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Eating Disorders in Collegiate Female Athletes: Factors That Assist Recovery

JESSYCA N. ARTHUR-CAMESELLE

Department of Psychology, Manhattanville College, Purchase, New York, USA

PAULA A. QUATROMONI

*Sargent College of Health & Rehabilitation Sciences, Boston University,
Boston, Massachusetts, USA*

The purpose of this study was to identify factors that assist female athletes' recovery from eating disorders. Forty-seven female collegiate athletes who experienced eating disorders responded to an open-ended question regarding factors that most helped their recovery. The most common factors were the desire to be healthy enough to perform in sport, support from others, and shifts in values/beliefs. A unique finding was that the desire to be healthy enough to perform in sport most frequently facilitated recovery. This knowledge can help treatment providers to foster athletes' motivation to recover and distinguishes athletes as a unique treatment population from non-athletes.

To date, few studies have examined recovery from eating disorders in highly competitive athletes, despite unique experiences that may distinguish them from the general population (Anderson, Petrie, & Neumann, 2012; Sherman & Thompson, 2001; Sundgot-Borgen & Torstveit, 2004; Thompson & Sherman, 2010). Understanding athletes' experiences regarding factors that facilitate recovery may help to guide treatment and prevention in this population.

Qualitative investigations of recovery in non-athletes provide information about general factors that assist eating disorder recovery. Based on past studies, the following are helpful to a woman attempting to recover from an eating disorder: support from friends and important others; professional

Address correspondence to Jessyca N. Arthur-Cameselle, Department of Psychology, Manhattanville College, 2900 Purchase Street, Unit 2334, Purchase, NY 10577, USA. E-mail: jessyca.arthurcameselle@mville.edu

treatment; determining underlying causes of the disorder; making cognitive changes in the eating disorder mindset; taking prescribed medications; embracing spirituality; and reading books about recovery (Cockell & Zaitsoff, 2004; Keski-Rahkonen & Tozzi, 2005; Lamoureux & Bottorff, 2005; Linville, Brown, Sturm, & McDougal, 2012; Nilsson & Hägglöf, 2006; Patching & Lawler, 2009; Pettersen & Rosenvinge, 2002; Ronel & Libman, 2003; Rorty, Yager, Rossotto, 1993; Tozzi, Sullivan, Fear, McKenzie, & Bulik, 2003; Wasson & Jackson, 2004; Woods, 2004).

Though these studies are informative, previous research has not adequately examined the unique experiences of athletes attempting to recover from eating disorders. In fact, to date, there are only two published studies on recovery in athlete samples. First, Woods (2004) examined untreated recovery in 18 participants, coincidentally all former high-school athletes, who reported via online questionnaires that parents, coaches, and peers who provided support helped recovery. In contrast, parents and coaches who encouraged weight loss hindered their recovery. While this study offers some insight, given that the participants were never elite or collegiate athletes, it is difficult to determine how influential the role of being an "athlete" was in the recovery process. More recently, Arthur-Cameselle and Baltzell (2012) interviewed 16 collegiate athletes in recovery to elicit advice for parents, coaches, and other athletes. Participants advised coaches to confront eating disorder behavior and urged parents to provide unconditional support. They most frequently suggested that other athletes should maintain hope that recovery is possible. These results provide some awareness of athletes' experiences regarding recovery, but a larger sample and more targeted questions are needed to illuminate specific factors that assist athletes.

The current study was designed to address this void in the literature by including a larger sample of female collegiate athletes who experienced eating disorder recovery. Females were chosen as a study group given the disproportionate prevalence of eating disorders in females compared to males (American Psychiatric Association, 2000). In particular, this study identifies factors that assist recovery in female collegiate athletes with eating disorders. No specific hypotheses were tested, given the lack of past research on this topic in athletes.

METHOD

Participants

Participants were 47 females who were current or former collegiate athletes in the United States at either National Collegiate Athletic Association (NCAA) Division I ($n = 43$) or Division III ($n = 4$) levels in 14 different sports, including: track ($n = 16$), cross country ($n = 12$), crew ($n = 12$), swimming ($n = 3$), gymnastics ($n = 3$), field hockey ($n = 3$), volleyball ($n = 2$),

tennis ($n = 2$), lacrosse ($n = 2$), golf ($n = 1$), diving ($n = 1$), ice hockey ($n = 1$), soccer ($n = 1$), and softball ($n = 1$); missing data ($n = 1$). Fourteen participants competed in two different sports: both track and cross country ($n = 11$), both crew and swimming ($n = 2$), and both gymnastics and crew ($n = 1$).

Participants ranged in age from 18 to 28 years old ($M = 19.97$, $SD = 1.69$). The sample included Caucasian (77%), African American (4%), Asian (4%), Hispanic (2%), or unidentified (13%) participants. Based on self-reported symptoms, they met *Diagnostic and Statistical Manual-IV-Text Revision (DSM-IV-TR)* criteria (American Psychiatric Association, 2000) for anorexia nervosa ($n = 16$), bulimia nervosa ($n = 7$), or eating disorder not otherwise specified (specifically, binge eating disorder; $n = 4$), or two or more of the three disorders ($n = 20$). Some participants reported a history of multiple eating disorder diagnoses; of that group, some met criteria for all disorders at different points in their experience ($n = 7$), while others experienced two different disorders, for example anorexia and bulimia ($n = 7$), anorexia and binge eating disorder ($n = 4$), or bulimia and binge eating disorder ($n = 2$). Twenty-nine participants received diagnoses from a professional. The average onset of symptoms was 16.44 years old ($SD = 2.29$). They experienced their disorders, on average, for more than two years ($M = 28.06$ months, $SD = 19.38$).

Each participant experienced at least one period of “recovery” (defined as a period without diagnostic symptoms of the disorder), the longest of which was on average 12.95 months ($SD = 13.82$). In this sample, the average age at onset of first recovery period was 18.53 years old ($SD = 2.0$ years). At the time of this study, the majority of participants ($n = 36$) were in recovery, while 11 had relapsed and were again experiencing eating disorder symptoms.

Procedure

Participants were recruited via flyers posted in athletic departments at 8 colleges on the east coast and by e-mails sent to athletic departments at 4 of those same 8 schools. Participants were instructed to visit a website which contained a hyperlink to the informed consent form and questionnaire, which was created specifically for this research. All participants completed the questionnaire online and electronically signed an informed consent form. On the questionnaire, participants were given the *DSM-IV-TR* criteria for eating disorders and indicated whether or not they had experienced the symptoms to determine appropriate diagnoses. Participants who did not meet diagnostic criteria were excluded ($n = 3$). Next, participants identified the types of treatment they utilized. Finally, participants answered the following open-ended question: “What would you say was the most important factor(s) that has assisted your recovery from your eating disorder?”

Data Analysis

Frequency data were analyzed with SPSS version 11.0. Responses to the open-ended recovery question were analyzed by content analysis (Patton, 2002). Responses were first analyzed using open-coding (Strauss & Corbin, 1998). Common responses were put into thematic "codes" and given a title that summarized the shared meaning. Codes were grouped together to reflect their connection to a larger thematic category. Factors mentioned only once were put into a category titled "other." Three research peers verified the codes to ensure accuracy. If disagreements occurred, though this was rare, changes were made after reaching a consensus. Participant quotes were altered to correct misspellings or punctuation; otherwise, wording is printed verbatim.

RESULTS

The most commonly used treatment provider was a "therapist" (66%, $n = 31$), which included clinical psychologists, sport psychologists, social workers, and counselors. More than half (57%, $n = 27$) worked with a nutritionist or dietitian, while 49% ($n = 23$) saw a physician. Only 28% used sports medicine staff ($n = 13$). Use of a psychiatrist ($n = 8$), group therapy ($n = 8$), outpatient clinic ($n = 4$), or inpatient treatment ($n = 3$) was relatively less common.

Responses concerning recovery factors were organized into three overarching categories: Internal Factors, Important Others, and Environmental Factors. The categories were further defined by 11 response codes (see Table 1).

Internal Factors

Overall, the athletes most frequently noted that because their eating disorder compromised their health, their recovery was facilitated by wanting to regain the ability and strength to fully participate in sport (34%, $n = 16$). For example, one athlete had a "realization that I wasn't performing as well because I never had the right amount of energy." Another recognized, "that losing weight/not eating would significantly inhibit my athletics. The lack of energy during practices and workouts was so hard." A runner noted, "I knew that I had to do everything that I could to be able to compete again." Another participant echoed this sentiment:

Recovery for me was helped by the fact that I was about to enter my freshman year of college playing a Division 1 sport . . . my purging got very out of control. . . . I realized I needed to get things under control before school if I was going to be a serious competitor.

TABLE 1 Thematic Codes That Describe the Most Important Factors That Helped Recovery

Categories and related sub-codes	Examples of participant responses
Internal factors	
Desire to participate in sport (34%)	"I couldn't play up to par until I ate food and got energy"; "Realizing that losing weight/not eating would significantly inhibit my athletics"
Change in values or beliefs (28%)	"Realized that there were other things that defined me"; "Focusing on myself . . . not on serving others"
"Fed up" with the disorder (11%)	"I was sick of being miserable"; "Tired of the lifestyle, it was draining"
Using new coping mechanisms (9%)	"Distract myself from thinking about food by doing other activities"; "Take time to myself"
Avoiding triggers (4%)	"Eat slower"; "I have to not weigh myself . . . don't let the mirror distract me from progress"
Important others	
Support/concern from others (28%)	"The support of my friends/teammates/loved ones"; "People believing in my ability to make the right/healthy decision"
Professional treatment (13%)	"Psychiatrist helped me find healthy ways of coping"; "Homework assignments that the psychologist would give me"
Universality with others with eating disorders (6%)	"Talking to my mom about her weight battles"; "Knowing someone else did it as well"
Confrontation/intervention (4%)	"People . . . said they couldn't deal with it"; "My mother literally sat and watched me eat"
Environmental factors	
Change in environment (9%)	"I left home and stayed with my aunt"; "I quit ballet—wasn't pressured to be incredibly thin anymore"
Not wanting others to find out (9%)	"I don't want my friends and teammates to know"
Other	"Taking Prozac"; "I confessed to someone"

Note. The total frequency is > 100% because 24 participants gave responses that were categorized into 2 or more response codes.

The next most common response was that shifts in values and beliefs were critical to recovery (28%, $n = 13$). One participant stated that she was helped by "figuring out that there are some things in life worth more than clinging to an eating disorder," while another stated, "I decided that I was a more realistic and rational person than how I was acting and that I owed it to myself to try and live normally." Some athletes also referenced feeling "fed up" with the disorder and lifestyle (11%, $n = 5$). This concept was expressed with comments including, "I realized I hated the life I was living so I might as well try something different." Other participants noted that developing new coping mechanisms was critical (9%, $n = 4$). For example, one athlete stated that she was able to "find healthy ways of coping with the stress and pressure that triggered the eating disorder" while others noted that avoiding triggers for disordered eating was essential to achieving recovery (4%, $n = 2$).

Important Others

Support and concern from others assisted 28% of participants ($n = 13$), which was reflected in comments like, "Knowing people were worried about me and supported my recovery." Another reported, "What helped me the most was seeking help before it got to out of control. Having people support you and people who are able to listen to you." Professional treatment was noted by 13% participants ($n = 6$), with comments such as, "The therapist was very helpful in uncovering the deeper issues that I was dealing with." Another participant's nutritionist "...was crucial in helping me gain control over binge eating by talking with me several times, checking up on me with cheery emails, and forming a realistic plan catered specifically to me." Relatively less frequent responses included a sense of universality with others with eating disorders (6%, $n = 3$) and experiencing intervention/confrontation (4%, $n = 2$).

Environmental Factors

Some athletes found that leaving non-supportive environments assisted recovery (9%, $n = 4$). For example, one athlete was helped by, "Going to college and doing college gymnastics instead of club. Club is really intense and all the girls are extremely skinny." A few participants also stated that the fear of someone in their environment discovering their eating disorder helped them to reduce or eliminate maladaptive eating behaviors (9%, $n = 4$). This theme is reflected by an athlete who stated, "It was too hard to cover up while I was at school."

Responses were also analyzed based on whether the participant was actively in a period of recovery ($n = 36$) or not in a period of recovery ($n = 11$) at the time of the study. Though the same themes emerged overall within both groups, there was a notable difference in the pattern of responses. The most frequently noted helpful factors for those who relapsed were support/concern from others ($n = 5$, 45%) followed by a change in values or beliefs ($n = 2$, 18%). Desire to participate in sport was noted by only 1 participant in this subgroup (9%). None of the other codes characterizing the full sample (listed in Table 1) were mentioned by more than 1 participant who had relapsed. Therefore, in the subgroup of women experiencing relapse, recovery for the sake of regaining sports performance exerted no more influence on recovery than any of the remaining factors identified. In stark contrast, for the group currently in recovery, desire to participate in sport continued to be the most frequently noted theme ($n = 15$, 42%), followed by a change in values or beliefs ($n = 11$, 31%) and support and concern from others ($n = 8$, 22%).

In addition, among those who were not actively in recovery, only 6 (55%) had used professional treatment providers of any kind, while 5 (45%)

had never sought professional help. In comparison, 31 participants who were in active recovery at the time of this study (86%) had undergone professional treatment while only 5 (14%) had not. More specifically, of those who were in a period of relapse, only five (45%) had seen psychotherapists, whereas 27 of those in recovery (75%) had worked with a therapist.

DISCUSSION

The findings of this investigation are novel because this is the first study to specifically examine factors that assist recovery from eating disorders in a cohort of collegiate female athletes. Findings will therefore be discussed primarily in comparison to non-athlete literature.

Overall, a unique finding was that participants were most frequently helped by a desire to regain health or energy to participate in sport. This supports previous findings in non-athletes that awareness of negative consequences of the disorder helps to motivate recovery (Nilsson & Hägglöf, 2006; Pettersen, Thune-Larsen, Wynn, & Rosenvinge, 2013; Rorty et al., 1993) and bolsters anecdotal claims that sport can become a motivating factor to reduce eating disorders (Axelsen, 2009). Woods (2004) reported that only one of her 18 former high school athletes mentioned that performance motivated recovery; however, it is likely that sport played a larger role for athletes in our study, since they competed at the collegiate level. While general negative consequences of eating disorders have been reported in past samples, our findings suggest that reduced sport performance is a unique recovery motivator for elite athletes, which represents a clear difference in their experiences from non-athletes. As such, this identifies athletes as a distinct recovery population and supports recommendations for athlete-specific treatment (Thompson & Sherman, 2010).

The current results suggest that if a female athlete does develop an eating disorder, she may have increased motivation to recover as compared to her non-athlete counterparts, given that she may experience consequences that interfere with her athletic ambitions. In particular, it is noteworthy that the athlete participants who were in recovery at the time of our study were far more likely to reflect and report on internal factors that facilitated their recovery, with their desire to participate in sport being the most salient factor. In contrast, those who had relapsed gave far more credit for their recovery efforts to support and concern from others, representing an external focus. This observation may be a marker for differences in recovery strategies used by women in these two distinct subgroups. Often in psychotherapy, clients learn to build self-esteem rather than to rely on self-worth defined by others; to shift from an external focus to an internal locus of control where an individual believes she has the tools and the ability to recover. The fact that women in relapse appeared externally driven whereas those in

recovery appeared internally driven may, in part, reflect work done in therapy that effectively helped those in recovery to focus on their own internal contributors to successful recovery. This is supported by our data which showed that those in active recovery were much more likely to have used professional treatment (specifically psychotherapists) than those who had relapsed.

Based on these observations, it can be inferred that a useful treatment strategy for an athlete would be to help her identify and explore sport-related goals that are jeopardized by the eating disorder. This personalized cost/benefit analysis is a common Motivational Interviewing tool (Miller & Rollnick, 1991) that appears to be a useful strategy for enhancing treatment motivation in clients with eating disorders (Cockell, Geller, & Linden, 2003; Macdonald, Hibbs, Corfield, & Treasure, 2012; Treasure & Ward, 1997). In working with an athlete, for example, a clinician might help her articulate the ways in which a lack of fuel (in anorexia) or inconsistent food intake (bulimia and binge eating disorder) hampers energy levels during practices and competitions or creates a mental distraction from performance. This type of intervention may motivate athletes to initiate recovery strategies at an earlier age or comply more fully with treatment strategies while still in college and/or still involved with competitive sports. This is of note given that the importance of sport in the lives of our participants can probably best be equated to findings in non-athletes that having children or a new career were related to recovery from eating disorders (Nilsson & Hägglöf, 2006; Pettersen & Rosenvinge, 2002; Tozzi et al., 2003), though both typically occur later in life and are arguably less influential for college-aged women. Our findings suggest that athletes may benefit from sport related motivation at earlier ages and therefore might be more likely to recover prior to these aforementioned important life events, which may not occur until they are in their 30s. Of course, the timing of recovery has implications related to the burden and costs of medical consequences and mortality associated with eating disorders and, as such, it is of great interest to clinicians to attempt to initiate recovery as quickly and as effectively as possible.

The second most common helpful factor reported by participants was support from others, which has been documented as helpful to non-athlete women working to recover (Linville et al., 2012; Nilsson, Engström, & Hägglöf, 2012). This observation speaks to the need to either incorporate family and friends into treatment or encourage the athlete to find a positive support network. In addition, an equal percentage of athletes noted that a shift in beliefs was helpful, which has also been commonly reported by non-athletes (Björk, & Ahlström, 2008; Nilsson & Hägglöf, 2006; Patching & Lawler, 2009). This observation suggests that some form of cognitive therapy, specifically enhanced cognitive behavioral therapy, should be applied to athletes, and will likely have similar positive results as have been documented in non-athletes (Dalle Grave, Calugi, Doll, & Fairburn, 2013; Fairburn et al.,

2013; Grilo, Cosby, Wilson, & Masheb, 2012). Other helpful factors reported in this study appear relatively universal, having been identified in non-athlete samples, including: professional treatment (Nilsson & Hägglöf, 2006), feeling “fed up” (Lamoureaux & Bottorff, 2005), new coping skills (Cockell & Zaitsoff, 2004; Pettersen et al., 2013), changing environments (Nilsson & Hägglöf, 2006; Tozzi et al., 2003), support from others with eating disorders (Keski-Rahkonen & Tozzi, 2005), and intervention (Pettersen & Rosenvinge, 2002).

The only other helpful factor described by our participants that was not reported in past research was the fact that, for a few athletes, recovery was assisted by the fear of others finding out about their disorder. It may be that fear of embarrassment was enough to motivate recovery for these participants. Alternatively, this athlete-specific finding may relate to the unique dynamics as part of a team or worry of discovery by a coach, which could ultimately jeopardize one’s standing on the team, athletic eligibility, or scholarship support.

Finally, there are some helpful factors cited in past non-athlete research that were not reported in this study, such as the helpful influence of having children or a career (Nilsson & Hägglöf, 2006; Pettersen & Rosenvinge, 2002; Tozzi et al., 2003), spirituality or religion (Tozzi et al., 2003; Wasson & Jackson, 2004) and internet support groups (Keski-Rahkonen & Tozzi, 2005; Pettersen & Rosenvinge, 2002; Ransom, La Guardia, Woody, & Boyd, 2010). Differences such as having children and a career can be explained by the younger age of participants in the current study as compared to the typically older samples (late 20’s to 40’s) described in the non-athlete literature. However, it is difficult to speculate about causes for the other differences.

Limitations

While this research provides new information about female athletes’ experiences, there were limitations that warrant cautious interpretation. First, participation was self-selected and, as such, generalizability of our findings is somewhat limited. Moreover, the participants’ responses were not separated by type of diagnosis because 43% of participants met criteria for two or more disorders. Different patterns may have emerged if the results were delineated by type of disorder. In addition, participants’ self-report of past eating disorder symptoms could result in bias or inaccuracy regarding eating disorder diagnoses. Though many participants also received a diagnosis from a professional, which bolsters their self-report, given the anonymous nature of the survey it was impossible to verify their symptoms. Finally, it is important to note that the results of this research reflect the participants’ subjective perceptions regarding what helped their recovery, which may or may not be what actually helped them.

CONCLUSIONS

This study provides valuable information about female athletes' unique experiences of recovery from eating disorders. The most noteworthy finding is that these athletes were most helped to reduce eating disorder behavior by a desire to be healthy enough to compete in their sport. Although some aspects of the sport environment may trigger or exacerbate eating disorder symptoms, this novel finding suggests that for high level athletes with eating disorders, the internal desire to participate and excel in sport is helpful and increases motivation to initiate and maintain recovery from eating disorders. This insight can be helpful to treatment providers and coaches, as they work to encourage and foster athletes' motivation for recovery and compliance to treatment. In particular, our findings suggest that connecting an athlete with an eating disorder to a professional treatment provider, particularly a therapist, may help her to shift focus to internal factors within her control and thus increase her chance of achieving recovery. Moreover, this information could be used in the prevention of eating disorders. Programs that educate athletes about the physical health consequences of their eating disorder, specifically related to impaired athletic performance and risk of being sidelined by injury may be particularly effective to deter maladaptive eating and exercise behaviors.

Future research should continue to examine recovery in larger samples, allowing for targeted subgroup analyses within samples of athletes from the same sports and with the same diagnoses. Research that more effectively examines recovery outcomes related to specific treatment strategies or patterns of professional services would be quite informative. Interviews would also be particularly helpful to gather more in-depth information than this survey yielded. Finally, research that clarifies the influences of teammates and coaches on recovery may help to guide prevention and intervention strategies specifically within the context of the sports environment itself.

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