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Report of Empirical Study

Self-reported health-related experiences, psychological capital, and psychological wellbeing in Lithuanian adults sample

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Abstract

The purpose of this research was to examine psychological wellbeing and psychological capital in groups of subjectively healthy and unhealthy individuals and identify significant associations. We have analyzed the results of a Lithuanian representative sample of adults ($n = 1001$). Results showed that adult respondents who reported the absence of cardiovascular diseases, nervous system diseases, autoimmune diseases, diabetes, vision disorders, physical or mental disability, and substance abuse demonstrated significantly higher scores for flourishing, life satisfaction, psychological capital, self-efficacy, hope, and resilience. The model on associations between the number of reported diseases, psychological capital, and wellbeing in the representative sample of adults ($\chi^2 = 110.786$, $df = 16$; CFI = .981; RMSEA = .077; NFI = 0.978; TLI = 0.968) indicated that a higher number of diseases (per person) predicts a weakening effect on psychological capital, while psychological capital predicts psychological wellbeing.

Keywords

health, illness, Lithuania, psychological capital, psychological wellbeing

Introduction

Psychological wellbeing (flourishing, happiness, life satisfaction) is a widely researched construct, and there are many attempts to conceptualize this construct, focusing on emotional or cognitive, objective, or subjective factors of wellbeing (Boehm and Kubzansky, 2012; Diener, 2009; Efklides & Moraitou, 2013; Marsh et al., 2019; O'Brien, 2008; Staudinger et al., 1999; Tappolet and Rossi, 2015; Wiest et al., 2011). Interestingly, some authors (e.g. Veenhoven, 1993) proposed the concept of inner well-being which is conceptualized in terms of input conditions (e.g. ability to live a fulfilling life) versus outer well-being which is characterized in terms of the livability of the environment (the quality of the environment in the way the environment promotes personal well-being or life satisfaction, happiness, perceived life quality, or overall well-being).

Evidence suggests that high levels of psychological well-being may facilitate favorable health outcomes and longevity (e.g. Koopmans, 2010) as well as creative thinking, problem-solving, and professional achievement: participants who report higher levels of psychological well-being tend to perform better on decision-making tasks in terms of accuracy, clerical error checking, anagram problem-solving, and original and flexible thinking (Diener and Seligman, 2004). Experimental evidence suggests that well-being brings out the best in people, making them more social, cooperative, and ethical (Diener, 2009).

Much of the debate over psychological wellbeing has focused on the role of income. For decades, researchers considered that income levels are extremely important for psychological wellbeing: it was presumed that socioeconomic inequality, poverty, and Gross Domestic Product (GDP) significantly contribute to national happiness (Fischer and Boer, 2011; O'Brien, 2008). Ortiz-Ospina E. and Roser M. noted: "richer people tend to say they are happier than poorer people; richer countries tend to have

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higher average happiness levels; and across time, most countries that have experienced sustained economic growth have seen increasing happiness levels" (Ortiz-Ospina and Roser, 2020).

At first glance, the primary significance of income on psychological wellbeing seems reasonable. However, the World Health Organization (WHO) reports an alarming increase in numbers (1999–2019) of various diseases. Still, there is no established research on parallels between these numbers and scores of national happiness. It means that health or the absence of illness is still under-researched as a predictor of national psychological wellbeing.

However, there is an extensive literature that links psychological wellbeing to positive health outcomes. Researchers analyzed predictors of subjective physical health and global wellbeing (Staudinger et al., 1999), cultivating positive emotions to optimize health and well-being (Fredrickson, 2000), environmental and genetic contributions to the relationship between subjective well-being, perceived health, and somatic illness (Røysamb et al., 2003), psychosocial adjustment among cancer survivors (Costanzo et al., 2009), control striving in older adults with serious health problems (Hall et al., 2010), health, happiness and wisdom (Judge et al., 2010), nonspecific mechanisms that enhance well-being in health-promoting behaviors (Gaitan-Sierra and Hyland, 2011), singing, health and wellbeing (Gick, 2011), happiness and cardiovascular health (Boehm and Kubzansky, 2012), religious behavior, wellbeing and health (Levin, 2013), persistent psychological wellbeing as predicting improved self-rated health (Ryff et al., 2015), emotions and wellbeing (Tappolet and Rossi, 2015), age differences in the within-person coupling of individuals' physical health and wellbeing (Schöllgen et al., 2016), psychological factors in health (Hilton and Johnston, 2017), defensive profile in breast cancer women (Di Giuseppe et al., 2019), improving employees wellbeing and physical health through a technology-based physical activity intervention (Lennefer et al., 2019).

Julia Boehm and Laura Kubzansky reviewed over 200 published studies to explore the link between life satisfaction, happiness, and cardiovascular health. Researchers concluded that life satisfaction and happiness were strongly associated with a reduced risk of cardiovascular disease: "the most optimistic individuals had an approximately 50% reduced risk of experiencing an initial cardiovascular event than their less optimistic peers" (Boehm and Kubzansky, 2012). Boehm et al. (2011) also found a link between optimism and the composition of cholesterol in the blood: optimistic individuals had higher levels of good cholesterol and lower triglycerides (Boehm et al., 2011).

Researchers have also established that the most optimistic individuals had a 55% reduced risk of all-cause mortality and a 23% reduced risk of cardiovascular death (Giltay et al., 2004). The most optimistic people had a 9% lower risk of developing coronary heart disease and a 14% lower risk of dying from any cause (Tindle et al., 2009), to name a few studies.

Research shows that psychological wellbeing contributes to better health, but what happens to wellbeing if someone is suffering a serious illness? Can people flourish and be satisfied with life if they are ill? These questions are extremely important nowadays when the world is facing the coronavirus COVID-19 outbreak. Moreover, the other facts about health in the world is no less dramatic. As stated by WHO, cardiovascular diseases are the number 1 cause of death globally, taking an estimated 17.9 million lives each year. Cancer is also a leading cause of death worldwide, accounting for an estimated 9.6 million deaths in 2018. About 422 million people worldwide have diabetes, viral hepatitis B and C affect 325 million people worldwide, more than 264 million people of all ages suffer from depression, the harmful use of alcohol results in 3.3 million deaths each year; about 270 million people (or about 6% of the global adult population) had used drugs in the previous year, about 35 million people are estimated to be suffering from drug use disorders, and about 0.5 million deaths annually are attributable to drug dependence (Disease and Injury Incidence and Prevalence Collaborators, 2018). Thus millions of people suffering from various diseases worldwide have to experience illness and its psychological outcomes.

A lot of research investigated psychological outcomes of illness (Besharat et al., 2018; Boehm and Kubzansky, 2012; Costanzo et al., 2009; Di Giuseppe et al., 2019; Hall et al., 2010; Mittag et al., 2016; Sibulwa et al., 2019; Wiest et al., 2011). Results vary from one disease to another, but the most relevant questions are: What factors determine psychological wellbeing in illness and health? How illness contribute to diminished psychological wellbeing? What are the related factors, and what is their role in psychological outcomes?

Around a decade ago emerged a construct of psychological capital (PsyCap) which is defined as "individual's positive state of development and is characterized by (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making positive attributions (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success" (Luthans et al., 2007: 3). In other words, PsyCap refers to a positive appraisal of one's capacity to overcome obstacles with sustained effort, and this appraisal reflects four dimensions: hope, self-efficacy, resilience, and optimism.

Research has documented associations between psychological capital (PsyCap) and several wellbeing outcomes, including health (Avey et al., 2010; Cheung et al., 2011; Harms et al., 2017; Luthans et al., 2006; Varas et al., 2019). Even though PsyCap exploration has concentrated mostly on the work domain, the capacity to persevere and overcome

emotional difficulties may be particularly important in the health context. Moreover, individuals higher on PsyCap in the health domain are more likely to engage in opportunities to sustain and improve health and more likely to persist in efforts to achieve health-related goals (Luthans et al., 2010, 2013). Furthermore, positive health experiences, such as coping with illness or disability, are likely to set positive development whereby individuals come to see themselves as more capable of taking on more significant challenges with each success (Harms et al., 2017; Li et al., 2014).

Even though there are many interesting findings on health-related PsyCap (Harms et al., 2017; Li et al., 2014; Luthans et al., 2010), the importance of PsyCap in serious physical or mental illnesses and disabilities is under-researched. It is not clear whether experiences of illness or disability, which affect psychological wellbeing, could also influence health-related PsyCap, and whether high PsyCap could serve as a mediating factor that helps improve psychological wellbeing in case of illness.

Our research aimed to compare psychological wellbeing (life satisfaction, flourishing, negative emotions, and positive emotions) and psychological capital (self-efficacy, hope, resilience, and optimism) in groups of subjectively healthy and unhealthy individuals.

In this paper, we analyze the results of a representative sample of adults ($n = 1001$). We hypothesized that the quantity of self-reported illnesses associates with diminished psychological capital and psychological wellbeing in individuals who have suffered the illness in the past even though they are living an active life at present.

Materials and methods

Sample

This study on self-reported health-related experiences, psychological wellbeing (life satisfaction, flourishing, negative emotions, and positive emotions), and psychological capital (self-efficacy, hope, resilience, optimism) used a test design utilizing a heterogeneous random sample of 1001 persons representing the Lithuanian population. All the participants were personally asked to participate in the study. Lithuanian sample was selected in a multi-scaled probabilistic way so that every citizen of Lithuania might have an equal probability to be interviewed. Thus the survey was conducted in the selected 20 cities and 29 villages. The Lithuanian subjects of the study included 46.8% of men ($n = 469$) and 53.2% of women ($n = 533$). The mean age of the respondents was 49.29 years (± 16.206 SD, Minimum – 18 years old, Maximum – 90 years old). The majority of the participants were married (48.9%), some were widows (13.8%), some indicated that they are separated (12.2%), lived alone (12%), or lived with a partner (9.7%). Lithuanian respondents were personally interviewed at their home, the interview took approximately 1.5 hours.

Measures

To assess psychological flourishing, we applied the Flourishing Scale (FS) of Ed Diener and colleagues (Diener et al., 2009), consisting of eight items. The Flourishing Scale is a measure of the respondent's self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. The scale provides a single psychological wellbeing score. In adults' study, the response pattern followed a 7-point Likert scale ranging from 7 (totally agree) to 1 (totally disagree). This scale includes the following items: "I lead a purposeful and meaningful life," "My social relationships are supportive and rewarding," "I am engaged and interested in my daily activities," "I actively contribute to the happiness and wellbeing of others," "I am competent and capable in the activities that are important to me," "I am a good person and live a good life," "I am optimistic about my future," "People respect me." Cronbach's alpha for the FS items in the adults' sample was .91 ($n = 1001$).

To assess life satisfaction, we applied the Satisfaction with Life Scale (SWLS) of E. Diener and colleagues (Diener et al., 1985). The SWLS is a short 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life. In adults' study, the response pattern followed a 7-point Likert scale ranging from 7 (totally agree) to 1 (totally disagree). The internal consistency of the life satisfaction scale in this research was high. Cronbach's alpha for the estimate of the adult respondents was .89 ($n = 1001$).

We applied the PCQ-24 scale (Luthans et al., 2007) to assess respondents' positive psychological capital. Psychological Capital or PsyCap is a higher-order construct consisting of four subscales, each comprised of six items each for a total of 24 items. The subscales include hope, efficacy, resilience, and optimism. Some sample items for PsyCap are the following: "I feel confident analyzing a long – term problem to find a solution" (Efficacy subscale); "There are lots of ways around my problem" (Hope subscale); "I always look on the bright side of things" (Optimism scale); and "I usually manage difficulties one way or another" (Resilience scale). In adults' study, the response pattern followed a 6-point Likert scale ranging from 6 (totally agree) to 1 (totally disagree). In the present study, Cronbach's alpha was .85 for adults' sample ($n = 1001$) and ranged from .83 to .88 for the subscales of self-efficacy, hope, optimism, and resilience.

To evaluate adult respondents' subjective health, we have applied these questions: "Have you ever suffered. . . (Cardiovascular diseases, Cancer, Diabetes, Hepatitis, etc.)?" The response alternatives provided were "yes" and "no."

To assess the emotional wellbeing of adults ($n = 1001$), we applied the Scale of Positive and Negative Experience (SPANE) of Diener et al. (2009). The SPANE is a 12-item questionnaire that includes six items to assess positive

feelings and six items to assess negative feelings. For both the positive and negative items, three items are general (e.g. positive, negative), and three per subscale are more specific (e.g. joyful, sad). The instructions are as follows: "Please think about what you have been doing and experiencing during the past 4 weeks. Then report how much you experienced each of the following feelings, using the scale below. For each item, select a number from 1 to 5, and indicate that number on your response sheet." The response pattern followed a 5-point Likert scale ranging from 1 (very rarely or never) to 5 (very often or always). Cronbach's alpha was .84 for the adults' sample ($n = 1001$).

Statistical analyses

We used SPSS, AMOS 26.0 programs for data analysis. A Shapiro–Wilk test showed a significant departure from normality for the variables of psychological flourishing W (958) = .972, $p < 0.001$, life satisfaction W (958) = .990, $p < .001$, positive emotions W (958) = .980, $p < 0.001$, negative emotions W (958) = .984, $p < 0.001$, psychological capital W (958) = .994, $p < 0.001$, self-efficacy W (958) = .978, $p < 0.001$, hope W (958) = .992, $p < 0.001$, optimism W (958) = .986, $p < 0.001$, and resilience W (958) = .990, $p < 0.001$. Similarly, Kolmogorov–Smirnov test showed that data were non-normally distributed for the variables of psychological flourishing, D (958) = .073, $p < 0.001$, life satisfaction D (958) = .054, $p < 0.001$, positive emotions D (958) = .102, $p < 0.001$, negative emotions D (958) = .091, $p < 0.001$, psychological capital D (958) = .036, $p = 0.006$, self-efficacy D (958) = .074, $p < 0.001$, hope D (958) = .064, $p < 0.001$, optimism D (958) = .062, $p < 0.001$, and resilience D (958) = .069, $p < 0.001$. As there was a significant departure from normality, we used nonparametric statistics. We applied Mann–Whitney (U) test to compare results between groups of subjectively healthy and unhealthy individuals. As mentioned above, we have also calculated the internal consistency of all variables (Cronbach's alpha). Furthermore, we conducted a square root transformation of right-skewed variables to create normally distributed variables. Then we created a model on associations between the study variables. In this research, a p-value less than 0.05 is considered to be statistically significant.

Results

Just 1.1% of respondents reported that they have never experienced any health-related difficulties. The frequency of the adult representative sample's self-reported health-related experiences are presented in Table 1. In this sample, 32% of respondents reported cardiovascular disorders, and 37% of respondents reported vision disorders.

Means and standard deviations of flourishing, life satisfaction, positive and negative emotions, and self-reported health-related experiences of adults' representative sample ($n = 1001$) are presented in Table 2.

Means and standard deviations of psychological capital, self-efficacy, hope, resilience, optimism, and self-reported health-related experiences of adults' representative sample ($n = 1001$) are presented in Table 3.

Next, we analyzed differences in self-reported psychological flourishing, life satisfaction, negative emotions, positive emotions, psychological capital, self-efficacy, hope, resilience, and optimism when comparing the groups based on self-reported experience of physical disability or absence of it. Mann–Whitney U test indicated that adult respondents who reported absence of physical disability demonstrated significantly lower mean ranks for negative emotions ($U = 51{,}981.000$, $Z = -2.292$, $p = 0.022$) and significantly higher mean rank scores for flourishing ($U = 38{,}086.500$, $Z = -7.095$, $p < 0.001$), life satisfaction ($U = 42{,}020.000$, $Z = -5.871$, $p < 0.001$), positive emotions ($U = 38{,}016.000$, $Z = 47{,}469.000$, $p < 0.001$), psychological capital ($U = 36{,}456.000$, $Z = -7.072$, $p < 0.001$), self-efficacy ($U = 40{,}653.000$, $Z = -6.010$, $p < 0.001$), hope ($U = 36{,}041.000$, $Z = -7.746$, $p < 0.001$), resilience ($U = 40{,}835.000$, $Z = -6.142$, $p < 0.001$) and optimism ($U = 42{,}053.000$, $Z = -5.777$, $p < 0.001$) than those who reported experience of disability (Table 4).

Furthermore, Mann–Whitney U test indicated that adult respondents who reported absence of mental disability demonstrated significantly higher mean rank scores for flourishing ($U = 9119.000$, $Z = -2.677$, $p = 0.007$), life satisfaction ($U = 9856.000$, $Z = -2.183$, $p = 0.029$), positive emotions ($U = 9576.000$, $Z = -2.342$, $p = 0.019$), psychological capital ($U = 9559.000$, $Z = -2.252$, $p = 0.024$), self-efficacy ($U = 10{,}172.000$, $Z = -1.920$, $p = 0.055$), hope ($U = 9816.500$, $Z = -2.204$, $p = 0.028$) and resilience ($U = 10{,}084.000$, $Z = -2.024$, $p = 0.043$) than those who reported experience of mental disability (Table 5).

Moreover, Mann–Whitney U test revealed that adult respondents who reported absence of cardiovascular diseases demonstrated significantly lower mean ranks for negative emotions ($U = 92{,}453.000$, $Z = -3.648$, $p < 0.001$) and significantly higher mean rank scores for flourishing ($U = 82{,}970.000$, $Z = -5.990$, $p < 0.001$), life satisfaction ($U = 89{,}821.000$, $Z = -4.369$, $p < 0.001$), positive emotions ($U = 76{,}309.500$, $Z = -7.307$, $p < 0.001$), psychological capital ($U = 72{,}393.500$, $Z = -7.768$, $p < 0.001$), self-efficacy ($U = 81{,}855.000$, $Z = -5.970$, $p < 0.001$), hope ($U = 70{,}461.500$, $Z = -8.948$, $p < 0.001$), resilience ($U = 81{,}142.000$, $Z = -6.358$, $p < 0.001$) and optimism ($U = 87{,}162.500$, $Z = -4.968$, $p < 0.001$) than those who reported cardiovascular diseases (Table 6).

In addition, Mann–Whitney U test showed that adult respondents who reported absence of autoimmune diseases demonstrated significantly lower mean ranks for negative emotions ($U = 66{,}049.000$, $Z = -3.543$, $p < 0.001$) and significantly higher mean rank scores for flourishing ($U = 60{,}046.000$, $Z = -5.266$, $p < 0.001$), life satisfaction ($U = 62{,}563.000$, $Z = -4.594$, $p < 0.001$), positive emotions ($U = 9277.000$,

Table 1. Frequency of adult (males and females) representative sample's self-reported health-related experiences ($n = 1001$).

Subjective health report	*n* (%)	Gender	*n* (%)	*p*-Value	95% CI
Physical disability	142 (14.2)	Male	73 (15.5)	0.273	[1.12, 1.19]
		Female	69 (13.0)		[1.10, 1.16]
Mental disability	27 (2.7)	Male	12 (2.5)	0.771	[1.01, 1.04]
		Female	15 (2.8)		[1.02, 1.04]
Cardiovascular diseases	323 (32.3)	Male	145 (30.7)	0.323	[1.27, 1.35]
		Female	178 (33.6)		[1.29, 1.37]
Autoimmune disorders and allergies	200 (20.0)	Male	84 (17.8)	0.106	[1.14, 1.21]
		Female	116 (21.9)		[1.19, 1.25]
Nervous system disorders	119 (11.9)	Male	47 (10.0)	0.075	[1.07, 1.13]
		Female	72 (13.6)		[1.10, 1.16]
Cancer	51 (5.1)	Male	24 (5.1)	0.972	[1.03, 1.07]
		Female	27 (5.1)		[1.03, 1.07]
Vision disorders	372 (37.2)	Male	153 (32.4)	0.003	[1.28, 1.37]
		Female	219 (41.4)		[1.37, 1.46]
Diabetes	132 (13.2)	Male	45 (9.5)	0.001	[1.07, 1.12]
		Female	87 (16.4)		[1.13, 1.20]
Substance abuse	49 (4.9)	Male	27 (5.7)	0.253	[1.04, 1.08]
		Female	22 (4.2)		[1.03, 1.06]
Hepatitis B or C	25 (2.5)	Male	7 (1.5)	0.052	[1.00, 1.03]
		Female	18 (3.4)		[1.02, 1.05]
Other	12 (1.2)	Male	5 (1.1)	0.701	[1.00, 1.02]
		Female	7 (1.3)		[1.00, 1.02]

Table 2. Descriptives of flourishing, life satisfaction, positive and negative emotions, and self-reported health-related experiences of adults' representative sample ($n = 1001$).

Subjective health report	Flourishing		Life satisfaction		Negative emotions		Positive emotions	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Healthy	5.8409	0.80446	4.8364	0.95002	2.4394	0.71598	4.0455	0.50050
Physical disability	4.3671	1.11319	3.4761	1.13830	2.7222	0.69913	3.0681	0.73447
Mental disability	4.4167	1.23986	3.5037	1.38605	2.6975	0.58294	3.1543	0.75380
Cardiovascular diseases	4.6991	1.11480	3.8025	1.23865	2.7069	0.63557	3.2353	0.64455
Autoimmune disorders and allergies	4.6275	1.15811	3.6945	1.22776	2.7424	0.65311	3.2113	0.67745
Nervous system disorders	4.2962	1.15575	3.3661	1.19723	2.8079	0.66831	3.1553	0.69333
Cancer	4.7868	1.22813	4.0588	1.34420	2.4252	0.72093	3.3264	0.73735
Vision disorders	4.8073	1.16106	3.8862	1.28970	2.6780	0.68130	3.3393	0.66841
Diabetes	4.7185	1.11074	3.8366	1.16798	2.6323	0.66722	3.3756	0.60229
Substance abuse	4.3036	1.46019	3.2694	1.53599	2.7326	0.74356	3.0532	0.72906
Hepatitis B or C	4.9550	1.12840	3.9760	1.38000	2.4600	0.72374	3.2400	0.82647
Other	5.0208	0.75910	3.6333	0.87732	2.7778	0.79878	3.4028	0.54799

$Z = -5.322$, $p < 0.001$), psychological capital ($U = 54{,}451.000$, $Z = -6.091$, $p < 0.001$), self-efficacy ($U = 59{,}612.000$, $Z = -5.045$, $p < 0.001$), hope ($U = 55{,}838.500$, $Z = -6.433$, $p < 0.001$), resilience ($U = 58{,}314.500$, $Z = -5.681$, $p < 0.001$) and optimism ($U = 65{,}460.500$, $Z = -3.650$, $p < 0.001$) than those who reported autoimmune diseases, allergies (Table 7).

Similarly, Mann–Whitney *U* test showed that adult respondents who reported absence of nervous system diseases demonstrated significantly lower mean rank scores for negative emotions ($U = 40{,}645.000$, $Z = -3.803$, $p < 0.001$) and significantly higher mean rank scores for flourishing ($U = 31{,}091.500$, $Z = -7.156$, $p < 0.001$), life satisfaction ($U = 33{,}628.500$, $Z = -6.201$, $p < 0.001$), positive emotions ($U = 36{,}773.000$, $Z = -4.948$, $p < 0.001$), psychological capital ($U = 29{,}989.500$, $Z = -6.782$, $p < 0.001$), self-efficacy ($U = 32{,}878.500$, $Z = -6.371$, $p < 0.001$), hope ($U = 31{,}855.500$, $Z = -6.796$, $p < 0.001$), resilience ($U = 34{,}934.500$, $Z = -5.640$, $p < 0.001$) and optimism ($U = 38{,}718.000$, $Z = -4.474$, $p < 0.001$) than those who reported nervous system diseases (Table 8).

Table 3. Descriptives of psychological capital, self-efficacy, hope, resilience, optimism, and self-reported health-related experiences of adults' representative sample ($n = 1001$).

Subjective health report	Psychological Capital		Self-efficacy		Hope		Resilience		Optimism	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Healthy	4.7008	0.50820	5.0303	0.49899	4.6970	0.53134	4.4242	0.60260	4.6515	0.62118
Physical disability	3.5779	0.80371	3.6417	1.02075	3.1972	0.98404	3.5626	0.89919	3.8818	0.70445
Mental disability	3.6836	0.85729	3.6852	1.16789	3.3395	1.14679	3.6852	0.92834	4.0247	0.65160
Cardiovascular diseases	3.7664	0.74822	3.8495	1.00575	3.4141	0.94320	3.7438	0.80563	4.0443	0.68257
Autoimmune disorders and allergies	3.7373	0.74242	3.8095	0.97621	3.4179	0.93367	3.6835	0.84701	4.0305	0.68174
Nervous system disorders	3.5570	0.80320	3.5494	1.07645	3.2062	1.01664	3.5655	0.87591	3.9280	0.67180
Cancer	3.8793	0.84054	3.9082	1.04586	3.5327	1.14359	3.8100	0.89024	4.1333	0.73617
Vision disorders	3.8834	0.77243	3.9702	0.99865	3.5924	0.98831	3.8170	0.83249	4.1399	0.70537
Diabetes	3.8998	0.74243	3.9284	0.99708	3.5878	0.96793	3.8295	0.80091	4.1489	0.64921
Substance abuse	3.6528	0.96788	3.6771	1.18721	3.2211	1.17919	3.6735	1.02794	3.9549	0.86414
Hepatitis B or C	4.0799	0.87175	4.1867	1.13786	3.6533	1.12208	4.0833	0.94024	4.2200	0.78869
Other	3.8090	0.44362	3.9028	0.70158	3.5278	0.56333	3.7222	0.52384	4.0833	0.51000

Table 4. Mann–Whitney (U) test comparisons based on representative sample's self-reported presence or absence of physical disability.

	Physical disability	N	Mean rank	Sum of ranks	Mann–Whitney U	Wilcoxon W	Z	p
Flourishing	No	853	524.35	447,270.50	38,086.500	48,239.500	−7.095	0.000
	Yes	142	339.71	48,239.50				
	Total	995						
Life satisfaction	No	854	520.30	444,333.00	42,020.000	52,173.000	−5.871	0.000
	Yes	142	367.42	52,173.00				
	Total	996						
Negative emotions	No	857	489.65	419,634.00	51,981.000	419,634.000	−2.292	0.022
	Yes	138	549.83	75,876.00				
	Total	995						
Positive emotions	No	853	519.43	443,076.00	38,016.000	47,469.000	−6.606	0.000
	Yes	137	346.49	47,469.00				
	Total	990						
PsyCap	No	838	515.00	431,567.00	36,456.000	46,186.000	−7.072	0.000
	Yes	139	332.27	46,186.00				
	Total	977						
Self-efficacy	No	849	517.12	439,032.00	40,653.000	50,523.000	−6.010	0.000
	Yes	140	360.88	50,523.00				
	Total	989						
Hope	No	853	526.75	449,316.00	36,041.000	46,194.000	−7.746	0.000
	Yes	142	325.31	46,194.00				
	Total	995						
Resilience	No	854	520.68	444,664.00	40,835.000	50,846.000	−6.142	0.000
	Yes	141	360.61	50,846.00				
	Total	995						
Optimism	No	855	519.82	444,442.00	42,053.000	52,064.000	−5.777	0.000
	Yes	141	369.25	52,064.00				
	Total	996						

Interestingly, Mann–Whitney U test showed that adult respondents who reported absence of vision disorders demonstrated significantly lower mean rank scores for negative emotions ($U = 103{,}018.000$, $Z = -2.785$, $p = 0.005$) and significantly higher mean rank scores for flourishing ($U = 97{,}490.000$, $Z = -4.096$, $p < 0.001$), life satisfaction ($U = 100{,}273.500$,

Table 5. Mann–Whitney (*U*) test comparisons based on representative sample's self-reported presence or absence of mental disability.

	Mental disability	*N*	Mean rank	Sum of ranks	Mann–Whitney *U*	Wilcoxon *W*	*Z*	*p*
Flourishing	No	967	501.57	485,018.00	9119.000	9497.000	−2.677	0.007
	Yes	27	351.74	9497.00				
	Total	994						
Life satisfaction	No	968	501.32	485,276.00	9856.000	10,234.000	−2.183	0.029
	Yes	27	379.04	10,234.00				
	Total	995						
Negative emotions	No	967	495.99	479,618.50	11,590.500	479,618.500	−0.999	0.318
	Yes	27	551.72	14,896.50				
	Total	994						
Positive emotions	No	962	498.55	479,601.00	9576.000	9954.000	−2.342	0.019
	Yes	27	368.67	9954.00				
	Total	989						
PsyCap	No	949	491.93	466,839.00	9559.000	9937.000	−2.252	0.024
	Yes	27	368.04	9937.00				
	Total	976						
Self-efficacy	No	961	497.42	478,016.00	10,172.000	10,550.000	−1.920	0.055
	Yes	27	390.74	10,550.00				
	Total	988						
Hope	No	967	500.85	484,320.50	9816.500	10,194.500	−2.204	0.028
	Yes	27	377.57	10,194.50				
	Total	994						
Resilience	No	967	500.57	484,053.00	10,084.000	10,462.000	−2.024	0.043
	Yes	27	387.48	10,462.00				
	Total	994						
Optimism	No	968	500.73	484,706.50	10,425.500	10,803.500	−1.800	0.072
	Yes	27	400.13	10,803.50				
	Total	995						

$Z=-3.443$, $p=0.001$), positive emotions ($U=96{,}652.500$, $Z=-4.023$, $p<0.001$), psychological capital ($U=91{,}491.000$, $Z=-4.618$, $p<0.001$), self-efficacy ($U=97{,}260.500$, $Z=-3.914$, $p<0.001$), hope ($U=91{,}179.000$, $Z=-5.466$, $p<0.001$) and resilience ($U=94{,}838.500$, $Z=-4.630$, $p<0.001$) than those who reported vision disorders (Table 9).

Furthermore, Mann–Whitney *U* test showed that adult respondents who reported absence of diabetes demonstrated significantly higher mean rank scores for flourishing ($U=46{,}541.500$, $Z=-3.282$, $p=0.001$), life satisfaction ($U=49{,}663.500$, $Z=-2.282$, $p=0.022$), psychological capital ($U=46{,}882.000$, $Z=-2.277$, $p=0.023$), self-efficacy ($U=47{,}526.000$, $Z=-2.519$, $p=0.012$), hope ($U=47{,}727.000$, $Z=-2.897$, $p=0.004$) and resilience ($U=49{,}278.000$, $Z=-2.279$, $p=0.023$) than those who reported diabetes (Table 10).

Moreover, Mann–Whitney *U* test indicated that adult respondents who reported absence of substance abuse demonstrated significantly higher mean rank scores for flourishing ($U=15{,}956.500$, $Z=-3.684$, $p<0.001$), life satisfaction ($U=15{,}687.000$, $Z=-3.831$, $p<0.001$), positive emotions ($U=14{,}811.500$, $Z=-3.861$, $p<0.001$), psychological capital ($U=16{,}353.000$, $Z=-3.118$, $p=0.002$), self-efficacy ($U=16{,}951.500$, $Z=-2.924$, $p=0.003$), hope ($U=15{,}945.500$, $Z=-3.692$, $p<0.001$), resilience ($U=17{,}993.500$, $Z=-2.649$, $p=0.008$) and optimism ($U=17{,}876.500$, $Z=-2.515$, $p=0.012$) than those who reported substance abuse (Table 11).

Surprisingly, the Mann–Whitney *U* test indicated no significant differences in flourishing, life satisfaction, positive or negative emotions, psychological capital, self-efficacy, hope, resilience, and optimism in adult respondents who reported cancer or absence of cancer. Similarly, the Mann–Whitney *U* test indicated no significant differences in these variables between groups of respondents who reported viral infection like Hepatitis B or C, or the absence of viral infection.

Thus our research has not confirmed the assumption that any illness experience diminishes the psychological capital or psychological wellbeing of adults. Based on the results of a representative sample, we assumed that the number of illnesses in the adult population might contribute to diminished psychological capital and psychological wellbeing.

Table 6. Mann–Whitney (*U*) test comparisons based on representative sample's self-reported presence or absence of cardiovascular diseases.

	Cardiovascular diseases	*N*	Mean rank	Sum of ranks	Mann–Whitney *U*	Wilcoxon *W*	*Z*	*p*
Flourishing	No	673	535.72	360,537.00	82,970.000	134,973.000	−5.990	0.000
	Yes	322	419.17	134,973.00				
	Total	995						
Life satisfaction	No	675	525.93	355,004.00	89,821.000	141,502.000	−4.369	0.000
	Yes	321	440.82	141,502.00				
	Total	996						
Negative emotions	No	676	475.26	321,279.00	92,453.000	321,279.000	−3.648	0.000
	Yes	319	546.18	174,231.00				
	Total	995						
Positive emotions	No	672	540.94	363,514.50	76,309.500	127,030.500	−7.307	0.000
	Yes	318	399.47	127,030.50				
	Total	990						
PsyCap	No	661	537.48	355,273.50	72,393.500	122,479.500	−7.768	0.000
	Yes	316	387.59	122,479.50				
	Total	977						
Self-efficacy	No	670	532.33	356,660.00	81,855.000	132,895.000	−5.970	0.000
	Yes	319	416.60	132,895.00				
	Total	989						
Hope	No	673	554.30	373,045.50	70,461.500	122,464.500	−8.948	0.000
	Yes	322	380.32	122,464.50				
	Total	995						
Resilience	No	675	537.79	363,008.00	81,142.000	132,502.000	−6.358	0.000
	Yes	320	414.07	132,502.00				
	Total	995						
Optimism	No	676	529.56	357,983.50	87,162.500	138,522.500	−4.968	0.000
	Yes	320	432.88	138,522.50				
	Total	996						

As the data were distributed not normally, we conducted a square root transformation of right-skewed variables to create normally distributed variables. Then we created a model on associations between the number of reported diseases, psychological capital, and wellbeing in the representative sample of adults.

To assess the model fit, we applied the Comparative Fit Index (CFI), the Normed Fit Index (NFI), the Tucker–Lewis coefficient (TLI), and the Root Mean Square Error of Approximation (RMSEA). The values higher than .90 for CFI, NFI, TLI and values lower than .08 for RMSEA are indicative of an acceptable fit. Findings revealed that the fit of the model was good, $\chi^2 = 110.786$, $df = 16$; CFI = .981; RMSEA = .077; NFI = 0.978; TLI = 0.968; $p = 0.000$. Significant results are reported in Figure 1.

The model indicates that a higher number of diseases (per person) predicts a weakening effect on psychological capital, while psychological capital predicts psychological wellbeing. To the point, to achieve an acceptable fit of the model, we have excluded a variable of negative emotions even though there was a significant negative association with the latent variable of wellbeing ($r = –0.48$, $p < 0.001$).

Discussion

The current study aimed to examine adults' self-reported health and its associations with psychological flourishing, life satisfaction, positive and negative emotions, psychological capital, self-efficacy, hope, resilience, and optimism.

Based on the literature, we have chosen to investigate a sample of adults, and we assumed that any illness experience diminishes psychological wellbeing as psychological wellbeing is related to health (Boehm and Kubzansky, 2012; Cimpean and David, 2019; Costanzo et al., 2009; Di Giuseppe et al., 2019; Fredrickson, 2000; Gick, 2011; Lai and Ma, 2016; Levin, 2013; Ma and Lai, 2018; Mittag et al., 2016; Røysamb et al., 2003; Schöllgen et al., 2016; Sibulwa et al., 2019; Staudinger et al., 1999; Wiest et al., 2011).

Moreover, as psychological wellbeing relates to psychological capital, we presumed that illness experience also diminishes the psychological capital of adults or adolescents. We have also hypothesized that the number of illnesses might contribute to reduced psychological capital and psychological wellbeing: the more illnesses people have, the slighter their psychological capital and wellbeing is.

Table 7. Mann–Whitney (*U*) test comparisons based on representative sample's self-reported presence or absence of autoimmune diseases, allergies.

	Autoimmune diseases, allergies	*N*	Mean rank	Sum of ranks	Mann–Whitney *U*	Wilcoxon *W*	*Z*	*p*
Flourishing	No	795	521.47	414,569.00	60,046.000	79,946.000	−5.266	0.000
	Yes	199	401.74	79,946.00				
	Total	994						
Life satisfaction	No	796	518.90	413,047.00	62,563.000	82,463.000	−4.594	0.000
	Yes	199	414.39	82,463.00				
	Total	995						
Negative emotions	No	796	481.48	383,255.00	66,049.000	383,255.000	−3.543	0.000
	Yes	198	561.92	111,260.00				
	Total	994						
Positive emotions	No	791	519.06	410,577.00	59,277.000	78,978.000	−5.322	0.000
	Yes	198	398.88	78,978.00				
	Total	989						
PsyCap	No	782	515.87	403,410.00	54,451.000	73,366.000	−6.091	0.000
	Yes	194	378.18	73,366.00				
	Total	976						
Self-efficacy	No	792	517.23	409,648.00	59,612.000	78,918.000	−5.045	0.000
	Yes	196	402.64	78,918.00				
	Total	988						
Hope	No	795	526.76	418,776.50	55,838.500	75,738.500	−6.433	0.000
	Yes	199	380.60	75,738.50				
	Total	994						
Resilience	No	796	523.24	416,499.50	58,314.500	78,015.500	−5.681	0.000
	Yes	198	394.02	78,015.50				
	Total	994						
Optimism	No	798	514.47	410,546.50	65,460.500	84,963.500	−3.650	0.000
	Yes	197	431.29	84,963.50				
	Total	995						

We analyzed differences in self-reported psychological flourishing, life satisfaction, negative emotions, positive emotions, psychological capital, self-efficacy, hope, resilience, and optimism when comparing the groups of adults based on self-reported health as prior research has documented possible associations (Hall et al., 2010; Hilton and Johnston, 2017; Staudinger et al., 1999; Van Dick et al., 2017).

Results showed that adult respondents who reported the absence of physical disability demonstrated significantly lower scores for negative emotions and significantly higher scores for flourishing, life satisfaction, positive emotions, psychological capital, self-efficacy, hope, resilience, and optimism than those who reported experience of physical disability. Our research modestly complements the findings of other authors on cognitive and affective facets of wellbeing (Wiest et al., 2011).

Furthermore, this research indicated that adult respondents who reported the absence of mental disability demonstrated significantly higher scores for flourishing, life satisfaction, positive emotions, psychological capital, self-efficacy, hope, and resilience than those who reported experience of mental disability. These findings are in line with other findings that demonstrate the relationship between psychological wellbeing and mental health; moreover, some researchers have found that people with better mental health displayed a lower likelihood of engagement in unhealthy behaviors (Ma and Lai, 2018).

Moreover, this research has revealed that adult respondents who reported absence of cardiovascular diseases demonstrated significantly lower scores for negative emotions and significantly higher scores for flourishing, life satisfaction, positive emotions, psychological capital, self-efficacy, hope, resilience, and optimism than those who reported cardiovascular diseases which is in line with many other findings (Besharat et al., 2018; Boehm and Kubzansky, 2012; Gaitan-Sierra and Hyland, 2011; Hall et al., 2010; Mittag et al., 2016).

In addition, this study showed that adult respondents who reported absence of autoimmune diseases demonstrated significantly lower scores for negative emotions and significantly higher scores for flourishing, life satisfaction, positive emotions, psychological capital, self-efficacy, hope, resilience, and optimism than those who reported

Table 8. Mann–Whitney (*U*) test comparisons based on representative sample's self-reported presence or absence of nervous system diseases.

	Nervous system diseases	*N*	Mean rank	Sum of ranks	Mann–Whitney *U*	Wilcoxon *W*	*Z*	*p*
Flourishing	No	876	522.01	457,278.50	31,091.500	38,231.500	−7.156	0.000
	Yes	119	321.27	38,231.50				
	Total	995						
Life satisfaction	No	878	519.20	455,856.50	33,628.500	40,649.500	−6.201	0.000
	Yes	118	344.49	40,649.50				
	Total	996						
Negative emotions	No	877	485.35	425,648.00	40,645.000	425,648.000	−3.803	0.000
	Yes	118	592.05	69,862.00				
	Total	995						
Positive emotions	No	873	511.88	446,869.00	36,773.000	43,676.000	−4.948	0.000
	Yes	117	373.30	43,676.00				
	Total	990						
PsyCap	No	863	511.25	441,208.50	29,989.500	36,544.500	−6.782	0.000
	Yes	114	320.57	36,544.50				
	Total	977						
Self-efficacy	No	871	516.25	449,655.50	32,878.500	39,899.500	−6.371	0.000
	Yes	118	338.13	39,899.50				
	Total	989						
Hope	No	877	520.68	456,633.50	31,855.500	38,876.500	−6.796	0.000
	Yes	118	329.46	38,876.50				
	Total	995						
Resilience	No	878	516.71	453,672.50	34,934.500	41,837.500	−5.640	0.000
	Yes	117	357.59	41,837.50				
	Total	995						
Optimism	No	878	513.40	450,767.00	38,718.000	45,739.000	−4.474	0.000
	Yes	118	387.62	45,739.00				
	Total	996						

autoimmune diseases, allergies. Having in mind some research (Gaitan-Sierra and Hyland, 2011), our findings needs further analysis.

Furthermore, this research revealed that adult respondents who reported the absence of diabetes demonstrated significantly higher scores for flourishing, life satisfaction, psychological capital, self-efficacy, hope, and resilience than those who reported diabetes.

Similarly, this research demonstrated that adult respondents who reported the absence of nervous system diseases demonstrated significantly lower scores for negative emotions and significantly higher scores for flourishing, life satisfaction, positive emotions, psychological capital, self-efficacy, hope, resilience, and optimism than those who reported nervous system diseases.

Likewise, our findings showed that adult respondents who reported the absence of vision disorders demonstrated significantly lower scores for negative emotions and significantly higher scores for flourishing, life satisfaction, positive emotions, psychological capital, self-efficacy, hope, and resilience than those who reported vision disorders.

Moreover, this research indicated that adult respondents who reported the absence of substance abuse demonstrated significantly higher scores for flourishing, life satisfaction, positive emotions, psychological capital, self-efficacy, hope, resilience, and optimism than those who reported substance abuse.

Thus our research is in line with the findings of many authors who analyzed the associations between health, psychological capital, and psychological wellbeing (Avey et al., 2010; Cheung et al., 2011; Efklides & Moraitou, 2013; Fredrickson, 2000; Levin, 2013; O'Brien, 2008; Satici, 2019; Schöllgen et al., 2016; Staudinger et al., 1999; Van Dick et al., 2017; Varas et al., 2019).

Surprisingly, this research indicated no significant differences in flourishing, life satisfaction, positive or negative emotions, psychological capital, self-efficacy, hope, resilience, and optimism in adult respondents who reported viral infection like Hepatitis B or C, or absence of viral infection, and respondents who reported cancer or absence of cancer. Having in mind other findings (Costanzo et al., 2009; Di Giuseppe et al., 2019; Hall et al., 2010; Staudinger et al., 1999), our results need further investigation.

Table 9. Mann–Whitney (*U*) test comparisons based on representative sample's self-reported presence or absence of vision disorders.

	Vision disorders	*N*	Mean rank	Sum of ranks	Mann–Whitney *U*	Wilcoxon *W*	*Z*	*p*
Flourishing	No	622	525.76	327,025.00	97,490.000	166,496.000	−4.096	.000
	Yes	371	448.78	166,496.00				
	Total	993						
Life satisfaction	No	625	521.56	325,976.50	100,273.500	168,538.500	−3.443	0.001
	Yes	369	456.74	168,538.50				
	Total	994						
Negative emotions	No	624	477.59	298,018.00	103,018.000	298,018.000	−2.785	0.005
	Yes	369	529.82	195,503.00				
	Total	993						
Positive emotions	No	623	522.86	325,741.50	96,652.500	163,813.500	−4.023	0.000
	Yes	366	447.58	163,813.50				
	Total	989						
PsyCap	No	614	520.49	319,582.00	91,491.000	157,194.000	−4.618	0.000
	Yes	362	434.24	157,194.00				
	Total	976						
Self-efficacy	No	619	521.87	323,040.50	97,260.500	165,525.500	−3.914	0.000
	Yes	369	448.58	165,525.50				
	Total	988						
Hope	No	625	535.11	334,446.00	91,179.000	159,075.000	−5.466	0.000
	Yes	368	432.27	159,075.00				
	Total	993						
Resilience	No	625	529.26	330,786.50	94,838.500	162,734.500	−4.630	0.000
	Yes	368	442.21	162,734.50				
	Total	993						
Optimism	No	626	509.07	318,680.50	107,938.500	175,834.500	−1.663	0.096
	Yes	368	477.81	175,834.50				
	Total	994						

Our research has not confirmed the assumption that any illness experience diminishes the psychological wellbeing or psychological capital of adults. Based on the results of the representative sample, we have also assumed that the number of illnesses in the adult population might contribute to diminished psychological capital and psychological wellbeing.

Our model on associations between the number of reported diseases, psychological capital, and wellbeing in the representative sample of adults indicates that a higher number of diseases (per person) predicts a weakening effect on psychological capital, while psychological capital predicts psychological wellbeing.

The results obtained can be related to the previous theoretical knowledge and most research findings, which point to the existence of a relation between subjective health and psychological wellbeing (Hilton and Johnston, 2017; Marsh et al., 2019; Tappolet and Rossi, 2015).

Moreover, our results modestly, but accurately identifies differences in psychological flourishing, life satisfaction, positive and negative emotions, psychological capital, self-efficacy, hope, resilience, and optimism in different subjective health groups of adults. The findings can be related to the previous theoretical findings and most research findings suggesting a relationship between specific dimensions of health, psychological capital, and psychological wellbeing (Baldwin et al., 2017; Breland et al., 2020; Cheung et al., 2011; Cimpean and David, 2019; Gaitan-Sierra and Hyland, 2011; Hall et al., 2010; Judge et al., 2010; Lai and Ma, 2016; Lennefer et al., 2019; Levin, 2013; O'Brien, 2008; Røysamb et al., 2003; Ryff et al., 2015; Ueno et al., 2020).

For the last decade, many authors have been contributing to solid theoretical foundations on health psychology. Our research has also contributed to research on flourishing, life satisfaction, positive and negative emotions, psychological capital, self-efficacy, hope, resilience, and optimism in different subjective health conditions. However, our research's contribution to health-related variables is exceptionally modest in comparison to the studies listed above, to name a few.

As many researchers focus on health-related interventions (Baldwin et al., 2017; Fredrickson, 2000; Gick, 2011; Hilton and Johnston, 2017; Lai and Ma, 2016; Lennefer

Table 10. Mann–Whitney (*U*) test comparisons based on representative sample's self-reported presence or absence of diabetes.

	Diabetes	*N*	Mean rank	Sum of ranks	Mann–Whitney *U*	Wilcoxon *W*	*Z*	*p*
Flourishing	No	864	509.63	440,322.50	46,541.500	55,187.500	−3.282	0.001
	Yes	131	421.28	55,187.50				
	Total	995						
Life satisfaction	No	865	506.59	438,196.50	49,663.500	58,309.500	−2.282	0.022
	Yes	131	445.11	58,309.50				
	Total	996						
Negative emotions	No	864	495.76	428,336.50	54,656.500	428,336.500	−0.634	0.526
	Yes	131	512.77	67,173.50				
	Total	995						
Positive emotions	No	860	501.33	431,141.00	50,889.000	59,404.000	−1.658	0.097
	Yes	130	456.95	59,404.00				
	Total	990						
PsyCap	No	851	496.91	422,870.00	46,882.000	54,883.000	−2.277	0.023
	Yes	126	435.58	54,883.00				
	Total	977						
Self-efficacy	No	861	503.80	433,773.00	47,526.000	55,782.000	−2.519	0.012
	Yes	128	435.80	55,782.00				
	Total	989						
Hope	No	864	508.26	439,137.00	47,727.000	56,373.000	−2.897	0.004
	Yes	131	430.33	56,373.00				
	Total	995						
Resilience	No	865	506.03	437,717.00	49,278.000	57,793.000	−2.279	0.023
	Yes	130	444.56	57,793.00				
	Total	995						
Optimism	No	865	502.11	434,328.50	53,531.500	62,177.500	−1.022	0.307
	Yes	131	474.64	62,177.50				
	Total	996						

et al., 2019; Luthans et al., 2006; Ryff et al., 2015; Sibulwa et al., 2019), we hope that our study at least humbly contributed to the understanding of the association between the number of diseases, psychological capital, and psychological wellbeing, and this might have an added value for health intervention planning. We hope that this research provided some empirical evidence to implement health-related PsyCap or similar interventions on a large scale as strong self-efficacy, hope and resilience proved to be beneficial for the health of people of different ages (Fredrickson, 2000; Luthans et al., 2006; Marsh et al., 2019; Ueno et al., 2020; Van Dick et al., 2017; Varas et al., 2019).

Conclusions

This paper presents some selected data from a broader survey on the wellbeing of Lithuanian adults. We considered that it is essential to investigate the relationship between psychological wellbeing, psychological capital, and diseases because of the issues regarding health prevention and health education.

The purpose of our research was to compare psychological wellbeing (life satisfaction, flourishing, negative emotions, and positive emotions) and psychological capital (self-efficacy, hope, resilience, optimism) in groups of subjectively healthy and unhealthy individuals.

In this paper, we have analyzed the results of a representative sample of adults ($n=1001$). We assumed that self-reported illness is associated with diminished psychological wellbeing in individuals who have suffered the illness in the past even though they are living an active life at present.

The survey has revealed that, in general, self-reported illness and the number of diseases is associated with diminished psychological capital and psychological wellbeing in the Lithuanian adults' population. The findings were confirmed by the results of Mann–Whitney (*U*) analysis, confirmatory factor analysis, and structural equation modeling.

Results showed that adult respondents who reported the absence of physical or mental disability, cardiovascular diseases, nervous system diseases, diabetes, autoimmune diseases, vision disorders, and substance abuse demonstrated significantly higher scores for flourishing, life satisfaction, psychological capital, self-efficacy, hope, and resilience.

Surprisingly, this research indicated no significant differences in flourishing, life satisfaction, positive or negative emotions, psychological capital, self-efficacy, hope, resilience, and

Table 11. Mann–Whitney (*U*) test comparisons based on representative sample's self-reported presence or absence of substance abuse.

	Substance abuse	*N*	Mean rank	Sum of ranks	Mann–Whitney *U*	Wilcoxon *W*	*Z*	*p*
Flourishing	No	946	505.63	478,328.50	15,956.500	17,181.500	−3.684	0.000
	Yes	49	350.64	17,181.50				
	Total	995						
Life satisfaction	No	947	506.44	479,594.00	15,687.000	16,912.000	−3.831	0.000
	Yes	49	345.14	16,912.00				
	Total	996						
Negative emotions	No	947	494.48	468,270.00	19,392.000	468,270.000	−1.725	0.085
	Yes	48	567.50	27,240.00				
	Total	995						
Positive emotions	No	943	503.29	474,605.50	14,811.500	15,939.500	−3.861	0.000
	Yes	47	339.14	15,939.50				
	Total	990						
PsyCap	No	929	495.40	460,224.00	16,353.000	17,529.000	−3.118	0.002
	Yes	48	365.19	17,529.00				
	Total	977						
Self-efficacy	No	941	500.99	471,427.50	16,951.500	18,127.500	−2.924	0.003
	Yes	48	377.66	18,127.50				
	Total	989						
Hope	No	946	505.64	478,339.50	15,945.500	17,170.500	−3.692	0.000
	Yes	49	350.42	17,170.50				
	Total	995						
Resilience	No	946	503.48	476,291.50	17,993.500	19,218.500	−2.649	0.008
	Yes	49	392.21	19,218.50				
	Total	995						
Optimism	No	948	503.64	477,453.50	17,876.500	19,052.500	−2.515	0.012
	Yes	48	396.93	19,052.50				
	Total	996						

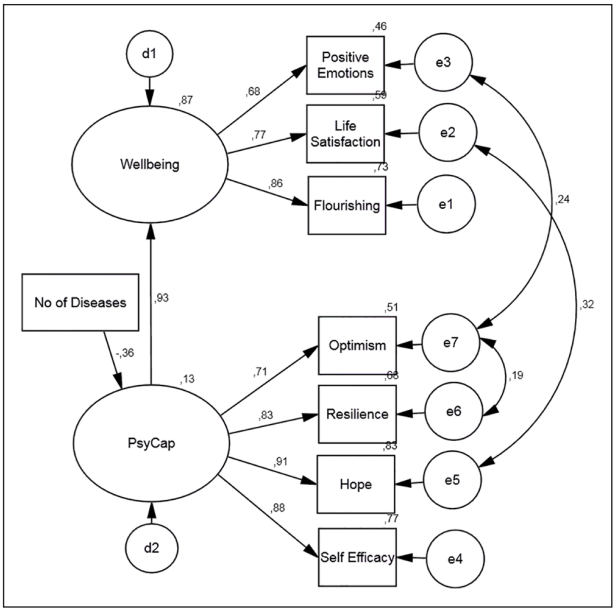


Figure 1. Standardized results of the model on associations between the number of reported diseases, psychological capital, and wellbeing in the representative sample of adults ($n = 1001$). $\chi^2 = 110.786$; DF = 16; RMSEA = 0.077; CFI = 0.981; NFI = 0.978; TLI = 0.968; $p = 0.000$.

optimism in adult respondents who reported cancer or absence of cancer. Likewise, there were no significant differences between the groups of respondents who reported viral infection like Hepatitis B or C or the absence of viral infection, and these findings need further investigation.

Our model on associations between the number of reported diseases, psychological capital, and wellbeing in the representative sample of adults indicates that a higher number of diseases (per person) predicts a weakening effect on psychological capital, while psychological capital predicts psychological wellbeing. Our research modestly contributed to the previous research in the field. This research implies that there is an association between the number of diseases, psychological capital, and psychological wellbeing, even though our findings need further investigation. We hope that this research provided some empirical evidence to implement health-related PsyCap or similar interventions on a large scale.

Limitations and future directions

The current study aimed to examine adults' self-reported health and its associations with psychological flourishing, life satisfaction, positive and negative emotions, and psychological capital (self-efficacy, hope, resilience, and optimism).

The limitation of the current study firstly consists of its locality because the study was conducted in Lithuania, and the results might reflect the cultural and socio-economic peculiarities of this area. Thus, it would be advantageous to organize larger appraisals and cultural comparisons to evaluate the significance of health/illness on national happiness, similarly to the studies on the significance of income.

Furthermore, the information on illnesses was self-reported and not checked in a clinical report. Therefore, it would be essential to compare information on subjective and objective health status and evaluate psychological capital and wellbeing by objective health-illness groups.

Moreover, based on the data obtained, it is possible to conclude only the existence of significant relationships among the examined variables. This research implies that there is an association between the number of diseases, psychological capital, and psychological wellbeing, even though our findings need further investigation. One of the implications for future research is creating an experimental or longitudinal design to test whether psychological capital interventions can significantly contribute to the increased psychological wellbeing of people suffering from various illnesses.

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