



RISK FACTORS IN HUNGARIAN ELITE RYTHMIC GYMNASTIC FROM PSYCHOLOGICAL ASPECT THE RELATION AMONG BODY IMAGE, MOTIVATION, BURN-OUT AND PERCEIVED COACH AND PARENT-AUTONOMY SUPPORT

Kovács K.^{1ABCD}, Kéring J.^{1ABCD}, Gyömbér N.^{1ABCD}, Lénárt Á.^{1D}
University of Physical Education, Budapest, Hungary

Author's contribution: A - Study design; B – Data collection;
C – Statistical analysis; D – Manuscript preparation.

Abstract

Regarding aesthetic sports the rhythmic gymnastics is one of the most complex sport, and involves the greatest risk for eating disorders and burnout. In case of youth sport motivational climate and perceived autonomy support are considered important factors regarding psychological development.

The objective - to investigate the association of body image, motivation and burnout of rhythmic gymnasts with the level of perceived autonomy support by coaches and parents.

Methods. The sample consists of elite rhythmic gymnastics athletes (N=26; average age=16,34; SD=2,00). We applied the following validated questionnaires: Sport Climate Questionnaire; The Perceived Autonomy Support Scale for Exercise Settings; The Task and Ego Orientation in Sport Questionnaire; Athlete Burnout Questionnaire; Body Attitudes Test.

Results. We found significant, negative, medium association between the level of perceived autonomy support and the subscale of devaluation, while the relationship between the level of perceived autonomy support (by coaches and parents) and body attitudes was significant, positive.

Conclusions. The positive relation of the level of perceived autonomy support and body attitudes might refer to the ambivalent quality of the athlete-parent and athlete-coach relationship. The negative relation of the level of perceived autonomy support and devaluation reveals the importance of the communication and feedbacks in athletic self-evaluation.

Key words: rhythmic gymnastics, motivation, perceived autonomy support, burnout, body attitude

Introduction

Rhythmic gymnastics is considered as one of the womanish olympic sport. Due to the artistic background of this sport (quality of presentation, gracefulness and lightness) the real difficulties, problems and sacrifices are almost unremarked for an outsider, although they can influence the whole lifestyle and lifespan of the athlete. Rhythmic gymnastics recommends outstanding coordinational and motoric abilities as well as refined sport-specific skills because of its highly complex and diverse collection of movements. Early specialization begins at the age of 3-4 and the sportcarrier terminates in young adulthood, however the early training load

and exaggerated efforts in this sport can cause harmful effects from psychological, physical and social aspects [7]. Furthermore, this sport can be characterized by a certain level of disproportion between relatively low number of competitions and huge amount of training/practice hours [22].

In case of youth sport, the concept of autonomy mostly emerges in connection to self-determination theory. According to this theory [19], in order to experience motivation, the individual needs to feel competent (competency), have the opportunity to make own decisions (autonomy) and to be able to attach to peers and coaches (need for attachment). Regarding youth sport, the satisfaction of the need



for autonomy helps to develop the self-determined attitude to sport, in which the direct environment has an especially important role. According to earlier studies, autonomy support promotes motivation [9] and performance [2].

In our research we have studied the motivation of athletes through goal orientation theory. Mastery goals refer to the effort to acquire new skills and develop competency [8]. They can lead to higher level of joy, interest, commitment, intrinsic motivation, satisfaction and competitive performance, as well as they provide a prevention from the fear of failure [27]. Performance goal however refer to the effort to overfulfill others and express individual abilities and they can be characterized by low level of perceived competence and low or maladaptive performance and behavioral samples [8]. Mastery goals are considered to have a certain preventive effect against formation of eating disorders [20], however performance goals can be connected to manifestation of eating disorders [3].

Goal orientation of parents can be associated with their children's goal orientation, thus the motivational climate or goal structure created by parents can have a significant influence on children's goal orientation [1]. The mastery motivational climate created by parents (in opposite to performance goal structure) anticipates the high level of autonomy regulation [16]. The opinions about the influence of parents and coaches in youth sport are controversial. Some researches [16, 21] consider the role of parents more important, they highlight the influence of parents outside the sport and their undivided attention regarding the developmental possibilities, however coaches concentrate only on athletic improvement and their activities are limited to sport. On the other hand, it has been shown in case of gymnasts, that the attitude of coaches has a greater impact, than parental influence; youth athletes expect to be secured and coordinated through their athletic carrier by their coaches [13].

In those sports, where the physical appearance provides esthetic advantage, athletes are highly pressured to attain the most minimal body fat percentage [23, 14]. The psychological background of body image disorders and eating disorders involves the fear from biological maturity, the feeling of vanity, lack of interoceptive consciousness,

as well as maladaptive perfectionism, that enhances cognitive and somatic anxiety and diminish self-esteem [12]. All of the sport-environment related difficulties, such as conflicts with coaches, exaggerated expectations and perfectionism are considered to be risk factors [25]. According to a study [15] 12 coaches (of 18) think, that the sport environment causes eating disorders, however other research [23] revealed, that 75% of athletes are on a diet because of the coaches. This can be related to the attitude of coaches, as they provide more attention to athletes with ideal body shape and body composition [24].

Burnout is a psychological syndrome, which is characterized by physical and emotional exhaustion, the feeling of decreased performance and depersonalization [10]. Female gymnasts with the experience of the symptoms of burnout reported that the exaggerated expectations of the sport highly limit the time and energy for private life, for those things, that matters outside sport [5]. The status of being an elite athletes force them to choose the process of pain dissociation instead of medical treatment, recreation and regeneration in case of injury [26].

The objective- to discover the association of perceived autonomy support, goal orientation, burnout and body image among hungarian elite rhythmic gymnasts. Along with this aim, our hypothesis focus on the connection of perceived autonomy support (by coaches and parents), goal-orientations, the quality of body image and the level of burnout. We assume, that perceived autonomy support (by coaches and parents) is positively correlated with task orientation, and negatively correlated with burnout and negative body image.

Methods

Participants: Twenty-six hungarian elite (first-class), rhythmic gymnasts (N=26), older than 14 years (mean=16,23 sd=2,00) have taken part in the research. The quantity of sample determinative, while the number of currently active athletes of this category is twenty-nine. The mean of weekly training hours is 22,77 (SD: 12, 87, Min: 5, Max: 46). Considering the presence of sport injuries, only 11,5% of athletes (3 persons) have never been injured before. This percentage is relatively high, considering the age of athletes. Furthermore, we

have investigated the frequency of weight control by coaches: 77% of athletes have weight training daily or weekly.

Applied methods: We have applied the following five psychological questionnaires: Sport Climate Questionnaire (SCQ-H) [4] measures the level of perceived autonomy support behaviour from the coach (Cronbach $\alpha=,93$). The Perceived Autonomy Support Scale for Exercise Settings (PASSES-H) [11] assess the level of perceived autonomy support behavior by parents (Cronbach $\alpha=,94$). The Task and Ego Orientation in Sport Questionnaire (TEOSQ) [6] determines motivation with two subscales: task-orientation (Cronbach $\alpha=,67$) and goal-orientation (Cronbach $\alpha=,87$). The Athlete Burnout Questionnaire (ABQ) [18] consists of three subscales: perceived sense of personal

accomplishment (Cronbach $\alpha=,84$); emotional/physical exhaustion (Cronbach $\alpha=,89$) and devaluation (Cronbach $\alpha=,89$). The Body Attitudes Test (BAT) [17] focuses on negative body image (Cronbach $\alpha=,93$).

Results and discussion

Based on statistical analysis there was no significant connection between perceived autonomy support (by coaches) and task orientation. We found significant, negative and medium association between perceived autonomy support and the subscale of devaluation ($\rho(26)=0,463, p=0,017$). There is a significant, positive and medium association between perceived autonomy support and body attitudes ($\rho(26)=0,631, p<0,001$). Results of statistical analysis are presented in Table 1.

Table 1

The association among perceived autonomy support by coaches, burnout, goal orientation and body attitudes

Spearman's rho		Goal	Task	Reduced sense of personal accomplishment	Emotional / physical exhaustion	Devaluation	Body attitudes
<i>Perceived autonomy support by coach</i>	Correlation Coefficient	0,106	0,323	-0,318	0,068	-,463*	,631**
	Sig. (2-tailed)	0,606	0,108	0,114	0,742	0,017	0,001
	N	26	26	26	26	26	26

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Based on statistical analysis there was no significant connection between perceived autonomy support (by parents) and task orientation. We found significant, negative and medium association between perceived autonomy support by parents and the subscale of devaluation ($\rho(26)=0,491, p=0,011$). There is a significant, positive and medium association between perceived autonomy support and body attitudes ($\rho(26)=0,432, p=0,028$). Results of statistical analysis are presented in Table 2.

The positive relation between perceived autonomy support by coaches and the body attitudes refers to the ambivalent quality of coach-athlete relationship, due to the sport-specific attitude to connect the performance with the

physical appearance. Furthermore the negative relation between perceived autonomy support by coaches and devaluation reveals the importance of communication of coaches and the quality of their feedback in the aspect of athletic self-evaluation.

Our results raise the question of changing the attitude of this sport. Education of coaches and sport experts as well as the review of the current system (importance of youth sport) can be an innovative solution. Sport psychology and developmental psychology should be built into the system of education, in order to introduce those theories and models, that can establish and promote the approach of positive youth development. The practice of double-goal coaching can help to prevent early drop-out and serious physical and mental injuries.



Table 2

The association among perceived autonomy support by parents, burnout, goal orientation and body attitudes

Spearman's rho		Goal	Task	Reduced sense of personal accomplishment	Emotional / physical exhaustion	Devaluation	Body attitudes
<i>Perceived autonomy support by parents</i>	Correlation Coefficient	0,105	0,358	-0,024	-0,349	-,491*	,432*
	Sig. (2-tailed)	0,608	0,072	0,908	0,08	0,011	0,028
	N	26	26	26	26	26	26

*. Correlation is significant at the 0.05 level (2-tailed).

Regarding eating disorders the first and most important step is the prevention. Psychoeducational approach can help coaches to be able to detect possible risks and take interventions. Furthermore, it would be beneficial to develop a realistic and „open-to-all” weight control procedure. In practice, it is highly important to avoid overcritical comments on body shape.

Regarding the prevention of burnout, regular monitoring of athletes (including mood state) through the whole season can be an effective method. In case of negative feedback, the attachment and compulsion to conform toward the coach may lead to the devaluation of athletic performance (basis of burnout). From the aspect of the athlete, it is highly important to change attitude, develop more effective coping skills against possible failures, frustration, performance expectations and injuries.

However, the study is not without limitations. Although previous studies have provided evidence that autonomy support also has an important role

in forming motivational climate and motivation in physical activity, the present research did not investigate the effect of autonomy support from parents and coaches over time. Future work is needed to explore how environments' behavior influences the achievement and the longitudinal effect of autonomy support on goal orientation, body attitudes and burnout.

Conclusions

The practical aim of our study was to demonstrate the importance of the need for psychological knowledge of coaches and raise the attention to the high level of vulnerability of rhythmic gymnasts. Furthermore we would like to highlight the significance of mitigation of risk factors in order to make this sport more popular among young athletes.

Conflict of interest

The authors claim that there is no conflict of interest.

References

- Atkins M, Johnson D, Force E, Petrie T. Peers, parents, and coaches, oh my! The relation of the motivational climate to boys' intention to continue in sport. *Psychology of Sport And Exercise*. 2015; 16:170-180. <http://dx.doi.org/10.1016/j.psychsport.2014.10.008>
- Cheon SH, Reeve J, Lee J, Lee Y. Giving and receiving autonomy support in a high-stakes sport context: a field-based experiment during the 2012 London Paralympic Games. *Psychology of Sport and Exercise*. 2015; 19, 59-69.
- De Bruin A, Bakker FC, Oudejans RRD. (2009). Achievement goal theory and disordered eating: Relationships of disordered eating with goal orientations and motivational climate in female gymnasts and dancers. *Psychology of Sport and Exercise*. 2009; 10(1): 72-79. doi:10.1016/j.psychsport.2008.07.002
- Deci RM. The sport climate questionnaire, 2001; Retrieved February 3, 2018 from: http://www.psych.rochester.edu/SDT/measures/auton_sport.html



5. Dubuc NG, Schinke RJ, Eys MA, Battochio R, Zaichkowsky L. Experiences of burnout among adolescent female gymnasts: Three case studies. *Journal of Clinical Sport Psychology*. 2010; 4:1–18.
6. Duda JL. Relationship between task and ego orientation and the perceived purpose of sport among high school athletes. *Journal of Sport and Exercise Psychology*. 1989; 11: 318-335.
7. Feeley BT, Agel J, LaPrade RF. When Is It Too Early for Single Sport Specialization?, *The American Journal of Sports Medicine*. 2016; 44(1): 234-41. <https://doi.org/10.1177/0363546515576899>
8. Fejes JB. Célok és motiváció - Tanulási motiváció a célorientációs elmélet alapján. Budapest: Gondolat Kiadói Kör; 2015. 21.p.
9. Fenton SAM, Duda JL, Quested E, Barrett T. Coach autonomy support predicts autonomous motivation and daily moderate-to-vigorous physical activity and sedentary time in youth sport participants. *Psychology of Sport and Exercise*. 2014; 15: 453-463.
10. Gustafsson H, DeFreese JD, Daniel DJ. Athlete burnout: review and recommendations, *Current Opinion in Psychology*. 2017; 16: 109-113. <https://doi.org/10.1016/j.copsyc.2017.05.002>
11. Hagger MS, Chatzisarantis NL, Hein V, Pihu M, Soós I, Karsai I. The perceived autonomy support scale for exercise settings (PASSSES): Development, validity, and cross-cultural invariance in young people. *Psychology of Sport and Exercise*. 2007; 8(5): 632-653. doi:10.1016/j.psychsport.2006.09.001
12. Joy E, Kussman A, Nattiv A. 2016 update on eating disorders in athletes: A comprehensive narrative review with a focus on clinical assessment and management. *British Journal of Sports Medicine*. 2016; 50(3): 154-162. doi:10.1136/bjsports-2015-095735
13. Kipp LE, Weiss M. Social predictors of psychological need satisfaction and well-being among female adolescent gymnasts: A longitudinal analysis. *Sport, Exercise, and Performance Psychology*. 2016; 4(3):153-169.
14. Kong P, Harris LM. The Sporting Body: Body Image and Eating Disorder Symptomatology Among Female Athletes from Leanness Focused and Nonleanness Focused Sports, *The Journal of Psychology*. 2015; 149:2: 141-160. DOI: 10.1080/00223980.2013.846291
15. Nowicka P, Eli K, Ng J, Aplitzsch E, Sundgot-Borgen J. Moving from Knowledge to Action: A Qualitative Study of Elite Coaches Capacity for Early Intervention in Cases of Eating Disorders. *International Journal of Sports Science & Coaching*. 2013; 8(2): 343-355. doi:10.1260/1747-9541.8.2.343
16. O'Rourke DJ, Smith RE. Parent-initiated Motivational Climate and Young Athletes Intrinsic-Extrinsic Motivation: Cross-sectional and Longitudinal Relations. *Journal of Child and Adolescent Behaviour*. 2013; 1(2). doi:10.4172/2375-4494.1000109
17. Probst M, Vandereycken W, Van Coppenolle H, Vander-linden J. The Body Attitude Test for patients with an eating disorder: Psychometric characteristics of a new questionnaire. *Eat. Disord*. 1995; 3: 133–145.
18. Raedeke TD, Smith AL. Development and Preliminary Validation of an Athlete Burnout Measure. *Journal of Sport and Exercise Psychology*. 2001; 23(4): 281-306. doi:10.1123/jsep.23.4.281
19. Ryan RM, Deci EL. *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. New York: Guilford; 2017. 17.p.
20. Scoffier S, Corrion K, D'Arripe-Longueville F. Effects of achievement goals on female aesthetic athletes' disordered eating attitudes. *Science & Sports*, 2013; 28(6): 151-157. doi:10.1016/j.scispo.2013.04.001
21. Schwebel FJ, Smith RE, Smoll FL. Measurement of Perceived Parental Success Standards in Sport and Relations with Athletes' Self-Esteem, Performance Anxiety, and Achievement Goal Orientation: Comparing Parental and Coach Influences. *Child Development Research*. 2016, 1-13. doi:10.1155/2016/7056075
22. Stambulova N, Stambulov A, Johnson U. 'Believe in Yourself, Channel Energy, and Play Your Trumps': Olympic preparation in complex coordination sports. *Psychology of Sport and Exercise*. 2012; 13(5): 679-686. doi:10.1016/j.psychsport.2012.04.009



23. Sundgot-Borgen J, Torstveit MK. Prevalence of eating disorders in elite athletes is higher than in the general population. *Clinical Journal of Sport Medicine*. 2004; 14, 25–32.
24. Tan J, Bloodworth A, Mcnamee M, Hewitt J. Investigating eating disorders in elite gymnasts: Conceptual, ethical and methodological issues. *European Journal of Sport Science*. 2014; 14(1): 60-68. doi:10.1080/17461391.2012.728632
25. Thompson RA, Sherman R. Reflections on athletes and eating disorders. *Psychology of Sport and Exercise*. 2014; 15(6): 729-734. doi:10.1016/j.psychsport.2014.06.005
26. Thomson P, Kibarska LA, Jaque SV. Comparison of dissociative experiences between rhythmic gymnasts and female dancers. *International Journal of Sport and Exercise Psychology*. 2011; 9(3): 238-250. doi:10.1080/1612197x.2011.614850
27. Weinberg RS, Gould DS. Foundations of sport and exercise psychology. *Human Kinetics*: 2018., 252.p.

Інформація про авторів:

Kovács K.

University of Physical Education, Budapest, Hungary

Kéringer J.

University of Physical Education, Budapest, Hungary

Gyömbér N.

University of Physical Education, Budapest, Hungary
gyomber.noemi@tf.hu

Lénárt Á.

University of Physical Education, Budapest, Hungary
lenartagota@gmail.com

Received: 04.06.2019;

Accepted 18.06.2019; Published: 28.06.2019.