination of mental health performed by Rucska et al. (2020) also covered the diagnostic condition survey and the effect of protective factors. In terms of social relationships, students showed a different picture: more than 50% of the youngsters shared their problems with their friends, 27.5% of them discussed their problems with their parents and there were some children who did not share their feelings or emerging problems with anyone.

In the wide-range research performed in the region, the rate of smokers is negligible (but not insignificant) among the questioned youngsters (8.5%). Alcohol occurs as another pleasure agent in the sample, and alcohol-consuming young people are mostly smokers as well ( $p=0.001$ ), and they often wake up tired ( $r=0.278$ ) (Rucska, 2020). 76% of the students of this region, based on their subjective judgement, sit in front of a television every day and 36% of them spend a plenty of time there every day. Based on the analyses, young people watching too much television are often anxious ( $p=0.044$ ) and they do not wake up relaxed in the mornings ( $p=0.012$ ) (Rucska & Kopkáné Plachy, 2020).

## Conclusion

Differences can be indicated between highly disadvantaged micro-regions as well, since primary health care is not unified in the region. A lot of villages does not have an own GP, or if they have, he/she is over the age of 70 and serves more districts at the same time (children and adult population as well). So, the region is not homogenous in the aspect of health status. In case of some general health status indicators (such as standardized mortality rate, life expectancy at birth, the frequency of visiting a physician, cases of hospitalization), territorial differences can be observed well, and they show that the mean age of the population is essentially lower than the national average ([www.ksh.hu](http://www.ksh.hu)). Based on the study, the causes of bad health status and inappropriate mental state are complex: they are caused by both economic and cultural factors, such as poverty or low educational level. As a result, the level of health culture of the population in this region is quite low, a part of the population is not aware of basic hygienic rules or the principles of healthy lifestyle. If this knowledge would be given, they could not even use them in practice, since they do not have enough income, they do not have enough money for healthy food or creating healthy living conditions. Their situation is further exacerbated by the complex deprived life situation in which they have to live. It is a really great stress resource that is also proved by the high rate of mental diseases (depression, anxiety). In this situation, the tendency for self-care decreases as well.

We must try to reduce the negative effects of disadvantaged situation as in an early age as possible, since it significantly influences health status that gradually deteriorates by the progression of age. Bad health status develops relatively soon in children with inappropriate health culture. A holistic point of view should be used to approach and discover the problems and find options and proposals to create an adequate solution. Disadvantaged situation may significantly influence the mental health status indispensable for relative well-being. It has been proved along different dimensions that there are some factors originating from disadvantaged situation which may significantly determine mental state even in childhood, and some of them influence the adult population's mental health negatively from childhood as well.

The aim of this study was to reveal the effects of the quality of life of the deprived population on mental health in a highly disadvantaged region. The study points on that mental problems are common in all ages. In this region, a significant part of the population lacks the ability of mental coping with everyday challenges and problems. Interference with this process is inevitable, and working professional organizations and mental aid services has and may have a significant role in this.

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