

## *Well-being and health perception of university students in Portugal: the influence of parental support and love relationship*

### BACKGROUND

The mental health of university students has been the subject of great attention from scientific investigations, not only to provide contextualised information, but additionally since high levels of well-being predicted a quality education. This study aims to evaluate the perception of well-being and health of university students, exploring the psychometric properties of the Well-being and Health Perception Scale (WbHPS) and analysing the influence of sociodemographic variables.

### PARTICIPANTS AND PROCEDURE

A questionnaire was applied to a representative sample of 840 university students in Portugal stratified by year of academic attendance and scientific area of study. The WbHPS consists of 5 items measured on a 5-point Likert scale. We considered as explanatory variables the year of study and scientific area, sex, age, love relationship, professional situation and BMI.

### RESULTS

The WbHPS showed good psychometric properties, indicating the presence of an explanatory factor of 58.45% of variance and a good internal consistency ( $\alpha = .81$ ). The obtained results identified WbHPS as being independently associated with being in a love relationship, having a normal weight and not being displaced after starting at university.

### CONCLUSIONS

It is necessary to (re)think about disease prevention and health promotion actions in higher education, with psychosocial interventions that truly reflect on the well-being and health of university students.

### KEY WORDS

higher education; happiness; life satisfaction

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## BACKGROUND

Subjective well-being (SWB), in general terms, is an assessment, both cognitive and affective, of one's own existence, the inner experience of each individual who makes a judgment of how he or she feels, or his or her degree of satisfaction with life.

The concept of SWB as a complex concept does not have a definition reached by consensus (Diener, Suh, Lucas, & Smith, 1999); however, most researchers agree that the study of SWB should comprise both cognitive and affective dimensions (Diener, Napa-Scolton, Oishi, Dzokoto, & Suh, 2000; Galinha & Ribeiro, 2005; Albuquerque & Tróccoli, 2004). The cognitive dimension of SWB is reflected in the cognitive judgment of life satisfaction, while the affective dimension is presented as descriptions of the emotional state, and may be related to pleasant (positive emotions) and unpleasant (negative emotions) feelings, both in specific terms and, overall, with happiness (Galinha & Ribeiro, 2005; Albuquerque & Tróccoli, 2004; Diener et al., 1999; Rojas & Elizondo-Lara, 2012). In other words, SWB is related to self-satisfaction and different areas of life, as well as a more holistic assessment, called overall life satisfaction or vital satisfaction.

Life satisfaction is a construct that refers to the contentment one feels in thinking about one's life as a whole (Bardagi & Hutz, 2010), subjective assessments or judgments that the individual makes regarding their experiences, if they have provided (dis)satisfaction with life. To this end, the individual compares the circumstances of life with a set of self-imposed standards and the extent to which their quality of life corresponds to those standards. Thus, according to Pavot and Diener (2009) and Diener, Inglehart, and Tay (2013), life satisfaction is a conscious cognitive judgment of life in which the judgment criteria are personal. In practical terms, individuals with high well-being should have a high degree of satisfaction with life and positive emotions and low levels of negative emotions.

As already mentioned, other important indicators for measuring SWB refer to the concept of subjective happiness, that is, the individual's perceptions of happiness or positive effects (Lyubomirsky & Lepper, 1999; Trinh & Khanh, 2019), the quality of life defined as the perception of an individual about his position in life, in the context of his culture and the value systems in which he lives, and in relation to his goals, expectations, standards and concerns (The WHOQOL Group, 1995). From this perspective, the definitions in the literature of health-related quality of life, life satisfaction, SWB and happiness suggest a conceptual overlap (Camfield & Skevington, 2008), and these dimensions are closely related (Medvedev & Landhuis, 2018).

Emerging adulthood, considered a new life transition phase in which university students are included,

is viewed as a time of exploration and experimentation (Arnett, 2000). This phase, by itself, can be a stage of the life cycle that is somewhat troubled, in which individuals are more independent in relation to parental control, but still free from commitments and responsibilities (Arnett, 2000). In addition, entry into higher education includes psychosocial development and a stage that leads to a number of new and sometimes adverse situations that can have negative repercussions (Abdel-Khalek, 2013; Auerbach et al., 2016; Demirli, Türkmen, & Arık, 2015; Feldman & Dreher, 2012; Molina et al., 2012; Pedrelli, Nyer, Yeung, Zulauf, & Wilens, 2015; Stoyles, Chadwick, & Caputi, 2015) on academic performance and the entire teaching-learning process (American College Health Association, 2018; Bücken, Nuraydin, Simonsmeier, Schneider, & Luhmann, 2018; Fernández, Araújo, Vacas, Almeida, & González, 2017; Ratelle, Simard, & Guay, 2013).

Additionally, these can have effects on general well-being, contributing to an increase in depression, licit and illicit drug abuse and eating disorders in college students (Auerbach et al., 2016; Benotsch, Koester, Luckman, Martin, & Cejka, 2011; Hingson, Zha, & Weitzman, 2009; Monahan, Bracken-Minor, McCausland, McDevitt-Murphy, & Murphy, 2012). In this climate, although they may be difficult to achieve, life satisfaction and happiness are extremely important aspects in the lives of college students, although difficult to achieve (Diener et al., 2000) and impacting their attitudes and behaviours (Khramtsova, Saarnio, Gordeeva, & Williams, 2007).

Although entering higher education is a controversial period in its own right and deserves special attention, and many young adults suffer from psychological distress during their first year of college (Davidson, Feldman, & Margalit, 2012), the study of well-being must be considered throughout the academic path. This is because other studies have shown that barriers to well-being, such as anxiety, stress and depression, increase with permanence in higher education (Beiter et al., 2015; Elias, Ping, & Abdullah, 2011; Fawzy & Hamed, 2017), with one in five university students reporting having an active mental illness (American College Health Association, 2018).

In this framework, this study aimed to analyse the psychometric properties of the Well-being and Health Perception Scale (WbHPS) and to explore predictors of WbHP among both first-year and third-year university students in Portugal.

## PARTICIPANTS AND PROCEDURE

### PARTICIPANTS

Data collection was carried out at a Portuguese university in the academic year 2018/2019. The total

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sample was estimated from a population of 5447 students enrolled in the 1st and 3rd year of the undergraduate and master's degrees, according to a confidence interval of 95% and a maximum error of 3%. For this purpose, stratified probabilistic sampling of university students was performed according to the year of study and the scientific area of study. In this sense, the different undergraduate and master's degrees were divided into scientific areas (as defined by the Foundation for Science and Technology): Human and social sciences, Law and economic sciences, Exact and natural sciences and Engineering sciences. Excluded from the sample were courses related to health sciences and postgraduate integrated masters or masters courses or those who did not have classes in the 1<sup>st</sup> or 3<sup>rd</sup> year.

The response rate was 96.2% (95% CI 94.8-97.6), and 33 questionnaires were excluded for not being answered or incorrectly filled out. For reasons of proportionality with the target population, the majority of respondents were in the first year of study ( $n = 464$ , 55.2%) and were female ( $n = 465$ , 55.4%). The sample of the present study mainly includes students who are not in a love relationship ( $n = 486$ , 58.3%), who changed residence at the time of entering higher education ( $n = 537$ , 64.9%). In addition, the majority of respondents were full-time student ( $n = 739$ , 88.8%) and had a BMI corresponding to normal weight ( $n = 599$ , 73.1%). The average age of the sample is 20.78 ( $SD = 4.22$ ), ranging from 18 to 54, and only 3% of the students are 30 years old or older.

## PROCEDURE

WbHPS development was carried out in three stages: scale construction (1<sup>st</sup> stage); content validity (2<sup>nd</sup> stage); psychometric validity (3<sup>rd</sup> stage). For the construction of the scale (1<sup>st</sup> stage) we proceeded by consulting and analysing other instruments of SWB, quality of life and happiness for young adults and/or university students. Considering the various national and international instruments, an analytical matrix was created and questions or items were selected in the original form of the following instruments: the World Health Organization Quality of Life Instruments – BREF (WHOQOL-BREF; Vaz Serra et al., 2006); the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985); the Subjective Well-Being Scale (SWBS; Albuquerque & Tróccoli, 2004); the Happiness Measure (HM; Fordyce, 1977, 1988), the Overall Life Satisfaction (OLS; Hutz, 2014); the Personal Wellbeing Index (PWI; Cummins, Eckersley, Pallant, van Vugt, & Misajon, 2003); the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS; Huebner, Seligson, Valois, & Suldo, 2006); the Oxford Happiness Questionnaire (OHQ; Hills & Argyle, 2002); the single item Delighted-Terrible

Scale (Andrews, 1974), the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999); Self-Anchoring (Cantril, 1965); the Global Happiness Item (Bradburn, 1969). Then, the different items were divided according to the cognitive and affective dimension of SWB, and those with the same semantic similarities were eliminated.

Given the conceptual overlap of SWB and the literature review by Medvedev and Landhuis (2018), the items were grouped into different categories: quality of life, life satisfaction, self-satisfaction, happiness, health, positive and negative effects. From these dimensions, a response item was created for each of the dimensions, except for positive and negative effects, for the sake of measuring the predicted scale. Note that a 5-point Likert scale response format was adopted.

According to Diener and collaborators (2013), well-being scales can be influenced by factors such as the order of the questions, the importance attached to certain aspects, or social comparison. In constructing this scale we tried to control these effects. Thus, the definite order meant that respondents reflected primarily on their life in general, then moved on to specific situations such as self-satisfaction. Additionally, information about health and finances, rather than only using information about social relationships or academic life, that is, considering all aspects of life, was used. In addition, the wording of certain items directed the answers to comparison with people of the same age, for example, "Compared with people your age, how do you rate your overall health?"

The scale in question was called the Well-being and Health Perception Scale (WbHPS), omitting the frequently used subjective term. The "subjective" descriptor delimits the construct indicating an assessment of life satisfaction from one's own perspective. And while this scale focuses on each individual's personal view of his or her own life, the statements in each of the items predict that assessment of well-being is not as subjective as on other scales analysed.

Then, for the content validity (2<sup>nd</sup> stage) 10 PhD researchers from several Portuguese universities with recognized work in the area of Health Education in Higher Education were invited. For validity purposes, the feedback from 5 of the invited investigators was considered and all proposed semantic changes were considered. In the same way, the instrument was applied to 12 university students, using the "thinking aloud" method (Almeida & Freire, 2008) to identify items that might be confusing and exclude less relevant or redundant items. In order to obtain greater objectivity, the following scale was used as the criterion of clarity evaluation for each item: 1 – *confused*; 2 – *unclear*; 3 – *clear*. The item related to quality of life was considered redundant

and was eliminated. Additionally, we reflected on the need to add an item related to satisfaction with physical form and lifestyle changes after entering higher education.

After the suggested restatements, the preliminary version of the WbHPS was presented to a sample of 32 students, with an average age of  $22.12 \pm 5.98$  years. This pre-test was performed in order to observe the average filling time and possible inconsistencies due to possible misunderstanding of the questions. In this sense, it was found that the issues were understood and there were no misconceptions and no further linguistic changes were necessary. The scale obtained a Cronbach's  $\alpha$  of .79, including the 6 scale items.

The questions of sociodemographic characterization included year of study and scientific area, sex, age, love relationship, weight and height (to calculate body mass index – BMI), current residence and professional situation.

The application of the instrument was performed in the classroom context for all students in the sample and in paper-and-pencil format for all students in the sample, after presenting the study objectives and informed consent. All ethical requirements for research procedures with human beings were met, and the present study was approved by the Ethics Committee for Research in Social and Human Sciences (CEICSH), of the University of Minho Ethics Council, under the protocol CEICSH 009/2019.

Data were analysed using IBM SPSS Statistics for Windows, version 25.0. The structure of the WbHPS scale was assessed by exploratory factor analysis (EFA) using the principal component analysis (PCA) method. For this, Bartlett's sphericity test was applied and the Kaiser-Meyer-Olkin (KMO) sampling adequacy measure was determined to test the validity of the factor analysis. The number of factors to be extracted was determined by the Kaiser criterion, considering the percentage of variance explained (Marôco, 2018). The factor loadings of each item and their commonalities ( $h^2$ ) were also evaluated. To evaluate the reliability of the scale, the item-total and

inter-item correlation coefficients were calculated and for the internal consistency evaluation, Cronbach's  $\alpha$  values were calculated.

A generalized linear model was developed including all sociodemographic variables with the intention of exploring possible predictors of well-being and health perception. A significance level of .05 was considered.

## RESULTS

### PSYCHOMETRIC PROPERTIES OF THE SCALE

Initially, a lifestyle changes item had been incorporated into the scale after entering higher education; however, after analysing the correlations and reliability of the construct, it was found that this item had a low correlation with the other items and that their exclusion from the scale increased the scale's reliability index. Thus, all analyses presented were performed for a scale of 5 items related to the dimensions: Satisfaction with life; Self-satisfaction; Felt happiness; Perceived health and Satisfaction with physical form. WbHPS showed good internal consistency ( $\alpha = .81$ ). Scale items had an item-total correlation between .47 and .74 and the Cronbach's  $\alpha$  value if the item is eliminated between .73 and .81. The item "Perceived Health" showed the least correlation with the scale, slightly increasing the value of Cronbach's  $\alpha$  if it were eliminated. However, given its importance, we chose to keep it. Also, the inter-item correlation coefficients for the scale ranged from .33 to .73.

Before performing the factor analysis, the assumptions of homoscedasticity and sphericity were verified. In the sample, the KMO value was .79 and Bartlett's sphericity test was significant ( $\chi^2(10) = 1663.08, p < .001$ ), showing that EFA is executable (Field, 2009).

The PCA results suggested the extraction of a factor that explains 58.4% of the explained variance, and the factor weights obtained ranged from .61 to .87. The item "Perceived health" presented the lowest factor weight in the model presented (Table 1).

WbHPS is strongly correlated with all of its component items ( $r_{\text{SATISFACTION LIFE}} = .77, p < .001, r_{\text{SELSATISFACTION}} = .82, p < .001, r_{\text{FELT HAPPINESS}} = .72, p < .001, r_{\text{PERCEIVED HEALTH}} = .63, p < .001, r_{\text{PHYSICAL FORM}} = .72, p < .001$ ).

Table 2 shows that the average for the 5 items that make up the scale ranged from 3.32 ( $SD = 1.01$ ) to 3.89 ( $SD = 0.88$ ), corresponding to the items "Satisfaction with physical form" and "Satisfaction with life", respectively. In this sense, 77.8% ( $n = 652$ ) of respondents indicated that they were satisfied or very satisfied with their life and 49.5% ( $n = 415$ ) with their physical form. The average WbHPS was  $3.73 \pm 0.64$ , ranging from 1 to 5 (Table 2).

Table 1

Factorial load of each WbHPS item

WbHPS items	Factorial load
Satisfaction with life	.84
Self-satisfaction	.87
Felt happiness	.81
Perceived health	.61
Satisfaction with physical form	.65
Variance explained (%)	58.37

Table 2

Mean and standard deviation of WbHPS and frequencies (%) of each WbHPS item

	<i>M</i>	<i>SD</i>	<i>n</i> (%)				
			Very dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very satisfied
Satisfaction with life	3.89	0.88	18 (2.1)	49 (5.8)	119 (14.2)	475 (56.7)	177 (21.1)
Self-satisfaction	3.72	0.94	24 (2.9)	78 (9.3)	143 (17.1)	543 (54.1)	140 (16.7)
Satisfaction with physical form	3.32	1.01	31 (3.7)	160 (19.1)	232 (27.7)	337 (40.2)	78 (9.3)
			Very unhappy	Unhappy	Neither happy nor unhappy	Happy	Very happy
Felt happiness	3.87	0.76	10 (1.2)	29 (3.5)	157 (18.8)	507 (60.6)	134 (16.0)
			Terrible	Bad	Reasonable	Good	Great
Perceived health	3.85	0.79	9 (1.1)	28 (3.3)	195 (23.2)	458 (54.6)	149 (17.8)
WbHPS	18.66	3.32					

Well-being and health perception of university students

#### WBHPS ACCORDING TO SOCIODEMOGRAPHIC CHARACTERISTICS

The bivariate analysis showed that the scientific area and year of study have no effect on students' perception of well-being and health ( $F(3, 829) = 2.55, p > .05, t(831) = -1.00, p > .05$ ). However, when considering the love relationship, current residence and BMI there were statistically significant differences of means between the different groups for each independent variable and WbHPS ( $t(824) = 4.13, p < .001, t(819) = -3.25, p < .001, F(3, 809) = 14.99, p < .001$ , respectively). This indicates that respondents currently in a love relationship have, on average, a greater perception of well-being and health compared to those who have no romantic relationship ( $M = 19.20 \pm 3.09, M = 18.24 \pm 3.43$ , respectively). Also, students who had not changed their residence after entering higher education ( $M = 19.96 \pm 3.21$ ) show higher well-being and health compared to students who had left their familial home ( $M = 18.17 \pm 3.39$ ). Considering BMI, it was concluded that students with BMI classified as overweight had a lower level of well-being and health ( $M = 17.47 \pm 3.28$ ) compared to students with normal weight ( $M = 19.03 \pm 3.26$ ) and with low weight ( $M = 18.28 \pm 3.01$ ). Regarding the sex of respondents and professional situation, there were no statistically significant differences between groups as a function of WbHPS ( $t(831) = 1.84, p > .05, t(823) = -0.57, p > .05$ , respectively).

Table 3 presents the associations between scores of WbHPS and other covariates. WbHPS was independently associated with having a love relationship,

having normal weight and not being displaced after starting at university.

#### DISCUSSION

The results of this study suggest that WbHPS shows excellent psychometric properties, being characterized by good internal consistency and a single explanatory factor of 58.4% of variance. This corroborates with Diener et al. (1985), who point out that factorial analyses of multi-item life satisfaction scales often reveal a single underlying dimension. The WbHPS briefly and broadly presents its key advantages by assessing the domain of overall life satisfaction and the affective component of well-being.

The results revealed a significant proportion of students who are satisfied or very satisfied with their lives ( $n = 652, 77.8\%$ ), results similar to other national (Bertoquini & Pais-Ribeiro, 2006) and international studies (Arias-de la Torre, Molina, Fernández-Villa, Artazcoz, & Martín, 2019b; Auerbach et al., 2016; Bardagi & Hutz, 2010; Hardeman et al., 2015; Pedrelli et al., 2015; Storrie, Ahern, & Tuckett, 2010). However, 22.8% of students were very dissatisfied or dissatisfied with their physical form, an aspect that should be considered when designing health education interventions.

In a meta-analysis by Wood, Rhodes, and Whelan (1989), it was found that women revealed more happiness than men. However, according to Marrero Quevedo, González Villalobos, and Carballeira

Table 3  
Standardized  $\beta$ -coefficients (generalized linear model – gamma regression) of multivariate analyses of the WbHPS scores according to other covariates ( $n = 840$ )

Predictors	Exp ( $\beta$ )	95% CI
Year of study		
1 <sup>st</sup> year	0.98	0.98-1.03
3 <sup>rd</sup> year	1.00	
Scientific area		
Engineering Sciences	0.96	0.91-1.01
Exact and Natural Sciences	0.99	0.93-1.06
Law and Economic Sciences	0.98	0.92-1.04
Human and Social Sciences	1.00	
Sex		
Male	0.99	0.96-1.02
Female	1.00	
Age (years)	1.00	1.00-1.01
Love relationship		
Yes	1.05**	1.01-1.08
No	1.00	
Current residence		
Displaced	0.96*	0.93-0.99
Not displaced	1.00	
BMI		
Low weight	1.05	0.93-0.99
Normal weight	1.05***	0.99-1.11
Overweight	1.00	
Professional situation		
Full time student	1.02	0.97-1.07
Worker / Student	1.00	

Note. AIC = 4199.32;  $p(\text{model}) < .01$ ;  $p(\text{intercept}) < .01$ . \* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$ .

Abella (2014), the most recent investigations show inconsistencies regarding the influence of gender on well-being. The present study did not reveal statistically significant differences between boys and girls, as were found in others studies (Bardagi & Hutz, 2010; Barrantes-Brais & Ureña-Bonilla, 2015).

In the sample of college students no significant differences were found between age or year of academic attendance and perception of well-being and

health. These data differ from the few studies available, which seem to indicate a decrease in well-being levels along the academic path (Beiter et al., 2015; Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010; Fernández et al., 2017; Kovess-Masfety et al., 2016; Pedrelli et al., 2015; Rotenstein et al., 2016).

This study showed differences between the love relationship and the perception of well-being and health. As found in other scientific studies (Czyżowska, Gurba, Czyżowska, & Kalus, 2020; Hills & Argyle, 2002; Myers & Diener, 1995; Ratelle et al., 2013), people in a loving relationship have a better perception of well-being and health. These data corroborate other international studies on well-being and happiness in college students by indicating that being in a loving relationship provides not only greater emotional stability but also greater well-being in all dimensions of life. (Diener et al., 1999; Lu, 2000; Marrero Quevedo et al., 2014).

The results indicated that non-displaced students have higher levels of well-being, as in other studies (Arias-de la Torre et al., 2019a; Fernández et al., 2017; Pedrelli et al., 2015; Rotenstein et al., 2016; Storrie et al., 2010). Family support continues to be one of the predictors of well-being for university students, both economically and emotionally. In line with the concept of emerging adulthood (Arnett, 2000), students are still free of the obligations inherent to adulthood and they are still dependent on their parents. In addition, if there was sufficient family support, this could help the individual develop their psychosocial and academic skills, free of financial responsibilities. Thus, it is important that in the processes of adaptation to higher education, implemented by universities, they consider strategies to improve family support (Aguayo et al., 2019; Claxton, Onwumere, & Fornells-Ambrojo, 2017; Kovess-Masfety et al., 2016).

The body mass index was considered a predictor of the model found in the present study. In this sense, it was found that overweight students showed a lower level of well-being than students with normal weight or underweight (Chen et al., 2016; Vankim & Nelson, 2013).

Finally, the economic factor can be considered relevant to the achievement of the well-being of university students (Arias-de la Torre, Vilagut, Martín, Molina, & Alonso, 2018), mainly due to the financial pressure on families (Arias-de la Torre et al., 2019b). On the other hand, being a student-worker can be a source of stress for the student (Aguayo et al., 2019). The multivariate analysis performed did not show the professional situation as a predictor of the level of well-being and health perception. This situation is different from other scientific studies with the university population, which show increased levels of psychological suffering caused by financial pressure (Barbaglia, Ten Have, Dorsselaer, Alonso, & de Graaf, 2015; Kovess-Masfety et al., 2016).

## LIMITATIONS AND FUTURE RESEARCH

The most common limitations of this kind of welfare studies, and to which the present study is not immune, as reported by Eid and Larsen (2008), involve the transitions presented by mood states and contextual influences, which may affect participants' responses. However, throughout the data collection process, efforts were made to minimize these effects by collecting data in the classroom context, in different classes and at different times of the day.

The geographical restriction of the present study should be considered in this subsection, and the study should be extended to include other higher education institutions, as well as the study of the psychometric properties of the scale to other populations.

Another limitation concerns the study design. Its cross-sectional nature precludes causal interpretation. However, this study is the starting point for further analyses with a longitudinal perspective. In other words, future longitudinal research is needed to understand the impact of a year of study on well-being and health perception.

Finally, we believe that future research should consider lack of satisfaction with the decision to choose the field of study, the results that the student obtains during his studies and the participants' social support; their support from peers or friends. It is also important to take into account student activity in scientific, sports and other organizations at the university and beyond. In this sense, it is worth considering the division of variables: individual and relational (Trinh & Khanh, 2019).

## CONCLUSIONS

Well-being (subjective) is a construct made up of different but distinctly related clearing components. People with higher levels of perception of well-being and health tend to be healthier, happier and more satisfied.

The growing number of higher education welfare programmes underline the efforts of higher education institutions to improve the well-being and health of college students (Chow, 2005). This study identifies this need, reinforcing the urgency of creating disease prevention and health promotion actions, with psychosocial interventions that allow university students to reflect on their well-being and happiness, contributing to their holistic development.

The results indicate that it is necessary to (re) think about disease prevention and health promotion actions in higher education, with psychosocial interventions that truly reflect on the well-being and health of university students.

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*Well-being and health perception of university students*

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