Meaning in Life: Is It a Protective Factor for Adolescents' Psychological Health?

László Brassai · Bettina F. Piko · Michael F. Steger

Abstract

Background Searching for a coherent meaning in life has long been proposed to be a protective factor in adolescent development.

Purpose The present study aimed to examine meaning in life as a protective factor in a largely unstudied population: Romanian adolescents. Additionally, we sought to provide a novel, multidimensional assessment of several health-related variables (substance abuse, health risk behaviors, psychological health). Potential gender differences were explored regarding the role of life meaning in adolescent health.

Method Data were collected in 2006 from students enrolled in the secondary schools of the Middle Transylvanian Region, Romania ($n=1,977$). Self-administered questionnaires were used as a method of data collection including items of life meaning and psychological health.

Results Meaning in life played a protective role with regard to health risk behaviors except smoking and binge drinking. Among males, meaning in life was found to be correlated only to illicit drug and sedative use, whereas among females, meaning in life was associated with binge drinking, unsafe sex, and lack of exercise and diet control. Psychological health was strongly related to meaning in life.

Conclusion In Romanian adolescents, meaning in life is a protective factor against health risk behaviors and poor psychological health.

Keywords Meaning in life · Psychological health · Health risk behavior · Adolescence · Protection

L. Brassai
Psychopedagogical Consulting Center, Kovasna County,
Saint George, Romania

B. F. Piko (✉)
Department of Behavioral Sciences, University of Szeged,
6722 Szentharomsag street 5,
Szeged, Hungary
e-mail: pikobettina@yahoo.com

M. F. Steger
Department of Psychology, University of Colorado,
Campus Delivery Fort Collins,
Fort Collins, CO, USA

Introduction

Adolescence is a critical life period due to hormonal–behavioral and psychosocial changes, particularly changes in youth's lifestyle and their health behaviors [1]. One consequence is that general health systems become very instable and adolescents tend to experience a greater level of psychosomatic symptoms, anxiety, or depression, and they tend to report lower level of subjective health status and life satisfaction [2–4]. In addition, a deterioration of psychological health is negatively related to health protecting behavior (e.g., physical activity or healthy diet) and positively to substance use, which may lead to serious negative health outcomes in later adult life [4–6]. This is unfortunate because achieving a stable equilibrium of protective factors could be a key factor in maintaining adolescents' health.

Within the risk and protective factors framework, interest in youth's capacity to be resilient and maintain positive development has been increased over the past decade [7]. Various protective mechanisms are thought to buffer the influence of risks on adolescent outcomes [8, 9]. Among others, spirituality and searching for a coherent meaning in life have long been proposed to be a resilience factor in

adolescent development [10, 11]. The individuals feel greater presence of meaning when they understand themselves (e.g., self-acceptance), the world around them (e.g., environmental mastery), and their fit within the world (e.g., positive relationships) [12]. As a resilience factor, a basic trust placed on the course of life events in adolescence predicts successful coping [13] and healthy life strategies [14]. Despite a growing number of studies, however, we still know very little about how these protective factors influence adolescent health.

There is growing evidence of a positive relation between meaning in life and health status in adolescence [15]. Research has established an association between meaning in life and the prevalence of psychosomatic symptoms [16, 17]. Additionally, meaning in life appears to be a strong predictor of good subjective health and psychological well-being in adolescence [13, 18]. Among other findings, greater meaning in life has been linked with life satisfaction and self-esteem [19], as well as positive affect [20], happiness [21], optimism [22], and life satisfaction [23], as positive indicators of optimal psychological functioning among youth [24].

Moreover, previous research suggested that meaning in life played a role in protecting adolescents from health risk behaviors. For example, meaning in life was negatively associated with health drug use [25, 26], heavy drinking [27], sedative use [28], and positively associated with health enhancing behaviors, such as physical activity [29] and diet control [30]. Although it has been established only in an adult population, meaning in life was also related to less smoking [31]. More research is needed in the field of the relationship between health-related behaviors and meaning in life. This is particularly true in terms of gender since there are differences between males and females in frequencies of substance use, health-enhancing behaviors, self-perceived health, and other indicators of well-being [4]. In addition, previous studies also reported that some protective factors for health risk behavior might differ for females and for males [16, 32]; for example, religiosity seemed to provide more protection for girls [33].

Overall detecting meaning in life as a possible protective factor among young people should be a priority in research of health, well-being, and health behavior. Based on our previous literature review, the current paper focuses meaning in life as a possible protective factor for adolescents' health-related factors in a largely neglected sample: Romanian adolescents. Besides the challenge of replicating previous research results in a sample of less investigated Eastern European youth, we aim to provide a novel integration of multiple health-related variables in one study, namely, substance use (smoking, drinking, drug, and sedative use), health risk behaviors (unsafe sex, lack of exercise and diet control), and psychological health (psychosomatic symptoms, psychological well-being, and quality of life). Finally, we also aim to explore the presence of gender differences in the role of life meaning in adolescent health. Based on international literature, we hypothesize that meaning in life acts as a protective factor against adolescent substance use, other health risk behaviors, and poor psychological health in adolescents in the Romanian population.

Methodology

Participants and Procedure

Data were collected in 2006 from students enrolled in the secondary schools of the Middle Transylvanian Region, Romania. This representative sample consisted of 2,152 students. The sample size was chosen as being approximately 2% of the entire high school population ($N=$ 207,000) in this region. After stratified by age cohorts, randomly selected schools and classes were the bases of data collection. Of 2,152 questionnaires sent out, 1,977 were returned and analyzed, yielding a response rate of 91.9%. The age range of the respondents was 15 to 19 years of age (mean, 16.8 years, SD, 1.0); 48.1% of the sample were males. Self-administered questionnaires were used as a method of data collection. Trained mental health educators distributed the questionnaires to students prior to the start of class. Parental permissions were obtained prior to the start of the study. Students were given a brief explanation of the objectives of the study and instructions for filling out the questionnaire. Participation in the study was voluntary. Completion time was approximately 45 minutes. Completed questionnaires were placed in sealed envelopes and collected from each of the participating schools.

Measures

Meaning in life was measured by the "Purpose and Connections" subscale of the Brief Stress and Coping Inventory developed by Rahe and Tolles [34]. This measurement was previously validated in Hungarian-speaking population samples [35, 36]. This coping scale presents eight questions regarding aspects of subjects' lives that make their "lives worth living"; for example: "I feel my life is part of some larger plan." Response categories were the following: not at all=0, sometimes=1, and always=2. Summary scores varied between 0 and 16. Cronbach's alpha coefficient was 0.86.

The *psychosomatic symptom* scale included the following self-reported symptoms: lower-back pain, tension headache, sleeping problems, chronic fatigue, stomach pyrosis, tension diarrhea, and heart palpitation. This

measure was used in order to obtain information on the frequency of these symptoms during the last 12 months [2]. For example, respondents were asked: "During the past 12 months, how often have you had a back-pain?" Responses were coded as often=3, sometimes=2, seldom=1, and never=0. The final scale had a range of 0 to 21 and was reliable with a Cronbach's alpha of 0.64.

Psychological well-being was measured using the frequency of the positive emotional states (forceful, optimism, and happiness) and three negative emotional states (exhausted, irritable, and disappointed) in the last 12 months [2, 37]. The response categories varied from never=0 to always=4. Cronbach's alpha value was 0.67.

Quality of life was measured with the World Health Organization–Five Well-being Index derived from a larger rating scale developed for a WHO project on quality of life in patients suffering from diabetes [38]. During the first psychometric evaluation, 10 of the original 28 items were selected due to the homogenity they had shown across the various European countries participating in this study [39]. Because positive psychological well-being has to include positively worded items only, these 10 items were then reduced to 5 items (WHO-Five), which still covered positive mood (good spirits, relaxation), vitality (being active and waking up fresh and rested), and general interests (being interested in things) [39–41]. This five-item measure of well-being had a Cronbach's alpha of 0.84 in previous studies [40] and 0.70 in our sample.

Seven types of *health-risk* behavior (smoking, binge drinking, illicit drug use, sedative use, unsafe sex, lack of exercise, and lack of diet control) were examined. The substance use items were derived from the Centers for Disease Control and Prevention Youth Risk Behavior Surveillance Survey [6]. The following questions were asked: "How many times in the last 30 days did you smoke/drink more couple of alcohol all at once/used an illicit drug, such as marijuana?" Response categories for substance use were none=1, 1–2 times=2, 3–9 times=3, 10–19 times=4, 20–39 times=5, and more than 40 times=6. For measure of the sedative use, adolescents were asked: "How many times in the last 30 days did you use sedatives without medical prescription?" Response categories were none=1, 1–2 times in a last 3 monthly=2, monthly=3, weekly=4, and daily=5. Protected sexual activity was measured with the following question: "How many times in a last 3 month when you had sexual intercourse did you or your partner use any kind of contraceptive method for prevent pregnancy?" Response categories were none=1, sometimes=2, in half of cases=3, in most of the cases=4, and every time=5. Diet control, that is, nutrition behavior control, was measured with the following question: "During the past month how much did you try to watch for what you ate, that is, tried to maintain a healthy diet?" For the

assessment of physical activity, respondents answered the following question: "How many times in the last three months did you exercise (i.e., played a sport, "worked out," etc.) for at least a half hour?" Response categories were none=1, sometimes=2, monthly 2–3 times=3, weekly 1–2 times=4, and weekly 3 or more=5 [42].

Analysis

SPSS for MS Windows 13.0 program (SPSS, Chicago, IL) was used in the calculations. Results were considered statistically significant if $p<0.05$. As an initial analysis, descriptive statistics were calculated, and Student's *t*-tests and chi-square tests were applied to test significance for gender differences. For the main focus of our interest, logistic regression analyses were applied. The main goal of this analysis was to detect whether meaning in life might be serving as a protection for those who were at risk in terms of their psychological health status (engaged, e.g., health risk behaviors or reported poor psychological health) as compared with those who were at risk/less engaged in these health problems. Therefore, we calculated odds ratios that helped detect the bivariate relationships between the meaning in life variable (as a continuous independent variable) and each type of health-related variable (as dichotomous dependent variables). For this analysis, the frequencies of health behavior variables (i.e., smoking, binge drinking, drug use, sedative use, unsafe sex, lack of exercise, and lack of diet control) were dichotomized and expressed the presence versus absence of current health risk behaviors; one or more behaviors were coded as "presence" of risk, and zero behaviors were coded as "absence" of risk [4]. Because mental health status variables were continuously distributed, they were dichotomized based on whether they were above or below median values. Thus, the following dichotomous variables were applied: presence versus absence of health risk behaviors, high versus low level of psychosomatic symptoms, high versus low level of psychological well-being, and high versus low level of quality of life (see Table 1 for these values).

The results of the binary logistic regression analyses are presented as a series of odds. An odds ratio <1.0 indicates that there is a negative association between the factors of interest; that is, it is a protective factor. In addition, confidence intervals (95%) were also calculated for statistically significant relationships based on the criterion that the confidence intervals did not include 1.0.

Results

Table 1 shows the descriptive statistics of study variables by gender. Of note, male and female adolescents did not

Table 1 Descriptive statistics for study variables by gender

	Male	Female	Significance
Life meaning[a], mean (SD)	8.7 (2.3)	8.8 (2.1)	$p=0.407$
Psychosomatic symptoms (%)[a,b]			
Low (≤5)	52.4	20.5	
High	47.6	79.5	$p=0.000$
Psychological well-being (%)[a,b]			
Low (≤11)	35.8	58.5	
High	64.2	41.5	$p=0.000$
Quality of life (%)[a,b]			
Low (≤7)	44.6	62.1	
High	55.4	37.9	$p=0.000$
Smoking (%)[c,d]			
No	51.5	54.6	
Yes	48.5	45.6	$p=0.160$
Binge drinking (%)[c,d]			
No	59.8	86.3	
Yes	40.2	13.7	$p=0.001$
Drug use (%)[c,d]			
No	95.6	96.4	
Yes	4.4	3.6	$p=0.354$
Sedative use (%)[c,d]			
No	98.2	96.6	
Yes	1.8	3.4	$p=0.025$
Unsafe sex (%)[c,d]			
No	62.1	65.3	
Yes	37.9	34.7	$p=0.136$
Lack of exercise (%)[c,d]			
No	96.9	93.2	
Yes	3.1	6.8	$p=0.001$
Lack of diet control (%)[c,d]			
No	89.2	92.1	
Yes	10.8	7.9	$p=0.025$

[a] t-test

[b] Dichotomization was based on a median value

[c] Dichotomization was based on the presence or absence of current health risk behaviors (yes/no) regardless of frequencies

[d] Chi-square test

differ on the meaning in life measure. Males reported significantly lower levels of psychosomatic symptoms and higher levels of quality of life and psychological well-being. Males also reported higher levels of binge drinking and lack of diet control in the previous 30 days, while females reported lower levels of sedative use and lack of exercise.

Next, we assessed relations between meaning in life and adolescents' health outcomes. Table 2 displays these results for health-related behaviors, and Table 3 displays results for other psychosocial factors for the whole sample and then separately for male and female adolescents.

Adolescents who reported lower levels of meaning in life also reported elevated levels of drug use, sedative use, unsafe sex, lack of exercise, and lack of diet control. Across the entire sample, meaning in life appeared to play a protective role with regard to drug use, sedative use, unsafe sex, lack of exercise, and lack of diet control, although

smoking and binge drinking were not associated with meaning in life. However, male and female adolescents showed somewhat different patterns of relationships. For males, lower levels of meaning in life were only related to less drug use and less sedative use. For females, lower levels of meaning in life were related to less binge drinking, less unsafe sex, a lack of exercise, and a lack of diet control. Thus, meaning in life appears related to health behaviors in different ways as a function of gender.

The pattern of results was more uniform with regard to the psychological variables. Across the entire sample, all of the three studied variables (psychosomatic symptoms, quality of life, and psychological well-being) are strongly related to meaning in life, while at gender level, there was only a discrepancy with regard to psychological well-being. Thus, lower levels of meaning in life were associated with poor psychological well-being and quality of life, as well as higher levels of psychosomatic symptoms among females.

Table 2 The role of life meaning in health behaviors—bivariate logistic regression analysis

Life meaning	Smoking, OR (95% CI)	Binge drinking, OR (95% CI)	Drug use, OR (95% CI)	Sedative use, OR (95% CI)	Unsafe sex, OR (95% CI)	Lack of exercise, OR (95% CI)	Lack of diet control, OR (95% CI)
Overall	0.96 (0.93–1.00)	0.97 (0.92–1.01)	0.87 (0.78–0.96)**	0.86 (0.77–0.97)**	0.95 (0.91–0.99)*	0.91 (0.83–0.99)*	0.90 (0.84–.097)**
	$p=0.065$	$p=0.146$	$p=0.005$	$p=0.010$	$p=0.018$	$p=0.031$	$p=0.003$
Male	0.95 (0.85–1.00)	(0.95–1.06)	0.80 (0.71–0.91)***	0.81 (0.68–0.98)*	0.97 (0.92–1.03)	0.91 (0.78–1.07)	0.97 (0.88–1.05)
	$p=0.052$	$p=0.989$	$p=0.000$	$p=0.027$	$p=0.366$	$p=0.253$	$p=0.421$
Female	0.98 (0.93–1.04)	0.91 (0.83–0.98)*	0.99 (0.84–1.16)	0.89 (0.77–1.04)	0.92 (0.87–0.98)**	0.89 (0.80–0.99)**	0.83 (0.74–0.92)***
	$p=0.544$	$p=0.025$	$p=0.843$	$p=0.137$	$p=0.010$	$p=0.010$	$p=0.000$

OR odds ratio, *95% CI* confidence intervals

*$p<0.05$

**$p<0.01$

***$p<0.001$

Among males, lower levels of meaning in life were associated with poor quality of life and high psychosomatic symptoms.

Discussion

Searching for protective factors is an important research field for positive youth development [3, 7–9]. The presence of meaning in life is particularly relevant during adolescence [10, 11], and it may serve as a protection against a number of health problems, such as depression, poor psychological well-being, or substance use [15–19]. The present study focused on the relationship between meaning in life and a set of adolescent health-related outcomes. More specifically, the main goal of the present study was to examine the association between meaning in life and adolescents' substance use and other health risk behaviors and their psychological health as possible protective factors against adolescents' substance use (smoking, binge drink-

ing, and marijuana use) and to determine whether gender differences were evident among these relationships. Previous work has found that meaning in life plays an important role in the prevention of these psychological and behavioral problems.

First of all, the present study examined whether meaning in life could be just such a protective factor. Empirical studies [18] confirm the importance of meaning in life even during the whole developmental stage of adolescence. In particular, there is a robust literature linking meaning in life with better psychological well-being and other indicators of positive mental health, although the vast majority of this research conducted on samples of participants in their 20s or older [20, 22, 23]. The present results are firmly in line with this previous research and extend them to a younger group of participants, indicating a relation between meaning in life and psychological well-being. Likewise in our study, previous research also demonstrated a relation between meaning in life and health complaints, e.g., researchers found an inverse relation between meaning in

Table 3 The role of life meaning in psychological health—bivariate logistic regression analysis

Life meaning	High psychosomatic symptoms, OR (95% CI)	Poor psychological well-being, OR (95% CI)	Poor quality of life, OR (95% CI)
Overall	0.91 (0.87–0.95)***	0.93 (0.89–0.97)***	0.77 (0.74–0.81)***
	$p=0.000$	$p=0.000$	$p=0.000$
Male	0.92 (0.87–0.97)**	0.97 (0.91–1.03)	0.80 (0.75–0.85)***
	$p=0.006$	$p=0.126$	$p=0.000$
Female	0.86 (0.80–0.93)***	0.88 (0.83–0.94)***	0.73 (0.68–0.79)***
	$p=0.000$	$p=0.000$	$p=0.000$

OR odds ratio, *95% CI* confidence intervals

*$p<0.05$

**$p<0.01$

***$p<0.001$

life and the experience of psychosomatic symptoms [15, 17]. Similar to the literature reviewed, our findings support a relationship between adolescents' meaning in life and health outcomes. In our large sample of adolescents, meaninglessness was associated with a poor psychological health (high psychosomatic symptoms, poor psychological well-being, and quality of life).

Besides psychological health, a lower level of health risk behaviors (binge drinking, illicit drug and sedative use, unsafe sex, and the lack of exercise and diet control) was also found to be associated with meaning in life. These findings are also in concordance with previous research results [25–30]. This may indicate a strong interconnection between life meaning and health consciousness/health valuing attitudes. In this view, as a part of optimal human functioning, meaningfulness is a protective factor that sustains and enhances health. Thus, the present study represents an important opportunity to examine several important aspects of psychological and psychosocial health in a single study, helping to create a more holistic impression of the role played by meaning in life.

Although it was not the main purpose of the present study, this research also explored the potential role of gender in the health and meaning of this sample. Females reported worse psychosomatic health status, psychological well-being, and quality of life, although they also reported less binge drinking and lack of diet control, but more sedative use and lack of exercise. Similar results were found by previous studies [13, 16, 17]. Thus, some cause for concerns appears with regard to the health and well-being of female adolescents, elevating the importance of identifying relevant protective factors. However, as is typical of previous research on older samples, levels of meaning in life did not differ as a function of gender [43]. However, females and males appeared to have different patterns of associations between meaning in life and health-related variables. Among males, meaning in life was found to be correlated only to illicit drug and sedative use, whereas among females, meaning in life was associated with binge drinking, unsafe sex, and lack of exercise and diet control. Previous research provided some evidence that protective factors for health behavior might differ for females and males [16, 32, 33]. If these findings were to replicate in future samples, it would suggest that meaning in life functions differently as a protective factor for female versus male adolescents. Particularly in light of the convergence of findings suggesting that female adolescents report worse psychological health and well-being, it is important to explore the ways in which protective factors like meaning in life work differently for male and female adolescents. For example, binge drinking was more commonly reported than marijuana use, and its greater prevalence suggests that positively intervening to reduce binge drinking would have greater health benefits than interventions focused on marijuana use within this population. At the same time, interventions designed to enhance meaning in life as a protective factor for binge drinking may be more likely to help female adolescent than males.

As a summary, the findings from the present study draw attention to meaning in life as a protective/resilience factor for adolescent psychological health and health-related behavior. Thus, they point to the need to better understand meaning in life as a protection in positive youth development. However, the present findings must be interpreted in light of several limitations. A significant limitation concerns the measure of meaning in life used. Although the "Purpose and Connections" subscale of the Brief Stress and Coping Inventory [34] has been applied previously to assess life meaning [36], there are more specific instruments like the Meaning in Life Questionnaire [22]. Although the psychometric properties of several of these measures have raised questions about their suitability for use in research, using more rigorously constructed measures (e.g., the Meaning in Life Questionnaire) may reveal more robust relations between meaning in life and health. However, in contrast to the measure used in the present study, few measures of meaning in life have been validated in Easter European populations. Another limitation is the cross-sectional design of the study and the self-report methods that were used. Because of this limitation, it is impossible to determine whether meaning in life predicts or causes better health outcomes, or vice versa, while it is also impossible to determine whether meaning in life is related to the actual physical functioning of the adolescents sampled. In some ways, perceived health and well-being are more relevant to people than more objectively determined physical functioning, but they are not entirely equivalent. Finally, the specific cultural context (Eastern European region) of the present study may limit the generalizability of interpretation of data. However, since no previous studies have investigated this issue thus far, this rare sample is also one of the strengths of the paper.

Despite these limitations, there are a number of specific findings that underscore the important role of life meaning as a protective factor. This is particularly true for adolescents since fewer studies focus on this issue as compared with adults. The current study makes an important contribution to the current literature by providing data on the relationship between meaning in life and adolescent psychological health using in the Romanian context. Due to the lack of research into this association in Eastern Europe, the findings of the current study make a valuable and interesting contribution for an international scientific audience. In addition, to our best knowledge, this is the first large-scale study exploring the potential role of meaning in life in a broad range of psychological and

psychosomatic health indicators as well as health risk behaviors. As such, it adds to our growing knowledge about the interplay of psychological risk and protective factors in adolescent health. Finally, this study provides some tantalizing glimpse of potentially important gender differences in the structure of protective factors for adolescent health, well-being, and health behavior.

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