

Stressors and coping strategies in children practicing judo

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Abstract:

Background and Study Aim: Judo requires a high level of physical fitness and mental resilience. Young athletes experience stress related to training, competition, and school. Effective coping strategies are essential for mental well-being and performance. The aim of this study was knowledge how typical psychological and somatic stress responses co-occur with preferred coping strategies in children aged 10–15 who practicing judo, and to describe the most frequently reported stressors in this group.

Material and Methods: The study involved 276 judokas aged 10–15 (113 girls and 163 boys) who trained at least three times per week. The assessment of indicators was carried out using the How Are You Coping? (JSR) questionnaire and a self-designed survey

Results: The average number of stressors per individual was 2.53; 72% were school-related and 28% were associated with the practice of judo. The main school stressors were tests and quizzes (64%; $p < 0.001$) and grades (43%; $p < 0.001$). The most frequently reported sports-related stressors included the desire to win (29%; $p < 0.001$) and comparing oneself with other competitors (23%; $p < 0.001$). The most common subjective stress responses were lack of concentration (33%), silence (25%), and abdominal pain (24%). In both dispositional and situational terms, the dominant coping strategy was active coping. Gender-related differences were observed in selected coping strategies: girls scored higher in both dispositional and situational concentrating on emotions and in dispositional seeking social support, whereas boys scored higher only in situational active coping.

Conclusions: The observed gender-related differences in selected coping strategies indicate the need for psychoeducational support tailored to different coping profiles. Despite high school-related stress, judokas most often use active coping, suggesting that systematic training is associated with adaptive coping patterns. Gender-based differences indicate the need for tailored psychological support. These findings emphasise the importance of psychoeducational programmes that address specific stressors and coping strategies commonly used by young judokas.

Keywords: anxiety, mental resilience, psychoeducational, school stressors

Dictionary:

Judoka – a person who practises judo.

Stressor – an internal or external demand, situation, or event perceived as challenging or exceeding adaptive resources.

School-related stressors – stressors connected with the educational environment, including tests, quizzes, marks, teacher-related difficulties, peer relationships, and school discipline.

Training-related stressors – stressors connected with judo training and competition, including the desire to win, coach-related pressure, parental expectations, and comparison with peers.

Coping strategies – cognitive and behavioural responses used to manage stressful situations and emotional tension.

Combat sports – the group of sports disciplines, in which the gist of the competition is the direct clash of two competing athletes. They are affiliated to the national and international sports organizations in order to carry out official competition, classification, etc. [23].

Physical activity – noun exercise and general movement that a person carries out as part of their day [24].

1. Introduction

Stress is defined as a psychological and physiological response to internal or external stimuli that exceed an individual's adaptive capacity [1]. In children and adolescents, chronic exposure to stressors can disrupt psychophysical balance, leading to nervous system overload and disturbances in social and educational functioning [2]. In competitive environments, this risk increases significantly. Consequently, contemporary sports for children and adolescents are increasingly incorporating psychological aspects of training and competition. This is particularly significant in combat sports disciplines such as judo, which—in addition to high physical demands—often involve intense emotional strain resulting from direct, one-on-one confrontation and performance pressure. Furthermore, young athletes face a dual challenge: on the one hand, they must fulfil academic obligations, while on the other, they face the expectations of high athletic performance and constant comparison with others. Accumulated stress in these areas can significantly influence not only their performance but also their psychosocial development and mental well-being [1, 2].

The results of research allow to suggest that the stress-coping methods implemented by young athletes have significant impact on both their immediate effectiveness during competitions and physical tests, as well as their long-term engagement in sports [3]. Despite the growing number of studies on this topic, relatively few are focused on children aged 10–15 years who regularly practicing judo. Existing publications primarily regard older adolescents or adult athletes, failing to address the specific developmental challenges faced by younger practitioners of this eastern combat sport [4, 5]. It should be emphasized that this group is particularly sensitive to stress due to the dynamic physical, emotional and cognitive changes occurring in their bodies, which may intensify the perception of stress and influence the choice of coping strategies.

In this context, the need to understand both the sources of increased emotional tension and the applied coping strategies has been emphasized in previous research. Judokas are exposed to stressors such as fear of competition and/or failure, comparisons with others, and high expectations from their surroundings [3, 4]. At the same time, school is a significant source of stress for them—the pressure of studying, taking tests, relationships with teachers and the need to combine education with sport (see: dual career development) [6, 7].

Despite these findings, mental preparation is still not sufficiently implemented when working with young people, and access to sports psychology specialists can be limited [4].

At the same time, it is worth emphasizing that judo, as a sport, can contribute to reducing emotional stress and also be a key element in meeting recommendations for daily physical activity. According to current data from WHO (World Health Organization) [8] and the Canadian Society for Exercise Physiology [9], children and adolescents should engage in at least 60 minutes of physical activity daily, which translates to 420 minutes per week. Unfortunately, in research, it has been shown that a significant share fails to meet these recommendations [10]. In this context, the role of organised physical activity forms, such as judo, is particularly important, as they can significantly contribute to achieving the recommended level of undertaken exercise.

The aim of this study was knowledge how typical psychological and somatic stress responses co-occur with preferred coping strategies in children aged 10–15 who practicing judo, and to describe the most frequently reported stressors in this group.

2. Materials and Methods

Participants

This study is cross-sectional in nature. It was carried out from May to June 2024, at sports training camps and in-person at judo clubs located in the Lesser Poland, Subcarpathian and Greater Poland Voivodeships. The project involved 276 judokas aged 10 to 15 (113 girls and 163 boys), who regularly trained at least three times a week. Participation in the study was voluntary and required obtaining written consent from the participants' legal guardians. Participants could withdraw from the study at any stage without explanation.

Study design

Two tools were used to assess stress coping strategies: the standardised How Are You Coping Questionnaire (JSR) by Juczyński and Ogińska-Bulik [11] and an original questionnaire created for the purpose of the study.

The JSR is a self-report, paper-and-pencil tool consisting of two sections. It allows to assess dispositional and situational coping strategies. Participants rated the frequency or intensity of nine coping strategies using a five-point Likert scale (0 = 'never', 4 = 'almost always'). The tool is based on the Lazarus and Folkman model (1984) and measures three main categories of strategies: Active Coping, Concentrating on Emotions, and Seeking Social Support [11].

The original questionnaire contained questions regarding: (1) subjective stress level, (2) sources of stress (school, sports), (3) psychophysiological reactions to stress (e.g. lack of concentration, abdominal pain), (4) performing breathing exercises, (5) participation in P.E. classes, and (6) weekly volume of physical activity, with reference to WHO recommendations and Canadian 24-Hour Movement Guidelines. Its development was guided by the theoretical framework of stress and coping adopted in the study, particularly the transactional model underlying the JSR questionnaire, as well as by the practical need to capture school- and sport-related stressors and subjective stress responses relevant to young judokas. The content of the questionnaire was reviewed for face and content validity by members of the research team and consulted with a school pedagogue and a qualified sport psychologist. The questionnaire was developed specifically for the purposes of the present study and has not undergone formal psychometric validation. Its internal consistency was not assessed prior to data collection. Given this limitation, findings derived from this instrument — including reported stressors and stress reactions — should be interpreted with caution and treated as exploratory in nature.

The questionnaires were anonymous and completed in paper format. Instructions were provided both orally and in written form. The research process was supervised by a member of the research team, ensuring formal accuracy and uniform implementation conditions.

The research project was approved by the Bioethics Committee at the University of Applied Sciences in Tarnow (Resolution No. 12/2024, dated April 17, 2024). The study was conducted in accordance with the principles of the World Medical Association's Declaration of Helsinki (1964, as amended) regarding research involving human

participants. Data were collected, processed and stored in accordance with applicable regulations on personal data protection.

Statistical analysis

Descriptive statistics were reported as mean (M) and standard deviation (SD or $\pm$), median (Med.), and minimum–maximum (Min–Max), and as n (%) for categorical variables.

Within-participant comparisons between the number of school- and training-related stressors were performed using the Wilcoxon signed-rank test (W). Differences in the frequency of specific stressors and stress reactions (multiple dichotomous items reported by the same participants) were tested using Friedman's test (χ^2), followed by pairwise Wilcoxon signed-rank post-hoc comparisons. Gender differences in JSR strategy scores were examined with the Mann–Whitney U test. Associations between the number of sport-related stressors and JSR scores were assessed using Spearman's rank correlation coefficient (ρ).

For selected sport-related stressors (yes/no), differences in mean JSR scores between groups were tested using independent-samples t-tests; Welch's correction was applied when variance homogeneity was violated. For single dichotomous items (e.g., breathing exercises; using training as a coping strategy; participation in PE classes), one-sample proportion tests were used to verify whether the distribution differed from equality. Statistical significance was set at $p < 0.05$ (two-tailed); p-values < 0.001 are reported as $p < 0.001$.

3. Results

The surveyed judokas reported an average of 2.53 stressors, of which approximately two-thirds (mean 1.83) were related to school stressors and one-third (0.71) were related to sports training. This difference was statistically significant ($p < 0.001$), indicating that judokas experience a significantly greater stress burden from academic demands than from those related to sports (Table 1).

Table 1. School and training stressors reported by judokas (n = 276)

Stressors	M SD	Med.	Max.	Min.	Significance of differences	Effect size r
Total	2.53 $\pm$ 1.39	2.0	7	0	-	
School	1.83 $\pm$ 1.16	2.0	7	0	-	
Training	0.71 $\pm$ 0.60	1.0	4	0	-	
School vs. Training	-	-	-	-	$p < 0.001^W$	0.71

The number of school-related stressors was significantly higher than the number of training-related stressors (Wilcoxon signed-rank test: $W = 646.00$, $Z = -11.85$, $p < 0.001$, $r = 0.71$), indicating a large effect.

Statistically significant differences were found in the frequency of reported stress factors at school (Friedman's test Chi-square = 443.79; $df = 7$; $p < 0.001$) and in sports (Friedman's test Chi-square = 46.60; $df = 3$; $p < 0.001$). The most often cited stress factor was tests and quizzes, given by 64% of the participants ($p < 0.001$). Furthermore, school marks were also a significant stress factor (for 43% of the participants), with both being cited significantly more often than other school-related stressors. However, in

the sports context, two stressors dominated: desire to win (29%) and comparison with peers (23%). Both of these factors were cited significantly more frequently than other sports-related stressors (Table 2).

Table 2. Dominating reasons for experiencing stress among judokas (n=276)

Reason for stress	Respondents		Significance of differences (Wilcoxon's post-hoc test)
	n	%	
Total stressors			
Tests and quizzes	177	64%	Friedman's $\chi^2 = 443.79$; df = 7; $p < 0.001$; Kendall's W = 0.230 >all others ($p < 0.001$) >all others apart from tests and quizzes ($p < 0.001$)
Marks	119	43%	
Desire to win	80	29%	
Comparison with peers	63	23%	
School stressors			
Tests and quizzes	177	64%	> all others ($p < 0.001$) >all others apart from tests and quizzes ($p < 0.001$)
Marks	119	43%	
Contact with teachers	52	19%	
Fear of school discipline referral	47	17%	
Sports stressors			
Desire to win	80	29%	Friedman's $\chi^2 = 46.60$; df = 3; $p < 0.001$; Kendall's W = 0.056 >all others apart from comparison with peers ($p < 0.001$) > all others apart from desire to win ($p < 0.001$)
Comparison with peers	63	23%	
Parents' expectations	28	10%	

Kendall's W was used as the effect size measure for the Friedman tests. The values $W = 0.230$ and $W = 0.056$ indicate, respectively, a small-to-moderate effect for school-related stressors and a small effect for training-related stressors.

The most frequently reported subjective stress response was lack of concentration, followed by silence and abdominal pain. The global Friedman test indicated significant differences in the distribution of stress responses ($\chi^2 = 116.43$; df = 7; $p < 0.001$; Kendall's W = 0.060). However, pairwise post-hoc comparisons should be interpreted cautiously, because the most frequent responses did not differ significantly from all other high-frequency responses after adjustment for multiple comparisons (Table 3).

Table 3. Responses to stress among studied judokas (n = 276)

Response to stress	Respondents		Descriptive frequency pattern and Friedman's test
	n	%	
Stress responses			Friedman's $\chi^2 = 116.43$; df = 7; $p < 0.001$; Kendall's W = 0.060
Lack of concentration	91	33	Most frequent response
Silence	69	25	High-frequency response
Stomach ache	66	24	High-frequency response
Shaking hands	52	19	Moderate-frequency response
Sweating	39	14	Lower-frequency response
Fingernail biting	36	13	Lower-frequency response
Turning red	19	7	Lower-frequency response
Crying	14	5	Least frequent response

In the studied group of judokas (n = 276), significantly more participants declared using training as a stress-coping strategy (83.7% vs. 16.3%, $p < 0.001$) and participating in physical education classes (96.7% vs. 3.3%, $p < 0.001$) compared with those who did not report these behaviours. A significantly low percentage of participants reported

using breathing exercises as a stress-reduction strategy (6.52%, $p < 0.001$). Most respondents declared that they enjoyed competition (74.3% vs. 25.7%, $p < 0.001$) and participated in tournaments (93.5% vs. 6.5%, $p < 0.001$). All analysed differences were statistically significant ($p < 0.001$) (Table 4).

Table 4. Occurrence frequency of selected behaviours and attitudes among young judokas when coping with stress, physical activity and competition (n = 276)

Behaviours/attitudes	Yes (%)	No (%)	<i>p</i> -value	Cohen's <i>h</i>	Interpretation
Practicing a strategy to cope with stress	231 (83.7%)	45 (16.3%)	$p < 0.001^P$	0.75	large effect
Applying breathing exercises	18 (6.5%)	258 (93.5%)	$p < 0.001^P$	-1.05	large effect; low prevalence
Participation in P.E. classes	267 (96.7%)	9 (3.3%)	$p < 0.001^P$	1.21	large effect
Liking competition	205 (74.3%)	71 (25.7%)	$p < 0.001^P$	0.50	moderate effect
Participation in tournaments	258 (93.5%)	18 (6.5%)	$p < 0.001^P$	1.05	large effect

p – one-sample proportion test

The most frequently used stress-coping strategy among the studied judokas was Active Coping, both in terms of dispositional and situational factors ($p < 0.001$). This strategy was significantly more often chosen compared to Concentrating on Emotions and Seeking Social Support. The differences between these two strategies did not reach the level of statistical significance. This pattern was consistent for both dispositional and situational indices (Table 5).

Table 5. Means of strategies for coping with stress (JSR) among young judokas in dispositional and situational terms (Likert scale 0 to 4; n = 276)

Type of strategy	M SD	Friedman's			Kendall's W	Effect interpretation	Post-hoc comparisons
		χ²	df	p-value			
Dispositional strategies							
		90.22	2	<0.001	0.163	small-to-moderate effect	
Active Coping	1.53 ±0.91	—	—	—	—	—	AC >CE, AC >SSS (p<0.001)
Concentrating on Emotions	0.93 ±0.67	—	—	—	—	—	E ≈ SSS (p > 0.05)
Seeking Social Support	1.27 ±0.85	—	—	—	—	—	—
Situational strategies							
		72.24	2	<0.001	0.131	small-to-moderate effect	
Active Coping	2.16 ±0.94	—	—	—	—	—	AC > CE, AC > SSS (p < 0.001)
Concentrating on Emotions	1.63 ±0.81	—	—	—	—	—	CE ≈ SSS (p > 0.05)
Seeking Social Support	1.69 ±0.88	—	—	—	—	—	—

AC Active Coping, CE Concentrating on Emotions, SSS Seeking Social Support

Gender-related differences were observed in selected coping strategies. Boys scored significantly higher than girls in situational Active Coping, whereas no significant gender difference was found for dispositional Active Coping. Girls scored significantly higher than boys in both dispositional and situational Concentrating on Emotions. Girls also reported significantly higher dispositional Seeking Social Support, while no significant gender difference was observed for situational Seeking Social Support (Table 6).

Table 6. Gender-related differences in strategies for coping with stress by judokas

Type of strategy	Girls M SD	Boys M SD	U test p-value	Interpretation	Rrb	Effect interpretation
<i>Dispositional</i>						
Active Coping	1.49 ±1.07	1.55 ±0.99	0.4236	Lack of significance ($p>0.05$)	-0.056	negligible
Concentrating on Emotions	1.19 ±1.16	0.75 ±0.71	0.0193	G>B ($p<0.05$)	0.163	small
Seeking Social Support	1.45 ±0.91	1.15 ±0.86	0.0093	G>B ($p<0.01$)	0.183	small
<i>Situational</i>						
Active Coping	1.94 ±0.97	2.32 ±0.86	0.0012	B>G ($p<0.01$)	-0.228	small
Concentrating on Emotions	1.77 ±1.05	1.53 ±0.9	0.0422	G>B ($p<0.05$)	0.143	small
Seeking Social Support	1.67 ±0.98	1.71 ±0.92	0.6935	Lack of significance ($p>0.05$)	-0.028	negligible

G girls; **B** boys; **U test** (Mann-Whitney); **rb** – rank-biserial correlation. Positive **rb** values indicate higher scores in girls, whereas negative values indicate higher scores in boys.

Training-related stress correlated positively with dispositional Concentrating on Emotions ($r = 0.26$; $p<0.001$), Seeking Social Support ($r = 0.19$; $p = 0.001$), and situational Concentrating on Emotions ($r = 0.17$; $p = 0.005$).

Higher levels of Concentrating on Emotions (dispositional and situational) were observed in individuals experiencing stress related to parental expectations ($p = 0.008$; $p = 0.003$). In turn, the ‘comparison’ stressor was associated with an increase in four strategies: dispositional Concentrating on Emotions ($p = 0.005$), Seeking Social Support ($p = 0.004$), and their situational counterparts ($p = 0.017$; $p = 0.037$).

Participants who did not indicate coach-related pressure were characterised by a higher level of situational Active coping ($p = 0.014$). No significant differences were found in the strategies employed by respondents stressed due to desire to win (Table 7).

Table 7. Correlations of strategies for coping with stress

Strategy (JSR)	(r)	p-value	Parents’ expectations	Coach’s pressure	Desire to win	Comparing to peers
Dispositional Active Coping	0.09	0.139	n.s.	n.s.	n.s.	n.s.
Dispositional Concentrating on Emotions	0.26	<0.001	higher in “yes” $p = 0.008$	n.s.	n.s.	higher in “yes” $p = 0.005$
Dispositional Seeking Social Support	0.19	0.001	n.s.	n.s.	n.s.	higher in “yes” $p = 0.004$
Situational Active Coping	-0.06	0.32	n.s.	higher in “no” $p = 0.014$	n.s.	n.s.
Situational Concentrating on Emotions	0.17	0.005	higher in “yes” $p = 0.003$	n.s.	n.s.	higher in “yes” $p = 0.017$
Situational Seeking Social Support	0.1	0.095	n.s.	n.s.	n.s.	higher in “yes” $p = 0.037$

(r) Correlation with general training-related stress – Spearman’s correlation coefficient with the total number of sport-related stressors. For individual sport-related stressors, JSR scores were compared between participants who reported a given stressor (“yes”) and those who did not (“no”) using independent-samples t-tests; **n.s.** indicates a non-significant result.

4. Discussion

The study's findings provide new data on key stressors and coping strategies among young judokas aged 10-15. The findings not only confirm significant differences between stressors originating from the school and sporting environments but also reveal coping strategy preferences specific to this developmental period. Statistically significant correlations were observed between stressor type and strategy selection, +

In research on the subject, it is clearly confirmed that regular physical activity is a key element in promoting psychophysical health among children and adolescents. As demonstrated by Janssen and LeBlanc, systematic exercise not only supports somatic development, but also significantly influences mental well-being [10]. Judo training seems to be of particular value in this context, as, according to Biedrzycki and Laskowski [12], it significantly influences the development of cognitive functions and social competences. Regular practice of this sport is associated with the use of effective stress coping strategies, confirmed by the results obtained in this study, where as much as 83.7% of young judokas ($p < 0.001$) indicated training as a method of stress regulation. Additionally, as observed by Katashinskaya et al. [13], regular judo training is associated with reduced anxiety and depressive symptoms, emphasizing its comprehensive impact on psychosocial development.

Analysis of the stressors reported among the studied judokas revealed a significant predominance of school-related factors over sports-related ones which was confirmed by statistical tests ($p < 0.01$). In the school environment, the most significant sources of stress were tests and quizzes (64% of respondents, $p < 0.001$) and marks (43%), while in the context of sports, the dominant factors were desire to win (29%) and comparisons with peers (23%). This distribution of mental stress sources clearly indicates that the main emotional burden associated with practicing judo is focused on competitive aspects, not the training process itself. These findings are consistent with previous studies showing that competition-related demands may be a relevant source of stress in young judokas and that regular judo practice has been associated with more favourable psychophysiological profiles in adolescent athletes [6, 13]. These observations suggest that, despite the presence of competition-related stress, judo practice may be associated with coping patterns that support more adaptive responses to sport-specific challenges.

A characteristic pattern of stress reactions was observed among the study participants, with a clear predominance of concentration difficulties (33% of respondents, $p < 0.001$). The next most frequently reported reactions were silence (25%) and somatic complaints, such as abdominal pain (24%). These results are interestingly reflected in the research by Rutkowska [6], who identified similar patterns of stress responses among young judokas, with particular emphasis on stage fright, mental blockage and concentration disorders. This convergence of observations suggests that concentration difficulties may be a characteristic feature of stress reactions in this specific group of young athletes.

Analysis of the JSR results revealed a significant preference for the Active Coping strategy among the examined judokas, both in the dispositional (1.53 ± 0.91) and situational dimensions (2.16 ± 0.94), with differences in relation to other strategies reaching a high level of statistical significance ($p < 0.001$). This consistency in strategy

selection may suggest that regular judo practice is associated with a coping profile characterised by a preference for active responses to stressful situations. In a similar context—Rutkowska [6]—in her work, observed a preference among young judokas to apply strategies based on self-control and an active approach to problem-solving. Importantly, both in our project and in the cited works, active strategies clearly outweighed avoidance or emotional strategies, which may indicate a characteristic profile of coping skills developed during judo training.

In the research by Rogowska and Kuśnierz [3], these authors provide significant data on factors influencing stress coping styles among judokas. Analysing a group of 98 athletes between the age of 13- and 21, they observed that younger participants (aged 13-16) significantly more often used an approach-behavioural coping style, characterised by active action and support seeking ($p < 0.05$). These results are consistent with our observations regarding the preference for active coping in a similar age group. Interestingly, comparable trends were noted by Atasoya et al. [14] in a study on older judokas (mean age of 19.2 years), carried out using the Inventory of Stress Coping Strategies in Sport (ISCCSI). Despite the age differences in the studied groups, both revealed a clear preference for task-oriented strategies, which may suggest that the specificity of judo as a sport discipline favours the development of these types of stress-coping skills, regardless of the competitors' age.

One of the most surprising results of our study was the extremely low percentage of judokas using breathing exercises as a method for coping with stress—only 6.52% ($p < 0.001$). This observation is particularly interesting in the context of current knowledge on the effectiveness of breathing techniques in regulating stress responses [15]. This discrepancy between the potential of interventions and their actual use indicates a significant gap in the mental preparation of young athletes. This is confirmed in the research by Rutkowska [6], who showed that most young judokas have never worked with a sports psychologist, and that most of them are unaware of the activities of such specialists. These observations suggest an urgent need for comprehensive actions encompassing athlete education, coach training and increased access to sports psychologists, which could significantly improve the effectiveness of coping with the sports competition-related stress.

In research on the topic, the crucial role is indicated of mental resilience in judo, a discipline that—due to direct physical contact, risk of injury and the pressure of competition—presents a particularly challenging environment psychologically. This is supported by the observations of Garrido-Muñoz et al. [16], who demonstrated that systematic training in this eastern martial art significantly strengthens athletes' adaptive abilities, allowing them to more effectively cope with both pain and the stress of defeat. The authors note a clear correlation between training experience and the level of mental resilience. This suggests that judo practice may be associated with higher levels of these psychological abilities, although causal conclusions require longitudinal confirmation. These conclusions point to the need for specialised psychoeducational programmes that include individual characteristics of athletes, such as age, gender and skill level, which could further enhance these natural mechanisms of psychological development.

Analysis of stress coping strategies showed that Active Coping was the dominant strategy in the overall sample, both in dispositional and situational terms. However, gender comparisons revealed a more differentiated pattern. Boys scored significantly higher only in situational Active Coping, whereas no significant gender difference was

found for dispositional Active Coping. Girls scored significantly higher in both dispositional and situational Concentrating on Emotions and in dispositional Seeking Social Support. These differences should be interpreted cautiously, as the corresponding effect sizes were small. These observations are confirmed in the research by Litwic-Kamińska and Kamińska [17], who, analysing a group of 80 judo and taekwondo athletes (average age of 19.45 years), observed a similar pattern – males more often chose a task-oriented approach, while females tended to favour emotional strategies and seeking social support. Similarity of the results, despite the age differences between the studied groups, suggests that the described gender-related differences may be a relatively constant feature regarding the psychological functioning of young judokas. In both studies, the strategies used by females, although different from those used by males, were also adaptive, which highlights the need to consider these differences in training and psychoeducational programmes.

In light of these observations, the study by Interdonato et al. [4] allows to demonstrate the dynamics of pre-competition anxiety in young judokas, revealing significant patterns related to gender and sports experience. The authors observed that anxiety levels significantly increase during competitions, particularly in girls ($p < 0.05$), while in the pre-competition period, gender-related differences were not of significance. This suggests that the moment of competition itself is a key stressor for female athletes. Importantly, a negative correlation was found in the study between training experience and anxiety levels ($p < 0.01$), confirming that systematic judo training promotes the development of mechanisms for emotional regulation. These results have important practical implications. They indicate the need for psychological support to be differentiated psychologically in the case of male and female athletes, particularly in the context of preparation for competitions. Furthermore, they emphasize the value of long-term training in building mental resilience [4].

The present findings are partly consistent with previous research on gender-related differences in coping. In this sample, boys obtained higher scores only in situational Active Coping, whereas girls scored higher in Concentrating on Emotions and in dispositional Seeking Social Support. Therefore, the results do not support a broad conclusion that boys generally use active coping more often than girls; rather, they indicate a specific gender-related difference in the situational dimension of active coping. Similar conclusions were drawn in the study by Atasoy et al. [14], who also noted discrepancies between athletes of different genders in the use of mental techniques such as visualisation and thought control. These findings support the need for psychoeducational programmes that are sensitive to gender-related coping profiles. However, because training experience and competitive level were not included in the present analyses, conclusions regarding the role of athletic experience should be treated as preliminary.

The data collected in our research clearly indicate that judo training is an important stress-coping strategy for the majority of the studied athletes (83.7%, $p < 0.001$). Nonetheless, the main sports stressors revolve around competition—participation in competitions was declared by 93.5% of the respondents ($p < 0.001$). Therefore, competition can be considered eustress—a positive form of stress that mobilizes the body's resources [18]. This concept is supported in the study by Kim et al. [19], who examined 124 athletes and demonstrated systematic judo practice is associated with better stress management skills and is an important tool essential for its reduction ($p < 0.01$).

Although there are few studies in which the effects of regular judo training among school-age children would be described in detail, in the available meta-analysis, the impact of systematic judo practice on the health of boys aged seven to 15 is broadly examined. The authors review numerous scientific reports demonstrating that judo has a beneficial effect on parameters such as body mass and composition, bone mineralisation and cardiovascular health. It is emphasized that training this discipline ideally supports the harmonious development of a young person's body, while also fostering self-confidence, discipline and overall psychosocial development [21].

Regarding the positive impact of judo training on youth, it is worth noting international guidelines on physical activity for adolescents, including the recommendations of WHO and the Canadian Society for Exercise Physiology, which clearly indicate the need for at least 60 minutes of moderate to vigorous physical activity a day. Meanwhile, in the Polish education system, students starting from fourth grade of primary school participate in only four hours of physical education per week, which allows for only about 43% of these recommendations to be met [9, 20, 8].

This highlights the need to introduce additional forms of physical activity to ensure that young people achieve an adequate level of daily exercise.

In this context, the results of our study indicate that the analysed group declared a high weekly volume of physical activity, combining regular judo training with school physical education. Although these findings suggest that young judokas are generally physically active, the data were based on self-reported training frequency and session duration and were not verified using objective measures of exercise intensity or training load. Therefore, conclusions regarding compliance with international physical activity recommendations should be interpreted with caution.

These observations are consistent with the conclusions reached by Kowalczyk et al. [21], who emphasize the unique value of judo as a discipline that is particularly conducive to the implementation of recommendations regarding physical activity, while ensuring comprehensive physical and psychosocial development of young practitioners.

5. Conclusions

The findings of this study indicate that young judokas reported predominantly school-related stressors and most often used Active Coping strategies in both dispositional and situational terms. Regular judo practice may provide a structured context in which children experience both sport-related demands and opportunities to use active coping responses; however, the cross-sectional design does not allow causal conclusions regarding the effects of judo training on psychosocial development.

The observed associations contribute to a better understanding of coping profiles among young judokas during a developmental period characterised by increased vulnerability to emotional overload. From an applied perspective, the findings suggest that psychoeducational support in judo settings should address school-related stressors, competition-related stress, active coping, emotional regulation, and basic breathing or relaxation techniques. The very low frequency of reported breathing exercises indicates a practical area for future coach-led and psychologist-supported interventions.

Several limitations of the present study should be acknowledged. First, the cross-sectional design precludes causal inference; all observed associations are correlational in nature and should be interpreted accordingly. Second, the absence of a non-athletic control group limits the ability to determine whether the observed coping patterns are specific to judo practice or reflect more general characteristics of physically active youth. Third, training experience, athletic level (competitive vs. recreational), and socioeconomic status were not systematically assessed, which may have influenced the results — particularly in gender-related analyses. Fourth, the measure of physical activity compliance with WHO recommendations was based solely on participants' self-reports, without objective verification of training load or exercise intensity; this limits the validity of conclusions concerning actual activity levels. Fifth, the original questionnaire used to assess stressors and stress reactions has not undergone formal psychometric validation; its reliability and construct validity are therefore unknown, which restricts the interpretive weight of findings derived from this instrument. Future research should therefore include longitudinal designs and objective indicators of stress regulation to clarify the mechanisms underlying the observed relationships and their long-term significance for psychological development in young judokas.

Moreover, practical implications were developed for coaches, parents and sports institutions—including the Polish Judo Association—with the aim of supporting the long-term, comprehensive development of young judokas, both in the sporting dimension and in the context of shaping mature, emotionally-stable individuals.

Data Availability Statement: The data supporting this study's findings are available from the corresponding author upon reasonable request.

Institutional Review Board Statement: “The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board of Bioethics Committee at the University of Applied Sciences in Tarnow (Resolution No. 12/2024, dated April 17, 2024).

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