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“I’m concerned – what do I do?” Recognition and management of disordered eating in fitness center settings.

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RUNNING TITLE: DISORDERED EATING IN FITNESS CENTER SETTINGS

ABSTRACT

Objective: To examine group fitness instructors' knowledge and attitudes towards identification and management of disordered eating (DE). **Method:** Group fitness instructors representing the three largest fitness center companies in Norway (n=837, response rate: 57%) completed a questionnaire through Questback (www.questback.com). The questionnaire contained items regarding gender, age, educational background, exercise behavior, and knowledge of recognition and response to DE. **Results:** Eighty-nine percent of the respondents reported knowledge about symptoms of DE, 29% was classified with adequate DE knowledge skills. Forty-nine percent of the instructors reported current concern about DE among one or more members, 47% reported knowledge about how to recognize and respond to DE, and 37% reported knowledge about their fitness center's guidelines for approaching DE concerns. The level of formal education in sports and exercise, and a history of self-reported eating disorder, but not fitness instructor experience, were explanatory factors for knowledge about DE symptoms. Both exercise specific educational level and instructor experience were explanatory variables for knowledge about recognition of and response to DE concerns. **Discussion:** Implications of the findings include a need for increased confidence among group fitness instructors regarding how to approach DE concerns, increased awareness of excessive/compulsive exercise as a symptom of DE, and enhanced dissemination of existing guidelines for managing DE concerns among members and/or staff.

Keywords: sports, exercise, dieting, psychiatry, eating disorders.

“I’m concerned – what do I do?” Recognition and management of disordered eating in fitness center settings.

The fitness center industry has increased especially in the last two decades, with almost 90 million members and 750 000 employees across Europe, USA and Australia (1; 2.). In a wealthy country like Norway, about one third of the general adult population has a membership at a fitness center (3.). Although it is believed that most attendees at fitness centers have a health promoting exercise behavior, disordered eating (DE) or severe eating disorders (ED) have been found to be as high as 28% among female fitness center members, and up to 40% among group fitness instructors (4; 5.). The DE continuum starts with healthy dieting behavior progressing to chronic dieting, frequent weight fluctuation, fasting, purging, and ending with clinical ED (6.). Excessive exercise, compulsive exercise and exercise dependence have all been suggested as symptoms of the EDs anorexia nervosa and bulimia nervosa (7.). While various terms have been used to define exercise as a symptom of DE and ED, no consensus exists as to when exercise becomes excessive and/or compulsive (7.).

Early identification and recognition of DE, and referral for professional assistance, are all factors associated with a more successful treatment outcome (6.). The environment at the fitness centers is likely to be a setting where high volumes of exercise and specific diets are the norm, thus making it difficult to detect potentially hazardous behavior. Due to frequent contact with clients, group fitness instructors are in an excellent position to identify the early symptoms of DE and ED, and direct clients to professional help (8.). However, it seems that knowledge about DE and ED is predicted by education, and not by years of practicing as an

instructor (9.). Since the educational level among group fitness instructors vary greatly, this aspect is important to examine.

Giordano (10.) raised the issue of whether fitness instructors have a moral obligation to the participation of individuals with DE in their classes. Such an imperative would include the obligation to ensure that individuals utilizing fitness center facilities do so in a healthy and safe manner. Despite the importance of such a gate keeping role, group fitness instructors' knowledge, attitudes, and practices concerning DE and weight control behaviors remain understudied. One available study found that 32% of the responding group fitness instructors recognized a clinical case description of a female with anorexia nervosa as a serious case of ED (8.). When asked how they would manage the specific case, 35% reported they would talk to the member; 28% said they would report it to the manager at the fitness center. These findings are comparable with studies examining knowledge about DE and ED among coaches, athletic trainers, and health care personnel in sports medicine (11-13.). Unfortunately, the response rate of the study by Manley et al. (8.) was low; therefore larger studies examining group fitness instructors' knowledge about DE and ED are needed.

In 2004, guidelines for identifying and managing members with DE were published by Fitness Australia in collaboration with the Center for Eating & Dieting Disorders (14.). These guidelines suggest that when a member with symptoms of DE is identified, a senior member of the staff or management must be notified. It is then decided who will approach the member, convey requirement for the member (e.g. exercise approval from their GP), and further actions needed (e.g. exercise counseling or suspension of the membership). In addition, the guidelines have some examples of how to approach DE concerns about employees having DE at the fitness center (14.). Comparable guidelines have been suggested

by Giordano (10.). The guidelines by Giordano (10.) and Marks & Harding (14.) are in accordance with the UK and the Australian laws, respectively. The American College of Sports Medicine (ACSM) has provided position stands for recognition and management of the female athlete triad in sports (6.). However, to date, guidelines for managing DE in fitness centers have not yet been published by any international sports medicine and/or ED organization. Furthermore, no published studies have explored how the Australian guidelines were implemented in fitness centers, or whether the group fitness instructors were aware of these guidelines. In Norway, no official guidelines for managing DE concerns in the fitness industry existed until 2010. However, the three largest fitness center companies in Norway (Sats, Elixia and Spent) had their own written information and procedure on how to respond to DE concerns at their centers. This procedure only dictated that employees should report to the management their concern about members/colleagues having DE. In contrast to the Australian guidelines, no further instructions on how to initiate and carry out a dialogue with the member/employee of concern were provided.

The aim of this study was therefore to examine Norwegian group fitness instructors' knowledge and confidence in identifying and managing DE in fitness club settings. The research questions were: What is the frequency of instructors reporting that they 1) can identify symptoms of DE, 2) have confidence in how to approach members and/or colleagues with DE, 3) know the procedures for managing DE concerns; and 4) What are the variables explaining the instructors' knowledge and confidence of identifying and managing concerns about members and/or colleagues having DE?

METHODS

Sample

Group fitness instructors from the three largest fitness companies in Norway (Sats, Elixia and Spenst) were invited to participate in this study. The inclusion criterion was teaching a minimum of one class per week during the spring semester of 2009. Group fitness instructors who were unable to understand the Norwegian language were excluded. Of the 1,473 instructors contacted, 78 instructors had invalid contact information. They were therefore unavailable for the study. The instructors received written information about the aim and methods of the study. Informed consent was obtained. The study was approved by the regional committee for medical ethics in Southern Norway (REK Sør).

This study was conducted as a cross sectional study using self-report through the online survey system Questback (www.questback.com). The leaders of group training at the fitness centers provided the instructors' e-mail addresses for the research group. We did not have permission to receive personal information such as names and postal addresses, therefore instructors with invalid e-mail addresses were unavailable for participation. The instructors were contacted by e-mail, and those who did not respond received up to two reminders.

Questionnaire

The survey included questions regarding age, height, body weight, education, numbers and types of classes taught per week and exercise history. In addition the respondents were asked if they presently or previously had an ED. To explore knowledge, confidence and attitudes towards identification and management of DE among members and colleagues, we chose a 7-item self-report with close-ended questions of either agree/disagree. The respondents were asked to answer if they agreed or disagreed to the following statements "*I can recognize symptoms of DE,*" "*I am currently aware of and/or concerned about DE in one*

or more members at my fitness center,” “I am currently aware of and/or concerned about DE in one or more colleagues at my fitness center,” “I feel confident of how to approach concerns about DE among members at my fitness center,” “I feel confident of how to approach concerns about DE among colleagues at my fitness center,” “My fitness center has written guidelines on how to manage concerns about DE among members,” and “My fitness center has written guidelines on how to manage concerns about DE among employees”. If the participants agreed to one or more of the statements, they were asked to elaborate on the statement. For example, they were asked to list symptoms of DE, and explain what they would do if they were concerned about DE among members or colleagues. These were designed as open-ended questions. The answers on elaboration of symptoms of DE were first coded as correct or false by the researchers (SBS and JSB), and then coded into the following categories: starvation/fasting, bingeing, purging, use of laxatives/diuretics, excessive/compulsive exercise, body dissatisfaction, drive for thinness, preoccupation with body weight/shape/food, low self-esteem, menstrual irregularities, dieting, changed physical appearance (severe weight loss/gain/fluctuation), mood instability, depression/anxiety, dizziness/injuries, compulsivity, and social isolation. In order to be categorized as reflecting adequate knowledge about DE, the respondents needed to list at least three of the following: preoccupation with food and/or body weight/shape, starvation/fasting, bingeing, purging, excessive/compulsive exercise, body dissatisfaction, drive for thinness and changed physical appearance. The answers to the elaboration on the statements regarding how to manage concerns about DE were coded into the following categories: “report to the management of the center,” “keep dialogue with the person of concern,” or “do nothing”.

Statistics

The statistical software IBM SPSS 19 was used to analyze the data. Descriptive variables are shown in mean (standard deviation) and percentages. Independent t test was used to explore statistical differences between male and female respondents, and one-way ANOVA with Bonferroni post hoc test was used to compare respondents with current eating disorder, previous eating disorder and no eating disorder. Binary logistic regression analysis (enter mode) was performed to explore whether general educational level, educational level in sport and exercise, instructor experience, and own experience with present/previous ED influenced the instructors knowledge regarding identification and management of concerns for DE. The dependent variable “instructor’s knowledge” was coded dichotomously (knowledge: yes/no). Effect sizes were estimated using Numbers Needed to Treat for categorical variables, and Cohen’s d for dimensional variables. Significance level was set to .05.

RESULTS

Descriptive data

A total of 837 group fitness instructors responded to the study, resulting in a response rate of 57%. Forty-eight percent of the instructors had exercise-specific education from a university college and/or a university (two semesters, bachelor or master degree) (Table 1, see Appendix A). Twenty-nine percent of the instructors reported a history with ED (15%).

Recognition and early identification of DE

A higher frequency of female versus male respondents, and respondents with compared to those without a self-reported ED history, reported knowledge about symptoms of DE (Table 2). Twenty-nine percent were categorized with adequate knowledge about

symptoms of DE (Table 2). Symptoms most commonly listed by the instructors were preoccupation with food, body weight/shape, fasting/starvation, bingeing, and purging (Figure 1).

Insert Table 2 here

Insert Figure 1 here

Knowledge about management of DE at the fitness centers

Table 2 shows that 47% reported knowledge of how to respond to concerns about DE among members. Instructors also reported they were more likely to involve the manager of the fitness center regarding DE concerns with a member as opposed to a colleague (34% vs 28%, $p < 0.05$). Eight percent of the instructors would initiate a dialogue with the person of concern if the individual was a member, while 12% of the instructors would do so if the individual was a colleague.

Exercise-specific higher education and self-reported ED history were explanatory variables for knowledge about DE symptoms (Table 3). Exercise-specific education and instructor experience were explanatory variables for the instructors' self-reported knowledge of approaching concerns about DE (Table 3).

Insert Table 3 here

DISCUSSION

The main finding was that although 89% of the instructors responded that they had knowledge about DE symptoms, fewer than half of the respondents felt confident of how to respond to concerns about DE. The number of respondents reporting knowledge about symptoms of DE was surprisingly high compared to other studies (8; 13.). However, only 29% were categorized with adequate knowledge according to our definition. This number is more in accordance with the previous studies, and more comparable to the frequency of respondents reporting current concerns about DE among members and/or colleagues. This could indicate a discrepancy between instructors' subjective evaluations of their own competence regarding DE symptoms, and their actual competence in detecting these symptoms among both members and colleagues. Therefore, it seems important to increase instructors' knowledge in actual recognition of DE. The gender differences found in knowledge about symptoms, and current concern about DE among one or more colleagues, might be explained by greater awareness of DE among female group fitness instructors. Possible confounding factors for these gender differences are the higher prevalence of self-reported ED history among female respondents compared to the males. The differences in knowledge between respondents with and without a history of ED were expected, as it is likely that those with an ED history have more knowledge about DE symptoms. The lower frequency of instructors with an ED history reported that their fitness center had guidelines for managing DE among colleagues might be explained by actual lack of awareness of the guidelines. Another possibility is that these instructors believed that the existing guidelines were inadequate, and that they therefore could not be considered as guidelines.

Only 20% of the respondents reported excessive/compulsive exercise as a symptom. This could be due to an assessment bias as the listing of symptoms was an open-ended question. The respondents may consider excessive/compulsive exercise as a give-in for a

symptom of DE. On the other hand, the instructors might not recognize this as a symptom because they belong to a subculture where high volume of exercise is common. In such cases, increasing awareness of the link between excessive/compulsive exercise and DE is important.

A higher number of the instructors indicated that they would report concerns about DE to the manager at the fitness center if they were concerned about a member as opposed to a colleague. It is possible that they felt a loyalty towards the colleague, and that reporting concerns about a colleague might lead to adverse consequences. Also, the colleague in question might be part of the management group, leading to fear that instructors would be jeopardizing their own job by reporting the concern.

The only significant explanatory factor for recognition and management of DE concerns was educational level in sports and exercise science. This is similar to the findings of Malek et al. (9.). Although the r^2 for the explanatory factors combined were small, we suggest that this finding supports the qualification requirement for working as an instructor.

The study included a large sample size with group fitness instructors representing various fitness centers from different areas of Norway. A major limitation to the study is the use of online response to the questionnaire. We can therefore not exclude the possibility that some respondents may have used the internet or other sources to “cheat”. Furthermore, the questions used to assess the respondents’ knowledge about recognition and management of DE were non-validated. The respondents may have interpreted the questions differently, and this may have affected the results. For example, we asked about recognition of DE symptoms in general; it is possible that the rates would have been higher if the question specified DE symptoms among members/employees at fitness centers. In addition, the response rate was

low (57%). With low response rates it is important to compare the background variables of the respondents with such variables from the total population. As such a community study of group fitness instructors from Norway was not available, it was not possible to conduct such comparisons. In addition, the study only includes group fitness instructors. As group fitness instructors teach group-based exercises, often with large groups, they do not get to know the attendees at their classes on an intimate level. It is possible that they find it more difficult to identify DE symptoms than, for example, personal trainers. Personal trainers often meet their clients several times per week for several weeks; they conduct individual screening, testing, and individual supervision of their clients' exercise. Future studies should aim to explore this type of knowledge among personal trainers, as they get to know their clients on a more intimate level than group fitness instructors.

Scientific and practical implications

Due to the lack of validation of the questions used to assess recognition and management of DE in fitness center settings, future studies should examine the sensitivity and specificity of such self-reported knowledge. Further, it would be interesting to examine the self-reported abilities against gold standards for recognition of ED, e.g. Eating Disorders Examination interview (16.). However, it is important to emphasize that group fitness instructors are not licensed health care personnel and are therefore unable to conduct diagnoses. They can, however, identify symptoms of DE, and then act upon their concerns according to the guidelines of the fitness center. Based on both this and previous studies (4,7), it is important to increase awareness of excessive/compulsive exercise as a symptom of DE and ED. Unfortunately, this issue is in our opinion not adequately addressed in the existing DE/ED prevention programs in Norway.

Although all of the included fitness centers had their own procedures for detecting and managing DE, these procedures were clearly not effectively implemented among the group fitness instructors. However, a low adherence is not surprising as the existing policies in Norwegian fitness centers before 2010 were vague and informal. In 2010, the authors of this paper developed official guidelines for detecting and managing DE in fitness centers in Norway (17.). A short version of these guidelines is shown in Appendix B. This was done in cooperation with the Norwegian Association of Fitness Centers and an ED non-governmental organization. In Norway, the Government has made no attempt to develop or monitor guidelines for recognition and management of DE in fitness centers. Future studies should address the value of such involvement to increase adherence to the guidelines.

There is, in our opinion, a need for shared guidelines for recognition and management of DE by fitness center companies in different countries. These guidelines should be taught to the employees in the same way as first aid, CPR, and fire instruction, and should be implemented in the curricula of athletic, fitness instructor, and personal trainer education. Additionally, it is important that instructors as an occupational group show understanding and knowledge about the function and possible hazards of excessive/compulsive exercise. Such hazards include injuries, dizziness, comorbid psychopathology, and impaired quality of life (18.). The legal versus moral obligations of the fitness center must be made clear, so that the center does not act against laws on discrimination and harassment. The guidelines presented by Giordano (10.) and Marks & Harding (14.) are in accordance with UK, US and Australian laws, respectively. As the laws differ from country to country, it is important that the guidelines are adapted to each country's laws and regulations. Some important common aspects independent of laws and regulations include: 1) the need for adequate education of group fitness instructors, 2) written procedures included in safety instructions, 3) the need for

one skilled person among the staff who should be in charge of following and updating the procedures, 4) the person in charge should monitor dialogue with members/employees of concern, 5) the dialogue should be performed in a polite, caring, non-judgmental and respectful manner, and 6) fitness centers having current lists of local clinicians and therapists who counsel persons with DE.

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APPENDIX A.

Table 1. Background variables among the group fitness instructors.

APPENDIX B.

Short version of Norwegian guidelines for management of concerns about eating disorders in fitness center settings.

FIGURE CAPTIONS.

Figure 1: Instructors' listing of symptoms of disorderd eating.

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