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Original Article

Disordered eating behaviors in rhythmic gymnasts: a survey to investigate the coaches' point of view on the management.

ALESSANDRA DI CAGNO[4], GIOVANNI FIORILLI[1], ENZO IULIANO[1], DESPINA TSOPANI[2], ANDREA BUONSENSO[1], MARINA PIAZZA[3], GIUSEPPE CALCAGNO[1]
[1] Department of Medicine and Health Sciences, University of Molise, Campobasso, ITALY
[2] Department of Physical Education and Sport Science, National and Kapodistrian University of Athens, Athens, GREECE
[3]Department of Experimental and Clinical Medicine, University of Firenze, Firenze, ITALY
[4]Department of Health Sciences, University of Rome "Foro Italico", Rome, ITALY

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Abstract:
Purpose: The aim of the present study was to investigate the coaches' point of view on the rhythmic gymnasts' disordered eating behaviors, by focusing the attention on their knowledge of this problem, in relation to training and competition participation. The second aim is to assess if there is theoretical and/or practical collaboration between coaches and medical staff. Methods: One hundred and Sixty-nine rhythmic gymnastics coaches completed a 23 items questionnaire, based on the NCAA survey (National Collegiate Athletic Association). All the coaches had 15.2 ± 9.6 years of experience in coaching. Paired T-Test was used to compare the impact of disordered eating behaviors on health and performance and Chi-Squared analysis was used to compare different outputs obtained in the answers. Results: Coaches declared to have identified an average of 1.3 ± 1.7 symptomatic gymnasts during their careers, and 25% of them affirmed to have no good knowledge of the problem. Participants were informed that disordered eating behaviors may negatively influence both health and sport performance. About 88% of the coaches were aware that current eating disorders influence the decision to recruit an athlete. Ninety-one percent of the coaches never referred to a professional mental health. Conclusion: Coaches understood seriousness of the problem, even though the majority of the coaches did not refer to a therapist. It was recommended, instead, a multidisciplinary approach for a correct management, including coaches, psychologists and nutritionists.
Keywords: energy availability; female athlete triad; nutritional inadequacy; gymnastics; trainer**.**

Introduction

In the last few decades, women participation in sport is largely increased. However, significant problems with eating disorders were identified in female athletes. People with eating disorders take concerns about food and weight to extremes, developing abnormal eating habits that are dangerous for their well-being and for their health (American Psychiatric Association, 2013). Clinical eating disorders might have revealed in precursor symptoms as bradycardia and evident dehydration (Joy, Kussman, & Nattiv, 2016), and an early identification and early appropriate treatment may prevent the development of more serious problems (de Oliveira, 2017). Some authors reported that disordered eating behaviors, and also dieting, can predict not only eating disorders but also a number of problematic outcomes, including increased risk for weight gain and obesity both in adolescents and young adults (Fiorilli et al., 2017; Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011). Eating disorders are more prevalent among athletes than non-athletes (Joy et al., 2016). Even if the prevalence of clinical eating disorders is quite low in sport environment, there is a higher prevalence of disordered eating practices, used by athletes. It was also stated that disordered eating behaviors and eating disorders are more frequent in female than male athletes, with a prevalence from 0 to19% in male athletes versus a prevalence from 6 to 45% in female athlete (Bratland-Sanda & Sundgot-Borgen, 2013). The rate of eating disorder is higher in sports with weight classes, in aesthetic sports, and in the sports where a lower body mass can be considered as advantageous (Joy et al., 2016), as rhythmic gymnastics (Krentz & Warschburger, 2013). In rhythmic gymnastics, success is strongly influenced by visual appeal, and body aesthetic appearance. Leanness have particular relevance both in performance and appearance, and the combination of excessive exercise, reduced food intake, the high level of stress in training and competition, and the special clothing, used during competitions, can even whet the problem of weight control (Mond, Van den Berg , Boutelle, Hannan, & Neumark-Sztainer, 2011). Increases in stress hormones, concomitant with low caloric intake to reach lean, almost anorexic-like physique, which characterizes the elite rhythmic gymnasts, seriously impairs sport performance (Thompson & Sherman, 2011). Primary amenorrhea was found to be 22% in gymnastics (Beals, &

Corresponding Author: GIOVANNI FIORILLI, E-mail: iorilli@unimol.it

Manore, 2002). The technical team pressure, put on athletes in order to maintain weight levels, is a relevant risk factor (Lombardo, Battagliese, Lucidi & Frost, 2012). In addition, the lack of medical control, especially on sub-elite gymnasts, may be a further important risk factor. American College of sport Medicine (ACSM) established a position stand on the female athlete triad (Otis, Drinkwater & Johnson, 1997). However, many athletes suffered only from components of the triad that are not successfully identified (Hawkey, Volberding, Tapps, & Tapps, 2017). As such, Nattiv at al. (2007) published an ACSM updated position stand considering energy availability, menstrual dysfunction and bone mass deficiency as separate triad components. Mountjoy et al. (2014) coined the term Relative Energy Deficiency in Sports (RED-S), that consists a multisystem approach considering the Triad components only a small portion of what is affected by lack of appropriate caloric intake. When the "shift" in energy distribution is not correct, it impairs overall health with several negative consequences on athletic performance. In this concern, the coach is an important social figure in the context of youth sport, and a positive coach-athlete relationship improves performance outcomes and sustains athlete growth (Gardner, Magee, & Vella, 2016). Jowett (2007) highlighted that this relationship is based on mutual respect, cooperation, and mutual understanding. Consequently, the coach education can affect athlete outcomes such as self-esteem, enjoyment and life behaviors (Langan, Blake & Lonsdale, 2013). The role of the coach in monitoring athlete behaviors and in providing positive responses becomes particularly important (Santos et al., 2017). Some coaches are not only implicated in detecting symptomatic athletes but also treating them. Consequently, they must to work with appropriate knowledge of athlete energy availability, eating disorders' problems and health and performance consequences of RED-S. They must opportunely interface with psychologists, nutritionists and other professional figures.

The aim of the present study was to investigate the coaches' point of view on disordered eating behaviors, by focusing the attention on their knowledge of this problem and the criteria used by the coaches to identify athletes with RED-S, to manage of the problem, and to deal with the health and performance consequences. The second aim is to assess if there is both theoretical and practical collaboration among coaches and medical staff.

Materials and Methods

Participants

One hundred sixty-nine Italian and Greek rhythmic gymnastics head coaches were enrolled for the present study. All the coaches had 15.2 ± 9.6 years of experience in coaching with a range from a minimum of 2 and a maximum of 45 years of experience. This study was designed and carried out in accordance with the Declaration of Helsinki. Explanations were given about the aim of the study, and informed written consent was obtained from all participants.

Procedures

Participants were asked to complete a survey based on the NCAA (National Collegiate Athletic Association) coaches' survey for the identification and management of gymnasts with disordered eating behaviors (Trattner Sherman, Thompson, Dehass & Wilfert, 2005). The survey used in the present study was a 23 items questionnaire, with the same structure of the NCAA survey used in the study of Trattner Sherman et al.(2005). The survey is reported as Appendix I.

Survey description

Twenty-three items, investigating different aspects of the eating disorders as identification, managements and consequences, composed the survey.

The first part of the survey - questions 1, 2, 3, 4, and 5- aimed to collect general information on coaching experiences with symptomatic athletes and the coaches' education regarding eating disorders.

The questions 6 and 7 aimed to investigate the coaches' opinions regarding the severity of the consequences that any disordered eating behaviors can have on female athletes' health and/or performance.

The questions 8, 9, 10 and 11 investigated coaches' opinions on amenorrhea.

The questions 12a, 12b, 13a, 13b, 14a, 14b, 15a, and 15b referred to athletes with disordered eating behavior/eating disorders identification, the criteria used to identify the disordered eating behavior/eating disorders' symptoms, and people to refer for management decision, when an athlete was identified. These questions were modified from the survey original version, in order to investigate the eventual differences between the "theoretical approach" to the problem and the "real practical approach".

The questions 16 and 17 investigated the coaches' opinion concerning the history of eating disorders or the presence of eating disorders relevance in the athlete recruitment.

The questions 18 and 19 investigated the theoretical approach of the coaches in two hypothetic situations involving two female athletes with disordered eating behavior and amenorrhea.

The questions 20, 21, 22, and 23 investigated whether coaches have referred an athlete to mental health professional, therapists or nutritionist.

Statistical analysis

The descriptive data were collected and computed as percentage or means ± SD. The comparison of the coaches' scores investigating the impact of disordered eating behaviors on health vs. performance (respectively indicated by coaches in question 6 and 7) was performed using paired T-Test. This analysis aimed to evaluate if significant differences existed in coaches' opinion regarding the severity of disordered eating behaviors on health vs. performance. Chi-Squared analysis was used to compare the different outputs obtained in the questions 12a vs. 12b, 13a vs. 13b, 14a vs. 14b, and 15a vs. 15b. The statistical analysis was performed the using EXCEL 2016 (Microsoft Corporation, Redmond, WA, USA).

Results

General information on coaches' experience (questions 1, 2, 3, 4, and 5)

Participants were all female (Question 1) and with an average of 15.2 ± 9.6 years of experience in coaching (Question 2). The participants reported to have coached an average of 1.3 ± 1.7 athletes with disordered eating behaviors/eating disorders in their careers (Question 3). Concerning the Question 4 ("Do you know of an athlete that you once coached that had an eating disorder you were unaware of, while you were their coach?"), 21.2% of the coaches answered "Yes", 78.8% answered "No".

The Question 5, concerning the coaches' training/education on disordered eating behaviors/eating disorders, 25.0% declared to have not received any kind of training/education, 30.9% declared to have attended lectures, 50.0% to read specific materials, 39.7% to have talked to eating disorders experts, 8.8% to have watched video tapes or television shows, 10.3% declared to have other kind of training/education. In this question participants could check more than one response.

Consequences on Health and on performance (questions 6 and 7)

The results relative to the Question 6 and 7 as described in Table 1, in order to have more clarity.

Table 1. Results of the questions 6 and 7of the survey relative to the negative consequence on health and performance produced by any disordered eating behaviors.

	Health (means ± SD)	**Performance (means ± SD)**	**Greater impact**	***p*-value**
Binge-eating	2.94 ± 0.54	3.04 ± 0.68	P	0.289
Skipping one meal a day	2.07 ± 0.89	2.64 ± 0.71	P	< 0.001 *
Skipping two meals a day	3.01 ± 1.14	3.41 ± 0.67	P	< 0.001 *
Fasting for an entire day	3.12 ± 0.88	3.60 ± 0.58	P	< 0.001 *
Self-induced vomiting	3.94 ± 0.24	3.90 ± 0.31	H	0.083
Laxative abuse	3.93 ± 0.26	3.87 ± 0.34	H	0.045
Diuretic/water pill abuse	3.88 ± 0.32	3.88 ± 0.32	=	1.000
Weighing oneself multiple times a day	3.57 ± 0.63	3.61 ± 0.57	P	0.409
Excessive exercise	3.59 ± 0.58	3.64 ± 0.54	P	0.300
Under eating	3.60 ± 0.58	3.64 ± 0.54	P	0.321
Eating fast food occasionally	2.96 ± 0.88	3.23 ± 0.79	P	< 0.001 *
Eating fast food frequently	3.59 ± 0.63	3.75 ± 0.47	P	0.011

The Mean scores were calculated using a 4-point scale (1 = "not at all serious" to 4 = "very serious").
The symbol H indicates that the behavior was valued as more serious for the athlete's health. The symbol P indicates the behavior was valued as more serious for the athlete's performance. The symbol = indicates that the behavior was valued as equally serious for the athlete's health and performance. The p-value was calculated using a paired T-Test comparing the health vs. performances scores reported by each coach. The symbol * indicated a significant difference between health and performance scores that was $p<0.004$ (p-value computed with Bonferroni correction due to the multiple test situation).

Amenorrhea (questions 8, 9, 10 and 11)

Concerning the coaches' opinion on amenorrhea (Question 8), 18.8% declared that amenorrhea is "Normal for female athletes and is not serious", 21.7% declared "Normal for female athletes but needs to be assessed after six months", the same percentage declared "Not normal but usually not harmful to the athlete", 33.3% declared "Not normal and requires a medical referral", and 4.3% did not answer.

In the question 9, whether coaches were aware of gymnasts' missed menses for more than 3 consecutive months, 55.1% of the coaches declared to be aware, 40.6% declared not to be aware, and 4.3% did not answer.

In the question 10, 58.0% declared to have talked with their athletes about amenorrhea, 37.7% declared not to have talked with their athletes, and 4.3% of the participants did not answer.

In the question 11, 36.2% of the coaches declared to have referred an athlete for a medical evaluation due to amenorrhea, 46.4% declare to have never referred an athlete for a medical evaluation, 17.4% of the participants did not answer.

Identification, criteria, management and input for decision (questions 12a, 12b, 13a, 13b, 14a, 14b, 15a, and 15b)

The results of these questions were as described in Table 2.

Table 2**.** Results of the questions 12a, 12b, 13a, 13b, 14a, 14b, 15a, and 15b.

Question 12a and 12b determination of the disordered eating behavior/eating disorder	**12a: Who can determines**	**12b: Who most frequently determines**	**Significance between the 2 questions**
Student-athlete	7.2%	0.0%	
Head coach	47.8%	81.2% (+)	
Assistant coach	4.3%	5.8%	$\chi^2 = 25.272$
Teammates	10.1%	14.5%	$df = 7$
Mental health professional	36.2%	31.9%	$p = 0.0007$*
Athletic trainer	4.3%	5.8%	
Other medical staff	72.5% (+)	46.4%	
Other	7.2%	14.5%	
Question 13a and 13b Criteria for eating behavior/eating disorder	**13a: What criteria or information do you think should be used**	**13b: What criteria or information do you use most frequently**	**Significance between the 2 questions**
Physical/medical problems	23,2%	10,1%	
Psychological/emotional problems	26,1%	21,7%	$\chi^2 = 7.592$
Eating disorder symptoms	78,3% (+)	72,5% (+)	$df = 7$
Decrease in athletic performance	72,5%	60,9%	$p = 0.370$
Other	5,8%	2,9%	
Question 14a and 14b: What to do when an athlete has an eating behavior/eating disorder	**14a: What should you do**	**14b: What do you most frequently do**	**Significance between the 2 questions**
Nothing	0,0%	1,4%	
Refer to a dietitian	40,6%	10,1%	
Refer to sports medicine personnel	36,2%	1,4%	
Refer to a general counselor or psychologist	59,4%	27,5%	$\chi^2 = 101.406$
Withhold from training and competition	0,0%	21,7%	$df = 7$
Refer to an eating disorder specialist	49,3%	75,4% (+)	$p < 0.0001$*
Have them read relevant materials	52,2%	14,5%	
Contact parents	76,8% (+)	39,1%	
Other	7,2%	4,3%	
Question 15a and 15b: Input into the decision to train and compete	**15a: which people should input into the decision**	**15b: which people has the most input into the decision**	**Significance between the 2 questions**
Student-athlete	2,9%	4,3%	
Head coach	76,8% (+)	59,4% (+)	
Assistant coach	0,0%	0,0%	
Teammates	0,0%	0,0%	$\chi^2 = 3.537$
Mental health professional	4,3%	4,3%	$df = 7$
Athletic trainer	1,4%	0,0%	$p = 0.831$
Other medical staff	73,9%	40,6%	
Other	7,2%	5,8%	

Differences between the percentage of the questions a and b were analyzed with chi-squared test.
Multiple response were admitted.
df = degree of freedom; * = statistically significant; (+) = most indicated answer.

Relevance of eating disorders in the athlete's recruitment (questions 16 and 17)

In the question 16, 75.4% of the coaches indicated that a history of a successfully treated eating disorder is "very important" in the decision to recruit an athlete or not, 18.8% indicated that this aspect is "important", and 2.9% indicated that this aspect is "somewhat important". None of the coaches answered "not at all important".

In the question 17, 88.4% of the coaches indicated that a current eating disorder is "very important" in the decision to recruit an athlete, 8.7% indicated that this aspect is "important", and none of the coaches answered "somewhat important" or "not at all important".

In both the questions, 2.9% of the coaches did not answer.

Theoretical approach of the coaches in two hypothetic situations (questions 18 and 19)

In the question 18 (the case of Ashley), 41.7% of the coaches indicated, as first choice, "Watch athlete closely to look for evidence of problem", 33.3% indicated "Talk to athlete", and 25.0% indicated "Talk to parents". In the question 19 (the case of Sara), 54.2% of the coaches indicated as first choice "Talk to athlete", 29.2% indicated "Talk to parents", 12.5% indicated "Watch athlete closely to look for evidence of problem", and 4.2% indicated as first choice "refer to a general counselor or psychologist".

Previous experiences of coaches with therapists or nutritionist (questions from 20, 21, 22, and 23)

In question 20, 91.0% of the coaches never referred to a mental health professional, 9.0% have referred to a mental health professional and overall the interviewed coaches declared that those services were good.

In question 21, 82.1% of the coaches never referred to a general therapist, 17.9% have referred to a general therapist and overall the interviewed coaches declared that those services were good.

In the question 22, 64.7% of the coaches never referred to an eating disorder therapist, 35.3% have referred to an eating disorder therapist, and in this case, overall they declared that those services were good.

In the last question, 23, 50.0% of the coaches never referred to a dietitian/nutritionist, 50.0% have referred to a dietitian/nutritionist, and overall they declared that those services were good.

Discussion

One of the coaches' goal in the sport preparation is to achieve the best results in competition, protecting the health of the athletes as stated in the Olympic Movement Medical Code (version in force as from 31 March 2016, downloadable at the site https://www.olympic.org). Athletes involved in aesthetic sports usually fall into a negative caloric balance and their body reacts by reducing the amount of energy needed for the daily life and sport performances (Torres-McGehee, 2009). The coach could carry out a fundamental role in detecting his/her athlete problems. The coaches have a privileged position to observe athletes in a variety of circumstances, as well as access to medical information, consequently they are an optimal source of early identification and intervention on athlete with disorders symptoms (Zimmerman, 1999). In the present study the interviewed coaches were those with at least 8 years of experience, and all of them women, and this could not a limitation of the study, because results are not extendable to male coaches. Female coaches are more comfortable discussing and managing problems as eating behaviors and menstrual disorders, with their female athletes (Tratner-Sherman et al., 2005) The great majority of the coaches declared that they know their gymnasts' eventual eating disorders' problems, and the seriousness of the consequences on health and performance. They are aware that even slight disorder eating behaviours might lead to serious health consequences as well as performance decrement (Hawkey et al., 2017). Otherwise, eating fast food occasionally is considered negative for performance. Especially laxative and diuretic abuse, use of diet pills and self-inducing vomiting, are considered seriously unsafe, leading to dehydration, electrolyte imbalances and gastrointestinal problems (Mountjoy et al., 2014). Diuretic and diet pills that contain WADA prohibited substances, may lead to a sport disqualification. Coaches take in consideration the declining performance, due to nutrients deficiency, as increased risk of infections, illness, chronic fatigue, and frequent overuse injuries (Nattiv et al., 2007). Moreover, psychological stress and depression are frequently associated to low energy availability (Stice, South & Shaw, 2012). Metabolic abnormalities and carbohydrates deficiency determine a reduction in glucose utilisation and mobilisation of fat stores, causing a decreased production of growth hormone, particularly dangerous for young athletes (Loucks & Thuma, (2003). Nevertheless, the coaches affirmed that clinical eating disorders diagnosis has been not frequent in their competitive rhythmic gymnastics careers, less than the averaged athletes identified in others sports that emphasize thinness (Tratner-Sherman et al., 2005). Conflicting findings, regarding the eating disorders prevalence in female athletes, especially in high-risk sports as rhythmic gymnastics, are shown in previous studies (Salbach, Klinkowski, Pfeiffer, Lehmkuhl, & Korte, 2007; Thomas, Keel & Heatherton, 2005) . These considerations may arise from the fact that an athlete can learn at an early age how to look safely after her body, which is a tool for success in her sport-discipline (di Cagno et al., 2014). In the other hand, it is possible that the coach is conniving with a decision of reducing energy intake to improve her athlete aesthetic sport performance, maybe ignoring that the underlying problem of RED-S is an energy inadequacy to support body functions and sport performance, especially in young athletes, as in Rhythmic Gymnastics (Thein-Nissenbaum & Hammer 2017). The coach in this case can play a negative role, exacerbating, with his/her recommendations, wrong eating behaviours and disorder eating practices, to lose or maintain body weight for better sport performance (Treasure & Schmidt, 2001). The coaches, to rightly and early identify eating problems of their gymnasts, may be agree on the dangerousness of a caloric restriction and elimination of specific food groups (Nattiv et al., 2007) and should have a working knowledge of eating disorder problems. Only 40% of the interviewed coached have talked with experts, and 25% declared to have not any kind of education in this field, highlighting a need for information, as in previous surveys was shown (Tratner-Sherman et al., 2005; Turk, Prentice, Chappell & Shields, 1999).

Concerning amenorrhea, about 40% of the interviewed coaches declared to be not worried about this problem, maybe considering that the majority of the gymnasts have only menstrual dysfunction whereas a

minority of them was amenorrhoeic. This is consistent with previous studies' findings (Hawkey et al., 2017; Thompson, 2007). It is well known that gymnasts did not develop negative consequences of amenorrhea, including reduced fertility and decreased bone density, after the end of the competitive period, during their lifetime (di Cagno et al., 2012). Nevertheless, menstrual dysfunction may have significant emotional impact, as anxiety and altered perception of self-normalcy (Nappi & Facchinetti, 2003) that is a functional impairment for competitive sport performance and reduces responsiveness to training (VanHeest, Rodgers, Mahoney & De Souza, 2014). The restoration of menses optimizes health, supports performance, and should be attempted using non-pharmacological modalities initially (Kelly & Hecht, 2016). Careful monitoring energy availability and weight is usually sufficient to the resumption of menses in the majority of the gymnasts. Less than 50% of the coaches declared not to be aware on the health consequences of missing the menstrual cycles for more than three consecutive months, considering the irregular or absent menstrual cycles "normal" in the sport environment (Tratner-Sherman et al., 2005). Consequently, the majority of the coaches declared to have talked with their athletes about amenorrhea, but did not refer the amenorrhoeic gymnasts for a medical evaluation. The need of information, in order to recognise and correctly manage is problem, emerges from this survey.

Regarding the collaboration among the sport staff and the health specialists, the coaches relieved discrepancy between what "should be done" and what actually happens. They believe that the diagnosis of eating disorders should be done by a medical staff, whereas symptomatic athletes are most frequently identified by head coaches or teammates and then encouraged to seek help, as in previous study stated (Thein-Nissenbaum & Hammer, 2017). Even if this answer demonstrated that a careful control on gymnast's behaviours is guaranteed by the head coach, the problem is whether they are effective identifiers. Coaches affirmed that first step, which should be performed in the case of symptomatic gymnasts' identification, is to talk to athlete, contact parents and secondly refer to an eating disorders specialist. Screening questionnaires can be administered at any time, if coaches and the medical staff suspect that an athlete can develop RED-S symptoms (Thein-Nissenbaum & Hammer, 2017). Unfortunately, there are no standardized guidelines to determine energy availability and RED-S symptoms, and the diagnosis requires expertise and medical consultation (Mountjoy et al., 2014). Ninety-one percent of the coaches never referred to mental health professionals, however it is well recognized the importance to have a mental health practitioner as part of the treatment staff, if eating disorders have been clinically diagnosed. In this case, treatment should be provided by mental health professional, considering that athlete resistance to treatment usually increases with the severity of the eating problem (Thompson, & Sherman, 2011). Fifty percent affirmed that they consulted with a nutritionist, differently from previous study findings in which the most frequently referred to sport medicine personnel (Tratner-Sherman et al., 2005). A tendency of sport environment is to manage the athlete problems within the athletic department, probably for the cost of the treatment and in order to have more control on the situation (Tratner-Sherman et al., 2005).

One of the managing decision, in which the coach is more involved, is whether the symptomatic athlete can be allowed to train and compete. Certainly, the decision requires coaches' knowledge of medical and psychological indicators of eating disorders, as highlighted by Sherman & Thompson (2001), even though the athlete must be recovered, both psychologically and medically, before she can return to train (De Souza et al., 2014). Started by saying that the management of female athlete RED-S should have a multiple disciplinary approach, the first intervention must focus on the low energy state (Brown, Dewoolkar, Baker & Dodich, 2017). Once again, treatment strategy involves an increase in energy intake, reduction in exercise or a comthienbination of both (Guebels, Kam, Maddalozzo & Manore, 2014). When energy balance is restored, modifying diet and exercise behaviors and normalizing body weight and menses, it will be possible to return to train and compete (De Souza et al., 2014). Coaches should know that it is possible to continue to practice physical activity only in the case of low energy availability or mild eating disorders. In this situation the coach will play a key role in the design of the gymnastics training program, working closely with the nutritionist, to maintain a positive energy balance for gymnast (Thein-Nissenbaum & Hammer, 2017). Almost all the interviewed coaches considered that the suspicion of athlete at risk of RED-S influences the recruitment of gymnasts for competitive activity.

Conclusion

Early screening and intervention of individuals at risk of RED-S and disorder eating behaviours is vital to manage and solve the health and sport performance problems, especially in adolescents as rhythmic gymnasts, who are still in the process of growing and maturing. The coaches must provide this need, inducing strong motivation among gymnasts to change abnormal behaviours, limiting exposure to slender body ideal, and should be supportive in maintaining correct eating behaviours for a long time. Having a daily relationship with their athletes, they compensate the eventual disturbed family relationship, which is determinant in favouring eating disorder onset (Treasure et al., 2008). It is important that, first of all, coaches have not acceptance or tolerance of their gymnasts eating disorders behaviours, succumbing in in psychopathological syndromes that may also impair their sport performance. Secondly they must educate and suggest their gymnasts what and how much to eat and exercise to achieve the best sport performance. Thirdly, they have to inform families and specialist health professionals for the problem management (Cook et al., 2016). It was recommended, a treatment staff in management, including coaches, psychologist and nutritionist organizing an annual health maintenance visit and

sport pre-participation evaluation, as suggested by ACSM. A multidisciplinary approach is crucial for a successful treatment (Warr & Woolf, 2011). The coaches have to provide a continuative education regarding the correct eating and training behaviors and contribute to the good health and high performance of their athlete with preventive strategies (Brown et al., 2017)

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