



Perception of Supportive and Thwarting Coaching Behaviors Among Physically Active Male Adults

Stanislav Sabaliauskas¹, Nelė Žilinskiėnė², Ričardas Gerasimovičius³, Donatas Gražulis⁴, Darius Radžiukynas⁵

¹ Vilnius University, Faculty of Medicine, M. K. Čiurlionio g. 21/27, LT-03101 Vilnius, mf@mf.vu.lt

² Vytautas Magnus University, Academy of Education, T. Ševčenkos g. 31, LT-03111 Vilnius, nele.zilinskiene@vdu.lt

³ Lithuanian Armed Forces, Šv. Ignoto g. 8, LT-01144 Vilnius, lk.kanceliarija@mil.lt

⁴ Vytautas Magnus University, Academy of Education, T. Ševčenkos g. 31, LT-03111 Vilnius, donatas.grazulis@vdu.lt

⁵ Vytautas Magnus University, Academy of Education, T. Ševčenkos g. 31, LT-03111 Vilnius, darius.radziukynas@vdu.lt

Annotation. The purpose of this study, which was conducted with a sample of healthy adult males, was to reveal how adults of different ages perceive a coach's interpersonal behavior during sports. The study results showed the perception of interpersonal behavior among coaches and physically active men, influenced by their ages. Support and thwarting behaviors analysis of older individuals rated perceived coach support with higher scores. Younger men experienced more control and pressure during training.

Keywords: *self-determination theory, interpersonal behavior, support, thwarting.*

Introduction

Physical activity has a significant impact on personal, physical, and mental health. The results of empirical research prove that regular training and physical activity are directly related to the life satisfaction and joy expression among all age people (An et al., 2020) as well as having a direct influence on public welfare. Meanwhile, physical inactivity is one of the most common health risk behaviors and is the fourth largest risk factor for death (World Health Organization, 2017). It increases with an age, yet if physical activity increases, it helps older people to avoid chronic diseases and increase independence (Oliveira et al., 2017).

Low or insufficient physical activity can be related to different human life habits, physical, and health literacy competencies, and social status. According to Eurobarometer (2018), the main reasons given by people to justify physical inactivity were “lack of time” and “lack of motivation”. Physical inactivity can be related to the behavior of physical education and health professionals, perceiving people as clients, yet ignoring their human component (Rodrigues et al., 2018). To care for the well-being of others shall be utmost important in every human community, wherein a motivational factor is critically important to satisfy interpersonal relationships and personal well-being (Le et al., 2018).

Social interaction is key to people’s motivation in various areas of life (Deci & Ryan, 1985) and can act as a source of personal satisfaction to promote an individual’s motivation for physical activity (Kegan et al., 2016). People constantly socialize, receive information from each other, which helps them understand and interpret human behavior. Thus, it is the interaction of social, environmental and cognitive-motivational processes that is significant for people’s involvement in physical activity practices (Maddison et al., 2009; Duda & Fenton, 2019).

Self-determination theory (SDT), which has gained recognition in the field of Physical Education and Sports (Deci & Ryan, 1985; Teixeira et al., 2018), explains the importance to fulfill Individual’s psychophysiological needs and is a useful tool to explain, analyze and processes the assumptions, that determine physical activity (Hagger & Chatzisarantis, 2008). Self-determination theory (SDT) is based on the assumption, that people are active, aspired and to constantly want to improve, yet tend to organize and target their activities, seek knowledge, improve skills. The authors (Deci & Ryan, 1985) distinguish three natural human needs: autonomy, competence and relatedness, which determine the level of motivation. Meeting these needs ensures that motivational development continues.

The need for relatedness is associated with an Individual’s belonging to a certain social group and the opportunity to communicate with different people. The need for autonomy is defined as “an Individual’s degree of freedom and choice.” Personal autonomy is perceived with the awareness that an Individual can control his/her behavior and refers to the experience of volition and willingness (Ryan & Deci, 2017). The need for competence is associated with self-realization in a certain activity, and is based on the perception of personal effectiveness, degree of mastery, and progress level. It is met when an Individual engages into activities and experiences, yet it is core for such activities to widen human skills and competencies.

According to the data of systematic reviews and meta-analyses, the strategies used by physical education teachers and sports coaches have a greater effect on the satisfaction of autonomy needs, which promotes independence (Rodrigues et al., 2018) and on the satisfaction of competence needs (Vasconcellos et al., 2020). Satisfaction of bonding needs is usually associated with interpersonal relatedness with peers and teachers (Vasconcellos et al., 2020). Thus, Physical Education Teachers and Sports Coaches can have a significant influence on an Individual’s motivation and involvement into Physical Activities.

Although this issue has been extensively investigated, the majority of researches focused on the satisfying the autonomy need (Jowett, 2017).

Researches analyzing the interpersonal behavior in various social contexts and cultures are gaining wider acknowledgment (Rocchi, Pelletier, Cheung, et al., 2017; Rodrigues et al., 2018). According to SDT, the six types of interpersonal behavior, which influence the satisfaction or dissatisfaction of basic needs are distinguished: 1) Autonomy-Supportive (AS), 2) Competence-Supportive (CS), 3) Relatedness-Supportive (RS), 4) Autonomy-Thwarting (AT) (also called controlling), 5) Competence-Thwarting (CT), and 6) Relatedness-Thwarting (RT) (Williams et al., 2013; Rocchi et al., 2017).

Autonomy Supportive (AS) involves the ability to provide the Individuals practicing Sports with freedom of personal choice by acknowledging their perspective on vision and encouraging voluntary decision-making (Edmunds et al., 2008).

Autonomy Thwarting (AT) refers to coercion, intimidation, and making demands without providing rationality or justification (Rocchi et al., 2017), yet includes usage of threatening language, making demands, but applying rewards (Bartholomew et al., 2009).

Competence Supportive (CS) is based on the recognition of the athlete's development and the belief that they can overcome obstacles, achieve their goals, and achieve success. CS is manifested by providing athletes with feedback on the performance of specific tasks (Sheldon & Filak, 2008; Puente & Anshel, 2010).

Competence Thwarting (CT) involves the behavior of discouraging athletes from performing challenging tasks by providing information that they are not competent, questioning their ability to improve, highlighting their failures, emphasizing guilt. CT behavior can cause athletes' doubts and frustration (Rocchi, Pelletier, Cheung, et al., 2017).

Relatedness Supportive (RS) includes warm communication with athletes, interest in their activities, support and care for athletes (Jones et al., 2004), i. e. refers to the display of emotional support (Sheldon & Filak, 2008).

Relatedness Thwarting (RT) is based on maintaining a distance in relations with athletes and ignoring their opinion, manifests in the unavailability of the coach, not giving athletes the opportunity to participate in activities together (Sheldon & Filak, 2008), i.e., RT behavior is associated with athletes' rejection and poor emotional connection with them (Rocchi & Pelletier, 2018).

Meeting personal needs is important for long-term engagement in Physical Activity Practices. However, in order to understand how these needs can be satisfied or frustrated, the authors of SDT (Ryan & Deci, 2017) recommend considering the characteristics of the environment that support or thwarting the needs. Such an approach is important because it allows a deeper look at interpersonal behavior processes from different perspectives. Empirical research (Edmunds et al., 2008) shows that Individual practicing sports who rate Sports Coaches as supportive tend to participate more often in training and are more committed to Sports. Meanwhile, the perception that the Coach's behavior is thwarting

leads to the accumulation of negative experiences and promotes more frequent dropouts from sports (Ng et al., 2013).

Research shows (Seefeld et al., 2002) that effective or successful physical education adapts training programs to individual needs, taking into account personal fitness levels, allowing personal control over performance and results, yet providing social support. However, it should be noted that context is important for assessing physical activity behavior (Eime et al., 2013). Therefore, in order to find ways to address adults' engagement in physical activity, it is important to extend this research into the sociocultural context of the country.

Interpersonal behavior in the context of sports activities has been extensively studied (Edmunds et al., 2008; Ng et al., 2013; Rocchi, & Pelletier, 2018; Teixeira et al., 2018; Rodrigues et al., 2021). The perception of supportive and thwarting interpersonal behavior style in sports has been investigated (Mladenović et al., 2015; Wekesser et al., 2021; McHenry et al., 2021; McHenry et al., 2022); educator support has been studied in terms of amotivation (Shen et al., 2010; Vansteenkiste & Ryan, 2013); students (students in physical education) are perceived by the teachers' motivational style, based on the satisfaction of human innate basic psychological needs (Haerens et al., 2018; Burgueño et al., 2022).

In Lithuania, many researches on adult physical activity focuses on comprehension of attitudes and habits of the general public or particular social groups, the forms and content of physical activity, the influence of socioeconomic factors on people's physical activity. However, research on the interaction between exercisers and coaches is episodic. Moreover, the relevance of this issue is becoming increasingly important. It is generally accepted and confirmed by many researches proving that the coach has a very significant influence on the motivation and satisfaction of young athletes in sport. Paradoxically, there is a lack of researches, both nationally and internationally, that examine the influence of sports coaches on adults' physical activity. Such studies shall include master athletes (e.g., Callary et al., 2021), adults with medical conditions or health training issues (e.g., Kivelä et al., 2014).

Côté and Gilbert (2009) point out that the aims of adult participation in sport cover a wide range of impacts:

- Provide opportunities for athletes to interact socially.
- Afford opportunities for athletes to have fun and playfully compete.
- Promote the development of fitness and health-related physical activities.
- Teach and assess sport-specific skills in a safe environment for long-term sport involvement.
- Teach personal and social assets through sport (citizenship). (p. 317)

However, there is also deficit of researches that examine the interpersonal behavior of coaches and physically active adults in sports. Such studies are valuable for understanding the athletic behavior of adults. Therefore, it is relevant to study the supportive and thwarting behaviors of the coach in the perception of physically active adults.

The purpose of this study, which was conducted with a sample of healthy adult male, is to reveal how adults of different ages perceive a coach's interpersonal behavior during sports.

Methods

Instrument of Research

The research questionnaire consisted of three structural parts: a guide for study participants, socio-demographic variables, and interpersonal behavioral variables (Interpersonal behaviors questionnaire (IBQ) in sport, Rocchi et al., 2017). Socio-demographic variables included information on the age, gender, and experience of independent leisure activities.

The IBQ in sport consists of twenty-four statements divided into six subscales. Subscales characterize strategies that support or thwarting autonomy, competence, and relatedness development: autonomy support (AS, i.e., "Gives me the freedom to make my own choices"), autonomy thwarting (AT, i.e., "Pressures me to do things their way"), competence support (CS, i.e., "Provides valuable feedback"), competence thwarting (CT, i.e., "Doubts my capacity to improve"), relatedness support (RS, i.e., "Takes the time to get to know me"), relatedness thwarting (RT, i.e., "Does not care about me").

Participants of the research. Research procedures and ethics

241 respondents participated in our study, selected in a targeted manner. The study sample consisted of working, physically active men who participated in general physical training under the guidance of a coach at least once a week at a sports gym. The mean age of participants was 27.01 years ($SD = 7.67$). The youngest participant was 18 years old, and the oldest was 54 years old. In the first stage of data analysis, the participants were divided into young male adults (up to 28 years old) and middle-aged male adults (29–54 years old) (Eime et al., 2016). Having highlighted the key differences between young and middle-aged groups, the analysis looked for patterns of change in the indicators. Therefore, the indicators of changes in perceived support and thwarting behavior are also presented by grouping the study participants into four groups (every 10 years).

Respondents were encouraged to read each statement of the questionnaire carefully and to respond openly and honestly. It was emphasized that there were neither correct nor incorrect answers to the questions in the questionnaire. In answering the questions describing the choice of sports activities, the participants of the study expressed their personal opinion, marking the answers that corresponded most to their personal attitudes. To answer each statement on the scale, subjects had to choose between five "strongly disagree" (1) and "strongly agree" (5) scales on a five-point scale.

Compliance with ethical standards. All procedures performed during the study were performed by involving study participants and analyzing study data in accordance

with the university and the European Code of Conduct for Research Integrity (All European Academies, 2017) and research requirements (Baines et al., 2013; Vanclay et al., 2013). Sports coaches were informed about the aims and purpose of the study, and their consents to conduct the study were obtained. Study participants were informed about the purpose of the study and their rights to participate in the study. Study participants were able to decide whether they wanted to participate in the study. The survey took place at a sports gym before or after the sports training without the participation of the sports coaches. The questionnaire was given sufficient time to allow respondents to submit their answers without haste. Respondents were informed that participation in the study is based on the principles of anonymity and confidentiality, participation in the study is voluntary, and the results obtained will be analyzed only in summary form.

Statistical data analysis

Data analysis was performed using Jamovi software. Prior to the analysis of the data, it was checked whether the respondents' answers did not contain the missing estimates, and the conformity of the survey data to the normal distribution was assessed. Statistical calculations showed that the indicators were not distributed according to the normal distribution, therefore, non-parametric criteria were used in the data analysis. The paper used descriptive statistical methods. Differences between groups were assessed using Mann-Whitney *U* test.

The structural model of IBQ was evaluated by investigative factor analysis (EFA) and confirmatory factor analysis (CFA) (Moosburger & Kelava, 2012). Cronbach's α coefficients (acceptable cut-off value >0.7) were calculated to assess the internal consistency of the IBQ in sport scale and its subscales (Cronbach, 1951; Taber, 2018). The structural validity of the model was assessed by the correlation of the statements with the subscale coefficient ITC (Item-total Correlation) and the Cronbach's α coefficient after eliminating the statement.

The suitability of the data for factor analysis was determined by evaluating the Spearman-Brown coefficient of confidence, the Kaiser-Meyer-Olkin (KMO) (acceptable cut-off value >0.7) and the Bartlett's test of sphericity (p -value <0.05). An exploratory factor analysis was performed to assess the structural validity of the IBQ. The 'Maximum' likelihood extraction method was used in combination with a 'promax' rotation for the investigative factor analysis. To assess the overall model fit, we used different fit indicators: RMSEA (Root Mean Square Error of Approximation, acceptable cut-off value <0.80); CFI (Comparative Fit Index, acceptable cut-off value >0.90); TLI (Tucker-Lewis Index, acceptable cut-off value >0.90) and χ^2 / df (Satorra-Bentler criteria, acceptable cut-off value <3.0). Indicators that do not meet these requirements do not support the model (Moosburger & Kelava, 2012). Finally, in all tests, a p -value of less than 0.05 was considered statistically significant.

Results

Descriptives and internal compatibility of IBQ. Skewness and kurtosis of total scores of the IBQ, mean values, and SDs are displayed in Table 1. IBQ internal consistency analysis confirmed the high consistency of the scale statements with respect to the measured phenomenon (Cronbach α - 0.927). The difference in variance of the responses to the individual statements was estimated by the Spearman-Brown coefficient of increased confidence. The value of the Spearman-Brown coefficient determined (equal to 0.925) is very close to the value of the Cronbach's alpha coefficient. This shows that the variances of the answers to the individual questions are similar.

Explorative factor analysis (EFA). The suitability of the data for factor analysis was determined by evaluating the Kaiser-Meyer-Olkin (KMO - 0.899) measure and performing the Bartlett sphericity test ($p = 0.000 < 0.05$). A 6-factor model was extracted, corresponding to the original English scale model, explaining 65.3 percent dispersion (Table 1). It should be noted that the study of internal consistency of subscales confirmed the high coherence between the statements of individual subscales (Cronbach α [.790 - .958]).

Structure of scale, CFA. The six-factor structure of the questionnaire was verified using confirmatory factor analysis. The structure of the IBQ was tested through a CFA using the Lavaan estimator. Assessing the statistical parameters of the respondents' answers (analyzing the values of asymmetry and excess), it was found that the data did not meet the criterion of normality. In such cases, an alternative solution is used to calculate the Satorra-Bentler criterion (Muthén & Muthén, 1998–2015). The six-factor model isolated by the CFA confirmed the model of the original questionnaire describing interpersonal behavior in sport, with suitability parameters and values as follows: CFI = 0.928, TLI = 0.917, and RMSEA = 0.070 (95% CI [.062; .078]), Satorra-Bentler (χ^2 / df) = 2.21.

Table 1

Descriptive Statistics and Data of Explorative Factor Analysis

No	Item	Mean	SD	Skewness	Kurtosis	Factor Loadings	Cronbach's α
AS - autonomy-support						15.81	.958
1	Gives me the freedom to make my own choices	3.06	1.00	-0.49	-0.44	.915	
2	Supports my decisions	3.13	0.91	-0.36	-0.27	1.03	
3	Supports the choices that I make for myself	3.14	0.91	-0.34	-0.23	.999	
4	Encourages me to make my own decisions	3.19	0.94	-0.49	-0.33	.755	

No	Item	Mean	SD	Skewness	Kurtosis	Factor Loadings	Cronbach's α
AT - autonomy-thwarting (called controlling)						13.02	.814
5	Pressures me to do things their way	3.06	0.95	0.35	-0.66	.776	
6	Imposes their opinions on me	2.68	0.86	0.34	-0.27	.634	
7	Pressures me to adopt certain behaviors	3.16	0.98	0.23	-0.68	.735	
8	Limits my choices	2.80	0.92	0.73	0.13	.766	
CS - competence-support						10.28	.803
9	Encourages me to improve my skills	3.66	0.85	-0.53	0.52	.497	
10	Provides valuable feedback	3.27	0.91	-0.26	-0.21	.479	
11	Acknowledges my ability to achieve my goals	3.29	0.86	-0.45	0.22	.409	
12	Tells me that I can accomplish things	3.31	0.97	-0.52	-0.15	.733	
CT competence-thwarting						9.59	.827
13	Points out that I will likely fail	2.15	0.81	0.80	0.96	.671	
14	Sends me the message that I am incompetent	2.32	0.81	0.96	1.46	.501	
15	Doubts my capacity to improve	2.09	0.72	0.75	1.78	.933	
16	Questions my ability to overcome challenges	2.14	0.70	0.45	0.80	.882	
RS - relatedness-support						8.97	.896
17	Is interested in what I do	2.97	0.91	-0.23	-0.18	.625	
18	Takes the time to get to know me	2.73	0.98	0.05	-0.80	.805	
19	Honestly enjoy spending time with me	2.69	1.01	-0.06	-0.89	.948	
20	Relates to me	2.69	1.04	0.10	-0.76	.910	
RT - relatedness-thwarting						7.59	.790
21	Does not comfort me when I am feeling low	2.49	0.96	0.69	0.16	.496	
22	Is distant when we spend time together	2.52	0.90	0.56	0.30	.676	
23	Does not connect with me	2.26	0.82	0.92	1.25	.857	
24	Does not care about me	2.30	0.82	0.86	1.13	.844	

Note. 'Maximum likelihood' extraction method was used in combination with a 'promax' rotation.

The study of supportive and thwarting behavior of the study participants was conducted by dividing the respondents into two groups: young people under 28 years of age (n = 166) and the middle-aged male group (n = 75). The results showed that middle-aged men indicated with higher scores the importance of the coach's support during training (Table 2). The analysis of the data revealed interesting results: younger men with higher scores note the coaching thwarting (p < 0.001) (pAT < 0.01; pCT > 0.05; pRT < 0.05). Meanwhile, the representatives of the middle-aged group note the support of coaches (p < 0.001) with significantly higher scores (p < 0.001) than young men.

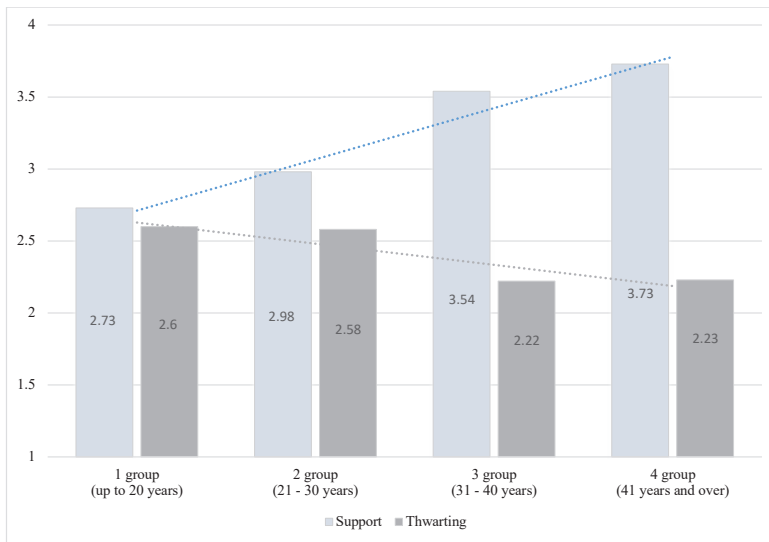
Table 2
Comparison of Subscales of Interpersonal Behavior in Terms of Age

Subscales	Young adults (up to 28 years)			Middle-aged adults (29–54 years)			P
	Mean	Std. Deviation	95% Conf. Interval for Mean	Mean	Std. Deviation	95% Conf. Interval for Mean	
AS	2.91	0.91	2.77 - 3.05	3.61	0.59	3.48 - 3.75	<.001
AT	3.10	0.74	2.99 - 3.22	2.52	0.59	2.39 - 2.66	<.001
CS	3.25	0.72	3.14 - 3.25	3.67	0.61	3.53 - 3.80	<.001
CT	2.22	0.64	2.11 - 2.30	2.09	0.57	1.96 - 2.22	>.05
RS	2.54	0.80	2.41 - 2.67	3.27	0.78	3.09 - 3.45	<.001
RT	2.47	0.73	2.35 - 2.58	2.23	0.53	2.10 - 2.35	<.01
Support*	2.90	0.68	2.80 - 3.02	3.52	0.59	3.38 - 3.65	<.001
Thwarting**	2.59	0.52	2.51 - 2.67	2.28	0.45	2.17 - 2.38	<.001

Note. AS: autonomy-supportive; AT: autonomy-thwarting; CS: competence-supportive; CT: competence-thwarting; RS: relatedness-supportive; RT: relatedness-thwarting

*Average AS, CS and RS value; **Average AT, CT and RT value

The study also revealed an increase in the importance of maintaining an atmosphere with an age (p < 0.001; Figure 1). The importance of a supportive climate increase with the age of the respondents (differences between groups 1–2 - p < 0.05; groups 2–3 - p < 0.001; groups 3–4 - p > 0.05). Analyzing the perception of the pressure experienced, a lesser change in the indicators was found, but as the age increases, the respondents evaluate the pressure with lower scores (p < 0.001). Older study participants experience less thwarting, feel less control (differences between groups 1–4 - p < 0.001).

Figure 1*Age-Related Changes in Perceived Support and Thwarting*

Note. Support: 1 group – 2 group $p < 0.05$; 2 group – 3 group $p < 0.001$; 3 group – 4 group $p > 0.05$
 Thwarting: 1 group – 2 group $p > 0.05$; 2 group – 3 group $p < 0.001$; 3 group – 4 group $p > 0.05$

Factor correlations (Table 3) between autonomy supportive (AS) and competence supportive (CS) climate, autonomy supportive (AS) and relatedness supportive (RS) climate are interrelated (r AS - CS = .614; AS - RS = .640). The dimensions of autonomy thwarting, competence thwarting, and relatedness thwarting are also interrelated ($p < 0.05$). The study showed that reverse relationships exist for supportive and thwarting behaviors ($p < 0.05$).

Table 3*Descriptives and Correlations Between Variables*

Subscales	1	2	3	4	5	6	Mean	SD
AS	1						3.12	.88
AT	-.527*	1					2.92	.74
CS	.614*	-.357*	1				3.38	.71
CT	-.252*	.328*	-.387*	1			2.17	.61
RS	.640*	-.486*	.630*	-.231**	1		2.77	.86
RT	-.426*	.453*	-.381*	.329*	-.343*	1	2.39	.68

Note. AS: autonomy-supportive; AT: autonomy-thwarting; CS: competence-supportive; CT: competence-thwarting; RS: relatedness-supportive; RT: relatedness-thwarting

* $p < 0.05$, ** $p < 0.001$

Discussion

This study focused on the interaction between coaches and physically active men on the basis of perceptions of supportive and thwarting interpersonal behavior styles within the context of self-determination theory. The coach-athlete relationship is dynamic, supportive, friendly, honest, cooperative, respectful, and positive.

Empirical studies confirm (Ntoumanis, 2001; Teixeira et al., 2018) that self-determination theory is the most widely used motivational construct, allowing comprehension of the influence of motivation on human behavior in the context of sports activities. Our research complements the theoretical knowledge of physically active men's perception of interpersonal coach behavior in sports and other researchers (Teixeira et al., 2012; Ng et al., 2013; Rocchi, Pelletier, Cheung, et al., 2017; Rocchi & Pelletier, 2018; Teixeira et al., 2018; Haerens et al., 2018; Rodrigues et al., 2021) who conducted similar studies. The obtained results widened our understanding about supportive and thwarting interpersonal behavior in sport.

Self-determination theory is based on the satisfaction of human innate basic psychological needs (Deci & Ryan, 1985). Higher motivation and long-term, purposeful sports activities can be expected in activities that satisfy these natural psychological needs (Teixeira et al., 2012). Failure to satisfy such needs in sports can lead to amotivation (Vansteenkiste & Ryan, 2013) and eventual termination of activities (Bartholomew et al., 2011). The authors, who studied (Ng et al., 2013; Teixeira et al., 2018) the impact of BPN (Basic Psychological Needs) frustration on motivational and emotional variables among sports club attendees, stipulated importance for coaches to know how to stimulate needs in supportive environment, and know how to control behaviors that may lead to frustration with physical activities. The perception that coach controls the accumulation of negative experiences may lead individuals to withdraw from their physical activities (Ng et al., 2013).

The coach's authority, behavior, surrounding motivational climate, impacts directly influence over the participation of individuals in physical activities, their behavior and performance in competitions. A coach's behavior can help reduce anxiety, increase self-confidence, desire to continue participating in physical activity and improve skills. Studies of coaches' perception of interpersonal behavior (Rodrigues et al., 2021) show that sports clubs members will be more motivated to exercise more persistently, and try to perform well, if the coach's behavior is supportive. After researchers (McHenry et al., 2022) conducted a study on the unconditional positive regard (UPR) aspect of coaches, which is considered the main construct in developing optimal development and psychological functioning, it was found that the supportive behavior style of coaches significantly contributes to the development of athletes' self-esteem, confidence in coach, motivation, self-confidence, and achievement of sports results. On the other hand, the coach's behavior can lead to anger, distraction, team division and amotivation. For example, researchers

McHenry et al. (2021) studied the experiences of former figure skaters, interpersonal relationships with former coaches, aspects of conditioned attention, unconditional negative evaluation, and disregard. The study results disclosed that experience had a negative impact on athletes' confidence in coaches, motivation, results and self-esteem. However, it is important to mention that based on the self-determination theory, the coach's behavior can be evaluated in two styles of interpersonal behavior – autonomy supportive and controlling (Mladenović et al., 2015). Different behavioral styles can have different impacts on achieving different training goals. For example, researchers (Mladenović et al., 2015), analyzing the effects of autonomy supportive and controlling coaching styles on the development of speed and technical elements of young water polo players, found that a controlled coaching style is more effective and suitable for developing athletes' speed, while behaviors supporting autonomy needs provide better climate for the development of sports techniques.

The fact that competence-supporting behavior of coaches can positively affect the quality of communication between coaches and athletes and the decision of young people to continue sports activities, is also confirmed by Wekesser et al. (2021) results. The research results of the authors Shen et al. (2010) reveal that the tutor's support in the context of autonomy and competence relationships is important for reducing the amotivation of athletes. A study by Edmund et al. (2007) found that athletes who feel being supported by their coaches commit themselves to long-term physical activities. Besides, physically active adults, who perceive autonomy and competence support from sports coaches, tend to have greater BPN (Basic psychological needs) satisfaction (Ng et al., 2013).

The analysis of scientific works and the results of our research show that interpersonal relationships between coaches and physically active people remain relevant at all ages. Our study revealed an increasing importance of a supportive climate as the age of the respondents increased.

The analysis of the answers to the statements on the subscales in our study showed that there was a marked difference in the evaluations of the statements describing the coaches' support in the answers of the older and younger groups of respondents. Meanwhile, fewer statistically significant differences were found in statements describing thwarting. Analysing the support of autonomy, it became clear that the older research participants valued the fact that the coach supported the physically active men's personal choices and encouraged them to make their own decisions. Satisfying the need for competence is manifested by encouraging physically active men to improve their skills. Coaches provide information about how the physically active men can achieve this. It is interesting that, despite the identified differences, both the participants of one and the other group rated the statement "Encourages me to improve my skills" with the highest scores among all statements. When assessing relationship maintenance behavior, the greatest differences were found between older and younger study participants compared to the statements of other subscales. When evaluating the relationship, older research

participants noted that they significantly value the coach's interest in the physically active men and the desire to get to know him better. Thus, older individuals indicated that the coach likes to spend time with the physically active men.

It should be noted that self-growth is not so effective, compared to when the student is guided by a coach or a teacher. Effective education and learning in changing situations require support. Interpersonal relationships and the provision of constructive feedback are essential in order to objectively assess one's abilities (Rottensteiner et al., 2015; Forsmann et al., 2016). Therefore, coaching and facilitation come to help the learner, which creates a space for the formation of the learner's abilities – confidence, connection, character, life skills, positive affect, and positive psychological capacities – and the creation of a climate (Vella et al., 2011). In this way, the field of education opens a window for the education of athletes, where the coach ensures the learning and development of the learner (Roberts & Potrac, 2014).

Research data will help coaches in communicating, encouraging, and motivating physically active people and athletes to achieve their goals. It will help to organize and carry out training more effectively. The results of the study can be useful for sports persons in strengthening their health, improving their physical abilities, and developing an active lifestyle.

Conclusion

The understanding of interpersonal behaviors is significant in educational practice because interaction is a context in which learning, value formation, and meaningful action take place. The results of the study showed that the perception of interpersonal behaviour between coaches and physically active adult men was influenced by the age of the participants. The analysis of support and thwarting behaviors showed that older and more experienced research participants rated the perceived support of the coach with higher scores and thwarting with lower scores. Meanwhile, younger study participants experienced more control and pressure during training. Perceptions of interpersonal behavior among young men are characterized by a marked perceived limitation of autonomy and control. The perception of autonomy-supporting relationships is closely related to the behavior of coaches, which develops the perception of athletes' competencies and relatedness support. Thus, the perception of autonomous behavior of physically active men can be related to the assessment of relationship quality. It should be noted that in physical education/sport environments, the perception of relationships can be influenced by strict adherence to the principles and rules of sports practice (event/discipline), when learning or performing exercises, which can affect the perception of controlled behavior when the coach observes the performance of tasks. Based on these results, we present a perspective in which we argue that perceptions of interpersonal behavior in physical education are

influenced by the dichotomy of a person's perceived autonomy and control. However, the development of supportive relationships does not necessarily mean a reduction of coach controlled physical education during practice. Research on interpersonal behavior can help to purposefully develop a culture of relationship formation, to contribute to the formation of traditions of leadership in the education of physically active men, to provide certain didactic measures to improve educational practice.

Limitation

A major limitation of the study is the small sample size. Although the results showed statistically significant changes, this does not allow generalizing the results to a national level. In addition, the results of our study are presented by analyzing only data from physically active men. It is therefore appropriate to conduct a study with both men and women. The data analysis revealed that perceptions of coaches' supportive and thwarting behaviors change as the age of exercisers increases. However, the study did not elaborate on the social characteristics of the participants e.g., education, social status, income, etc. We believe that the perception of the relationship between the exerciser and the sports coach may be sensitive not only to the age of the respondents, but also to other socio-demographic aspects and to the individuals' level of physical or health literacy. Therefore, additional research would allow the identification of typical patterns of sport behavior for different age or social groups. Thus, additional research would allow a more comprehensive analysis of the factors influencing the development and change in interpersonal behavior.

Conflict of Interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

References

- All European Academies. (2017). *The European code of conduct for research integrity*. <https://allea.org/code-of-conduct/#toggle-id-13>
- An, H., Chen, W., Wang, C., Yang, H., Huang, W., & Fan, S. (2020). The relationships between physical activity and life satisfaction and happiness among young, middle-aged, and older adults. *International Journal of Environmental Research and Public Health*, 17(13), 4817.

- Baines, J. T., Taylor, C. N., & Vanclay, F. (2013). Social impact assessment and ethical research principles: ethical professional practice in impact assessment Part II. *Impact Assessment and Project Appraisal*, 31(4), 254–260. <https://doi.org/10.1080/14615517.2013.850306>
- Bartholomew, K. J., Ntoumanis, N., Ryan, R., & Thøgersen-Ntoumani, C. (2011). Psychological need thwarting in the sport context: assessing the darker side of athletic experience. *Journal of Sport & Exercise Psychology*, 33(1), 75–102. <https://doi.org/10.1123/jsep.33.1.75>
- Bartholomew, K. J., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2009). A review of controlling motivational strategies from a self-determination theory perspective: implications for sports coaches. *International Review of Sport and Exercise Psychology*, 2, 215–233. <https://doi.org/10.1080/17509840903235330>
- Burgueño, R., García-González, L., Abós, A. & Sevil-Serrano, J. (2022). Students' motivational experiences across profiles of perceived need-supportive and need-thwarting teaching behaviors in physical education. *Physical Education and Sport Pedagogy*. <https://doi.org/10.1080/17408989.2022.2028757>
- Callary, B., Young, B., & Rathwell, S. (2021). *Coaching masters' athletes: Advancing research and practice in adult sport*. Routledge.
- Côté, J., & Gilbert, W. (2009). An integrative definition of coaching effectiveness and expertise. *International Journal of Sports Science & Coaching*, 4, 307–323. <https://doi.org/10.1260/174795409789623892>
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297–334. <https://doi.org/10.1007/BF02310555>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and selfdetermination in human behavior*. Plenum.
- Duda, J. L., & Fenton, S. A. M. (2019). Social, environmental, and cognitive-motivational processes that promote engagement in physical activity in youth. In M. H. Anshel, S. J. Petruzzello, & E. E. Labbé (Eds.), *APA handbook of sport and exercise psychology*, 2, *Exercise psychology* (pp.123–146). American Psychological Association. <https://doi.org/10.1037/0000124-007>
- Edmunds, J., Ntoumanis, N., & Duda, J. (2007). Adherence and well-being in overweight and obese patients referred to an exercise on prescription scheme: a self-determination theory perspective. *Psychology of Sport and Exercise*, 8(5), 722–740. <https://doi.org/10.1016/j.psychsport.2006.07.006>
- Edmunds, J., Ntoumanis, N., & Duda, J. (2008). Testing a self-determination theory-bases teaching style intervention in the exercise domain. *European Journal of Social Psychology*, 38(2), 375–288. <https://doi.org/10.1002/ejsp.463>
- Eime, R. M., Harvey, J. T., Charity, M. J. Casey, M. M., Weserbeek, H., & Payne, W. R. (2016). Age profiles of sport participants. *BMC Sports Science, Medicine and Rehabilitation*, 8(6), 1–10. <https://doi.org/10.1186/s13102-016-0031-3>
- Eime, R. M., Harvey, J. T., Sawyer, N. A., Craike, M. J., Symons, C. M., Polman, R. C. J., & Payne, W. R. (2013). Understanding the contexts of adolescent female participation in sport and physical activity. *Research Quarterly for Exercise and Sport*, 2(84), 157–166.

- Eurobarometer (2018). *Sports and Physical Activity, Eurobarometer-472*. European Commission.
- Forsmann, H., Gråstén, A., Blomqvist, M., Davids, K., Liukkonen, J., & Konttinen, N. (2016). Development of perceived competence, tactical skills, motivation, technical skills, and speed and agility in young soccer players. *Journal of Sports Sciences*, 34(14), 1311–1318. <https://doi.org/10.1080/02640414.2015.1127401>
- Jones, R., Armour, K., & Potrac, P. (2004). *Sports coaching cultures: From practice to theory*. Routledge.
- Jowett, S. (2017). Coaching effectiveness: the coach–athlete relationship at its heart. *Current Option in Psychology*, 16, 154–158. <https://doi.org/10.1016/j.copsyc.2017.05.006>
- Haerens, L., Vansteenkiste, M., De Meester, A., Delrue, J., Tallir, I., Vande Broek, G., Goris, W., & Aelterman, N. (2018). Different combinations of perceived autonomy support and control: identifying the most optimal motivating style. *Physical Education and Sport Pedagogy*, 23(1), 16–36. <https://doi.org/10.1080/17408989.2017.1346070>
- Hagger, M., & Chatzisarantis, N. (2008). Self-determination theory and the psychology of exercise. *International Review of Sport and Exercise Psychology*, 1(1), 79–103. <https://doi.org/10.1080/17509840701827437>
- Keegan, R. J., Middleton, G., Henderson, H., & Girling, M. (2016). Auditing the socio-environmental determinants of motivation towards physical activity or sedentariness in work-aged adults: a qualitative study. *BMC Public Health*, 16(438), 1–20. <https://doi.org/10.1186/s12889-016-3098-6>
- Kivelä, K., Elo, S., Kyngäs, H. A., & Kääriäinen, M. (2014). The effects of health coaching on adult patients with chronic diseases: a systematic review. *Patient Education and Counseling*, 97(2), 147–57.
- Le, B. M., Impett, E. A., Lemay, E. P., Jr., Muise, A., & Tskhay, K. O. (2018). Communal motivation and well-being in interpersonal relationships: An integrative review and meta-analysis. *Psychological Bulletin*, 144(1), 1–25. <https://doi.org/10.1037/bul0000133>
- Maddison, R., Hoorn, S. V., Jiang, Y., Mhurchu, C. N., Exeter, D., Dorey, E., Bullen, C., Utter, J., Schaaf, D., & Turley, M. (2009). The environment and physical activity: The influence of psychosocial, perceived and built environmental factors. *The International Journal of Behavioral Nutrition and Physical Activity*, 6(19), 1–11. <https://doi.org/10.1186/1479-5868-6-19>
- McHenry, L. K., Cochran, J. L., Zakrajsek, R. A., Fisher, L. A., Couch, S. R., & Hill, B. S. (2021). Elite figure skaters’ experiences of harm in the coach-athlete relationship: A person-centered theory perspective. *Journal of Applied Sport Psychology*, 33(4), 420–440. <https://doi.org/10.1080/10413200.2019.1689536>
- McHenry, L. K., Cochran, J. L., Zakrajsek, R. A., Fisher, L. A., Couch, S. R., Hill, B. S. (2022). Elite figure skaters’ experiences of thriving in the coach-athlete relationship: A person-centered theory perspective. *Journal of Applied Sport Psychology*, 34(2), 436–456. <https://doi.org/10.1080/10413200.2020.1800862>
- Mladenović, M., Trunic, N., Djurovic, M., & Vucic, D. (2015). Autonomy support, controlled coaching styles and skills development in water polo. *Physical Education & Sport*, 13(3), 341–349.

- Moosburger, H., & Kelava, A. (2012). *Testtheorie und Fragebogenkonstruktion*. [Test theory and questionnaire construction]. Springer.
- Muthén, L., & Muthén, B. (1998–2015). *Mplus user's guide* (7th ed.). Muthén & Muthén.
- Ng, J., Ntoumanis, N., Thøgersen-Ntoumani, C., Stott, K., & Hindle, L. (2013). Predicting psychological needs and well-being of individuals engaging in weight management: The role of important others. *Applied Psychology*, 5(3), 291–310. <https://doi.org/10.1111/aphw.1201>
- Ntoumanis, N. (2001). A self-determination approach to the understanding of motivation in physical education. *British Journal of Educational Psychology*, 71(2), 225–242. <https://doi.org/10.1348/000709901158497>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). Mc Graw Hill.
- Oliveira, J. S., Sherrington, C., Amorim, A. B., Dario, A., & Tiedemann, A. (2017). What is the effect of health coaching on physical activity participation in people aged 60 years and over? A systematic review of randomised controlled trials. *British Journal of Sports Medicine*, 51, 1425–1432.
- Puente, R., & Anshel, M. (2010). Exercisers' perceptions of their fitness instructor's interacting style, perceived competence, and autonomy as a function on self-determined regulation to exercise, enjoyment, affect, and exercise frequency. *Scandinavian Journal of Psychology*, 51(1), 38–45. <https://doi.org/10.1111/j.1467-9450-2009.00723>
- Roberts, S. J., & Potrac, P. (2014). Behaviourism, constructivism and sports coaching pedagogy: a conversational narrative in the facilitation of player learning. *International Sport Coaching Journal*, 1, 180–187. <https://doi.org/10.1123/iscj.2014-0097>
- Rocchi, M., Pelletier, L., & Desmarais, P. (2017). The validity of the Interpersonal Behaviors Questionnaire (IBQ) in sport. *Measurement in Physical Education and Exercise Science*, 21(1), 15–25. <https://doi.org/10.1080/1091367X.2016.1242488>
- Rocchi, M., & Pelletier, L. (2018). How does coaches reported interpersonal behavior align with athletes' perceptions? Consequences for female athletes' psychological needs in sport. *Sport, Exercise and Performance Psychology*, 7(2), 141–154. <https://doi.org/10.1037/spy0000116>
- Rocchi, M., Pelletier, L., Cheung, S., Baxter, D., & Beaudry, S. (2017). Assessing need-supportive and need-thwarting interpersonal behaviours: The Interpersonal Behaviours Questionnaire (IBQ). *Personality and Individual Differences*, 104, 423–433. <https://doi.org/10.1016/j.paid.2016.08.034>
- Rodrigues, F., Bento, T., Cid, L., Neiva, H. P., Teixeira, D., Moutão, J., Marinho, D. A., & Monteiro, D. (2018). Can interpersonal behavior influence the persistence and adherence to physical exercise practice in adults? A systematic review. *Frontiers in Psychology*, 9 (2141), 1–15. <https://doi.org/10.3389/fpsyg.2018.02141>
- Rodrigues, F., Macedo, R., Teixeira, D. S., Cid, L. & Monteiro, D. (2021). Fitness trainers' use of need-supportive and need-thwarting behaviors: the role of gender, fitness activity, and professional experience. *Rev Andal Med Deporte*, 14(2), 82–86.
- Rottensteiner, C., Tolvanen, A., Laakso, L., & Konttinen, N. (2015). Youth athletes' motivation, perceived competence, and persistence in organized team sports. *Journal of Sport Behavior*, 38(4), 432–449.

- Ryan, R., & Deci, E. (2017). Self-determination theory. *Basic psychological needs in motivation, development, and wellness*. Guildford Press.
- Seefeldt, V., Malina, R. M. & Clark, M. A. (2002). Factors affecting levels of physical activity in adults. *Sports Medicine*, 32, 143–168. <https://doi.org/10.2165/00007256-200232030-00001>
- Sheldon, K. M., & Filak, V. F. (2008). Manipulating autonomy, competence, and relatedness support in a game-learning context: new evidence that all three needs matter. *The British Journal of Social Psychology*, 47(Pt 2), 267–283. <https://doi.org/10.1348/014466607X238797>
- Shen, B., Li, W., Sun, H., & Rukavina, P. B. (2010). The influence of inadequate teacher-to-student social support on amotivation of physical education students. *Journal of Teaching in Physical Education*, 29(4), 417–432.
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48, 1273–1296.
- Teixeira, D., Silva, M., & Palmeira, A. (2018). How does frustration make you feel? A motivational analysis in exercise context. *Motivation and Emotion*, 42(3), 419–428. <https://doi.org/10.1007/s11031-018-9690-6>
- Teixeira, P., Carraça, E., Markland, D., Silva, M., & Ryan, R. (2012). Exercise, physical activity, and self-determination theory: a systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 9 (1), article 78, 1–30. <https://doi.org/10.1186/1479-5868-9-78>
- Vanclay, F., Baines, J. T., & Taylor, C. N. (2013). Principles for ethical research involving humans: ethical professional practice in impact assessment (Part I). *Impact Assessment and Project Appraisal*, 31, 243–253. <https://doi.org/10.1080/14615517.2013.850307>
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23, 263–280. <https://doi.org/10.1037/A0032359>
- Vasconcellos, D., Parker, P. D., Hilland, T., Cinelli, R., Owen, K. B., Kapsal, N., Lee, J., Antczak, D., Ntoumanis, N., Ryan, R. M., & Lonsdale, C. (2020). Self-determination theory applied to physical education: A systematic review and meta-analysis. *Journal of Educational Psychology*, 112(7), 1444–1469. <https://doi.org/10.1037/edu0000420>
- Vella, S. A., Oades, L. G., & Crowe, T. P. (2011). The role of the coach in facilitating positive youth development: moving from theory to practice. *Journal of Applied Sport Psychology*, 23, 33–48. <https://doi.org/10.1080/10413200.2010.511423>
- Wekesser, M., Harris, B., Langdon, J., & Wilson, Jr. C. (2021). Coaches' impact on youth athletes' intentions to continue sport participation: The mediational influence of the coach-athlete relationship. *International Journal of Sports Science & Coaching*, 16(3), 490–499. <https://doi.org/10.1177/1747954121991817>
- Williams, N., Whipp, P. R., Jackson, B., & Dimmock, J. A. (2013). Relatedness support and the retention of young female golfers. *Journal of Applied Sport Psychology*, 25(4), 412–430. <https://doi.org/10.1080/10413200.2012.749311>
- World Health Organization (2017). *Physical activity for health*, World Health Organization. 1–50.

Fiziškai aktyvių suaugusių vyrų palaikančio ir slopinančio trenerio elgesio suvokimas

Stanislav Sabaliauskas¹, Nelė Žilinskienė², Ričardas Gerasimovičius³, Donatas Gražulis⁴,
Darius Radžiukynas⁵

¹ Vilniaus universitetas, Medicinos fakultetas, M. K. Čiurlionio g. 21/27, 03101 Vilnius, stanislav.sabaliauskas@mf.vu.lt

² Vytauto Didžiojo universitetas, Švietimo akademija, T. Ševčenkos g. 31, 03111 Vilnius, nele.zilinskiene@vdu.lt
³ Lietuvos kariuomenė, Šv. Ignoto g. 8, 01144, Vilnius, lk.kanceliarija@mil.lt

⁴ Vytauto Didžiojo universitetas, Švietimo akademija, T. Ševčenkos g. 31, 03111 Vilnius, donatas.grazulis@vdu.lt

⁵ Vytauto Didžiojo universitetas, Švietimo akademija, T. Ševčenkos g. 31, 03111 Vilnius, darius.radziukynas@vdu.lt

Santrauka

Tarpasmeninio elgesio tyrimai suaugusiųjų amžiaus tarpsnyje yra svarbūs kryptingai ugdant santykių kultūrą, prisidedant prie lyderystės tradicijų formavimo ir numatant didaktines priemones ugdymo praktikai tobulinti. Šio tyrimo, atlikto su sveikų sportuojančiųjų suaugusių vyrų imtimi, tikslas yra atskleisti, kaip skirtingo amžiaus suaugusieji suvokia trenerio tarpasmeninį elgesį sportuojant. Tyrime taikytas „Tarpasmeninio elgesio sporte klausimynas“ (Rocchi et al., 2017). Tyrimo imtį sudarė dirbantys, fiziškai aktyvūs vyrai (n = 241), kurie bent kartą per savaitę dalyvavo bendro fizinio rengimo pratybose vadovaujant treneriui. Tyrimas atliktas suskirsčius respondentus į dvi grupes: jaunų vyrų (iki 28 m.) ir vidutinio amžiaus vyrų (nuo 29 iki 56 m.). Rezultatai parodė, kad vidutinio amžiaus vyrai aukštesniais balais pažymi trenerio palaikymo treniruočių metu svarbą (p < 0,001), o jaunesni – aukštesniais balais įvertina iš trenerio patiriamą spaudimą (p < 0,001). Tyrimas parodė palaikymo klimato svarbos didėjimą, susijusį su respondentų amžiumi (p < 0,001). Analizuojant patiriamo spaudimo suvokimą, nustatyta ne tokia ryški rodiklių kaita, tačiau didėjant amžiui respondentai mažesniais balais vertina patiriamą spaudimą (p < 0,001). Tyrimas atskleidė, kad tarpasmeninio elgesio supratimas yra reikšmingas suaugusiųjų ugdymo praktikoje, nes sąveika tampa besitreniruojančius palaikančiu ir įgalinančiu ugdymo kontekstu.

Esminiai žodžiai: *apsisprendimo teorija, tarpasmeninis elgesys, parama, slopinimas.*

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