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UNIVERSITY STUDENTS' WELL-BEING AND SELF-RATED HEALTH IN ITALY AND SERBIA: EXPLORING SOCIAL AND HEALTH DETERMINANTS

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BLAGOSTANJE I SAMOPROCENA ZDRAVLJA STUDENATA UNIVERZITETA U ITALIJI I SRBIJI: ISTRAŽIVANJE DRUŠTVENIH I ZDRAVSTVENIH DETERMINANTI

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Abstract

Our objectives were to examine the well-being scales, to compare the levels of well-being and its determinants in Italian and Serbian samples of university students, and to find the determinants of self-rated health (SRH) among students based on data from Italian and Serbian household health surveys. In the first phase, 695 Serbian and 747 Italiansubjects were handled a questionnaire regardingmultidimensional well-being(MWB) and five sections: socio-demographic characteristics, personal goal appraisals, mental health, physical activity, and life style factors.In the second, 2482 Italianand 2143 Serbianstudents aged 18-30 were extracted from 2013 national health surveys in Italy and Serbia. SRH was the dependent variable while the independent variables were divided into socio-demographics and health behaviors.The difference in MWB and SRH between Italians and Serbians is in favor of the latter or not significant. Disconfirming the results from general population surveys, when it comes to young adults, Italians are certainly not happier or healthier than Serbians. Considering the cross-cultural reliability and validity analysis, the well-being scales can be used as a valid research tool in future studies.

Keywords: well-being, self-rated health, young adults, Italy, Serbia.

Scientific field: Medicine.

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Sažetak

Naši ciljevi su bili ispitivanje skale blagostanja, ispitivanje nivoa blagostanjakao i njegovih determinantimeđu studentima u Italiji i u Srbiji i ispitivanje determinantisamoprocenjenog zdravlja među studentimana osnovu podataka iz istraživanja zdravlja na uzorcima italijanskih i srpskih domaćinstava. U prvoj fazi, 695 srpskihi 747 italijanskih studenata popunili su anketu o višestrukom blagostanju i pet delova: socio-demografske karakteristike, procena ličnih ciljeva, mentalno zdravlje, fizička aktivnost i faktori životnog stila. U drugoj, 2482 studenta od 18 do 30 godina iz Italijei 2143 iz Srbije su preuzeti izNacionalne ankete o zdravlju iz 2013. godine za odraslu populaciju Italije i Srbije. Samoprocenjeno zdravlje je bilo zavisna varijabla dok nezavisne varijable su podeljene na socio-demografske karakteristike i zdravstvene navike. Razlike za višestruko blagostanje i samoprocenjeno zdravlje između Italijana i Srba bile su u korist Srba ili nisu bile značajne. Nasuprot rezultatima Nacionalne ankete u opštoj populaciji, kada je reč o mladima, Italijani sigurno nisu srećniji ili zdraviji od Srba. Uzimajući u obzir analizu kroz-kulturalne pouzdanosti i validnosti, skale blagostanja mogu da se koriste kao validni alati za buduća istraživanja.

Ključne reči: blagostanje, samoprocenjeno zdravlje, mladi, Italija, Srbija.

Naučna oblast: Medicina.

Uža naučna oblast: Javno zdravlje.

UDK broj:_____.

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University students' well-being and self-rated health in Italy and Serbia:

Exploring social and health determinants

1. INTRODUCTION

Well-being has become an important topic of interest related to health and its determinants. Research in this field has been growing increasingly over the last 20 years (1). As a public health goal, the concept has gone beyond indicators of health, such as life expectancy or mortality, because it is one of the most complete and profound reflection of health. In the new European health policy "Health 2020", signed and adopted by 53 Member States of the Region in September 2012, the World Health Organization (WHO) has stated that the aim is to improve significantly the health and well-being of populations (2).Moreover, in September 2015, 193 countries members of United Nations (UN) signed the "2030 Agenda for Sustainable Development". The world has started efforts to achieve 17 Sustainable Development Goals (SDGs) over the next 15 years, and goal number 3 is specific: "To ensure healthy lives and promote well-being for all at all ages" (3).

A specific area of research on well-being regards young adults – individuals aged 18 to 30 – and a call for improving their health and well-being has been launched (4).

1.1. The concept of well-being

The origin of word well-being can be in found in the Jung's concept of individuation that is the manner in which a thing is identified as distinguished from other things (5). This process sees innate elements of personality, the components of the immature psyche, and the experiences of the person's life become integrated, allowing the person to access a state of well-being. During the 1950s positive emotions and feelings of well-being became a new

topic of scientific and research activities, predominantly among psychologists. Within the discipline, a consensus grew about the idea that self-reports on how well life is going can convey important information on underlying emotional status. The next step was to start measuring what is best referred today to as subjective well-being (henceforth, SWB). SWB is very often related to happiness,however, it is not the same though the terms are often used synonymously. SWB, in fact, is a broader category of phenomena that includes people's emotional responses, domain satisfactions, and global judgments of life satisfaction (6).

SWB's definitions are multiple and the concept is also described as a person's cognitive and affective evaluations of his or her life (7). In this case, the cognitive element refers to what one thinks about his or her life satisfaction in global terms (life as a whole) and in domain terms (in specific areas of life, such as work, relationships, etc.). On the other hand, the affective element refers to emotions, moods, and feelings. Affect is considered positive when the emotions, moods, and feelings are experienced as pleasant (e.g. joy, elation, affection, etc.). Differently, affect is deemed negative when the emotions, moods, and feelings sensed are unpleasant (e.g. guilt, anger, shame, etc.).

A person who has a high level of satisfaction with their life, and who experiences a greater positive affect and little or less negative affect, would be deemed to have a high level of SWB.

1.1.1. Historical background of the well-being's study

Knowing the historical background to the well-being'sstudy is necessary to approach the definition of well-being.

Substantial gains in world human development are observed since the mid-19th century and especially over the period 1913 to 1970. A major advance across the board took place after the Second World War, just at the time of an economic globalization backlash, which resulted from substantial gains in longevity and education (8). Thus, while real GDP per capita stagnated or even declined as world commodity and factor markets disintegrated, health and education practices became increasingly globalized, resulting in a major advance in human development.

Looking at the Three Worlds Theory, developed by Chinese Communist leader Mao Zedong (9), the gap between the first and the third world widened in absolute terms, but an incomplete catching up took place across the board until the 1970s. In that period, Asia, driven by China and India, and to lesser extent Latin America and North Africa, managed to recover.

In the long run, social dimensions have driven human development gains. Longevity accounts for the larger share during the first half of the 20th century. Education, and to lesser extent life expectancy at birth, also played their parts in this process. The only period in which substantial gains in longevity were achieved worldwide was that of the epidemiological, or first health, transition.That is the phase in which persistent gains in lower mortality and higher survival were achieved as infectious disease gave way to chronic disease (10). This season was experienced from the 1920s and the 1960s. After this era, longevity gains slowed down everywhere because of the exhaustion of first health transition. All the world regions fell behind in terms of the longevity index as a result of a second health transition. At the turn of 20th century, in the advanced countries, mortality started falling among the adults due to respiratory and cardiovascular diseases being fought

more efficiently and to better health and nutrition during childhood (11). The absence from this second health transition helps to explain why the developing regions have fallen behind in terms of human development and could partially explain also the lack of per capita income growth.

In the western world, medical technological change – such as, the diffusion of the germ theory of disease (1880s), new vaccines (1890s), sulfa drugs to cure infectious diseases (late 1930s) and antibiotics (1950s) – has been a main force behind the major advancement in longevity and quality of life. Other forces contributing to this dynamic have been economic growth, through nutrition improvements that strengthened the immune system and reduced morbidity, and public provision of health (12). On the other hand, in the third world, the main achievements were driven by low-cost public health measures and the diffusion of hygienic practices (13).

In such environment the study of well-being become important, as it presents the composite part of longevity and includes better quality of life.

1.1.2. Different definitions of well-being

Above the previous attempts to delimit the field of well-being, the question of how the concept should be defined still remains largely unresolved. This deficit can be traced back to Ryff (9), who believed that there has been particular neglect in the task of defining the essential features of psychological well-being (henceforth, PWB).

An early attempt to define well-being was within Bradburn's (15) classic research ofPWB. His work marked a move away from the diagnosis of psychiatric cases to the study of psychological reactions of ordinary people in their daily lives. His discussion stemmed from

his interest in how individuals coped with the daily difficulties that they faced. The author highlighted how PWB, which he also referred to as happiness, was the variable that stands out as being of primary importance. The majority of his research focused on the distinction between positive and negative affect. His model specified that an individual will be high in PWB in the degree to which he/she has an excess of positive over negative affect and will be low in well-being in the degree to which negative affect predominates over positive.

In 1978, Shin and Johnson seemed to move closer to defining well-being by stating that it is an overall assessment of a person's quality of life according to his/her own chosen criteria (16). This definition connects for the first time the ideas of well-being and quality of life, which today are sometimes used interchangeably. The World Health Organization (WHO) defined quality of life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (17). A narrow emphasis on quality of life cannot adequately help to define well-being. Indeed, it would seem that quality of life appears to be a dimension of well-being rather than an all-embracing definition.

The focus on positive functioning dates back to the work of Rogers, who discussed well-being in terms of the good life (18). He believed that each individual strived towards becoming a fully functioning person open to experience and trusting in his/her own organism. His work has partly influenced the work of Ryff and Singer in their development of core dimensions of PWB: self-acceptance, purpose in life, environmental mastery, positive relationships, personal growth, and autonomy (19).

Another crucial author who helped marking the field of well-being is Keyes, who views mental health as a syndrome of well-being symptoms: he believes that mental health is created when an individual exhibits a high level on at least one symptom of hedonia and just over half the symptoms of eudaimonia, i.e., positive functioning in life (20). His work has led to the use of the terms flourishing and languishing as scientific concepts, rather than as philosophical ideals. The term flourishing has now become synonymous with the positive psychology movement, the branch of psychology founded by Seligman that uses scientific understanding and effective intervention to aid in the achievement of a satisfactory life (21).

The author, in one of his recently published book entitled *Flourish*, outlined his new dynamic concept of well-being, which moves away from theories based purely on happiness. According to the former President of the American Psychological Association, the notion of happiness is an awkward construct that hides the true, complex, nature of human flourishing. He used to think that the topic of positive psychology was happiness and then he changed his mind, embracing well-being as the discipline's topic. Moreover, he added that the gold standard for measuring well-being is flourishing and that the goal of positive psychology is to increase flourishing. In *Flourish*, he refused to seek a definition of well-being, which, in his view, is a construct with several measurable elements, each a real thing, each contributing, but none defining well-being. The measurable elements are a set of building blocks for a flourishing life: Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment (PERMA). (22)

To conclude, it seems,following scientific observations, not necessary to focus on definitions, when the spotlight should be on the components of well-being (23).

As we mentioned earlier, in the pursuit of understanding well-being, there are two main theoretical perspectives which focus on addressing the question of what makes people feel good and happy, the hedonic and eudaimonic approaches (24).

1.1.2.1. Hedonic approach to well-being

In its narrowest and most traditionally measured form, hedonic well-being (henceforth, HW) is the series of momentary affective states that occur through time. These range from the moment-to-moment assessments of affect to instruments that require reflection by respondents about longer time periods, such as how they felt yesterday (25). The typical HW question is "How do you feel at this moment?"A reasonable argument can be made that the terms HW and emotions are synonymous; and sometimes HW is called emotional well-being. Emotions can be fleeting states that vary from minute to minute; however, when emotions are aggregated over longer periods of time, they become more stable and reliable measures that may better fulfill the needs of well-being researchers. Historically, the standard period studied HW analysis has been a single day.

HW measures are designed to capture emotions as they fluctuate from moment to moment and in response to day-to-day events and activities. They therefore aim to be reactive to a respondent's immediate focus. Although life evaluation, positive experience, and negative experience are not completely separable—they correlate to some extent, but HW is distinctive enough from overall life evaluation to warrant pursuing it as a separate element in surveys. When it comes to the components' analysis, the most obvious analytic decision for survey design is how to allocate questions between negative and positive affect (25). They can reflect different aspects of life that are relevant to policy making. Thus, measuring

all in national and specialized surveys is recommended (26). For example, an activity may produce both negative and positive feelings in a person, or certain individuals may be predisposed to experience both positives and negatives more strongly. Therefore, assessments of HW should always include both positive and negative dimensions in order for meaningful inferences to be drawn. Additionally, indicators of negative emotion are distinct from one other —sadness, worry, stress, anger, frustration, etc.— and tend to be more differentiated than those on the positive side, which move more in unison (27). Negative emotions do not track in parallel, as the positive emotion questions incline to.

Beyond and possibly twisting with HW are additional types of SWB that may be of potential interest to policy makers, leaders, and citizens.

1.1.2.2. Eudaimonic approach to well-being

A number of alternative or supplemental forms have been placed under the rubric of eudaimonic well-being (henceforth, EW): these include optimism, quality of social relationships, meaning and purpose in life, skills, freedom to make decisions, engagement, and self-worth. EW comes into play if one assumes that people commonly strive for more than just happiness and one believes a worthwhile societal goal is to encourage citizens to pursue meaning and purpose in their lives, to give and receive social support, and to have skills and self-esteem. The *Ryff Multidimensional Scales of Well-Being* is an example of a widely used, predominantly eudaimonic scale and it consists of six dimensions of wellness: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, self-acceptance (28).

EW is broadly related to the opportunities that people perceive they have to exercise choice and to pursue fulfilling lives. The new *OECD Guidelines On Measuring Subjective Well-being* include a separate measure of EW (30). Literature cited in that volume suggested that eudaimonia correlates less closely with the other SWB measures than do measures of positive or negative affect or of life evaluation. The purpose (or lack of it) dimension of EW seemed particularly important, as it is associated with much of what we do. Purposefulness (or worthwhileness) can be an important driver of behavior and is experienced in much the same way as emotion. This dimension may be important for understanding (or predicting) why and when people engage in various activities during the day or in life more generally.

Although a great deal of research has documented the positive effects of eudaimonic activities, less research has examined the relative impact of both hedonic and eudaimonic approaches on well-being. Existing empirical research suggests, however, that eudaimonic approaches may be relatively more important for well-being than hedonic approaches. For example, daily eudaimonic activity was found to be more robustly associated with well-being than behaviors aimed at experiencing pleasure or obtaining material goods (30). Specifically, orientations to meaning and to engagement, representing eudaimonic approaches to well-being, have been found to be more robustly associated with life satisfaction than an orientation to pleasure in both national (31) and cross-national studies (32). Further, multiple self-report indicators of well-being, such as satisfaction with life, vitality, positive affect, and meaning in life, hadmore numerous and generally stronger associations with EW than HW (33).

1.1.3.Growing evidence about well-being through different studies

The number of academic studies about well-being's evidence has grown rapidly in the past decades. Many cite Richard Easterlin's 1974 paper,*Does economic growth improve the human lot? Some empirical evidence* (34), as heralding the beginning of this field of research. The work has marked the beginning of the processof SWB's rediscovery within economics, which had been largely forgotten since the late nineteenth century (35). Easterlin's paper found that economic growth did not necessarily lead to a rise in average levels of happiness, sparking a new interest that grew rapidly from the mid-1990s onwards, with investigators using large-scale social survey data to explore the statistical relationships between SWB and a variety of personal, social, and economic factors. Widely used datasets including well-being items are the *World Values Survey* (36), the *European Values Survey* (37), the *Eurobarometer* (38), and the *Gallup World Poll* (39). These datasets are analyzed by well-being researchers to establish statistical relationships with specific variables. Some of these surveys, such the Gallup World Poll, are used to make comparisons between the average levels of well-being across different countries. Other surveys include a sample of individuals only from one country and they are used to compare well-being of individuals within a country.

Majority of the studies provide a cross-section of one country, a snapshot of a group of individuals at a certain point in time. The so-called cross-sectional studies are often used to assess the prevalence of acute or chronic conditions, or to answer questions about the causes of disease or the results of intervention. They may also be described as censuses. Other types of researches are longitudinal, either when a number of years of cross-sectional data are pooled or for a panel data, when information is collected from the same individuals

over time. In a comparison with the cross-sectional studies, the longitudinal design allows tracking the same people and so the differences observed in those people are less likely to be the result of cultural differences across generations. (40)

There are several methodological issues surrounding well-being research to be considered when looking at the existing evidence (41).

First, most of the research describes associations between personal, social, and economic factors (such as unemployment, income, relationships) and measures of SWB. These associations on their own do not imply causation (29). This is especially the case in cross-sectional studies, where causation cannot be established definitively. However, many of the longitudinal studies show that well-being changes in line with changes in certain variables, and in these cases there are stronger grounds to claim a causal relationship, especially where there is a plausible causal mechanism (42).

Second, although many of the studies point to similar conclusions, the precise findings will depend on study design. For example, where findings from two different studies do contrast, one, or both, of the studies may have failed to control for correlated explanatory factors or may have been designed to control for different factors. In a concrete example, it could be supposed that there is a statistical relationship between ice-cream consumption and number of drowning deaths for a given period. These two variables could have a positive correlation with each other. The most likely explanation is that the relationship is spurious and that a third, confounding, variable (the season) influences both variables: during the summer, warmer temperatures lead to increased ice-cream consumption as well as more people swimming and thus more drowning deaths. (43)

Third, a fundamental problem in making comparisons between international data is that it is assumed that response scales are used in the same way across different countries, across time, and across groups of respondents within a country. However, there is some evidence to suggest this is not the case; for example, Americans tend to report situations more positively than East Asians (44). There is also an argument that the concepts of life satisfaction and/or happiness cannot be translated to capture the same idea. Evidence shows that cultural norms explain a relatively small part of the variation in well-being levels internationally (45) which seems to suggest that translation is not a major source of difficulty (46); however, this remains contested.

Fourth, Johns and Ormerod (47) highlighted a methodological problem that arises when using SWB measures, especially when considering their relationship with income. Measures such as life satisfaction and overall happiness commonly use a bounded scale, for example, 0–10, 0–5 or 0–3. This means that respondents who have chosen the highest value cannot subsequently score any higher, even if their well-being rises. This gives rise to a further issue when SWB is related to a variable such as GDP or income, which (in theory) appears to be able to rise without limit, as any increases that this rise brings will become increasingly difficult to recognize on a bounded scale. The same can be said also for the lower end. However, research has shown that life satisfaction has changed in response to economic conditions (48) and can still usefully demonstrate changes in the point at which diminishing returns begin.

1.1.3.1.Insight in different predictors of well-being

SWB analysis is sensitive to the measures used. Validated measures of well-being have only recently been included in surveys, so the opportunity to carry out longitudinal analysis is just beginning. Some of the factors most frequently associated with well-being are presented in the following.

Evidence about the relationship between age and SWB is mixed and it mostly depends on culture: from one hand, in the Western world the connection is best explained by a U-shaped curve, with the lowest levels of wellbeing around ages 45-54, but, from the other hand, in the rest of the world this linearity is weaker. For example,respondents from the former Soviet Union and Eastern Europe show a large progressive decline in well-being with age; Latin America also shows a similar pattern, while in sub-Saharan Africa little changesin time(49). Sometimes, this association is reduced or disappears once other factors are taken into account. There is also evidence that associations with age are different for different aspects and measures of well-being. For example, the report *Measuring National Wellbeing: Life in the UK 2012* (50) showed that well-being was highest for young and old adults and lowest for people in their middle years. This pattern supports the widely held view that well-being and age have a U-shaped relationship. They also found that well-being dips again among those aged 80 and over. On the other hand, results of the multivariate analysis of the 2007 *Scottish Social Attitudes*, a series of surveys on changing public attitudes, showed that age was not significantly and independently associated with any of the satisfaction measures in the survey once other factors were controlled for (51).

Gender is usually found to be a significant predictor of well-being, although there is mixed evidence as to which experiences higher well-being. Multivariate analysis of the combined 2009 and 2011 *Scottish Health Survey* data indicated that men had higher odds than women for positive well-being (51). However, analysis of the *Annual Population Survey 2011-2012* data found that women had higher overall well-being (52). Moreover, it has been reported that HW was higher in men and EW higher in women (53). Regarding gender issues, the *Longitudinal Study of Young People in England* interviewed a cohort of respondents annually since 2004 (at age 13) until 2010 (at age 19). Data from 2010 indicated that at age 19, young people who identified as heterosexual were more likely to be satisfied with their life than those who identified as gay, lesbian or bisexual (54).

The link between well-being and ethnicity is complicated by many confounding factors, such as relationship status, education, employment and living conditions, and again different studies have found different patterns of association. The most common third variable in this relationship is religion. With the transformation of traditional religious institutions and the erosion of nation-state boundaries that historically described religion and prescribed religiosity, a transcultural form of religiosity/spirituality has risen (55). The emergence of such alternative order lead to religious hybridization and hybrid forms of consumption, where people transgress the boundaries of traditional religio-ethnic identities to embrace wellbeing in all aspects of everyday life (56).As such, future research should study the role of markets and marketing practices in generating intercultural/transcultural and hybrid religiosities/spiritualities and investigate how these alternative religiosities/spiritualities influence people's sense of wellbeing (57). At the moment, after controlling for other factors, data analysis of *Annual Population Survey 2011-2012*of the UK Office for National

Statistics showed that Arab, Bangladeshi, Black, Indian and Pakistani adults had significantly lower well-being than white adults (52).

One of the most consistent predictors of well-being is self-rated health (henceforth, SRH). *Measuring National Wellbeing: Life in the UK 2012* showed that SRH was associated with overall life satisfaction, with those who felt that they had good health being much more likely to report higher levels of SWB. On the other hand, disability was also linked to life satisfaction, with half of individuals reporting long-term disability having low overall life satisfaction, compared with around a fifth of those with no disability. (58)

Being in a relationship appears to have a positive effect on well-being. Results from the *Annual Population Survey 2011-2012* dataset showed that having a partner was associated with higher SWB (52). Adults who were married, in a civil partnership, or cohabitating reported higher levels of well-being compared with those who were single, widowed or divorced, after controlling for other factors such as age. This correlation is particularly strong in women: multivariate analysis of the combined 2009 and 2011 *Scottish Health Survey* data showed that marital status was a significant predictor of well-being for women, with single women having significantly higher odds of low levels of well-being than women who were living with a partner (51).

Only some analyses have found highest level of educational qualifications to be a significant determinant of well-being (59). Often, factors such as employment status and household income have been found to have a stronger association. Multivariate analysis of the combined 2009 and 2011 *Scottish Health Survey* did show that education level was a

significant predictor of well-being, but only among women, with those with no educational qualifications having increased odds of having low well-being (51).

There is also a relationship between well-being and employment status. Data from *Annual Population Survey 2011-2012* showed that the proportion of unemployed people who rated their life satisfaction as low was more than twice the proportion reported by employed people (45% vs 20%). Unemployed people experienced lower overall well-being than their employed and self-employed counterparts even after other individual circumstances were controlled for. Moreover, retired people had higher well-being then people in employment after controlling for other factors such as age. (50)

Household income is another strong predictor of our variable of interest. As shown by multivariate analysis on the 2007 *Scottish Social Attitudes* data, respondents with the lowest household income were more likely to have lower SWB. Self-perceived financial hardship related to all the measures of SWB included, with happiness and satisfaction levels lowest among those who were finding it difficult or very difficult to cope. (60)

The area and home in which a person lives can have a bearing on their well-being, although multivariate analyses tend to find that individual level factors are more influential than the characteristics of the area where people live. Multivariate analysis from the *Annual Population Survey 2011-2012* dataset found that an area's Index of Multiple Deprivation was a strong predictor of average well-being, but that it accounted for less than half the variation in well-being levels seen in different regions of the UK. Some regions had much higher average well-being than expected given their deprivation levels and vice versa. The

analysis also showed that people living in rural areas had higher well-being than those in urban areas (52).

1.1.3.2. Multidimensionality of well-being

The *Stiglitz Report* on the measurement of economic performance and social progress recognizes that well-being is multidimensional (61). There are both theoretical and practical reasons for approaching well-being as a multidimensional construct across valued life domains (62).

On the theoretical side, well-being is an abstract construct that includes both feeling good and functioning well (63). Well-being cannot be defined by a single measure, but is comprised of various aspects that are more readily measured (22). Unidimensional measures such as life satisfaction are strongly affected by a person's mood at the time, and ignore other aspects of well-being. In fact, multidimensional measures of well-being are only moderately correlated with life satisfaction (62). Further, reducing measures to a unidimensional notion obscures potentially valuable information. For example, in a comparison across European countries, France and Spain scored similarly on overall well-being, but France scored high on engagement, moderately on competence, and low on self-esteem, whereas Spain scored moderately on engagement, low on competence, and high on self-esteem (62).

On the practical side, multidimensional well-being (henceforth, MWB) metrics can identify groups with specific strengths and weaknesses. In education, overall grade point average indicates a student's overall achievement, but obscures the individual academic areas where students struggle. Report cards break down grades across subject areas, highlighting weak

areas. Similarly, assessments of well-being need to go beyond global assessments to provide teachers and school counselors with specific information about domains in which students thrive or struggle. Some students may need to dial up their sense of meaning whereas others might need to increase their positive emotions or improve social relationships.

1.1.3.3. The importance of cross-culturality and different population groups in well-being assessment

Policy makers are particularly interested in societal conditions that promote well-being and the research field of comparative research into happiness in nations is one of the responses to this interest. This strand of research started in the early 1960s with Cantril's (64) seminal book, *The Pattern of Human Concerns*. Forty years on comparative research has developed into a major research field and survey studies on happiness have been done in almost every country in the world. At the moment, more than 5000 survey findings on happiness in nations are available in the *World Database of Happiness*, which have been used in about 1500 scientific publications on happiness and society (65). Yet, as we have already mentioned in 1.4., although the number of comparative research studies on well-being is escalating, there are still doubts about the validity of the reported results.

Nations not only differ in how much SWB they actually experience, but they also have different opinions on the ideal levels of SWB. For example, Brazilians think it is very desirable to experience positive emotions, whereas the Chinese show comparably less enthusiasm for the idea of feeling positive emotions (66). Traditionally, many have pointed out the fact that happier nations are simply wealthier. In fact, there is a strong association between income and SWB level across nations. However, this "richer equal

happier"argument is incomplete. One problematic issue is that rich nations are not only economically better off, but they also possess various non-materialistic characteristics that contribute to SWB (e.g., more stable, democratic government, more human rights). Hence, it is not completely clear whether the link between national wealth and SWB is caused by material affluence per se, or by other positive qualities afforded by wealthy societies. Second, there are clusters of nations that challenge the income explanation. The happiness reports of relatively affluent East Asian nations are among the lowest in the world (Japan, being a prime example), whereas individuals in some Latin American nations (e.g., Puerto Rico) report happiness much higher than their economic standings suggest (67). Finally, but very importantly, after a certain income level, economic factors lose their predictive power. Once a nation becomes rich enough to fulfill most people's basic needs (food, shelter), further economic prosperity does not guarantee further increase of SWB. More and more countries around the globe are surpassing this threshold level of income (gross domestic product per capita of roughly $10,000), which means pure economic models will have limited success in predicting national differences in SWB in coming years.

Variables at the level of entire cultures have recently offered important complementary perspectives on national differences in SWB (68). One cultural dimension related strongly to SWB is individualism/collectivism. In highly individualist cultures (e.g., U. S., Western/Northern Europe), each individual's right, freedom, and unique feelings are emphasized over the expectations and needs of an in-group, such as family. In more collectivist societies (e.g., East Asia, Central/South America), the goals and needs of a significant in-group tend to take priority over the thoughts, values, and preferences of an individual. Theoretically, there are costs as well as benefits associated with personal

freedom. In individualist cultures (high freedom), people freely choose personal goals and lifestyles, but because of the lack of strong social support, adverse life events might have severe negative consequences (such as suicide). In collectivist cultures, on the other hand, strong social support may buffer stressful events, but the drawback is that there is less freedom to pursue personally rewarding goals. Although there seems to be a tradeoff associated with personal freedom, in study after study researchers have found that individualist cultural members are happier than collectivist cultural members (69).

Besides cross-national approach and orientation to specific populations became targets of scientific interest within studies of well-being. Systematic reviewsamong thepopulation of young adults and university students has confirmed that the best measurement scales are reliable and valid and have been tested in cross-cultural settings (70,71). The most utilized domains are social, or interpersonal, well-being and physical health, but, in general, a wide variety of facets have been employed so that the interested users can find at least one measurement tool fitting the most with all their possible research questions. The focus on a population of young adults – specifically the adults aged 18-30 – is justified by recent evidence supporting the hypothesis that young adults do not have that healthy behaviour, as generally thought. As youngsters grow out of adolescence entering young adulthood, they tend to less frequently have breakfast, physical exercise, or get regular checkups; in addition, they are highly exposed to dangerous health-related risk factors, such as junk food, unprotected sex, binge drinking, and drugs (72).

Therefore, the challenge of multicultural approach to well-being assessment is still remaining, as well as assessment of well-being among the specific population groups such as young people.

1.2. The concept of self-rated health and its relation to well-being

In the field of health, the closest variable to well-being is self-rated health (henceforth, SRH).The associations of the two concepts is bi-directional, with lower baseline levels of well-being predicting subsequent poorer SRH as well as poorer SRH predicting lower well-being(73). SRH also called self-reported health, self-assessed health, or self-perceived health, refers to a single question, namely "How is your health in general?", with five possible answers: very good, good, fair, poor, and very poor (74). A similar, but less common, form is the first question of the SF-36: "In general, how would you rate your health today?" with the possible choices being very good, good, moderate, bad or very bad (75).

The SRH question is purposely vague so as to seize people's own assessment of health according to their own definition of health (76).Although the answer is based on what people think—and thus is subjective—it is a statistically powerful predictor of mortality in the general population (77). This is used as a proof that this measurement is valid, because mortality is considered as the most objective measurement of the general health of an individual (78).

Moreover, SRH has been found to be a reliable measurement of general health since respondents rated the same general health assessment within a period where their health was unlikely to change. The negative aspect of the vagueness is the lower reliability than other self-rated measurements assessing a more specific aspect of health. (79)

Considering what was previously stated and adding that SRH is easy to apply, this subjective measure of health is often used in health research and large-scale surveys, because it helps to follow the evolution of health across time and between populations (80).

2. OBJECTIVES

The objectives of this doctoral research are the following:

1. Examining cross-cultural reliability and validity of the well-being scales in a students' population.

2. Comparing the levels of well-being and its determinants in Italian and Serbian samples of university students with definition of the specific model, which describes well-being in the student population and it is culturally applicable in different contexts.

3. Further comparison of determinants of well-being and self-rated health among students based on data from Italian and Serbian household health surveys.

4. Identifying the significant predictors of well-being and self-rated health among students and on the basis of the results, instruct possible interventions aimed at increasing the well-being of students' population.

3. METHOD

This research was developed in two steps, both under the framework of ERAWEB (Erasmus Mundus–Western Balkans) joint mobility programme. The first phase is a questionnaire-based study among students, while the second is an analysis of data from two national health surveys.

3.1. Questionnaire-based study among students

The first phase is planned as cross-sectional study involving a consecutive sample of 1442 students enrolled at the Faculties of Medicine and Psychology of the Universities of Belgrade (Serbia) and Turin (Italy).

3.1.1. Population and sample

In Belgrade, we have been able to recruit a total number of 695 subjects, of which 618 medical students and 77 psychology students. In Turin, the total number of respondents amounts to 747, of which 306 medical students and 441 psychology students. The differences are due to the size of each Faculty: for example, in Belgrade, only 100 psychology students on average are accepted every year, while in Turin this number usually reaches 400 people.

The sample was collected adopting a consecutive sampling technique, in which every subject meeting the criteria of inclusion is selected until the required sample size is achieved (81). This approach is one of the best within the non-probability methods because when all members of an accessible population are invited to participate in a study over a fixed times period, the risk of bias is greatly reduced (82). In our case, data collections lasted one

month. The students were invited after undergraduate and postgraduate classes by one of the junior authors to fill the online-based, self-administered, anonymous questionnaire. Those interested received a link to the online questionnaire. Informed consent was obtained online, and only after consent was given the participants would begin filling the questionnaires.

3.1.2. Research Instrument

The handled questionnaire contains six sections based on the similar studies (83): MWB, socio-demographic characteristics, personal goal appraisals, mental health, physical activity, and life style factors. The Italian and the Serbian versions of the scales included in the questionnaire have considered cultural adaptation and have been translated and back translated by native speakers. Both questionnaires have in total 100 questions. Different scales known in the literature have been employed and all are open access based on the previous published studies.

As socio-demographics we have included: age, gender, nationality, current place of residence, mode of transportation to school, commuting time to school, height, weight, marital status, satisfaction with academic choice, current school enrolled, high school final average mark, working status, housing type, number of people in household, objective economic status, subjective economic status, and SRH. Most of the items were drawn from the *European Health Interview Survey wave 2* (EHIS wave 2) (84).Through height and weight we calculated the body mass index (BMI), using the formula kg/m2 (85). SRH was excluded from the analyses because of multicollinearity problems with the dependent variable – well-being. The variable satisfaction with academic choice presented five possible options: very

satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, and very dissatisfied. Because of the distribution the analysis were made on the following categories: very satisfied, satisfied, and not satisfied (including neither satisfied nor dissatisfied, dissatisfied, and very dissatisfied). A similar transformation was made for the variable "subjective income": from very good, good, fair, not good, and not good at all to good (very good and good) and not good (fair, not good, and not good at all). For the occupational groups, the label employed includes part-time and full-time jobs.

The well-being scale isa modified version of the*I COPPE scale* (83), including overall life situation and the following domains: relationships, community, occupation (since we focus on students, this was modified into student status/life), physical health, psychological health, and economic status. For each item participants will be asked to rate on a scale from 0 (worst possible) to 10 (best possible) their past, current, and future situation (e.g., "The number ten represents the best your life can be. The number zero represents the worst your life can be. When it comes to relationships with important people in your life, on which number do you stand now?"). We analyzed only the present time item, leaving the two remaining questions for future analysis and for reliability purposes.

Interpersonal or social well-being in our research regards the dynamics of social relationships because it strongly correlates with several positive outcomes, such as longevity (86), resilience (87), physical health (88), and overall well-being (89). Community wellbeing is related to the degree of satisfaction with one's community, which is connected to mental health, sense of belonging and community participation (90). Occupational well-being mirrors the state of gratification with one's job and here is expressed through student status/life.It has been identified as one of the central dimensions of well-being (88). Physical

wellness is the state of fulfillment with one's overall health and should be related to overall well-being (91). Psychological well-being relates to the level of satisfaction with one's emotional life and should correlate with higher physical wellness (92). Finally, overall well-being should positively correlate and sum up with the specific features of well-being (93).

The goals were explored through a modified version of *Little's Personal Project Analysis* (94): participants were asked to write down three of their personal goals and to appraise each project necessary to achieve specified goal along nine statements, using a 7-point Likert scale (1 = low, 7= high). These items pertain to importance ("to what extent is the project important to you"), commitment ("to what extent are you committed to realizing this project"), progress ("to what extent have you made progress realizing this project"), support ("to what extent do you enjoy the support of other people in realizing this project"), hope ("to what extent do you believe you can realize this project"), control ("to what extent is realizing this project under your control"), stress ("to what extent is it stressful to attain the goal"), and interference ("to what extent do you feel that you are interfered in your efforts to attain the goal"). The results drawn from this scale will be analyzed in a future stand-alone study.

Mental health was investigated through the *Physical Health Questionnaire-8* (PHQ-8) (95), an 8-items measure of depression symptoms linked to DSM diagnostic criteria for major depressive disorder widely used in primary care practice.More specifically, it was asked for how long in the past 2 weeks a particular depressive symptom has been experienced. The response set was converted into the following points: 0=not at all, 1=several days, 2=more than half the days, and 3=nearly every day (96). The PHQ-8 consists of eight of the nine criteria on which the DSM-IV diagnosis of depressive disorders is based (97). The ninth

question in the DSM-IV, included in the extended PHQ-9 (96), assesses suicidal or self-injurious thoughts. It was omitted for ethical reasons. Research indicates that the deletion of this question has only a minor effect on scoring because thoughts of self-harm are fairly uncommon in the students population, and the ninth item is by far the least frequently endorsed item on the PHQ-9 (95,97,99,100).

Physical activity(henceforth, PA) was examined through the *International Physical Activity Questionnaire – Short Version* (IPAQ-SV) (101), a scale specific for young and middle-aged adults including seven items to measure the frequency and duration of vigorous-intensity PA, moderate-intensity PA, walking level, and estimated time spent sitting per week. This last item was developed as separate indicator and not as part of the summed physical activity score. The data was then used to estimate total weekly physical activity by weighting the reported minutes per week within each activity category by a Metabolic Equivalent of Task (henceforth, MET) energy expenditure estimate assigned to each category of activity. The weighted MET-minutes per week for vigorous-intensity PA were calculated as duration X frequency per week X 8. The weighted MET-minutes per week for moderate-intensity PA were calculated as duration X frequency per week X 4. The weighted MET-minutes per week for walking level were calculated as duration X frequency per week X 3,3. The total number of MET-minutes per week was obtained by summing the subtotals (102).

The last section contains items about life style, including the following domains: smoking, marijuana consumption, heavy drug assumption, alcohol intake, binge drinking, intakes of fruit and vegetable, and life satisfaction. Also these sections were modeled on the base of EHIS-2 (84).Smoking habit was measured with a question: “Do you smoke at all nowadays?”

The three possible responses were dichotomized into non-smokers (no) and smokers (yes, daily and yes, occasionally).Binge drinking, or risky single occasion drinking, was estimated using the following single-item: “During the past 12 months, how often have you had six or more drinks on one occasion?” The answers were classified into non-binge drinkers (never) and binge drinkers (once a month, once a week, and every day).Lastly, the frequencies of vegetables and fruits intake were measured through two similar questions: “How often do you eat vegetables or salad (excluding juice and potatoes)?”, and “How often do you eat fruits (excluding juice)?” Answers were then rearranged into two levels, following the WHO report recommending minimum quantity per day for the prevention of several diseases (103): inadequate (never, less than once a week, 1 to 3 times a week, and 4 to 6 times a week), and adequate (once or more a day). The two categories were then summed up, forming two levels of the variable denominated fruit and vegetable: adequate (once a day or more for both) and inadequate (once a day or more just for one of the two and less than once a day for both).

Before the main research, a pre-test including 15 respondents was conducted to determine the feasibility of the research in terms of the amount and quality of data to be collected and after that a pilot study was conducted on 86 Italians and 83 Serbians to validate the multidimensional instrument for assessing well-being among Italian and Serbian students (104).

3.1.3. Statistical analysis

The obtained results, in line with the preexisting goals, were examined through methods of descriptive and inferential statistics, respectively univariate and multivariate techniques.

Before proceeding to analyze the data, all items' scores were examined for accuracy of data entry and detecting and replacing missing values. Data analysis was carried out with the *Statistical Package for the Social Sciences* (SPSS) version 21.0 software (SPSS Inc., Chicago, IL, USA).

To check the differences between the means and frequencies of the variables representing background characteristics (i.e., age and income) across the two national groups, t-tests for independent samples, chi-square tests, and Mann–Whitney U tests were performed. Cronbach's Alpha was employed to estimate of the reliability of the employed MWB scale while Pearson product-moment correlation coefficient, or Pearson's r, served to measure of the linear dependence between two similar variables such as MWB and SRH. Moreover, univariate (unadjusted) and multivariate (adjusted first for age and gender and then for all study variables) logistic regression analysis tested for MWB differences across Italy and Serbia.In the last phase, univariate and multivariate multinomial linear regression analyses were employed. The use of multivariate modeling enabled us to distinguish between all the different determinants. Odds ratios in univariate analysis were calculated, and then the adjustment for age and gender was introduced in a second model. Only the variables that resulted significant in the adjusted for age and gender model have entered the final multivariate multinomial linear regression model to identify the predictors of MWB. The variable Physical Activity presented a very wide data range and it had to belog transformed in order to be analyzed in the regression models (105). In all the analyses, a P-value of <0.05 was considered statistically significant.

In the future, an exploratory factor analysis (EFA) will be employed in order to assess the dimensional structure of the scales in the present samples. The EFA will be performed using

Varimax rotation. The number of factors to be retained will be decided on the basis of Eigenvalues, looking at the screen plot, and the interpretability of the factor solution. Next, we will proceed to further assess measurement invariance of the selected factor solution across Italian and Serbian groups. The factor structure of the scales will be tested within each of the two national groups separately. To assess how well the confirmatory factor analysis models represented the data, the following criteria will be used as cut-offs for good fit: CFI ≥ .90 (with ≥ .95 being ideal), RMSEA and SRMR ≤.08 (with ≤ .05 being ideal) (106).These analyses will be carried out with AMOS version 7.0 software (SPSS Inc., Chicago, IL, USA).

3.2. Analysis of data from two national health surveys

In the second phase, we have used cross-sectional population-based data from two national health surveys in Italy and Serbia. Students aged 18-30 were in focus. We have compared SRH between these two populations, and analyzed associations of socio-demographic characteristics and health behaviors as determinants of SRH in two separate models. This dependent variable was chosen because the most similar available to MWB (107,108,109).

3.2.1. The basic characteristics of health surveys

Both countries dispose of nationally representative data that include measures of SRH and health-related habits as a result of the alignment to European standards in health surveys (84). More specifically, for this secondary analysis we have used data from the *2013 Italian National Health Survey*, section *Multi-scope Survey on the Family Aspects of Daily Life* (110) and from the *2013 National Health Survey* (111) for the population of Serbia.

The Italian survey provides information on the citizens' habits and the problems they face in everyday life. In the questionnaires, the thematic areas are on different social aspects allowing to obtain information about the citizens' quality of life, the degree of satisfaction of the life conditions, their economic situation, the area in which they live, and the functioning of all public utility services. School, work, family and social life, spare time, political and social participation, health, life style, access to the services have all been investigated from a point of view in which behaviour objectivity, motivations, opinions contribute to define the social information. The survey is included in The National Statistic Programme, which gathers the statistical investigations needed for the country. (110)

The *Serbian National Health Survey 2013* (without data on Kosovo and Metohija) is the third national health survey conducted by the Ministry of Health of the Republic of Serbia, while the analysis of the obtained data was carried out by the *Institute of Public Health of Serbia* "*Dr Milan Jovanović Batut*". The first such survey was published in 2000, the second in 2006. The Serbia National Health Survey was carried out by way of interviews, anthropometric measurements and blood pressure measurements.The major goal of the health survey was to obtain the description of the health status of the population, at the level of the Republic and the four statistical regions (Vojvodina, Belgrade, Šumadija and Western Serbia, Southern and Eastern Serbia). In order to reach the major goal of the research, the following specific goals were defined: identification of the main health problems, description of the health status and health needs of the population, assessment of the coverage by and distribution of health indicators, analysis of the level of health care use and its determinants, and projection of possible trends in the health population status. (111)

Both surveys targeted members of private households and adopted paper and pencil technique to submit questionnaires. For Italy, in order to obtain a nationally representative sample, households were selected through a complex stratified multistage design, while a stratified two-stage cluster probability sampling was adopted in Serbia. A total of 30,914 respondents (20,275 Italians and 16,623 Serbians) completed the examination, with a response rate of 78.9% and 88.9% in Italy and Serbia respectively. For our purpose, we isolated a total number of 4625 students, 2482 Italians and 2143 Serbians.

3.2.2. Variables selected for the analysis of SRH among the student population

As dependent variable, SRH was measuredaccording to the WHO formula (74). The first two options were grouped as “good” and the last two were grouped as “not-good”, as seen in other studies (112,113).

The independent variables were selected after reviewing the research literature on the determinants influencing SRH. The selected items were divided into two groups: socio-demographics and health behaviors. Socio-demographics included: age, gender, and education level.Age was categorized as follows: 18-24 and 25-29. It was not possible to consider the variable as continuous because the Italian data was obscured for privacy reasons. Education level was reclassified according to the *International Standard Classification of Education* (ISCED) (114): low (ISCED 0–2), medium (ISCED 3-4), and high (ISCED 5-8). Items regarding health behaviors included: intake of fruits, intake of vegetables, binge drinking, smoking, and Body Mass Index (BMI). Fruit and vegetable were summed as in the questionnaire-based study among students (presented in the paragraph 3.2). BMI was

categorized into three groups, according to the WHO classification (85): under/normal weight (<25), overweight (25 to 29.99), and obese (≥30).

3.2.3. Statistical analysis

Analyses consisted of descriptive statistics and univariate and multivariate multinomial logistic regression. The use of multivariate modeling enabled us to distinguish between different determinants. First, we reported frequencies for independent and dependent variables and results of chi-square tests assessing significant differences between Italian and Serbian students. Then we reported results of univariate (unadjusted) and multivariate (adjusted first for age and gender, later for all study variables) logistic regression analysis testing for differences in determinants of SRH across the two groups of students. Finally, we reported results of univariate and multivariate logistic regression analyses using SRH as the dependent variable. ORs in univariate analysis were calculated and only the variables significant in this phase entered the final multivariate multinomial logistic regression model in order to identify the predictors of SRH, using good–SRH as the reference category. Data analysis was again carried out with SPSS version 21.0 software (SPSS Inc., Chicago, IL, USA).

4. RESULTS

4.1. Questionnaire-based study among students

Questionnaire based study among students in two countries has provided insights in similarities and differences of socio-demographics, health behaviour, MWB and SRH between the two populations of students. Also, the study has explored significant determinants of MWB in both populations.

4.1.1. Socio-demographics and health behavior of students

According to the descriptive statistics (Table 1), the Serbians reported a significantly better MWB then the Italians ($p<0.001$). The two groups of participants did not differ according to age ($p=0.346$). The Italians took more time to reach the School then the Serbians ($p<0.001$). The difference in BMI was minimal, but significant and in favor of the Italians ($p<0.001$). The distributions of the different levels of the variable satisfaction with academic choicewere different because more Serbians then Italians described themselves as very satisfied and not satisfied, while the opposite was recorded for intermediate answer. About double the students from Italy reported to be full-time or part-time employed then the Serbian colleagues. When it came to subjective income, the Italians reported a wealthier condition. The Serbians recorded about 30% worse mental health. The variable physical activity was the most different because the Italians declared to be about 40% more active. There was not significant different in the smoking cigarettes frequency of both groups because a third of all of them reported to use cigarettes ($p=0.729$) while a higher percentage of Italians consumed marijuana in the last year. Significantly similar numbers were recorded also for

the variable binge drinking (p=0.153). At last, more Italians ate an adequate intake of fruit and vegetablein the analyzed frame of time. Individual-level characteristics of the total sample of 1442 participants are shown in Table 1.

Table 1 Descriptive statistics of the study population according to country

	Italy (n=747) n (%)	**Serbia (n=695) n (%)**	**Both countries (n=1442) n (%)**	**p***
Multidimensional well-being (MWB)				
Mean (SD)	6.48 (1.87)	7.01 (1.99)	6.74 (1.95)	**< 0.001**[†]
Age				
Mean (SD)	21.47 (2.35)	21.58 (2.36)	21.52 (2.36)	0.346[†]
Commuting time				
Mean (SD)	33.90 (26.35)	29.49 (18.16)	31.77 (22.86)	**< 0.001**[†]
BMI				
Mean (SD)	21.22 (3.00)	21.87 (2.85)	21.53 (2.95)	**< 0.001**[†]
Academic choice				
Very satisfied	321 (43.0)	321 (46.2)	642 (44.5)	0.361[‡]
Satisfied	347 (46.5)	297 (42.7)	644 (44.7)	
Not satisfied	79 (10.6)	77 (11.1)	156 (10.8)	
Occupational groups				
Unemployed	629 (84.5)	643 (92.5)	1272 (88.4)	**< 0.001**[‡]
Employed	115 (15.5)	52 (7.5)	167 (11.6)	
Subjective income				
Good	301 (40.8)	198 (28.5)	499 (34.9)	**< 0.001**[‡]
Not good	436 (59.2)	496 (71.5)	932 (65.1)	
Mental health - PHQ-8				
Mean (SD)	8.66 (4.59)	12.11 (5.58)	10.33 (5.38)	**< 0.001**[†]
Physical activity - IPAQ				
Mean (SD)	3792.15 (12457.72)	2309.28 (2440.99)	3077.46 (9152.20)	**< 0.001**[§]
Smoking cigarettes				
No	529 (71.0)	487 (70.1)	1016 (70.6)	0.729[‡]
Yes	216 (29.0)	208 (29.9)	424 (29.4)	
Smoking marijuana				
No	552 (74.2)	575 (82.7)	1127 (78.3)	**< 0.001**[‡]
Yes	192 (25.8)	120 (17.3)	312 (21.7)	
Binge drinking				
No	415 (55.7)	360 (51.9)	775 (53.9)	0.153[‡]
Yes	330 (44.3)	334 (48.1)	664 (46.1)	
Daily intake of fruit and vegetable				
Adequate	346 (46.3)	134 (19.3)	480 (33.3)	**< 0.001**[‡]
Inadequate	401 (53.7)	561 (80.7)	962 (66.7)	

[*] Differences between the two countries
[†] Independent-samples T Test; [‡] Chi-square; [§] Mann–Whitney U test

4.1.2. Reliability of the applied constructs of well-being

Reading from the commonly accepted rule for describing internal consistency (115), most of the coefficients were good ($0.9>\alpha\geq0.8$) or excellent ($\alpha\geq0.9$). The lowest data was recorded for psychological well-being ($\alpha=0.848$) while economic well-being scores the highest ($\alpha=0.943$). The 7 items for the present time, used to compose the MWB score, showed excellent internal consistency ($\alpha=0.925$).Table 2 shows reliability coefficients for all subscales and the whole scale evaluated.

Table 2 Reliability analysis for the measured constructs of well-being

	Number of items	**Cronbach's Alpha**
Single subscales		
Overall well-being	3	0.872
Interpersonal well-being	3	0.902
Community well-being	3	0.926
Student status	3	0.880
Physical well-being	3	0.890
Psychological well-being	3	0.848
Economic well-being	3	0.943
Whole scale - only present*	7	0.925

* Past and future items were not part of this analysis

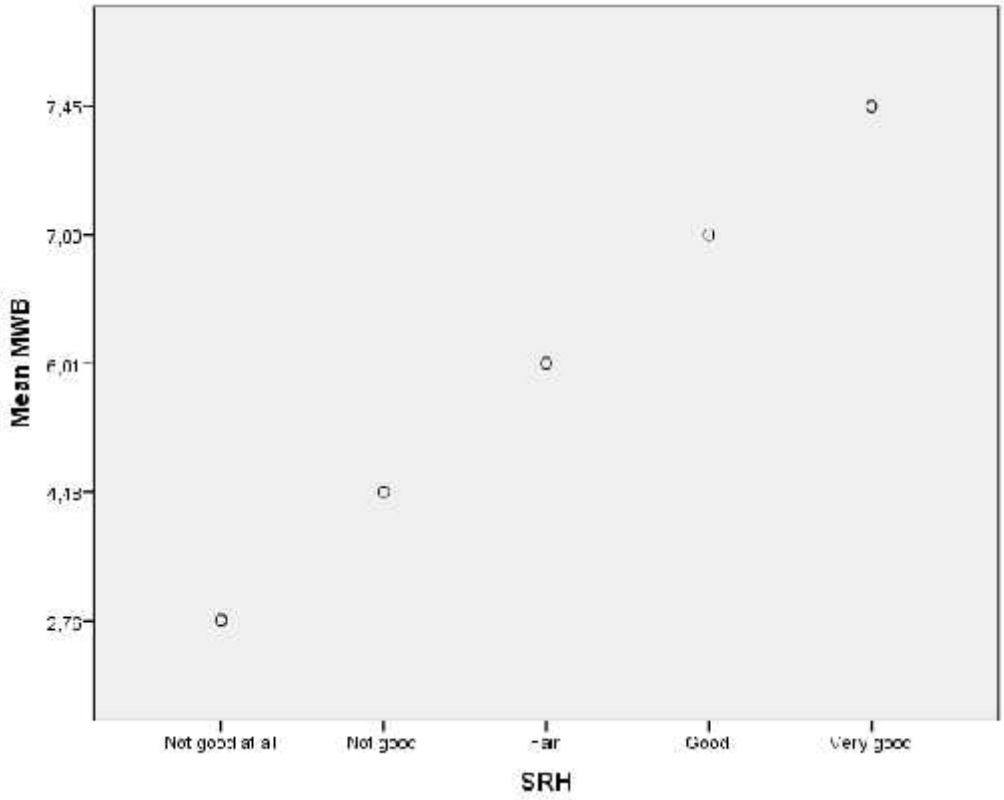
4.1.3. Linear dependence of MWB and SRH

To determine whether the levels of MWB in the questionnaire-based study were comparable to the levels of SRH in the Analysis of data from two national health surveys, we measured linear dependence between the two variables. The data is from the questionnaire-based study which contained both MWB and SRH. The latter is not included in the regression models because of multicollinearity problems.

The Pearson's correlation coefficient for the two variables is 0.418, $p<.001$.

In the past, guidelines were offered for the interpretation of a correlation coefficient (116). However, all such criteria are in some ways arbitrary and should not be observed too strictly (117). Taking into consideration context and purposes, the two variables can be compared. Figure 1 shows a summary point plots of MWB and SRH.

Figure 1 Summary point plots indicating linear dependence between MWB and SRH



4.1.4. Regression models in predicting determinants of MWB

The two groups of students significantly differed in all the analyzes, with the Serbiansalwayshaving higher MWB than the Italians: when analyzed alone in the univariate model (OR 1.15), when adjusted on age and gender (OR 1.16), and when adjusted on all the study variables (1.44). Levels of MWB as potential discriminators between the two countries of interest are reported in Table 3.

Table 3 MWB differences between countries in logistic regression models

	Italy (1) vs. Serbia (2)		
	OR	**95% CI**	**p**
Univariate	**1.15**	**1.09-1.22**	**< 0.001**
Adjusted on age and gender	**1.16**	**1.10-1.23**	**< 0.001**
Adjusted on all variables	**1.44**	**1.33-1.56**	**< 0.001**

Italian and Serbian students have some different and some identical determinants being significant predictors of MWB (Table 4). Ageand binge drinking are the variables significant only for the Italians while commuting time, physical activity, smoking cigarettes andfruit and vegetable predict MWB only for the Serbians in the multivariate model. The variables significant for both groups are satisfaction with academic choice, subjective income, and mental health. BMI, occupational groups, and smoking marijuana are never related to MWB in this analysis. Multivariate linear regression models for determinants of MWB for the two distinct samples are shown in Table 4.

Table 4 Predictors of MWB in multivariate linear regression models

	Italy		Serbia	
	β	**p**	**β**	**p**
Age	**-.168**	**0.000**	.054	0.135
Commuting time	.004	0.911	**-.165**	**0.000**
BMI	.007	0.837	-.048	0.148
Academic choice	**-.079**	**0.029**	**-.087**	**0.009**
Occupational groups	-.005	0.900	-.050	0.141
Subjective income	**-.089**	**0.014**	**-.118**	**0.000**
Mental health	**-.304**	**0.000**	**-.281**	**0.000**
LOG Physical activity	.026	0.464	**.079**	**0.018**
Smoking cigarettes	.046	0.241	**-.094**	**0.010**
Smoking marijuana	-.012	0.772	-.062	0.087
Binge drinking	**-.093**	**0.014**	-.062	0.080
Fruit and vegetable	-.027	0.451	**-.097**	**0.004**

4.2. Analysis of data from two national health surveys

Two national surveys have provided an opportunity to analyzeSRH of student populations in a broader context.

4.2.1. Socio-demographics, health behavior and SRH

According to the descriptive statistics (presented in Table 5), the Serbians reported a slightly better SRH then the Italians, but the difference is not significant (p=0.059). The two groups of participants did not differ according to gender (p=0.151) and to fruit and vegetable (p=0.728). The two groups had a different age structure, with more Italians in the 18-24layer and more Serbians in the 25-29 age group (p=0.002). The Serbians were better educated, with more respondents in the middle and high ISCED groups (p<0.001).The majority of not overweight students were Italians, while more overweight and obese were Serbians (p<0.001).The variable differing the most between the two samples was binge drinking: more than half of the Serbians reported that, during the past 12 months, at least once, they have had six or more drinks on one occasion. On the other hand, less than quarter (p<0.001) of the Italians reported the same(p<0.001). At last, more Serbians than Italians reported to smoke daily or occasionally (p=0.033). Individual-level characteristics of the total sample of 4625 participants are shown in Table 5.

Table 5 Descriptive statistics of the study population according to country

	Italy (n = 2482) n (%)	**Serbia (n = 2143) n (%)**	**Both countries (n = 4625) n (%)**	**P#**
Self-rated health				0.059
Good	2251 (90.7)	1977 (92.3)	4228 (91.4)	
Not-good	231 (9.3)	166 (7.7)	397 (8.6)	
Socio-demographics				
Age				**0.002**
18-24	1482 (59.7)	1181 (55.1)	2663 (57.6)	
25-29	1000 (40.3)	962 (44.9)	1962 (42.4)	
p##	0.162	**< 0.001**	**< 0.001**	
Gender				0.151
Male	1264 (50.9)	1046 (48.8)	2310 (49.9)	
Female	1218 (49.1)	1097 (51.2)	2315 (50.1)	
p	0.929	**< 0.001**	**0.015**	
Education level				**< 0.001**
Low	696 (28.0)	325 (15.2)	1021 (22.1)	
Middle	1454 (58.6)	1482 (69.2)	2936 (63.5)	
High	332 (13.4)	336 (15.7)	668 (14.4)	
p	0.205	0.080	**0.017**	
Health behavior				
BMI				**< 0.001**
Less than 25	1975 (79.6)	1466 (70.2)	3441 (75.3)	
25-29	425 (17.1)	470 (22.5)	895 (19.6)	
30+	82 (3.3)	152 (7.3)	234 (5.1)	
P	**< 0.001**	**0.010**	**< 0.001**	
Daily intake of fruit and vegetable				0.728
Adequate	821 (33.1)	722 (33.7)	1543 (33.9)	
Inadequate	1581 (63.7)	1421 (66.3)	3002 (66.1)	
p	**< 0.001**	**0.006**	**< 0.001**	
Binge drinking				**< 0.001**
No	1969 (82.2)	622 (43.1)	2591 (67.5)	
Yes	427 (17.8)	821 (56.9)	1248 (32.5)	
p	0.527	0.334	0.737	
Smoking				**0.033**
No	1857 (74.8)	1544 (72.0)	3401 (73.5)	
Yes	625 (25.2)	599 (28.0)	1224 (26.5)	
p	**0.002**	**< 0.001**	**< 0.001**	

Differences between Italy and Serbia in all variables according to chi-square test

Differences between good and not-good self-rated health in all the variables separately for Italy, Serbia and both countries according to chi-square independence test

4.2.2. Regression models highlighting predictors of SRH

The two groups of students do not significantly differed in the univariate analysis (p=0.059), but they do differ in the other models: Italians have a better SRH then Serbians when including in the model age and gender (p=0.034) or when including all the study variables (p=0.026). This result disconfirms the finding reported in the previous table, where Serbians scored a non-significant 1.6% higher than Italians in good SRH (p=0.059).Levels of SRH as potential discriminators between the two countries of interest are reported in Table 6.

Table 6 SRH differences between countries in logistic regression models

	Italy (1) vs. Serbia (2)		
	OR	**95% CI**	**p**
Univariate	0.82	0.66-1.01	0.059
Adjusted on age and gender	**0.80**	**0.65-0.98**	**0.034**
Adjusted on all variables	**0.74**	**0.56-0.97**	**0.026**

Three variables, all included in the health behavior classification, are significant for both national groups (Table 7): BMI, fruit and vegetable, and smoking. For BMI in both groups, the higher the value, the higher the chance to report worse SRH. For fruit and vegetable, students eating less than the daily adequate amount of fruit and vegetable have a higher chance to declare not-good SRH. Regarding cigarettes, smokers reported worse levels of SRH. There are no significant determinants of SRH within the socio-demographics for the Italians while both older students andfemale respondentshave higher chances to report not-good SRH for the Serbians.The only analyzed variable never correlating with SRH is

education level. Multivariate logistic regression models for determinants of SRH for the two distinct samples are shown in Table 7.

Table 7 Predictors of SRH in multivariate logistic regression models

	Italy		**Serbia**	
	OR (95% CI)	**p**	**OR (95% CI)**	**p**
Socio-demographics				
Age	1.23 (0.92-1.65)	0.159	**1.55 (1.02-2.36)**	**0.041**
Gender	1.26 (0.94-1.69)	0.126	**2.54 (1.65-3.90)**	**0.000**
Education level	1.19 (0.94-1.50)	0.152	1.32 (0.96-1.80)	0.306
Health behavior				
BMI	**1.45 (1.13-1.86)**	**0.004**	**1.32 (1.05-2.92)**	**0.046**
Fruit and Vegetable	**1.88 (1.35-2.63)**	**0.000**	**1.65 (1.05-2.61)**	**0.032**
Binge drinking	1.04 (0.72-1.50)	0.834	1.35 (0.87-2.08)	0.181
Smoking	**1.47 (1.08-2.00)**	**0.015**	**1.60 (1.05-2.43)**	**0.025**

4.3. Comparison of the variables shared from both studies

Individual-level characteristics of the total sample of 6067 participants are shown in Table 8. Examining in contrast the two previous works, we found four same variables: BMI, the combined intake of fruit and vegetable, binge drinking, and smoking cigarettes. For the former, we had to adopt the normal weight, overweight, obese classification because in the Italian survey the raw data was obscured. The remaining three variables did not undergo further transformations. We compared the descriptive statistics across countries and study types. Moreover, in order to analyze the differences between the frequencies, chi-square tests were carried out.

For both countries, the medical and psychology students who filled the questionnaire-based study recorded lower values of BMI. Consequently, the majority of overweight and obese respondents can be found only in the national survey. When it comes to the consumption of fruit andvegetable, more Italian survey students reported an adequate daily intake than the future health professionals only. The opposite can be seen in Serbia, where a higher percentage of medical and psychology students eat more fruit and vegetable than the colleagues interviewed in 2013. Summarizing, the most important components of a healthy diet are eaten by the Italians. Regarding binge drinking, we can read from Table 1 that Italians and Serbians who participated at the questionnaire-based study did not significantly differ. On the contrary, looking at the results from Table 5, we can conclude that binge drinking is the most different determinant included in the survey: for every Italian student having six or more drinks on one occasion, there are about three Serbians. Even recapitulating the total result for binge drinking from both studies, we have a 2:1 proportion

in favor of the Serbians. At last, smoking is the most similar variable across the two examinations: if for the Italians there are slightly more smokers in the questionnaire, for Serbians the difference between survey and questionnaire is not significant. This is the only non-significant case in this whole comparison.

Table 8 Descriptive statistics of the study population according to country and the two studies

	Italy		*Serbia*	
	Survey	**Questionnaire-based study**	**Survey**	**Questionnaire-based study**
	(n=2482) n (%)	**(n=747) n (%)**	**(n=2143) n (%)**	**(n=695) n (%)**
BMI				
Less than 25	1975 (79.6)	676 (91.2)	1466 (70.2)	597 (85.9)
25-29	425 (17.1)	56 (7.6)	470 (22.5)	95 (13.7)
30+	82 (3.3)	9 (1.2)	152 (7.3)	3 (0.4)
p*	**< 0.001**		**< 0.001**	
Fruit and vegetable				
Adequate	821 (34.2)	346 (46.3)	722 (33.7)	134 (19.3)
Inadequate	1581 (65.8)	401 (53.7)	1421 (66.3)	561 (80.7)
p	**< 0.001**		**< 0.001**	
Binge drinking				
No	1969 (82.2)	415 (55.7)	622 (43.1)	360 (51.9)
Yes	427 (17.8)	330 (44.3)	821 (56.9)	334 (48.1)
p	**< 0.001**		**< 0.001**	
Smoking				
No	1857 (74.8)	529 (71.0)	1544 (72.0)	487 (70.1)
Yes	625 (25.2)	216 (29.0)	599 (28.0)	208 (29.9)
p	**0.038**		0.315	

* Differences between survey and questionnaire-based study in all variables according to chi-square test

5. DISCUSSION

The study of well-being among students is a very actual theme, considering that in the scientific literature it is possible to find a rising number of works in this area, as well as substantial debates on the definitions and on the principal features (118,119,120).

Student well-being and resilience are essential for both academic and social development. Universities have the responsibility to strengthen the cognitive, physical, social, emotional and spiritual development of the all the youngsters.Parents entrust their children and young people to principals, teachers, and school staff with confidence that this institution will deliver on this agenda. In this context, several development plans have already been published (121,122).Well-being, or the lack of it, can affect a student's engagement and success in learning. Educators need to understand the potential well-being has to bring about positive change, what is required to foster well-being, and how it can become a powerful force in students' learning and development. In fact, researches show that high engagement with school also fosters several aspects of students' well-being, such as positive emotions and life satisfaction. Moreover, a high level of school engagement is positively associated with academic success, and negatively associated with students' ill-being, such as depressive symptoms and burnout (123).

Not only do confident, resilient children with a capacity for emotional intelligence perform better academically, but they can also be better adults. A New Zealander research group followed a cohort of children and adolescents for 32 years, looking to investigate the relative importance of social and academic pathways to well-being in adulthood and they found that social connectedness was a better predictor of adult well-being than academic

achievement (124). Another work found that positive changes in well-being over time were correlated with increased value importance, decreased pressure and greater success in enacting values in the transition from high school to early adulthood (125).

The focus on young adults is justified by the strong evidence that they area slice of the population with an unhealthy behaviour. More and more evidence coming from different backgrounds show that they are less healthy than adolescents (126,127).Transitioning from adolescence to early adulthood, individuals tend to less frequently have breakfast, physical exercise, or get regular checkups. On the contrary, they are highly exposed to serious health-related risk factors, such as junk food, unprotected sex, binge drinking, and drugs (72). Currently, the obesity epidemic is a problem affecting the whole Western world, but the leading group in this dynamic is represented by the young adults (128). Accordingly, a call for improving the health and well-being of young adults has been launched (129). In this context, a reliable measurement tool of MWB that was specifically tested among populations of young adults coming from different cultural backgrounds, such as the instrument we tested in the questionnaire-based study, is of crucial importance.

Our results indicate that Serbian medical and psychology students reported better MWB than Italian colleagues in all the models. There is no further evidence in literature comparing student's well-being in the said two countries, so we are going to compare our conclusions with more general studies.

Our result is not in line with previous findings indicating Italy as a better ranked country in the *World Happiness Report*, a landmark survey of the state of global happinessranking 156 countries by their happiness andsubjective well-being levels as primary indicators of the

quality of human development.The first report was published in 2012 (130), the second in 2013 (131), and the third in 2015 (132). In 2016 a shorter report was published (67). The factors considered are: GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity, and perceptions of corruption. In the general table, the two countries, across the different releases, took opposite paths: in the four measurements, Italy consistently slided down from 30th then 45th to 50th (in both 2015 and 2016) whileSerbia constantly climbed up from 119th then 106th then 87th to 86th. This trend can be especially seen in the 2015 report, where a table with the changes in happiness from 2005-2007 to 2012-2014 was included. In this case, Serbia ranked 34th with a positive score while Italy ranked 123rd, or third last, with a negative score.

The authors of the *World Happiness Report*claim that the driving force behind the Italian results is the Eurozone financial crisis, which is reflected also by the negative results of Portugal, Spain, and Greece (132). In the last decade, Western economies have undergone profound social, economic, and legislative transformations which have had a major impact on labour market organization. Employment insecurity has increased through both increased unemployment risks and the diffusion of so-called “flexible” employment – a large and heterogeneous set of contractual arrangements which share a number of features. Compared to conventional forms of employment, these arrangements are associated with greater insecurity, worse working conditions, lower pay, and fewer social protections (135).In 2005, the unemployment rate was 13.0% among young adults aged 15 to 34 and in the same age group, temporary and atypical employment was very common, representing around one-quarter of total employment (134). Since the onset of the economic recession in 2008, the total unemployed population has increased 60%, with young adults contributing

disproportionately to this risewhile the unemployment rate for individuals aged 15 to 34 doubled from 11.7% in 2008 to 23.0% in 2013 and, over the same period, the probability that young adults would become and remain employed decreased (135). The consequences of this trend can be also seen in our result, especially in the negative correlation between subjective income and MWB in multivariate regression model.

On the other hand, Serbia showed an upward convergence to European averages, alongside other transition countries in the region, such as Macedonia and Albania. For instance, even though young people in Serbia again belong to the countries of Eastern Europe where satisfaction with profession is lower (average score in Serbia is 7.28, while European average is 7.38) (136), satisfaction with family life puts young people in Serbia in a group of countries (Cyprus, Montenegro, Malta, Romania, and Croatia) with the scores higher than the European average: 8.0. In this pool of countries, Serbia scores the highest, 8.38 (136). Unemployment is a problem that Serbia faces from longer time than Italy. Even today's young adults enter the work market with relatively low expectations and with the ability to cope with the consequences of unemployment. On the other hand, today's Italian young adults live a relatively new reality, in which this degree of work uncertainty is unprecedented. In this context, coping with routines such as over-qualification and underemployment can dramatically affect the well-being.

The case of volunteering is particularly related to well-being. Unemployed individuals report higher levels of depressive symptoms, anxiety, lower levels of self-esteem, confidence, life satisfaction, social support and sense of control (137,138,139,140,141,142). Longitudinal studies, where available, have confirmed that these negative effects are largely the result of becoming unemployed (social causation), not the result of individuals with lower well-being

and mental health more likely ending up unemployed (individual drift) (143,144,145,146,147).If unemployment has negative effects due to the loss of income and social and psychological benefits, then these negative effects could be reduced if other social institutions provide a replacement for the manifest and latent benefits. In this respect, Beck's (148) idea that civil labor - socially recognized and valued work, such as voluntary work, rewarded by civic money - will benefit societies that exhibit increasing job insecurity, unemployment, and underemployment could serve as a bedrock for future interventions. This work can serve as an alternative source of activity, identity, purpose and socio-psychological latent benefits. Then, it is not a surprise when we read that formal volunteering in Italy is a relatively new social phenomenon and that in other European countries, such as Belgium, Hungary, and the Netherlands, unemployed individuals or other non-working members of the population are more active than employed individuals in volunteering (149).

Our main findings were four. First, the difference in SRH between Italian and Serbian students aged 18-30 is not significant. This result strengthens the conclusions drawn from the questionnaire-based study among students: when it comes to young adults, Italians are certainly not happier or healthier than Serbians. The outcome is discordant with a recent study which looked at SRH of a sample representative of Italian and Serbian adult populations: in that case, Serbians had three times more chances to report bad-SRH than Italians (150). A study found that the political system could mediate the relationship between SRH and European young adults: the prevalence of poor health was much higher in the Former Soviet Union region, characterized by a past communist history, than in Western Europe. Age-specific analyses showed East–West health differences usually being larger as

age increases (up to 65+). Moreover, the authors stated that the younger generations within Central Europe, and possibly each successive generation thereafter, might be on the road to recovery because of the relative and fading influence of the past regimes (151). Our finding was mitigated in the regression models, where young Italians resulted to be slightly healthier than Serbians, when considering all the study variables in the multivariate logistic model.

Second, education level did not influence SRH in none of the analysis. On the opposite, the presence of systematic differences in health between socioeconomic groups as measured by education is well documented: the low educated groups have a higher prevalence of poor SRH, higher incidence of specific diseases, and higher rates of mortality (152,153,154). On the other hand, our finding is related to the majority of the sample, students with middle or high education level: in both samples, more than a third of the students completed at least high school. These numbers reflect a trend: the number of tertiary graduates in Europe is on a rise (from about 10 million in 2003 to about 15 in 2013) (155). With less people completing their education before the high school, the effect of low education on health is also diminishing.

Third, as education, binge drinking is not a determinant of SRH for students aged 18-30 in Italy and Serbia, above the fact that in the latter the percentage of binge drinkers is exceeding 50%. This finding is peculiarity of young adults because, if we take under consideration a sample representative of Italian and Serbian adult populations, then the phenomenon also called risky single occasion drinking becomes a significant determinant of SRH (150). A recent research analyzed the drinking patterns of university students in Germany, Bulgaria, and Poland. They found,in all of them, that that binge drinking was not

worsening health (156). Since frequency of drinking is such a broad measure, which does not assess the quantity or the quality of alcohol consumed, high reported frequency presents only a relatively small concern for health problems, especially in this slice of the population. Other possible explanation is that university students represent relative healthy population – too young to be influenced by negative effects and consequences of excessive alcohol use or abuse. Negative effects on health may be relevant in later developmental stages. In fact, persons who drink alcohol frequently are more likely not to care for the own health (156). Higher amounts of alcohol may be also connected with various maladaptive outcomes, alcohol-related problems, and self-neglecting behavior that can extend far into adulthood. More longitudinal researches are needed.

Fourth, an adequate combined intake of fruit and vegetable is the strongest determinant of SRH for the Italian students and the second strongest for the Serbians.Nutrition is a major environmental influence in physical and mental growth and development in early life. Healthy food provides the nutrients needed to form and maintain body tissues (protein, iron and calcium), energy for physical activity and metabolism (fat and carbohydrate) and nutrients for regulating body processes (vitamins and minerals). Studies support the theory that good nutrition contributes to improving the well-being of students and their potential learning ability, therefore contributing to better school performance (157).The promotion of a healthy diet and physical activity in these years not only contributes to better mental, social and physical health during this stage of life, providing increased capacity to perform daily activities, but also sets the basis for better health throughout the life course and therefore contributes to a longer life with a better quality. It is not a case, in fact, that Italy,

where at least one third of the students eats fruit and vegetable on a daily basis, is one of the healthiest countries of the world (158,159).

One of the aims of this research was to cross-culturally examine the well-being scale in a students' population. Considering the results from the reliability analysis and from the linear dependence analysis with SRH, we think that the presented well-being scale may capture additional, important information in a compact format.This may be particularly useful because of the reduction of item redundancy and associated confusion and fatigue with longer, semantically similar items such as those on the 50-item *Extended Satisfaction with Life Scale* (160).Furthermore, our instrument displayed strong psychometric properties in this sample, similar to the psychometrics reported in other comparable college populations.

We were able to find 7 more toolsof MWB tested in samples of young adults. The *Brief Multidimensional Students' Life Satisfaction Scale – College Version*(161) is a short scale, with only 9 items, but with good internal consistency. The *Mental Health Continuum Short Form* (162) is the short form of the *Mental Health Continuum* (163), from 40 to 14 items.The scale's short form improved the format asking how much time the individuals functioned in a specific manner, ranging from 'all of the time' to 'none of the time'.The *Quality of Student Life Questionnaire* (164) is specific for assessing the educational needs and the program outcome; its test-retest coefficient ranges from 0.72 and 0.92, with the Cronbach's alpha stretching from 0.76 to 0.91 for the included scales.The *World Health Organization Quality of Life-100*(165) is a long scale, with 100 items. The field in which it has shown the best results is depression: this scale assesses the relationship of quality of life to psychopathological measures such as apathy and anhedonia and these links were not influenced by possible adverse events of medication (166).The *World Health Organization*

Quality of Life Brief(167) is the official shorten version of the previous item, developed because the latter was not fit, because of its length, for practical use. The number of items passed from 100 to 26, but none of the facets went lost because the upgraded scale contained at least one item for each of the 24 aspects of the longer instrument.The *Health Survey Questionnaire SF-36* (75) is an old instrument developed as part of the Medical Outcomes Study, a multi-site, multi-year research aimed at explaining variations in patient outcomes.The *PERMA*(168) is a recently introduced model of flourishing in which psychological well-being is defined in terms of (P)ositive emotions, (E)ngagement, (R)elationships, (M)eaning, and (A)ccomplishment (22). In this context, our scale can surely provide an alternative, helping the reader to choose the fittest instrument according to specific research questions related to specific domains of well-being.

A strength point of this work is the large sample of future health professionals involved: the analyzed scale is optimized for students, and in particular for health-related studies. Other similar studies from the literature had a significant smaller sample size (83). Also, even though only two Universities are involved, we can generalize the results on the whole countries, considering that students in both contexts tend to move to bigger cities in search of the best education. Moreover, an in-depth focus on well-being among young adults could represent a novelty aspect in the European context. At last, two similar, but not equivalent dependent variables are in focus, allowing us to summarize results on the basis of health and happiness.

A weak point regards the dynamic nature of this phenomenon: considering the variability over time of physical and mental health and their sensitivity to external and internal influences, a process of iterative revision of approaches and methods of well-being could

give a more realistic picture of this fast changing dynamic. For instance, a prospective multi-national research with a concurrent evaluation of the eudaimonic and the hedonic concepts of well-being in at least one individualistic and one collectivist culture is needed. In this sense, the results of this research should help in the selection of the proper instruments. Moreover, self-assessments often can differ from the real state for variables such as economic state and health conditions. Comparability is not issued, anyways, because when respondents are not answering sincerely, they tend to do it in similar ways, not compromising the cross-cultural design (169).

6. CONCLUSIONS

Our study, conducted as a first research among students of Medicine and Psychology and a second analysis of two health surveys, represents a base for further intervention answering to the call on action to improve well-being and SRH. Possible interventions aimed at helping medical and/or psychological students could employ standardized instrument from this doctoral study to optimize the research within the situation analysis.Being proactive at University level could help future generations of health professionals.

On the base of the preexisting goals, regarding the examination of the well-being scales in a students' population, the comparison of well-being and its determinants in Italian and Serbian students, the further comparison of determinants of well-being and self-rated health, and the identification of the significant predictors of well-being and self-rated health among students, looking at the results, we can conclude that:

1. Considering the cross-cultural reliability and validity analysis, the well-being scales can be used as a valid research tool in a students' population.

2. The difference in both MWB and SRH between Italian and Serbian students aged 18-30 is in favor of the latter or not significant. Disconfirming the results from general population surveys, when it comes to young adults, Italians are certainly not happier or healthier than Serbians.

3. Social, demographic, and economic characteristics of the respondents (such as education or subjective economic status) are related to both MWB and SRH in the two populations.

4. With a Pearson's correlation coefficient of 0.418 ($p<.001$), we consider MWB and SRH comparable in a cross-cultural cross-sectional mixed methods research.

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ANNEX

Italian questionnaire

Università degli Studi di Torino
Dipartimento di Psicologia

Univerzitet u Beogradu
Medicinski Fakultet

BETOS – BEograd TOrino Study

Grazie per aver accettato di partecipare a questo importante questionario.
Raccoglieremo pensieri ed opinioni al fine di migliorare la vostra salute e pianificare interventi atti a fornire agli studenti universitari la migliore assistenza sanitaria possibile.
I principali promotori della presente ricerca sono il Dott. Francesco Lietz (francesco.lietz@med.bg.ac.rs), Dottorando presso l'Università di Belgrado (Serbia) e il Dott. Giovanni Piumatti (giovanni.piumatti@unito.it), Post Doc presso l'Università di Belgrado.
Siate certi che tutte le risposte fornite verranno conservate con la massima riservatezza.
Ti chiediamo di compilare un codice segreto. Il tuo codice si compone della tua data di nascita, delle ultime due lettere del tuo nome di battesimo e delle prime due lettere del tuo cognome..

Ecco un esempio:

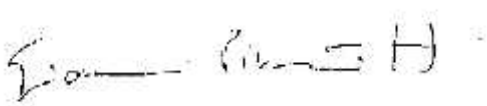
Il giorno in cui é nata Maria		Il mese di nascita di Maria			Le ultime 2 lettere del nome di Maria		Le prime 2 lettere del cognome di Maria	
1	4	O	T	T	I	A	R	O

Ora segui l'esempio per creare il tuo codice segreto:

Il giorno in cui sei nato/a		Il mese in cui sei nato/a			Le ultime 2 lettere del tuo nome		Le prime 2 lettere del tuo cognome	

Francesco Lietz

Giovanni Piumatti



TITLE

A01. **Genere**: ☐Maschio ☐ Femmina

A02. **Età**:_____

A03. **Nazionalità**:_____

A04. **Dove vivi ora?** (specifica la città/cittadina)_____

A05. **Mezzo di transporto per l'Università:**

☐A piedi ☐Bicicletta ☐ Scooter/motocicletta

☐Automobile ☐ Trasporto pubblico ☐ Altro:_____

A06. **Tempo impiegato per raggiungere l'Università** (in minuti)**:_____**

A07. **Altezza**(in cm)**:_____**

A08. **Peso**(in kg)**:_____**

A09. **Stato civile**:

☐ Single (mai sposato) ☐ In una relazione (inclusi i matrimoni e le coppie di fatto)

☐ Vedovo/a ☐ Divorziato/a

A10. **Convivi con il tuo/la tua partner?**

☐ Si, come coppia di fatto (incluso il matrimonio) ☐ Si, ma non come coppia di fatto ☐ No

A11. **Soddisfazione della scelta accademica:**

☐Molto soddisfatto/a ☐Soddisfatto/a ☐ Nè soddisfatto/a, nè insoddisfatto/a

☐ Insoddisfatto/a ☐ Molto insoddisfatto/a

A12. **A che Facoltà sei iscritto/a?_____**

A13. **A che anno di studi sei attualmente iscritto/a?_____**

A14. **Se nella tua Facoltà esistono gli indirizzi/specializzazioni, quale hai scelto?_____**

A15. **Con quale votazione ti sei diplomato/a alle scuola superiori?**

☐ Tra 60 e 70 su 100 ☐ Tra 71 e 80 su 100 ☐ Tra 81 e 90 su 100 ☐ Tra 91 e 100

A16. **Status di studente/lavoratore:**

☐ Lavoro full-time ☐ Lavoro part-time ☐ Studio soltanto

A17. **Condizione abitativa**:

☐ Con i miei genitori ☐ Casa/appartamento di proprietà (senza i miei genitori)

☐ In fitto (senza i miei genitori) ☐ Residenza universitaria☐ Altro:_____

A18. **Con quante persone vivi attualmente?_____**

A19. **Quale pensi sia il reddito minimo mensile pro capite dei tuoi genitori?**

☐ Meno di 1200€ ☐ 1201-1500€ ☐ 1501-2000€ ☐ 2001-2500€ ☐ Più di 2501€

A20. **Come consideri il suddetto reddito mensile?**

 Molto buono Buono Medio Non buono Per niente buono

A21. **Come va la tua salute in generale?**

 Molto bene Bene Nella media Non bene Per niente bene

BETOS

Per ognuna delle seguenti domande in questa sezione, lo zero rappresenta il peggio che la tua vita possa essere ell dieci il meglioche la tua vita possa essere. Per ogni dominio, immaginate presente, passato e futuro.

Quando pensi alla **miglior vita possibile** per te...

B01.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B01.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10
B01.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

Quando si tratta delle **relazioni con le persone importanti** nella tua vita...

B02.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B02.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10
B02.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

Quando si tratta della **comunità** in cui vivi...

B03.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B03.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10
B03.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

Quando si tratta della tuo **status di studente**...

B04.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B04.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10
B04.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

Quando si tratta della tua **salute fisica e benessere fisico**...

B05.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B05.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10
B05.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

Quando si tratta del tuo **benessere emotivo e psicologico**...

B06.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B06.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10
B07.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

Quando si tratta della tua**situazione economica**...

B07.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B07.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10

B07.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

Quando si tratta della tua**vita sessuale**...

B08.1. ... che voto daresti **adesso**?	0	1	2	3	4	5	6	7	8	9	10
B08.2. ... che voto avresti dato **un anno fa**?	0	1	2	3	4	5	6	7	8	9	10
B08.3. ... che voto penseresti di dare **ad un anno da**	0	1	2	3	4	5	6	7	8	9	10

BETOS

Ora pensa ai tuoi obiettivi/progetti personali che hai in questo momento. Questi possono essere correlati a qualsiasi dominio della tua vita. Elenca tre dei tuoi obiettivi/progetti personali e per ognuno rispondi alle domande presentate di seguito usando una scala da 1 ("pochissimo") a 7 ("moltissimo").

C01.1. **OBIETTIVO/PROGETTO 1**:_____

C01.2. Fino a che punto questo progetto é importante per te?	1	2	3	4	5	6	7
C01.3. Fino a che punto sei impegnato alla realizzazione di questo progetto?	1	2	3	4	5	6	7
C01.4. Fino a che punto hai fatto progressi nella realizzazione di questo progetto?	1	2	3	4	5	6	7
C01.5. In che misura godi del sostegno di altre persone per la realizzazione di questo progetto?	1	2	3	4	5	6	7
C01.6. In che misura ritieni di poter realizzare questo progetto?	1	2	3	4	5	6	7
C01.7. Fino a che punto la realizzazione di questo progetto è sotto il tuo controllo?	1	2	3	4	5	6	7
C01.8. Fino a che punto è stressante raggiungere questo progetto?	1	2	3	4	5	6	7
C01.9. In che misura interferenze esterne ostacolano la realizzazione di questo progetto?	1	2	3	4	5	6	7

C02.1. **OBIETTIVO/PROGETTO 2**: _____

C02.2. Fino a che punto questo progetto é importante per te?	1	2	3	4	5	6	7
C02.3. Fino a che punto sei impegnato alla realizzazione di questo progetto?	1	2	3	4	5	6	7
C02.4. Fino a che punto hai fatto progressi nella realizzazione di questo progetto?	1	2	3	4	5	6	7
C02.5. In che misura godi del sostegno di altre persone per la realizzazione di questo progetto?	1	2	3	4	5	6	7
C02.6. In che misura ritieni di poter realizzare questo progetto?	1	2	3	4	5	6	7
C02.7. Fino a che punto la realizzazione di questo progetto è sotto il tuo controllo?	1	2	3	4	5	6	7
C02.8. Fino a che punto è stressante raggiungere questo progetto?	1	2	3	4	5	6	7
C02.9. In che misura interferenze esterne ostacolano la realizzazione di questo progetto?	1	2	3	4	5	6	7

C03.1. **OBIETTIVO/PROGETTO 3**: _____

C03.2. Fino a che punto questo progetto é importante per te?	1	2	3	4	5	6	7
C03.3. Fino a che punto sei impegnato alla realizzazione di questo progetto?	1	2	3	4	5	6	7
C03.4. Fino a che punto hai fatto progressi nella realizzazione di questo progetto?	1	2	3	4	5	6	7
C03.5. In che misura godi del sostegno di altre persone per la realizzazione di questo progetto?	1	2	3	4	5	6	7
C03.6. In che misura ritieni di poter realizzare questo progetto?	1	2	3	4	5	6	7
C03.7. Fino a che punto la realizzazione di questo progetto è sotto il tuo controllo?	1	2	3	4	5	6	7
C03.8. Fino a che punto è stressante raggiungere questo progetto?	1	2	3	4	5	6	7
C03.9. In che misura interferenze esterne ostacolano la realizzazione di questo progetto?	1	2	3	4	5	6	7

BETOS

Nelle ultime 2 settimane, con quale frequenza ti ha dato fastidio ciascuno dei seguenti problemi?

	Mai	Alcuni giorni	Per più della metà del tempo	Quasi ogni giorno
D01. Scarso interesse o piacere nel fare le cose	☐	☐	☐	☐
D02. Sentirsi giù, triste o disperato/a	☐	☐	☐	☐
D03. Problemi ad addormentarsi o a dormire tutta la notte senza svegliarsi, o a dormire troppo	☐	☐	☐	☐
D04. Sentirsi stanco/a o avere poca energia	☐	☐	☐	☐
D05. Scarso appetito o mangiare troppo	☐	☐	☐	☐
D06. Avere una scarsa opinione di sé, o sentirsi un fallimento o aver deluso se stesso/a o i propri familiari	☐	☐	☐	☐
D07. Difficoltà a concentrarsi su qualcosa, per esempio leggere il giornale o guardare la televisione	☐	☐	☐	☐
D08. Muoversi o parlare così lentamente da poter essere notato/a da altre persone. O, al contrario, essere così irrequieto/a da muoversi molto più del solito	☐	☐	☐	☐

Saremmo ora interessati a sapere per quanto tempo hai fatto **attività fisica NEGLI ULTIMI 7 GIORNI**. Tieni in considerazione che per "intensa attività fisica" si intende l'attività che richiede uno sforzo fisico elevato e che costringe a respirare con un ritmo molto più elevato del normale. Per "moderata attività fisica" si intende invece l'attività che richiede uno sforzo fisico moderato e che costringe a respirare con un ritmo solo moderatamente più elevato del normale.

E01. Per quanti giomi hai compiuto attività fisiche intense, come ad esempio sollevamento di pesi, scavo di buchi nel terreno, attività aerobiche o corse veloci in bicicletta?_____ **giorni alla settimana**

E02. Quanti minuti hai trascorso compiendo tali attività fisiche intense?_____ **minuti al giorno**

E03. Per quanti giomi hai compiuto attività fisiche moderate, come ad esempio trasporto di pesi leggeri, escurisioni in bicicletta ad una velocità regolare, partite di tennis in doppio? _____ **giorni alla settimana**

E04. Quanti minuti hai trascorso compiendo tali attività fisiche moderate?_____ **minuti al giorno**

E05. Per quanti giorni hai camminato per almeno 10 minuti? Considera le camminate a casa, quelle per spostarsi da un posto all'altro, ed ogni altra camminata che ti è capitato di fare anche solo per piacere, esercizio o sport.
_____ **giorni alla settimana**

E06. Per quanti minuti hai camminato?_____ **minuti al giorno**

E07. Quanti minuti hai trascorso rimanendo seduto?_____ **minuti al giorno**

BETOS

L'ultima serie di domande riguarda alcuni fattori dello **stile di vita**.

F01. **Fumi attualmente**?

□ Si, quotidianamente □ Sioccasionalmente (meno di 30 sigarette nell'ultimo mese) □ No

F02. **Se fumi, quante sigarette fumi al giorno?**_____

F03. **Ha mai fumato quotidianamente, o quasi, per almeno un anno?** □ Si □ No

F04. **Quanto spesso sei esposto al fumo passivo?**

□ Mai/quasi mai □ Meno di un'ora al giorno □ 1-5 ore al giorno □ Più di 5 ore al giorno

F05. **Durante gli ultimi 12 mesi, ha mai assunto cannabis?** □ Si □ No

F06. **Durante gli ultimi 12 mesi, ha mai assunto altre sostanze come cocaina, amfetamine, ecstasy o altre sostanze simili?** □ Si □ No

F07. **Durante gli ultimi 12 mesi, quanto spesso hai consumato delle bevande alcoliche di qualsiasi tipo?**

□ Mai □ Una volta al mese o meno □ 2-4 volte al mese
□ 2-3 volte a settimana □ 4-6 volte a settimana □ Ogni giorno

F08. **Durante gli ultimi 12 mesi, quanto spesso hai consumato 6 o più bicchieri di bevande alcoliche in un'unica occasione?**

□ Mai □ Meno di una volta al mese □ Una volta a settimana □ Una volta al giorno o quasi

F09. **Quanto spesso mangi frutta (esclusi i succhi)?**

□ Mai □ Meno di una volta a settimana □ 1-3 volte a settimana
□ 4-6 volte a settimana □ Una volta al giorno □ Due o più volte al giorno

F10. **Quanto spesso mangi verdure o insalata (esclusi i succhi e le patate)?**

□ Mai □ Meno di una volta a settimana □ 1-3 volte a settimana
□ 4-6 volte a settimana □ Una volta al giorno □ Due o più volte al giorno

F11. **Nel complesso, quanto, su una scala da 0 a 10 dove 0 sta per "completamente insoddisfatto" e 10 per "molto soddisfatto", ti ritieni attualmente soddisfatto della tua vita?**_____

Scrivi la tua mail:_____

Il questionario é terminato. Ti ringraziamo ancora una volta per il tempo che ci hai dedicato. Se volessi avere maggiori informazioni o specifiche sulla presente ricerca ci puoi contattare ai seguenti indirizzi email:
francesco.lietz@med.bg.ac.rs
giovanni.piumatti@unito.it.

Serbian questionnaire

Università degli Studi di Torino
Dipartimento di Psicologia

Univerzitet u Beogradu
Medicinski Fakultet

BETOS – BEograd TOrino Study

Hvala Vam na učešćuu ovom važnom istraživanju.
Podaci iz ankete biće korišćeni u cilju unapređenja Vašeg zdravlja i planiranja intervencije za obezbeđivanje najbolje moguće zdravstvene zaštitestudentima.
Glavni istraživači ove studije su dr Francesco Lietz (francesco.lietz@med.bg.ac.rs), student doktorskih studija na Medicinskom Fakultetu Univerziteta u Beogradu, i dr Giovanni Piumatti (giovanni.piumatti@gmail.com), student postdoktorskih studija na Medicinskom Fakultetu Univerziteta u Beogradu.
Budite sigurni da će svi odgovori biti strogo čuvani.
Molimo Vas da popunite tajni kod. Vaš kod će biti sačinjen od datuma Vašeg rođenja, poslednja dva slova Vašeg imena i prva dva slova Vašeg prezimena.

Na primer:

n kad se Marija rodila		Mesec rođenja Marije			oslednja dva slova Marijinog imena		Prva dva slova Marijinog prezimena	
1	4	O	K	T	J	A	R	O

Sada kreirate svoj tajni kod:

Dan kada si rođen/a		Mesec rođenja			oslednja dva slova Vašeg imena		Prva dva slova Vašeg prezimena	

Francesco Lietz

Giovanni Piumatti

BETOS

A01. **Rod**: ☐Muški ☐ Ženski

A02. **Godine starosti**:_____

A03. **Državljanstvo**:_____

A04. **Sadašnje mesto prebivališta** (navedite opštinu):_____

A05. **Prevozno sredstvo do fakulteta:**

☐Peške ☐Bicikl ☐ Skuter/motocikl

☐Auto ☐ Gradski prevoz ☐ Ostalo:_____

A06. **Vreme potrebno do fakulteta** (u minutima)**:_____**

A07. **Telesna visina** (u cm)**:_____**

A08. **Telesna težina** (u kg)**:_____**

A09. **Bračno stanje**:

☐ Nisam u vezi (nikad u braku) ☐ U vezi (uključujućibrak i vanbračnu zajednicu)

☐ Udovac/ica ☐ Razveden/a

A10. **Da li živite u Vašem domaćnistvu sa nekim kao par?**

☐ Da, na pravnoj osnovi ☐ Da, bez pravne osnove ☐ Ne

A11. **Zadovoljstvo akademskim izborom:**

☐ Vrlo zadovoljan/na ☐ Zadovoljan/na ☐ Ni zadovoljan/na ni nezadovoljan/na

☐Nezadovoljan/na ☐ Vrlo nezadovoljan/na

A12. **Koji fakultet studirate?_____**

A13. **U kojoj godini studiranja ste u ovom trenutku?_____**

A14. **Ako na Vašem fakultetu postoje smerovi, na kojem ste Vi?_____**

A15. **Sa kojim prosekom ste završili srednju školu?**

☐ < 2.5 ☐ od 2.5 do 3.49 ☐ od 3.5 do 4.49 ☐ ≥ 4.5

A16. **Da li radite uz studiranje?**

☐ Da, puno radno vreme ☐ Da,nepuno radno vreme ☐ Ne, samo studiram

A17. **Stanujem:**

☐ Sa roditeljima ☐ U vlastitom stanu/u vlastitoj kući (bez roditelja)

☐ U iznajmljenom stanu/u iznajmljenoj kući (bez roditelja) ☐ U studentskom domu ☐ Ostalo:_____

A18. **Koliko osoba sa Vama živi u istom stanu/istoj kući?_____**

A19. **Šta mislite koji je mesečni prihod po članu Vašegdomaćinstva?**

☐ manje od 300€ ☐ između 300 i 400€ ☐ između 400 i 500€ ☐ između 500 i 600€ ☐ više od 600€

A20. **Kako biste ocenili prethodno navedene mesečne prihode?**

☐ Vrlo dobro ☐ Dobro☐ Prosečno ☐ Nije dobro ☐ Nije uopšte dobro

A21. **Kakvo je Vaše zdravlje u celini?**

☐ Vrlo dobro ☐ Dobro☐ Prosečno ☐ Nije dobro ☐ Nije uopšte dobro

BETOS

Za svako od naredenih pitanja na ovoj stranici, broj deset predstavlja najvišu, a broj nula najnižu ocenu aspekata Vašeg života. Za svaki domen,molimo Vas da razmislite o sadašnjosti, prošlosti i budućnosti.

Ovaj skup pitanja se odnosi na **najbolji mogući život** za Vas.

B01.1. Kako ga ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B01.2. Kako biste ga ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10
B01.3. Kako ćete ga oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

Ovaj skup pitanja se odnosi na Vaše**međuljudske odnose**.

B02.1. Kako ih ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B02.2. Kako biste ih ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10
B02.3. Kako ćete ih oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

Ovaj skup pitanja se odnosi na Vaše**društveno okruženje** (zajednica u kojoj živite).

B03.1. Kako ga ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B03.2. Kako biste ga ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10
B03.3. Kako ćete ga oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

Ovaj skup pitanja se odnosi na Vaš**studentski status**.

B04.1. Kako ga ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B04.2. Kako biste ga ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10
B04.3. Kako ćete ga oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

Ovaj skup pitanja se tiče Vašeg**fizičkog zdravlja i fizičkog blagostanja**.

B05.1. Kako ga ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B05.2. Kako biste ga ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10

B05.3. Kako ćete ga oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

Ovaj skup pitanja se tiče Vašeg**emocionalnog i psihološkog blagostanja**.

B06.1. Kako ga ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B06.2. Kako biste ga ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10
B06.3. Kako ćete ga oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

Ovaj skup pitanja se tiče Vaše**ekonomske situacije**.

B07.1. Kako je ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B07.2. Kako biste je ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10
B07.3. Kako ćete je oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

Ovaj skup pitanja se tiče Vašeg**seksualnog života**.

B08.1. Kako ga ocenujete sada?	0	1	2	3	4	5	6	7	8	9	10
B08.2. Kako biste ga ocenili pre godinu dana?	0	1	2	3	4	5	6	7	8	9	10
B08.3. Kako ćete ga oceniti za godinu dana?	0	1	2	3	4	5	6	7	8	9	10

BETOS

Sada razmislite o ličnim ciljevima koje imate u ovom trenutku. Oni mogu biti u vezi sa bilo kojim aspektom života. Molimo Vas da navedete svoja tri najvažnijeg lična cilja i odgovorite na svako od pitanja, koristeći skalu od 1 (vrlo malo) do 7 (mnogo).

C01.1. **CILJ 1**:_____

C01.2. U kojoj meri je cilj značajan za Vas?	1	2	3	4	5	6	7
C01.3. U kojoj meri ste se obavezali na realizovanje ovog cilja?	1	2	3	4	5	6	7
C01.4. U kojoj meri ste napravili napredak ka realizovanju ovog cilja?	1	2	3	4	5	6	7
C01.5. U kojoj meri ste imali podršku drugih ljudi na realizovanju ovog cilja?	1	2	3	4	5	6	7
C01.6. U kojoj meri verujete da možete da realizujete ovaj cilj?	1	2	3	4	5	6	7
C01.7. U kojoj meri je realizovanje ovog cilja pod Vašom kontrolom?	1	2	3	4	5	6	7
C01.8. U kojoj meri je stresno postići ovaj cilj?	1	2	3	4	5	6	7
C01.9. U kojoj meri se osećate da se neko meša u Vaše napore da postignete navedeni cilj?	1	2	3	4	5	6	7

C02.1. **CILJ 2**: _____

C02.2. U kojoj meri je cilj značajan za Vas?	1	2	3	4	5	6	7
C02.3. U kojoj meri ste se obavezali na realizovanje ovog cilja?	1	2	3	4	5	6	7
C02.4. U kojoj meri ste napravili napredak ka realizovanju ovog cilja?	1	2	3	4	5	6	7
C02.5. U kojoj meri ste imali podršku drugih ljudi na realizovanju ovog cilja?	1	2	3	4	5	6	7
C02.6. U kojoj meri verujete da možete da realizujete ovaj cilj?	1	2	3	4	5	6	7
C02.7. U kojoj meri je realizovanje ovog cilja pod Vašom kontrolom?	1	2	3	4	5	6	7
C02.8. U kojoj meri je stresno postići ovaj cilj?	1	2	3	4	5	6	7
C02.9. U kojoj meri se osećate da se neko meša u Vaše napore da postignete navedeni cilj?	1	2	3	4	5	6	7

C03.1. **CILJ 3**: _____

C03.2. U kojoj meri je cilj značajan za Vas?	1	2	3	4	5	6	7
C03.3. U kojoj meri ste se obavezali na realizovanje ovog cilja?	1	2	3	4	5	6	7
C03.4. U kojoj meri ste napravili napredak ka realizovanju ovog cilja?	1	2	3	4	5	6	7
C03.5. U kojoj meri ste imali podršku drugih ljudi na realizovanju ovog cilja?	1	2	3	4	5	6	7
C03.6. U kojoj meri verujete da možete da realizujete ovaj cilj?	1	2	3	4	5	6	7
C03.7. U kojoj meri je realizovanje ovog cilja pod Vašom kontrolom?	1	2	3	4	5	6	7
C03.8. U kojoj meri je stresno postići ovaj cilj?	1	2	3	4	5	6	7
C03.9. U kojoj meri se osećate da se neko meša u Vaše napore da postignete navedeni cilj?	1	2	3	4	5	6	7

BETOS

U toku protekle 2 nedelje, koliko često Vam je smetao bilo koji od sledećih problema?

	Nije uopšte	Nekoliko dana	Više od 7 dana	Skoro svakog dana
D01. Slabo interesovanje ili zadovoljstvo da nešto radite	☐	☐	☐	☐
D02. Malodušnost, depresija ili beznadežnost	☐	☐	☐	☐
D03. Problem da zaspite, spavate u kontinuitetu ili previše spavate	☐	☐	☐	☐
D04. Osećanje zamora ili nedostatka energije	☐	☐	☐	☐
D05. Loš apetit ili prejedanje	☐	☐	☐	☐
D06. Loše mišljenje o sebi - ili osećaj da ste promašeni, ili da ste razočarali sebe ili svoju porodicu	☐	☐	☐	☐
D07. Teškoća da se koncentrišete na stvari, kao što su čitanje novina ili gledanje televizije	☐	☐	☐	☐

D08. Toliko usporeno kretanje ili govor da su drugi to mogli da primete, ili suprotno - toliko ste bili uzvrpoljeni ili nemirni da ste se kretali više nego obično	☐	☐	☐	☐

Pitanja koja slede odnose se na vreme koje ste proveli u fizičkoj aktivnosti van posla **u prethodnoj nedelji**.Naporna fizička aktivnost odnosi se na one aktivnosti koje iziskuju veliki fizički napor i teraju Vas da dišete mnogo brže nego inače. Umerene aktivnosti su one koje zahtevaju umeren fizički napor i dovode do nešto težeg disanja nego normalno.

E01. Koliko dana ste upražnjavali napornu fizičku aktivnost kao što je podiznje tereta, kopanje, *„aerobic"* ili brza vožnja bicikla ?_____**dana u nedelji**

E02. Koliko minuta dnevno ste provodili u toj napornoj fizičkoj aktivnosti?_____**minuta dnevno**

E03. Koliko dana ste imali umerenu fizičku aktivnost kao što je nošenje manjeg tereta, vožnje bicikla u normalnom ritmu,tenis u dublu? (ne računajući šetnju) _____**dana u nedelji**

E04. Koliko minuta dnevno ste provodili u toj umerenoj fizičkoj aktivnosti?_____**minuta dnevno**

E05. Koliko dana ste išli u šetnju dužu od 10 minuta? (uključujući i hod u kući, hod od jednog do drugog mesta, kao i svaka druga šetnja u koju ste išli radi rekreacije,sporta, vežbe ili uživanja) _____**dana u nedelji**

E06. Koliko minuta ste prosečno provodili dnevno u šetnji/hodu? _____ **minuta dnevno**

E07. Koliko minuta dnevno ste sedeli?_____**minuta dnevno**

BETOS

Poslednji skup pitanja se tiče **Vašeg stila života**.

F01. **Da li trenutno pušite?**

☐ Da, svakodnevno ☐ Da, povremeno (manje od 30 cigareta u poslednjih mesec dana) ☐ Nejuopšte

F02. **Ako pušite, koliko cigareta prosečno popušite u toku jednog dana?**_____

F03. **Da li ste ikada pušili svakodnevno?** ☐ Da ☐ Ne

F04. **Koliko često ste izloženi duvanskom dimu?**

☐ Nikada ili skoro nikada ☐ Manje od sat vremena dnevno

☐ 1-5 sati dnevno ☐ Više od 5 sati dnevno

F05. **Tokom prethodnih 12 meseci, da li ste pušili kanabis?** ☐ Da ☐ Ne

F06. **Tokom prethodnih 12 meseci, da li ste uzeli bilo koju drugu supstancu, kao što su kokain, amfetamini, ekstazi ili druge slične supstance?** ☐ Da ☐ Ne

F07. **Tokom prethodnih 12 meseci, koliko ste često pili bilo koju vrstu alkoholnih pića?**

☐ Nikada ☐ Manje od jednom mesečno ☐ 2-4 puta mesečno

☐ 2-3 puta u nedelji ☐ 4-6 puta u nedelji ☐ Svaki dan ili skoro svaki dan

F08. **Tokom prethodnih 12 meseci, koliko se često dešavalo da popijete 6 ili više pića koja sadrže alkohol u toku jedne prilike?** ☐ Nikada ☐ Jednom mesečno ☐ Jednom nedeljno ☐ Svaki dan ili skoro svaki dan

F09. **Koliko često jedete voće, izuzimajući sok napravljen od koncentrata voća?**

☐ Nikada ☐ Manje od jednom nedeljno ☐ 1-3 puta nedeljno

☐ 4-6 puta nedeljno ☐ Jedan put dnevno ☐ Dva puta i više dnevno

F10. **Koliko često jedete povrće i salate, izuzimajući krompir i sok napravljen od koncentrata povrća?**

☐ Nikada ☐ Manje od jednom nedeljno ☐ 1-3 puta nedeljno

☐ 4-6 puta nedeljno ☐ Jedan put dnevno ☐ Dva puta i više dnevno

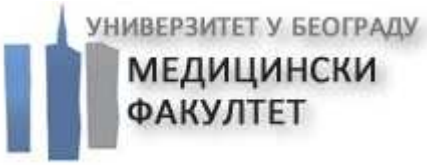
F11. **Sveukupno, kolikoste, na skali od 0 do 10 gde 0 predstavlja „potpuno nezadovoljan/a“ i 10 „mnogo zadovoljan/a“, trenutno zadovoljni Vašim životom?**_____

Molimo Vas potvrdite Vašu e-mail adresu:_____

Upitnik je završen.Hvala još jednom na vremenu koje ste nam posveti . Ako želite više informacija ili detalja o istraživanju, možete nas kontaktirati na sledeće -mail adrese:
francesco.lietz@med.bg.ac.rs
giovanni.piumatti@unito.it

English questionnaire

Università degli Studi di Torino
Dipartimento di Psicologia



Univerzitet u Beogradu
Medicinski Fakultet

BETOS – Beograd Torino Study

Thank you for agreeing to take part in this important survey.
We will be gaining your thoughts and opinions in order to improve your health and to plan interventions for providing University students the best health care possible.
The main promoters of this research are Dr. Francesco Lietz (francesco.lietz@med.bg.ac.rs), Ph.D. student at the University of Belgrade (Serbia), and Dr. Giovanni Piumatti (giovanni.piumatti@unito.it), postdoctoral researcher at the University of Belgrade.
Be assured that all answers you provide will be kept in the strictest confidentiality.
We ask you to fill in a secret code. Your code is made up of your birth date, the last two letters of your first name and the first two letters of your last name.

For instance:

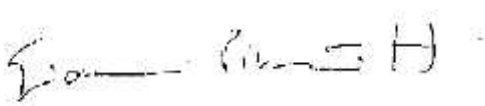
Mary's day of birth		Mary's month of birth			Last two letters of Mary's name		First two letter of Mary's surname	
1	4	O	C	T	R	Y	R	O

Following the example, create your own secret code:

Your day of birth		Your month of birth			Last two letters of your name		First two letter of your surname	

Francesco Lietz

Giovanni Piumatti



BETOS

A01. **Gender**: ☐ Male ☐ Female

A02. **Age**:_____

A03. **Nationality**:_____

A04. **Where do you live now?**(specify municipality)_____

A05. **Mode of transport to School:**

☐ Walk ☐Bike ☐ Scooter/motorcycle

☐Car ☐ Public transportation ☐ Other:_____

A06. **Commuting time to School** (in minutes)**:_____**

A07. **Height** (in cm)**:_____**

A08. **Weight** (in kg)**:_____**

A09. **Marital status**:

☐ Single (never married)☐ In a relationship (including marriage and registered partnership)

☐ Widowed ☐ Divorced

A10. **Are you living with someone in your household as a couple?**

☐ Yes, on a legal basis ☐ Yes, without a legal basis ☐ No

A11. **Satisfaction with academic choice:**

☐ Very satisfied ☐Satisfied ☐ Neither satisfied nor dissatisfied

☐ Dissatisfied ☐ Very dissatisfied

A12. **What is your School?_____**

A13. **What year of study are you in at the moment?_____**

A14. **If your School has specializations, what is yours?_____**

A15. **High school final average mark**:***[depends from the school system]***

☐ Very low ☐ Low ☐ High ☐ Very high

A16. **Working/studying status:**

☐ Working full-time ☐ Working part-time ☐ Only studying

A17. **Housing**:

□ With my parents □ Owned flat/house (without my parents) □ Renting(without my parents)

□ Student dorm □ Other:_____

A18. **Number of people in household:_____**

A19. **What is approximately the monthly income per capita of your family?** ***[varies from country to country]***

□ Very low □ Low □ Average □ High □ Very high

A20. **How would you rate the said monthly income?**

□ Very good □ Good □ Fair □Not good □ Not good at all

A21. **How is your health in general?**

□ Very good □ Good □ Fair □Not good □ Not good at all

BETOS

For each of the following questions in this page, number zero represents the worst and number ten the best your life can be. For every domain, please think about present, past and future.

When it comes to the**best possible life** for you, on which number...

B01.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B01.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B01.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

When it comes to **relationships with important people** in your life, on which number...

B02.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B02.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B02.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

When it comes to the**community** where you live, on which number...

B03.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B03.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B03.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

When it comes to your**student status**, on which number...

B04.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B04.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B04.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

When it comes to your**physical health and wellness**, on which number...

B05.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B05.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B05.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

When it comes to your**emotional and psychological well-being**, on which number...

B06.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B06.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B06.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

When it comes to your**economic situation**, on which number...

B07.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B07.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B07.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

When it comes to your**sexual life**, on which number...

B08.1. ... do you stand **now**?	0	1	2	3	4	5	6	7	8	9	10
B08.2. ... did you stand **a year ago**?	0	1	2	3	4	5	6	7	8	9	10
B08.3. ... do you think you will stand **a year from now**?	0	1	2	3	4	5	6	7	8	9	10

BETOS

Now consider the personal goals/projects you have at the moment. They may be related to every life domain. Please list three of your goals/projects and answer the questions, using the scale from one (not at all) to seven (a lot).

C01.1. **GOAL/PROJECT 1**:_____

C01.2. To what extent is the project important to you?	1	2	3	4	5	6	7
C01.3. To what extent are you committed to realizing this project?	1	2	3	4	5	6	7
C01.4. To what extent have you made progress realizing this project?	1	2	3	4	5	6	7
C01.5. To what extent do you enjoy the support of other people in realizing this project?	1	2	3	4	5	6	7
C01.6. To what extent do you believe you can realize this project?	1	2	3	4	5	6	7
C01.7. To what extent is realizing this project under your control?	1	2	3	4	5	6	7
C01.8. To what extent is it stressful to attain the goal?	1	2	3	4	5	6	7
C01.9. To what extent do you feel that you are interfered in your efforts to attain the goal?	1	2	3	4	5	6	7

C02.1. **GOAL/PROJECT 2**: _____

C02.2. To what extent is the project important to you?	1	2	3	4	5	6	7
C02.3. To what extent are you committed to realizing this project?	1	2	3	4	5	6	7
C02.4. To what extent have you made progress realizing this project?	1	2	3	4	5	6	7

C02.5. To what extent do you enjoy the support of other people in realizing this project?	1	2	3	4	5	6	7
C02.6. To what extent do you believe you can realize this project?	1	2	3	4	5	6	7
C02.7. To what extent is realizing this project under your control?	1	2	3	4	5	6	7
C02.8. To what extent is it stressful to attain the goal?	1	2	3	4	5	6	7
C02.9. To what extent do you feel that you are interfered in your efforts to attain the goal?	1	2	3	4	5	6	7

C03.1. **GOAL/PROJECT 3**: _____

C03.2. To what extent is the project important to you?	1	2	3	4	5	6	7
C03.3. To what extent are you committed to realizing this project?	1	2	3	4	5	6	7
C03.4. To what extent have you made progress realizing this project?	1	2	3	4	5	6	7
C03.5. To what extent do you enjoy the support of other people in realizing this project?	1	2	3	4	5	6	7
C03.6. To what extent do you believe you can realize this project?	1	2	3	4	5	6	7
C03.7. To what extent is realizing this project under your control?	1	2	3	4	5	6	7
C03.8. To what extent is it stressful to attain the goal?	1	2	3	4	5	6	7
C03.9. To what extent do you feel that you are interfered in your efforts to attain the goal?	1	2	3	4	5	6	7

TITLE

Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
D01. Little interest or pleasure in doing things	☐	☐	☐	☐
D02. Feeling down, depressed, or hopeless	☐	☐	☐	☐
D03. Trouble falling or staying asleep, or sleeping too much	☐	☐	☐	☐
D04. Feeling tired or having little energy	☐	☐	☐	☐
D05. Poor appetite or overeating	☐	☐	☐	☐
D06. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	☐	☐	☐	☐
D07. Trouble concentrating on things, such as reading the newspaper or watching television	☐	☐	☐	☐
D08. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	☐	☐	☐	☐

Next questions regard the time you spend doing different types of physical activity **in the last 7 days**. Please note that 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, while 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

E01. How many days did you do vigorous physical activities?_____**daysper week**

E02. How many minutes did you spend on one of those days doing vigorous physical activities?_____**minutes per day**

E03. How many days did you do moderate physical activities? _____**daysper week**

E04. How many minutes did you spend on one of those days doing moderate physical activities?_____ **minutes per day**

E05. How many days did you walk for at least 10 minutes at a time?_____**daysper week**

E06. How many minutes did you spend on one of those days walking?_____ **minutes per day**

E07. How many minutes did you spend sitting?_____ **minutes per day**

BETOS

The last set ofquestions regards **lifestyle factors**.

F01. **Do you smoke at all nowadays?**

□ Yes, daily □ Yes, ocasionally (less than 30 cigarettes in the last month) □ Not at all

F02. **If you do smoke, how many cigarettes do you smoke each day?_____**

F03. **Have you ever smoked daily, or almost daily, for at least one year?** □ Yes □ No

F04. **How often are you exposed to tobacco smoke?**

□ Never/almost never □ Less than one hour per day
□ 1-5 hours per day □ More than 5 hours per day

F05. **During the past 12 months, have you taken any cannabis?** □ Yes □ No

F06. **During the past 12 months, have you taken any other substance, such as cocaine, amphetamines, ecstasy or other similar substances?** □ Yes □ No

F07. **During the past 12 months, how often have you had an alcoholic drink of any kind?**

□ Never □ Monthly or less □ 2-4 times a month
□ 2-3 times a week □ 4-6 times a week □ Every day

F08. **During the past 12 months, how often did you have 6 or more drinks on one occasion?**

□ Never □ Less than monthly □ Weekly □ Daily or almost daily

F09. **How often do you eat fruits (excluding juice)?**

□ Never □Less than once a week □ 1-3 times per week
□ 4-6 times per week □ Once a day □ Twice or more a day

F10. **How often do you eat vegetables or salad (excluding juice and potatoes)?**

□ Never □Less than once a week □ 1-3 times per week
□ 4-6 times per week □ Once a day □ Twice or more a day

F11. **Overall, how much, on a scale from 0 to 10where 0 means "completely dissatisfied" and 10 means "very satisfied", are you satisfied with your life?_____**

Write your email address:_____

The survey is complete. Thank you once more for the time you dedicated us. If you want more information or details on this research you can contact the following email addresses:
francesco.lietz@med.bg.ac.rs
giovanni.piumatti@unito.it.

BIOGRAPHY

Francesco Lietz was born on January 2, 1990, in Naples (Italy), where he finished his high-school education. He completed his Bachelor's degree in Psychological Sciences and Techniques in 2011 at the Second University of Naples with a final grade of 100/110. He completed his Master's degree in Clinical and Community Psychology in 2014 at the University of Turin (Italy) with a final grade of 108/110. He also studied at Örebro University (Sweden) on an exchange program (ERASMUS) for one semester (Sept 2012 – Jan 2013). He arrived in Belgrade in 2013 for research purposes at the "Institute of Mental Health" in the framework of the ERAWEB programme. In 2014, he began his PhD in Public Health at the Faculty of Medicine at the University of Belgrade in the framework of the ERAWEB programme. Till now, he passed all the exams with the highest marks. Alongside writing a systematic review in his field, he also participated at the Young Research Forum of Public Health researchers which ASPHER (Association of the Schools of Public Health in the European Region) organizes every year. His work about well-being was recognized as part of top 10 contributions among the 80 accepted abstracts.

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Potpisani-a Francesco Lietz

broj upisa JZ-08/14

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