



# Health status differences in subjective well-being of male and female high school students preferring sedentary leisure activities

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## Abstract

**Introduction.** Leisure may provide certain unique subjective well-being (SWB) benefits that cannot be obtained through other domains in life, as leisure is typically characterized by autonomy or greater freedom of choice than other life dimensions. The objective of the present study was to analyse the level of SWB in male and female high school students with different health status preferring sedentary leisure time activities and compare SWB dimensions (SWB-Ds) between healthy students and students with self-reported health disorders (S-RHDs). **Material and Methods.** The research sample comprised of 153 male students (healthy; n=90 and with S-RHDs; n=63) and 238 female students (healthy; n=126 and with S-RHDs; n=112) who preferred sedentary types of leisure time activities. A standardized The Bern Subjective Well-Being Questionnaire for Adolescents (BFW) was used as a primary research method. Non-parametric Mann Whitney U-test was used to assess differences between two independent groups of male and female high school students according to their self-reported health status (healthy vs. with S-RHDs). **Results.** Significantly higher level of negative SWB-Ds was found in the group of male students with S-RHDs compare healthy male students (U=1672, p=0.000, r=0.34). No significant differences were found in the comparison between healthy female students and female students with S-RHDs. **Conclusions.** Many researches indicate a very close positive connection between regular participation in sport leisure activities and SWB, but just few of them investigate correlations and comparisons among SWB, health status and sport leisure activities participation.

**Keywords:** positive and negative dimensions, male and female high school students, healthy students, self-reported health disorders, sedentary leisure time activities.

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## **INTRODUCTION**

Leisure can fulfil needs and desires that are thwarted in other areas of one's life, such as work, which can protect one's overall well-being [1]. Leisure may provide certain unique well-being benefits that cannot be obtained through other domains in life, as leisure is typically characterized by autonomy or greater freedom of choice than other life domains [2]. The influence of basic psychological needs on well-being has been documented across various life domains, such as work [3], education [4], sport [5] and across diverse cultural samples [6]. Although leisure can be solitary or social, social leisure activities strongly contribute to subjective well-being (SWB). For instance, leisure with friends has been shown to increase immediate well-being, while leisure time with a spouse benefits global well-being [7]. Social leisure activities can build social relationships, promote positive emotions, and improve quality of life [8]. Participation in the social leisure activity like sport, increase a personal well-being by higher level of the positive aspects as well as lower level of negative aspects of the SWB [9, 10].

Sedentary behaviour comprises sitting or lying, during waking hours, with low-energy expenditure [11]. There is a growing public health concern over the effects that sedentary lifestyles are having on the physical and psychological health of children and adolescents [12, 13]. Sedentary behaviour (or sitting) is ubiquitous in the developed world with young people now spending most of their leisure time in sedentary pursuits such as screen-viewing (e.g., television/DVD viewing, computer use and internet use), sedentary socialising and inactive forms of transport [14].

Following the World Health Organization's (WHO) proposal in 1948 that, "Health is not merely the absence of disease but a state of wellbeing," well-being has become an increasing focus of research, as well as conceptual debate [15]. There is a very close connection between sedentary leisure activities and health problems already in young age category people. Sedentary leisure activities like television watching, video games, internet use and computer use for work purposes, has been a contributing factor to different types of non-communicable diseases and associated with an increased risk of all-cause mortality as well as decrease the SWB of people with different health status level [16].

The objective of the present study was to analyse the level of subjective well-being in male and female high school students with different health status preferring sedentary leisure time activities. Furthermore; this study should deepen the knowledge about the subjective well-being dimensions/items and compare it between healthy students and students with self-reported health disorders.

## **METHODS**

### *Participants and data collection*

The research sample comprised of 153 high school male students (mean age  $16.88 \pm 1.37$  years of age) and 238 high school female students (mean age  $16.60 \pm 1.43$  years of age) who do not participate in any sport activity in their leisure time and so, preferred sedentary types of leisure time activities. The most preferred sedentary leisure activities in male high school students were TV watching and playing on the electronic devices and the most preferred sedentary leisure activities in female high school students were meeting/chatting with friends/socializing, listen to the music and just doing nothing. The male sample as well as the female sample of the students were divided into 2 groups according to their health status: healthy (male,  $n=90$ ; mean age  $16.73 \pm 1.33$  years of age and female,  $n=126$ ; mean age  $16.71 \pm 1.36$  years of age) and with self-reported health disorders (S-RHDs) (male,  $n=63$ ; mean age  $17.13 \pm 1.41$  years of age and female,  $n=112$ ; mean age  $16.47 \pm 1.51$  years of age). The data were collected from February to June 2019 at six different high schools and vocational schools in Slovak cities Bratislava, Nitra, Liptovský Hrádok, Ružomberok, Spišská Nová Ves and Humenné. The questionnaires were distributed in paper form and respondents were instructed on how to complete it and informed of survey questions related to health status and preferred leisure time activities. For this study, we selected only students who had prefer sedentary leisure time activities. Among the most S-RHDs students reported musculoskeletal disorders, allergies,

cardiovascular and metabolic disorders and combination of musculoskeletal and internal human systems diseases.

### *Ethics*

The study was approved by the Ethics Committee of the Faculty of Physical Education and Sports, Comenius University in Bratislava, Slovakia (ref. no. 10/2019). Informed consent to participate was obtained for the study contents, purposes, and protocols, data confidentiality and anonymity procedures, and participants' freedom to discontinue the study had been explained. All subjects signed informed consent before the enrolment.

### *The Bern Subjective Well-Being Questionnaire for Adolescents (BFW)*

A standardized, The Bern Subjective Well-Being Questionnaire for Adolescents (BFW) [17] was used as a primary research method. The BFW questionnaire consists of 28 items scale that measure both positive and negative feelings about the self, covering five main SWB dimensions (SWB-Ds): (1) "Overall life satisfaction" supported by 6 items, (2) "Current psychological problems" supported by 7 items, (3) "Current physical difficulties" supported by 8 items, (4) "Self-esteem" supported by 3 items and (5) "Depressive mood" supported by 4 items. Items of four dimensions (1, 2, 4, and 5) are answered using a 6-point Likert scale format ranging from strongly disagree (point 1) to strongly agree (point 6) and dimension 3 Current physical difficulties are answered using a 4-point Likert scale format ranging from not at all (point 1) to very often (point 4). Two SWB-Ds (1 and 4) evaluate a positive attitude of SWB and higher scores indicate higher SWB and three dimensions (2, 3 and 5) evaluate a negative attitude of SWB and higher scores indicate a lower SWB. In this study, a Slovak version of the BFW was used [18].

### *Data analysis*

The program IBM SPSS Statistics version 23.0 was used for data processing. The data were describe using absolute and relative frequencies, including the mean ( $\bar{x}$ ) and standard deviation ( $\pm$ SD). The Kolmogorov-Smirnov test was used to evaluate data normality and non-parametric Mann Whitney *U*-test was used to assess differences between two independent groups of male and female high school students (healthy versus S-RHDs). The significance level was set at  $\alpha \leq 0.05$  (\*) and  $\alpha \leq 0.01$  (\*\*). The rate of dependence (effect size) between the two samples of features was conveyed by means of the coefficient *r* ( $r > 0.90$  - very large effect size,  $r = 0.70$ - $0.90$  - large effect size,  $r = 0.50$ - $0.70$  - medium effect size,  $r = 0.30$ - $0.50$  - small effect size,  $r < 0.29$  - very small effect size) proposed by Pett [19].

## **RESULTS**

The obtained data are summarized in tables 1 and 2. Table 1 contain positive and negative feelings about the self, covering five main subjective well-being dimensions (SWB-Ds) comparison between healthy male students and with self-reported health disorders students. Table 2 include SWB-Ds comparison between healthy female students and with self-reported health disorders students. Figures 1 and 2 show a comparison of SWB-Ds in students with positive and negative dimensions depending on their state of health for men and women, respectively.

SWB-Ds analyses show significantly higher occurrence of Current psychological problems in the group of male students with S-RHDs ( $2.456 \pm 0.947$  points of the mean score) compared healthy students ( $1.965 \pm 0.785$  points of the mean score) ( $U=1928$ ,  $p=0.001$ ,  $r=0.272$ ) (Table 1). Results further revealed significantly higher occurrence of current physical difficulties, again in the group of male students with S-RHDs ( $1.968 \pm 0.510$  points of the mean score) compare healthy students ( $1.640 \pm 0.450$  points of the mean score) ( $U=1748$ ,  $p=0.001$ ,  $r=0.323$ ). Significantly higher level of depressive mood was presented again by the group of students with S-RHDs ( $2.675 \pm 1.098$  points of the mean score) compare healthy peers ( $2.325 \pm 0.932$  points of the mean score) ( $U=2329$ ,  $p=0.05$ ,  $r=0.169$ ). The higher scores of all three presented SWB-Ds presented a negative attitude of SWB and indicate a lower SWB in the group of male students with S-RHDs. Observed data generally presented significantly higher SWB in the group of healthy male students comparing students with S-RHDs showing significantly higher level of SWB negative dimensions ( $U=1672$ ,  $p=0.000$ ,  $r=0.34$ ) (Figure 1).

The results of the present study further revealed no significant differences in SWB positive dimensions (overall life satisfaction and self-esteem) between healthy male students and male students with S-RHDs (Table 1) neither by summarising both positive SWB-Ds (Figure 1).

The present study further revealed no significant differences in SWB between female high school students according to their health status non-in-one SWB-D's comparison (Table 2), neither in positive nor negative SWB-Ds comparison (Figure 2). Even the results of the present study did not confirm significant differences in different SWB-Ds between healthy female students and female students with S-RHDs, different items of SWB-Ds analyses show significantly higher worries with health, which is part of the SWB-D of Current psychological problems, in the group of female students with S-RHDs comparing healthy female peers preferring sedentary leisure activities.

Table 1. SWB-Ds comparison between male students with different health status

| SWB-Ds                         | Healthy male students (n=90)      | Male students with S-RHDs (n=63) | U      | Z      | p     | abs(r) |
|--------------------------------|-----------------------------------|----------------------------------|--------|--------|-------|--------|
|                                | $\bar{x} \pm SD$<br>(point score) |                                  |        |        |       |        |
| Overall life satisfaction      | 4.378±1.055                       | 4.447±0.941                      | 2728   | -0.397 | 0.691 | 0.034  |
| Current psychological problems | 1.965±0.785                       | 2.456±0.947                      | 1928** | -3.369 | 0.001 | 0.272  |
| Current physical difficulties  | 1.640±0.450                       | 1.968±0.510                      | 1748** | -4.045 | 0.001 | 0.323  |
| Self-esteem                    | 4.796±1.227                       | 4.444±1.285                      | 2363   | -1.763 | 0.078 | 0.139  |
| Depressive mood                | 2.325±0.932                       | 2.675±1.098                      | 2329*  | -1.889 | 0.050 | 0.169  |

SWB-Ds - subjective well-being dimensions, S-RHDs - self-reported health disorders,  $\bar{x}$  - mean, SD - standard deviation, U and Z = Mann-Whitney U-test statistics; p = statistical significance (\*p≤0.05, \*\*p≤0.01); abs(r) = absolute value of r = effect size

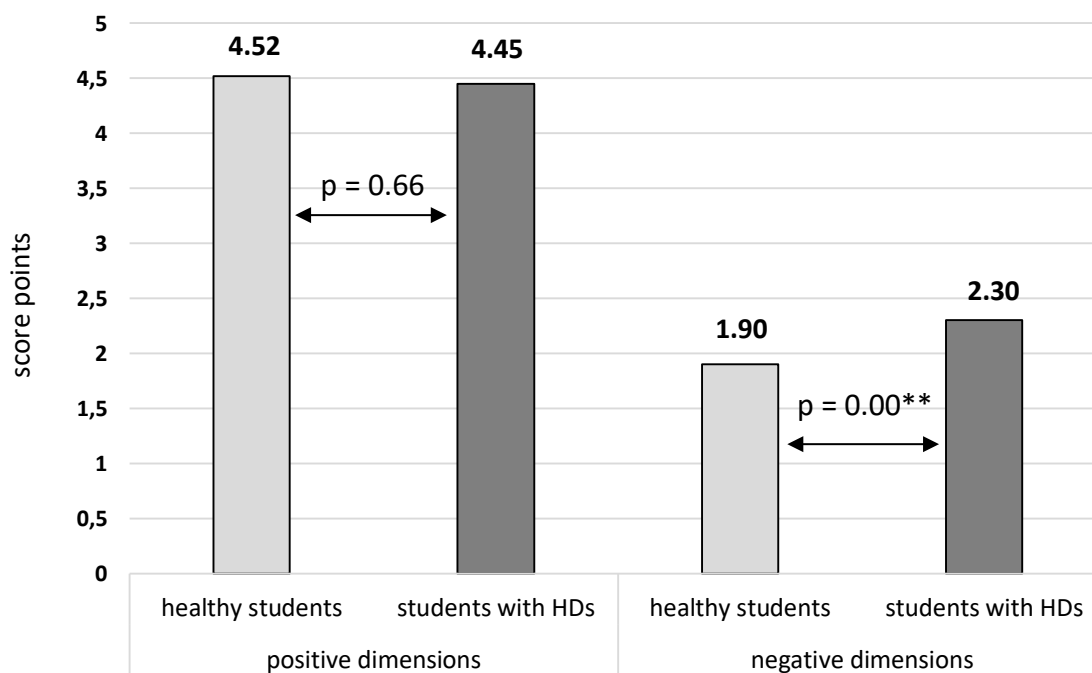


Figure 1. A comparison of SWB-Ds between healthy male students according to their health status with those with self-reported health disorders (HDs).

Table 2. SWB-Ds comparison between female students with different health status

| SWB-Ds                         | Healthy male students (n=90)      | Male students with S-RHDs (n=63) | U    | Z      | p     | abs (r) |
|--------------------------------|-----------------------------------|----------------------------------|------|--------|-------|---------|
|                                | $\bar{x} \pm SD$<br>(point score) |                                  |      |        |       |         |
| Overall life satisfaction      | 4.165±0.942                       | 4.085±1.026                      | 6819 | -0.447 | 0.655 | 0.041   |
| Current psychological problems | 2.416±0.783                       | 2.614±0.984                      | 6549 | -0.958 | 0.338 | 0.111   |
| Current physical difficulties  | 2.169±0.615                       | 2.184±0.638                      | 6932 | -0.233 | 0.815 | 0.012   |
| Self-esteem                    | 4.209±1.175                       | 4.229±1.201                      | 6971 | -0.160 | 0.873 | 0.008   |
| Depressive mood                | 2.917±1.115                       | 2.712±0.996                      | 6381 | -1.277 | 0.202 | 0.097   |

SWB-Ds - subjective well-being dimensions, S-RHDs - self-reported health disorders,  $\bar{x}$ - mean, SD - standard deviation, U and Z = Mann-Whitney U-test statistics; p = statistical significance (\*p≤0.05, \*\*p≤0.01); abs(r) = absolute value of r=effect size

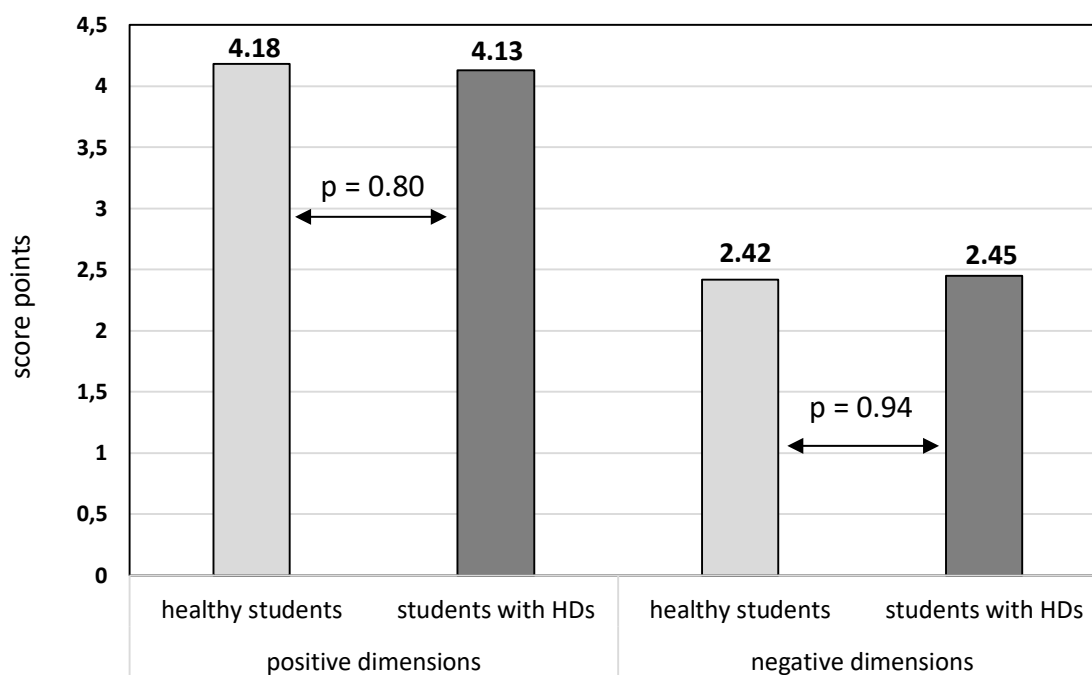


Figure 2. A comparison of SWB-Ds between healthy female students according to their health status with those with self-reported health disorders (HDs).

## DISCUSSION

Analysing different items of the current psychological problems dimension, we found that male students with S-RHDs presented significantly higher worries with health, aging, partner and finance comparing healthy peers. In the SWB-D of current physical difficulties presented male students with S-RHDs significantly higher occurrence of palpitation, illness, fatigue and headache comparing healthy male students. Items of depressive mood analyses brought significantly higher level of indolence and lassitude in the group of students with S-RHDs compare healthy male students. Even in the SWB-D Self-esteem were not found significant differences between healthy male students and their peers with S-RHDs, healthy students feel significantly more as valuable as the others comparing male students with S-RHDs preferring sedentary leisure activities.

We found significantly higher level of SWB in the group of healthy male students compare male students with S-RHDs who declared significantly higher level of negative SWB-Ds. Male high school students with S-RHDs presented significantly higher level of current psychological problems, current

physical difficulties and depressive mood comparing healthy male peers. The present study further revealed significantly higher worries with health, aging, partner and finance; significantly higher occurrence of palpitation, illness, fatigue and headache; significantly higher level of indolence and lassitude in the group of students with S-RHDs compare healthy male students preferring sedentary leisure activities.

Similar results of SWB in the group of male samples were declared by Pačesová, Šmela & Kraček [20]. Authors found significantly higher level of current psychological problems and Depressive mood in the group of males preferring sedentary leisure activities comparing males preferring sport leisure activities, who also reported significantly higher level of overall life satisfaction compare male preferring sedentary leisure activities. In the present study, no significant differences were found in comparison of SWB between female high school students with different health statuses. Different results were reported by the scientific paper of Pačesová et al. [10], who found significantly higher level of positive SWB-Ds in the group of females who preferred sport leisure activities compare females preferring sedentary leisure activities. On the other hand, they reported significantly higher level of depressive mood than females preferring sport leisure activities [10].

Another study shows significant differences in SWB between healthy male and female high school students preferring sedentary leisure activities [21]. Healthy female students preferring sedentary leisure activities reported significantly higher level of current psychological problems, current physical difficulties as well as significantly higher level of depressive mood compare healthy male peers preferring sedentary leisure activities. On the other hand, they showed significantly higher level of overall life satisfaction and Self-esteem than female high school students [21]. People who are deaf and hard of hearing preferring sedentary leisure activities achieved the highest score in two items, so they feel, that they are a person of worth, at least on an equal as well as they are able to do things as well as most other people [22]. Individuals who are deaf and hard of hearing may be disadvantaged in terms of health and participation in beneficial physical activities compared to the majority of society due to their information deficit and limited auditory perception [23]. Population with physical disabilities who prefer sedentary leisure activities revealed the positive SWB by the highest satisfaction in their life with home environment, family relations, food, and deaf population preferring sedentary leisure activities declared the positive SWB by the highest satisfaction with family relations, children and love. On the other hand, the negative SWB was presented by both minority groups with sedentary behaviour by dissatisfaction with political situation and justice [23].

Many studies have shown that regular participation in social leisure activity like sport, protects individuals from both physical [24-29] and psychological disorders [30] and so, increase the level of quality of their life and SWB [31]. According to the study's findings, male high school students with different S-RHDs reported significantly higher worries with health, aging, partner and finance, showed significantly higher occurrence of palpitation, illness, fatigue and headache comparing healthy male students. Also, female students of the present study with self-reported health disorders declared significantly higher worries with their health compare healthy female peers.

## **CONCLUSION**

Observed data of the present study reported significantly higher level of SWB in healthy male high school students compare male high school students with S-RHDs preferring sedentary types of leisure activities. No significant differences were found in SWB between healthy female high school students and female students with S-RHDs preferring sedentary leisure activities. Many researches indicate a very close positive connection between regular participation in sport leisure activities and SWB, but just few of them investigate correlations and comparisons among SWB, health status and sport leisure activities participation.

## **LIMITS OF THE STUDY**

For our investigation we used only self-reported measures of preferred leisure activities and health status level which are easy to use, less invasive and less expensive. The future investigation

needs an objective measure of the health status level and leisure time activities character (sedentary, sport) in high school students.

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