

# Optimism and stress-coping strategies among students of physical activity and nutrition in public health. The pilot study

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## Abstract

**Introduction.** Many life events, negative and positive, are often associated with stress, which is part of changes and complex life situations. Stress is a psychological factor, but it also causes physiological reactions in the human body. Students of health promotion and physical activity are exposed to many stressful situations, their future profession is associated with great responsibility, which may result in severe and chronic stress. To prevent the negative effects of stress, using appropriate methods of coping with it can be considered. Defined as the belief in the positive results of actions taken, dispositional optimism is an important factor in coping with stress. A high level of optimism helps you cope with difficult situations and protects you against the consequences of excessive stress. Coping styles and strategies, as well as optimism, are factors that can play an important role in healthy ways of coping with stress. **Aim of Study.** The aim of the pilot study was to investigate and examine whether there are linkages and differences between optimism and stress-coping strategies among the students of Physical Activity and Nutrition in Public Health degree course. **Material and Methods.** A total of 77 participants took part in the pilot study, including 48 females, 29 males. The mean age of the students was  $20.039 \pm 1.437$  years. During the pilot study two questionnaires were applied: Coping Orientations to Problems Experienced (COPE) to measure the students' stress-coping strategies and Revised Life Orientation Test (LOT-R) to estimate their dispositional optimism. **Results.** Dispositional optimism correlates significantly and negatively with the tendency to use avoidance strategies. In terms of support-seeking and emotion-focused strategies, higher intensity of these traits was found among female participants. **Conclusions.** Dispositional optimism is a significant psychological health-promoting factor that may prevent the escalation of the tendency to apply avoidance strategies among the first-year students of Physical Activity and Nutrition in Public Health degree course.

Women may show stronger inclination to employ emotional strategies.

**KEYWORDS:** optimism, stress, coping strategies, student.

Received: 22 September 2024

Accepted: 22 February 2025

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## Introduction

Many life events, both negative and positive, are often associated with stress that is an intrinsic part of considerable changes and complicated life situations. Not only is stress a psychological factor but it also provokes physiological responses in human body. A stress reaction can trigger a cascade of changes in the

following human body systems: the endocrine, nervous, cardiovascular and immune one. Moreover, prolonged exposure to a stressor may substantially increase the risk of psychosomatic diseases, e.g. coronary artery disease or peptic ulcers [23]. Consequently, excessive chronic distress is believed to be a pathogenic factor on the one hand, and on the other hand stress is also considered a motivating factor – in the form of eustress, it activates right resources to manage the challenge (a stressful situation), and thus it may contribute to human development and adaptability. Due to the specific nature of the discipline they study, which is the combination of both education and sporting activity, students at the University of Physical Education are often involved in situations that may result in the development of either pathological or motivational types of stress. Students' activities and efforts in the field of the development of their own physical excellence, group struggles and competition, achieving success and, ultimately, fulfilling their educational duties, entail permanent presence of potential stressors in their lives. Stressful events may be avoidable, while their complete elimination is impossible. Hence, the manner in which stress is experienced appears to be crucial. Stress-coping styles were examined by Endler and Parker [6] who distinguished the following three types: task-oriented coping, emotion-oriented coping, and avoidant-oriented one. The task style (characterized by implementing active coping strategy) involves seeking solutions to the problem, opportunities to take action to minimize or eliminate the source of stress. The emotion style (refers to support-seeking and emotion-focused strategies) involves regulating one's own feelings and emotional response to the problem instead of addressing and solving it. Wishful thinking is a classic example of this style. The third style, the avoidant-oriented one (based on evasive strategies), is characterized by actions and efforts made to avoid dealing directly with stressful situations and, at the same time by a distinct lack of efforts oriented toward solving the problem. Another aspect of the third style seems to be a substitution tendency to seek replacement of unacceptable emotions or unattainable aims with socialising or distracting behaviour, including shopping, drinking alcohol, emotional eating, etc. [6].

Health promotion and physical activity students are exposed to numerous stressful situations and their future profession features a high degree of responsibility, which may result in both severe and chronic stress. Therefore, employment of appropriate stress-coping methods may be considered a preventive measure for the

negative consequences of stress. Some studies indicate a predominance of the emotion style among both medical and non-medical students [15]. Regarding public health and tourism and recreation students, the research results revealed the above-average values for the avoidant style [3]. Medical students quickly adapt to uncomfortable situations and change their coping style depending on the situation. Furthermore, the research results confirm that the avoidant style with the substitution tendency to socialize is more common among students of medicine than those of dentistry [4]. In research on students of the University of Physical Education, the predominant stress-coping style was the emotion-focused style (49%), followed by the task-oriented style (40%), while the lowest percentage of the students indicated the avoidant-oriented style (11%) [5].

Dispositional optimism, defined as a belief in positive outcomes of actions taken, is another significant factor in coping with stress. A high level of optimism is conducive to coping with difficult situations as well as it provides protection against the consequences of excessive stress [16]. Therefore, it may be a desirable personality trait in stressful situations. Moreover, the research proves that students who possess the personality trait do not experience academic burnout and their level of academic achievement is high [26]. Great academic satisfaction is linked to optimism and the task-oriented stress-coping style [2]. Furthermore, optimism has a positive impact on coping with stress and conduces to the employment of the task-oriented style [1].

Stress-coping styles and strategies as well as optimism, are factors that may play an important role in health-promoting coping with stress, and therefore may constitute protective factors against the pathological consequences of stress. Moreover, a task-oriented stress-coping style and optimism may foster adaptive stress management. Hence, they may contribute to employing eustress to increase motivation as well as to striving for excellence in physical culture, which seems particularly relevant for students at the University of Physical Education.

### **Aim of Study**

The purpose of the pilot study was to assess the relationship between dispositional optimism and three factors representing stress-coping strategies (active coping, avoidance behaviour, support-seeking and emotion-focused coping), and to assess the salience of the differences in these psychological properties, taking into account the gender of the students of Physical Activity and Nutrition in Public Health degree course.

## Material and Methods

The survey pilot study involved 77 first-year students of the Physical Activity and Nutrition in Public Health degree course. The age of the students was  $20.039 \pm 1.437$  SD years. The treatment group consisted of 48 women (aged  $19.917 \pm 1.096$  SD years) and 29 men (aged  $20.241 \pm 1.851$  SD years). Involvement in the survey pilot study was fully voluntary and anonymous, of which the students were informed prior to their participation in it. Information about the voluntary and anonymous nature of the survey pilot study was also included in the survey instructions. Furthermore, the survey pilot study was carried out under the supervision of a psychologist in the university building.

A self-designed questionnaire was applied in the survey pilot study to gain socio-demographic information. Standardized psychological instruments with recognised psychometric properties were used to measure psychological properties. The first one is COPE (Coping Orientations to Problems Experienced) – the multidimensional inventory for the measurement of coping with stress; it is an instrument created by Carver that was adapted to Polish cultural conditions by Juczyński and Ogińska-Bulik [13]. The instrument measures coping strategies, and therefore enables the evaluation of the intensity of the behaviour people undertake to cope with stress. These tendencies have been classified into 15 strategies which can be grouped into three stress-coping factors. The active coping strategies consist of the following scales: active coping, avoidance of competing actions, reframing, planning, positive re-evaluation and development. The strategies for seeking support and focusing on emotions include scales such as: seeking instrumental social support, seeking emotional social support, focusing on emotions and discharging them as well as turning to religion. The avoidance strategies comprise scales that include denial, cessation of actions, sense of humour, consuming alcohol and taking other psychoactive drugs, acceptance and distraction. The inventory consists of 60 statements. The respondents reply to each statement using a four-point scale, where 1 means ‘I almost never act like this’ and 4 means ‘I almost always act like this’. The score for each measured factor is obtained by summing up the scores achieved in the strategies included in the given factor. Cronbach’s  $\alpha$  coefficient for individual strategies ranges between 0.48 and 0.94 [13]. The second questionnaire is the Revised Life Orientation Test (LOT-R); it is an instrument designed by Scheier, Carver and Bridges, and its Polish adaptation was made by Poprawa and Juczyński [14]. The questionnaire is used to assess

dispositional optimism, defined as a relatively constant tendency to express a conviction about positive effect of actions taken. The instrument consists of 10 items, 6 of which are part of the dispositional optimism scale. A respondent replies to the test items on a five-point Likert scale, where 0 means that the statement ‘definitely does not apply to me’ and 4 means that the test item ‘definitely applies to me’. The instrument is characterized by satisfactory psychometric properties. The reliability of the instrument determined by the Cronbach’s  $\alpha$  coefficient was 0.76 [13].

## Statistical analysis

The statistical analysis of the obtained results was carried out using MS Excel 2016 and Statistica version 13.3., the normality of the distributions was tested with the Shapiro–Wilk test. The correlation matrix was prepared based on Spearman’s rank correlation coefficient. The Mann–Whitney U test was applied to test the significance of differences between the groups identified in the pilot study. In statistical analyses  $p < 0.05$  was assumed as the level of statistical significance.

## Results

The scores achieved on three stress-coping scales by the students of physical activity and nutrition in public health were analysed. These three scales are active coping strategies (COPE – active coping), support-seeking and emotion-focused strategies (COPE – emotions) and avoidance strategies (COPE – avoidance). Statistical analyses also included students’ scores on the dispositional optimism scale (LOT-R – optimism). Descriptive statistics of the variables are presented in Table 1.

**Table 1.** Descriptive statistics of the variables (n = 77)

Variable	Mean	Standard deviation	Median	Min.	Max.
COPE – active coping	41.468	5.902	42.000	30.000	56.000
COPE – emotions	39.065	8.118	40.000	20.000	59.000
COPE – avoidance	51.039	7.886	50.000	33.000	71.000
LOT-R – optimism	14.701	3.794	15.000	6.000	22.000

Note: COPE – Coping Orientations to Problems Experienced, LOT-R – Revised Life Orientation Test, max. – maximum, min. – minimum

Analysis of the correlation matrix indicates that there is a statistically significant negative linkage

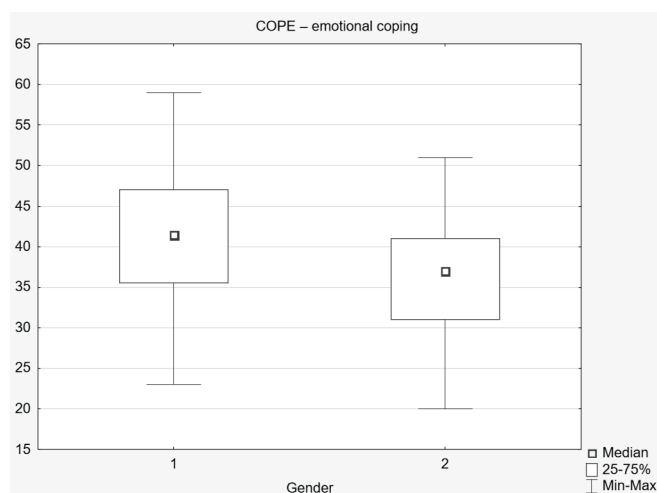
between dispositional optimism and the tendency to use avoidance strategies. The linkage appeared to be moderate (Table 2).

**Table 2.** Linkages between dispositional optimism and stress-coping strategies

Variable	COPE – active coping	COPE – emotions	COPE – avoidance	LOT-R – optimism
COPE – active coping	1.000	0.237*	0.282*	0.126
COPE – emotions		1.000	0.159	–0.062
COPE – avoidance			1.000	–0.371*

Note: COPE – Coping Orientations to Problems Experienced, LOT-R – Revised Life Orientation Test

\*  $p < 0.05$



1 – woman, 2 – man, Max – maximum, Min – minimum

**Figure 1.** Difference in support-seeking and emotion-focused strategies found between women and men

An examination of the significance of gender differences in stress-coping strategies and optimism revealed significantly higher levels of support-seeking and emotion-focused strategies (COPE – emotions) in women compared to men (Figure 1). No significant differences were observed for the other variables (Table 3).

## Discussion

The pilot study revealed that there is a significant, negative and moderate correlation between dispositional optimism and applying avoidance strategies among students of physical activity and nutrition in public health. On the basis of the conducted pilot study, it can be indicated that dispositional optimism as a personality trait may play an important role in counteracting the tendency to use avoidance strategies when confronted with stress, which would confirm the health-promoting nature of optimism. Optimism is one of the basic psychological protective factors that mobilise the body to be active and to take action in the face of life difficulties or illnesses. For this reason, optimism can be acknowledged to support task-oriented coping strategies, which are characterised by the best coping outcomes, and to counteract 'less mature' avoidant strategies. The results of the survey pilot study confirmed the negative associations between optimism and avoidant strategies in coping with stress, which is consistent with the assumption of a health-promoting role of dispositional optimism. Stress-coping strategies themselves may also be important factors in health-promoting psychological properties. Controlling one's own emotions and reactions is a key element of good mental health. Research carried out by Gondo et al. in 2023 revealed a positive correlation between regular relaxation practice and lower stress levels

**Table 3.** Differences between female and male students in dispositional optimism and stress-coping strategies

	Women (n = 48)			Men (n = 29)			Mann–Whitney U test	
	Mean	Standard deviation	Median	Mean	Standard deviation	Median	Z	p
COPE – active coping	41.604	6.191	41.500	41.241	5.488	43.000	–0.090	0.929
COPE – emotions	40.813	8.266	41.500	36.172	7.092	37.000	2.526	0.012*
COPE – avoidance	51.833	8.484	50.500	49.724	6.718	49.000	1.200	0.230
LOT-R – optimism	14.250	3.564	14.000	15.448	4.102	16.000	–1.462	0.144

Note: COPE – Coping Orientations to Problems Experienced, LOT-R – Revised Life Orientation Test, Z – normal distribution, p – level of significance

\*  $p < 0.05$



among students at the University of Lille in Northern France [8]. In contrast, Deckto et al. in 2002 organised relaxation and cognitive-behavioural activities for students (the 90-minute sessions took place over the period of one and a half months, one session per week) [8]. The results demonstrated a significant reduction in psychological distress, anxiety and perceived stress in these students. Research conducted by McGrady et al. in 2012 aimed at the measurement of the impact of a wellness programme on anxiety and depression levels in a group of 450 medical students [8].

Therefore, coping with stress should be considered one of the behaviours that positively influence our well-being [24]. In her survey research on professionally working students, Wróblewska [28] noticed similar trends to those observed by us regarding the relationship between optimism and coping with stress, with statistically significant associations of optimism with task- and emotion-focused coping styles, while in our survey research a significant linkage was observed between optimism and the tendency to use avoidance strategies. Similarly to Wróblewska's research [28], the research by Wilczek-Rużyczka and Frendo [27] conducted among homosexuals also proved a positive relationship between optimism and task-oriented style, and a negative relationship between optimism and emotion- and avoidance-oriented styles, with statistically significant linkages for the first two styles indicated. In contrast, the research by Lee and Mason [17], involving women of different ethnicities, found that a decrease in optimism was associated with increased use of avoidance strategies, while an increase was associated with a tendency to use task-oriented strategies. The meta-analysis by Nes and Segerstrom [20] also indicates a negative association between dispositional optimism and increase in intensity of applying avoidance strategies. To sum up, the above-mentioned papers confirm the outcome produced in the survey presented here, i.e. a negative association between optimism and avoidant strategies.

In the survey presented here, a higher tendency to seek support and focus on emotions has been observed among women compared to men. Moreover, other survey research on children and adolescents has also revealed the higher tendency to seek support among girls than among boys [7]. It has also been observed that female gender identity correlates with emotion-focused coping strategies among adolescents [21]. Previous studies into various groups of adults from different populations also confirm higher intensity of support-seeking and emotion-focused strategies and styles among women

relative to men, which remains consistent with the observations made in our research [9, 11, 12, 18, 19]. Taking the above into consideration, it can be assumed that for female students the social environment and the support that can be obtained therein play a significant role in coping with difficult situations. The socialisation hypothesis indicates that gender differences in emotional and instrumental preferences are the result of the socialisation process and gender roles [10, 22, 25]. The number of respondents to the survey is relatively small and therefore the results of this work should be interpreted with caution. The observed trends should be further explored on a larger sample group. Due to the limited number of respondents, more complex comparisons were not made. Other comparisons, such as socio-demographic variables other than gender, should be taken into consideration in future research.

### Conclusions

In conclusion, the study provides significant results – dispositional optimism among first-year students of physical activity and nutrition in public health is negatively associated with the use of avoidance strategies. It has also been shown that women demonstrate a higher intensity of support-seeking strategies and concentration on emotions compared to men. It is very important knowledge of stress-coping strategies as a developmental and health-promoting factor should be promoted in higher education.

### Funding

No external funding.

### Conflict of Interest

The authors declare no conflict of interest.

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