



## Review article

# A systematic review of studies comparing body image concerns among female college athletes and non-athletes, 1997–2012



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## ABSTRACT

Research prior to 2001 indicated that athletes experienced better body image than non-athletes, with no differences among sport types. Since then, female athletes have become increasingly sexually objectified in the media, and the sociocultural beauty ideal has shifted to emphasize appearing both *athletic* and *thin*. Part I of this paper explores the literature describing these changes. Part II presents a systematic and comprehensive literature review of 10 recent studies comparing body image concerns (BIC) among collegiate female athletes and non-athletes to identify the current status of BIC in female athletes. Findings indicate that involvement in collegiate athletics provides some protection from BIC; however, this protection appears attenuated for athletes in more feminine sports (e.g., gymnastics), and higher level athletes (Division I). Researchers should examine how sociocultural pressures unrelated to competition predict female athletes' BIC using measures that focus on objectification, positive body image, body functionality, and thin- and athletic-ideal internalization.

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## Introduction

Female participation in sports has been linked to improved academic performance and enhanced self-esteem, as well as reductions in depression and risk for osteoporosis and breast cancer (Women's Sports Foundation [WSF], 2009). In addition, sports participation provides females with opportunities to learn valuable life and work skills, such as teamwork, goal-setting, and perseverance (WSF, 2009). Some research indicates athletic participation could enhance body image (Miller, Sabo, Melnick, Farrell, & Barnes, 2000); yet, other researchers consider sport-related weight pressures to be a contributor to body image concerns (BIC), particularly in college female athletes (Reel, SooHoo, Petrie, Greenleaf, & Carter, 2010).

Body image is a broad and dynamic concept that extends across perceptual and attitudinal modalities. BIC are indicated by body size misperception and/or negative attitudes or feelings toward the human body and its appearance (Cash & Szymanski, 1995). The term body image is an umbrella term encompassing many constructs. These include, but are not limited to: weight (dis)satisfaction, body (dis)satisfaction, body shame, appearance (dis)satisfaction, appearance evaluation, body esteem, body appreciation, body dysmorphia, and body schema (Avalos, Tylka, & Wood-Barcalow, 2005; McKinley & Hyde, 1996; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Among college aged females, BIC are associated with several health issues, such as disordered eating (Grabe, Hyde, & Ward, 2008), substance abuse (Carr & Szymanski, 2010), depression (Carr & Szymanski, 2010), decreased self-esteem (Tylka & Sabik, 2010), and consideration of cosmetic surgery (Swami, 2009).

To explore the relationship between athletic participation and body image, Hausenblas and Downs (2001) conducted a meta-analysis of studies published between 1975 and 2000. They compared body image of non-athletes and athletes across gender, age, and competition level (i.e., adolescent/high school, club/recreational, elite, and college). The overall findings suggested athletes possessed a more positive body image than non-athletes, with an equivalent disparity between athletes and non-athletes of each gender. No comparison was made on body image among males versus females; yet, other research indicates that body image is "gendered" in nature (Smolak & Murnen, 2008, p. 258). In other words, the level at which BIC occur varies between males and females, and is indicated by different motivators (e.g., the pursuit of thinness versus pursuit of muscularity). Although Hausenblas and Downs' (2001) results did not address gender differences, their research suggested athletic participation was associated with more positive body image.

One limitation of Hausenblas and Downs' (2001) study was their inability to analyze data from all identified studies, due to more than 25 different types of body image measures being administered across the reviewed studies. As a result, most of the aggregated data came from studies using the Eating Disorder Inventory's Body Dissatisfaction subscale (EDI-BD; Garner, Olmstead, & Polivy, 1983). Hausenblas and Downs (2001) and others (e.g., Bailey, Goldberg, Swap, Chomitz, & Houser, 1990) have noted that the EDI-BD is not an adequate measure of overall body image, as the items focus on the lower body (hips, thighs, etc.) to the exclusion of other body parts. Also, the EDI-BD appears specific to body *shape* dissatisfaction (Bailey et al., 1990). Despite these notable limitations, Hausenblas and Downs (2001) provided a comprehensive

synthesis comparing body image among athletes and non-athletes at the time.

However, since the turn of the 21st Century, two notable socio-cultural shifts have taken place: (a) the sexual objectification of female athletes in the media has increased (American Psychological Association [APA], 2010; Kim, Segas, & Walker, 2010) and (b) the definition of ideal female beauty now includes appearing athletic, in addition to being thin (Daniels, 2009; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2003). Given the sociocultural changes that have occurred since Hausenblas and Downs' (2001) meta-analysis, a timely, relevant update is necessary to understand the current status of body image among female athletes.

The purpose of this paper is two-fold. In Part I, we provide a brief overview of body image literature as it relates to the noted sociocultural changes and the female athlete. In Part II, we conduct a comprehensive narrative synthesis (Center for Reviews and Dissemination [CRD], 2009) of recent studies comparing BIC in collegiate female athletes and non-athletes. We elected to conduct a narrative synthesis as part of a systematic review because the varying nature of body image measurement in studies of female athletes and non-athletes makes pooling of all data within a meta-analysis impossible (Hausenblas & Downs, 2001). A meta-analysis of aggregated data from studies using such heterogeneous outcome measures could likely produce misleading results (CRD, 2009), while a narrative synthesis within a systematic review will facilitate a better comprehensive understanding of current body image literature among female athletes. Also, several new instruments (e.g., Objectified Body Consciousness Scale, Self-Objectification Questionnaire, Drive for Leanness Scale, Internalization-Athlete subscale of the Sociocultural Attitudes Towards Appearance Scale-3) have been developed since the work of Hausenblas and Downs (2001). Many of these instruments are not specific to body image, but measure constructs highly related to body image and are thus used when examining BIC. We hope to determine if there are differences in BIC between athletes and non-athletes that are specific to the different body image constructs and measures, which would be difficult to determine through a meta-analysis.

We focused exclusively on females. Due to the gendered nature of body image (Smolak & Murnen, 2008), a single sex focus will allow for a more in depth review of the literature and will allow for more informed comparisons by sport. Our focus on college women is warranted since this population is considered to be at high-risk for BIC (Fitzsimmons-Craft, Harney, Koehler, Danzi, Riddell, & Bardone-Cone, 2012).

Also, research indicates that there are discrepancies in BIC among collegiate female athletes depending on university competition level (i.e., Division I, II, and III; Kato, Jervas, & Culpepper, 2011); thus, comparisons of BIC between female athletes, across competition levels, and non-athletes are warranted. University competition level is best explained by the divisional structure of the National Collegiate Athletic Association (NCAA). The NCAA oversees competitive athletics throughout the United States and Canada, and its membership creates rules in Division I, Division II, and Division III (NCAA, 2012). Division I is the most competitive, as it includes the largest athletic programs that provide the most athletically related financial aid. Division II universities have somewhat smaller athletic programs (less sports) and offer more limited financial aid. Division III universities do not offer any athletically related financial aid. Division I and II also have special academic eligibility

requirements, because of the financial aid offered, with Division I rules being more stringent. Because there is no potential financial aid associated with participation at the Division III levels, eligibility requirements are set by the individual college or university.

Research on how BIC differs among female athletes and non-athletes can help identify potential mediating and moderating effects of the relationship between athletic status and specific body image constructs. If differences in BIC among female athletes and non-athletes are found to vary depending on the construct, then researchers will need to determine how psychological, environmental, or sociocultural factors are related to specific constructs.

## Part I: Sociocultural Changes and the Female Athlete

### Sexual Objectification of Female Athletes

Objectification theory (Fredrickson & Roberts, 1997; Szymanski, Moffitt, & Carr, 2011) suggests that the human body is not only constructed biologically; it is also developed through sociocultural contexts such as gender roles and sexual objectification. Female gender roles, as perceived by women, include exhibiting traits that emphasize submissiveness, modesty, thinness, and appearance investment (Mahalik, Morray, Coonerty-Femiano, Ludlow, Slattery, & Smiler, 2005). Sexual objectification reinforces these gender roles by focusing on the female appearance and diminishing non-feminine achievements. Sexual objectification occurs when the body is separated from the person and recognized predominantly for its physical attributes (body or body parts), with its worth being equated to its representation of an object of sexual desire (Fredrickson & Roberts, 1997).

It has been proposed that the sexual objectification of the female athlete's body extends from the cultural tendency to sexualize females in general, and is an effort to maintain "patriarchal power" over women via masculine hegemony (Daniels, 2009). Further, sexual objectification of female athletes devalues female athletics (Hardin, Lynn, & Walsdorf, 2005). Increased sexual objectification of female athletes received much attention following the release of the 1997 *Sports Illustrated Swimsuit Edition*, the first issue in which the magazine began using female athletes as swimsuit models (Kim et al., 2010). Since 1997, there has been other research demonstrating that female athletes experience greater sexual objectification than male athletes, usually via sexually suggestive images and articles in print media (Daniels & Wartena, 2011; Fink & Kensicki, 2002; Hardin et al., 2005) and Internet sports blogs (Clavio & Eagleman, 2011). Even the highest level female athletes have been overtly sexualized. For example, during the 2012 Olympic Games, internet blogs pondered if Olympian javelin thrower Leryn Franco had breast implants, and noted that, despite not making the finals in her event, she still held "the top spot for hottest female Olympian" (Gratereaux, 2012, para. 1).

Sexual objectification contributes to the internalization of socio-cultural beauty ideals (Fredrickson & Roberts, 1997; Moradi, Dirks, & Matteson, 2005). When something is internalized it is taken within and believed to be self-defined. Internalization of sociocultural beauty ideals may lead individuals to believe their desire to attain the ideal is a personal choice rather than a result of social pressure (McKinley & Hyde, 1996). Further, sexual objectification and internalization are theorized to lead females to self-objectify, or define their own body as an object to be viewed by others (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996; Szymanski et al., 2011). Objectification theory posits that pronounced self-objectification leads to adverse psychological consequences, including but not limited to social physique anxiety (SPA; Calogero, 2004) and body shame (Calogero, 2004; Tylka & Hill, 2004; Tylka & Sabik, 2010). SPA reflects concern by individuals

that their body or physical appearance is being negatively evaluated by others. Body shame occurs when individuals experience strong feelings of guilt or embarrassment from not meeting an internalized ideal beauty. These psychological consequences are in turn associated with disordered eating (e.g., Moradi et al., 2005; Tylka & Sabik, 2010), depression (Carr & Szymanski, 2010; Szymanski & Henning, 2007), and sexual dysfunction (Szymanski et al., 2011).

Researchers posit that the enhanced sexual objectification of athletes could most negatively affect the body image of female athletes playing sports that focus on appearance, leanness, or both (Karr, Davidson, Bryant, Balague, & Bohnert, 2013; Reel et al., 2010). It seems that "appearance-focused" (i.e., aesthetic) sports are adjudicated sports in which appearance and physique are emphasized for success in competition, and include cheerleading, gymnastics, figure skating, and diving (Harrison & Fredrickson, 2003; Hausenblas & Carron, 2002; Petrie & Greenleaf, 2012). Cheerleading, gymnastics, and figure skating all emphasize several aspects of appearance, including the aesthetics of technical form (i.e., gracefulness), physical build, make-up and hair, and costume (i.e., uniform). The emphasis of appearance in diving is exclusive to technical form and physical build. Thus, the extent to which appearance is emphasized in each of these sports differs.

The definition of a "lean-focused" sport is even less clear. Some researchers define a lean sport as an endurance-type sport, such as swimming and long-distance running, where being lighter in weight and leaner in fat contributes to improved performance (Engel et al., 2003). Other researchers use the term lean to describe sports that emphasize weight as part of appearance, and include sports such as gymnastics, cheerleading and figure skating (Harrison & Fredrickson, 2003; Homan, McHugh, Wells, Watson, & King, 2012). Still others have indicated that this term could include sports that emphasize leanness for either competition or appearance, which would encompass all of the aforementioned sports (Reel et al., 2010; Reinking & Alexander, 2005).

It is apparent that the definition of the terms "lean sport" and "aesthetic sport" emphasize the competition aspect. In other words, athletes are grouped into these categories based on expectations specific to competition within the sport. However, athletes may experience additional sociocultural expectations that are related to appearance, but unrelated to athletic performance (Hardin & Greer, 2009; Parsons & Betz, 2001; Petrie & Greenleaf, 2012). Through a survey of college students, Parsons and Betz (2001) attempted to determine society's comparative objectification of athletes participating in a variety of sports. Results indicated that female athletes participating in tennis, swimming, gymnastics, and cheerleading experienced greater objectification by peers. As noted previously, swimming, gymnastics, and cheerleading have been defined as lean- and/or appearance-focused sports in the literature. Tennis, however, has consistently been grouped separately from such sports (Harrison & Fredrickson, 2003; Hausenblas & Carron, 2002).

Parsons and Betz's (2001) findings indicate that there may be external sociocultural expectations of attractiveness and femininity projected onto female athletes that are unrelated to competition. In fact, several researchers have indicated that the same athletes identified as highly objectified by peers (Parsons & Betz, 2001) are also considered more feminine (Clavio & Eagleman, 2011; Hardin & Greer, 2009; Kane, 1988; Kim et al., 2010). Additionally, athletes from tennis and swimming appear to be some of the most sexually objectified in the media (Fink & Kensicki, 2002; Kim et al., 2010). Researchers have also noted volleyball (Kane, 1988; Kim et al., 2010) and golf (Clavio & Eagleman, 2011; Fink & Kensicki, 2002; Kane, 1988; Kim et al., 2010) as two feminine sports in which athletes are more objectified in the media.

Early researchers defined feminine sports as being less physical and aggressive, lower-risk, and non-strength-based (Kane, 1988). More recent research indicates that society's perception of an

athlete's femininity is affected by the media's portrayal of the athlete. For example, [Harrison and Secarea \(2010\)](#) found that a sexualized high status female basketball player was more likely to be perceived as stereotypically feminine and heterosexual than a non-sexualized female basketball player. Basketball is typically perceived as a more masculine sport ([Hardin & Greer, 2009](#); [Kane, 1988](#); [Kim et al., 2010](#); [Parsons & Betz, 2001](#); [Petrie & Greenleaf, 2012](#)); thus, these findings indicate that the sexual objectification of an athlete, regardless of sport type, can lead viewers to label the athlete as more feminine. Their findings, however, provide no indication as to society's general categorizing of sports as feminine or masculine, just the athlete in question. Although there are indications that the media more frequently objectify athletes from feminine sports ([Fink & Kensicki, 2002](#); [Hardin & Greer, 2009](#); [Kim et al., 2010](#)), we do not know if these sports are considered feminine because of this objectification, or if they are objectified because they are considered more feminine.

In summary, the traditional focus of body image research among female athletes has been on weight- and appearance-related pressures specific to competition; however, recent research points to the objectification of female athletes as potentially imposing additional pressures on other female athletes to exemplify stereotypic female characteristics, including ideal appearance. Furthermore, it appears that these sociocultural expectations are not exclusive to athletes participating in sports traditionally considered appearance- or weight-focused.

### The New Ideal

Research demonstrates that society's perception of ideal beauty is partially defined, and significantly perpetuated, by the media ([Grabe et al., 2008](#)). The new ideal of athletic and thin was partly evident with the evolution of mainstream health and fitness magazines, such as *Women's Health* and *Fitness* ([Thompson et al., 2003](#)). The images, articles, and ideals of these magazines, combined with the general media's portrayal of the new beauty ideal has put more pressure on girls and women to attain a glorified, unreachable physical ideal ([Kilbourne & Jhally, 2010](#)). The detrimental effect of this pressure has been noted among females in general (e.g., [Daniels, 2009](#); [Harrison & Fredrickson, 2003](#); [Swami, 2009](#)), and early research indicates female athletes have acknowledged and heeded society's message that appearance is at least as important as performance ([Gibson, 2007](#); [Larabee, 2011](#)).

In recognition of the evolving beauty ideal, prominent body image researchers have revised existing body image survey instruments and created new ones in an effort to include measures specific to the new athletic ideal. For example, in its third revision, the Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3; [Thompson et al., 2003](#)) added a new subscale called *Internalization-Athlete*. This subscale assesses the level at which the athletic ideal has been internalized by asking participants how much they try, or want, to look like sport and athletic figures. An example of another instrument is the Athletic Image Scale (AIS; [Lenart, Goldberg, Bailey, Dallal, & Koff, 1995](#)), a three-dimensional silhouette instrument designed to assess a female's actual and ideal physiques. These instruments can assist researchers in identifying how the desire to attain an athletic physique is related to body image in both female athletes and non-athletes.

### Part II: Systematic Review of Comparative Studies

Research prior to 2001 indicates that athletes experienced a more positive body image than non-athletes. Since this time, the sexualization of female athletes in the media has increased, and the sociocultural beauty ideal has come to include appearing athletic in addition to being thin. These sociocultural changes further

pressure women and girls to attain a glorified, unreachable ideal, while also pressuring female athletes to exemplify these projected beauty ideals. For the second part of this paper, we conducted a systematic and comprehensive literature review to synthesize recent body image research that compares collegiate female athletes and non-athletes to identify the current status of BIC among female athletes. As previous research indicates that these group differences may vary depending on which sport-type (e.g., lean, feminine, aesthetic) or university competition level (i.e., Division I, II, and III) is considered, we also will explore differences between athletes and non-athletes in the context of sport-type and competition level.

### Method

In this systematic review, "competitive athletics" is defined as a college- or university-level sport or "emerging sport" team governed by the NCAA, or a similar governing body (e.g., [Canada's Collegiate Intrauniversity Sport \[CIS\]](#)). The term "collegiate female athlete" is defined as a female athlete participating in a college or university sport team governed by the NCAA, or a similar governing body. This distinction is important, because past research indicates that varsity athletes experience less BIC than club/recreational athletes attending college ([Hausenblas & Downs, 2001](#)). Since varsity athletes and recreational/club athletes experience BIC at significantly different levels, the two groups of athletes should not be collapsed together as one homogenous group. Also, club sports are not nationally governed; they are student-run and university-regulated with eligibility requirements that differ by university and sport. For example, some universities only allow students to participate in club sports, while other universities allow staff, faculty, and/or alumni to participate. Furthermore, some club sports require individuals to try-out for team membership, while other club sports are open to anyone regardless of skill level. Due to these differences, we felt that participation in club sports could not be considered inherently equal to varsity sport participation.

### Search Procedures

[Hausenblas and Downs \(2001\)](#) used the key words *athlete*, *sport*, *body image*, *body image disturbance*, *body dissatisfaction*, and *body esteem*, in a computer search of the following databases: Dissertation Abstracts Online, Educational Resources in Completion, MedLine, PsychINFO, and SPORTDiscus. We used their search terms to query the same databases, with the addition of the key words *internalization* and *objectification*.<sup>2</sup> We also searched the following additional databases: Academic Search Premier, Communication and Mass Media Complete, Masters Abstracts International, Psychological and Behavioral Sciences Collection, PubMed, and Women's Studies International. We also searched the reference lists of all retained articles. Studies were required to meet the following inclusion criteria: (a) peer-reviewed manuscript, article, dissertation, or thesis available in the English language; (b) published or documented between 1997 and 2012 (July); (c) measured a component of body image; and (d) included a sample of collegiate female athletes with a non-athletic comparison group. The beginning cutoff of 1997 was chosen due to our interest in examining how BIC differs between collegiate female athletes and non-athletes after the noted sociocultural shifts in beauty ideals and sexual objectification of female athletes. While we concede that this shift did not occur at a single moment in time, the noted change in focus of the 1997 *Sports Illustrated Swimsuit Edition* to

<sup>2</sup> With consideration to a query by a reviewer, we conducted a subsequent cross-search in January 2013 using the key terms *thin ideal* and *athletic ideal*. The search returned 28 journal articles; however, none met the ascribed inclusion criteria.

include athlete models provided what we felt to be an appropriate starting point for our literature search. We intended to include any research studies that may have been inadvertently excluded by Hausenblas and Downs (2001) from 1997 to 2000.

The database search returned 333 studies spanning from 1998 to 2012. One-hundred thirty eight ( $n=138$ ) studies were eliminated prior to abstract review because they focused on males and/or adolescents ( $n=100$ ) or non-college athletes (e.g., ballet dancers, auxiliary unit members;  $n=38$ ). After this primary exclusion, abstracts for 195 studies were reviewed, which led to the elimination of 83 additional studies that did not include an athlete group. Full articles were obtained for the remaining 112 studies. Of these 112 studies, four studied an adolescent sample; 66 did not measure body image; 13 did not have a non-athlete comparison group; and 19 did not include sports that met our definition of competitive athletics. Ten studies ultimately satisfied all selection criteria and were included in this review. The following information was extracted from each article: (a) study purpose; (b) participant makeup (sample size, sport type, and grouping); (c) school size, type, and/or region; (d) measurement tools for assessing body image constructs; (e) research design; (f) data analysis procedures; and (g) results. Comparisons were then made on various body image constructs by sport type and competition level.

## Results

### Description of Studies Included in the Review

Ten studies spanning from 1998 to 2012 met the inclusion criteria for this review. Six studies were reported in peer-reviewed manuscripts (DiBartolo & Shaffer, 2002; Finkenberg, DiNucci, McCune, Chenette, & McCoy, 1998; Krane, Stiles-Shipley, Waldron, & Michalenok, 2002; Robinson & Ferraro, 2004; Steinfeldt, Zakrajsek, Carter, & Steinfeldt, 2011; Wiggins & Moode, 2000), three as Master's theses (D'Arcy, 2007; Fellows, 1999; Rose, 2008), and one was part of a doctoral dissertation (Hoag, 2012). Two studies (Fellows, 1999; Finkenberg et al., 1998) occurred in the two-year overlap period between the beginning of the search time window and Hausenblas and Downs' (2001) meta-analysis. One study (Finkenberg et al., 1998) was listed by Hausenblas and Downs (2001) as being reviewed; however, the study was not included in the data analysis section of their meta-analysis, nor referenced within their manuscript. Table 1 outlines the author(s), year, sample size/type, school type, body image measure(s) administered, and associated study results.

**Research design.** All 10 studies were cross-sectional, quantitative, and collected self-report data. Seven used paper/pencil format to collect data (D'Arcy, 2007; DiBartolo & Shaffer, 2002; Krane et al., 2002; Robinson & Ferraro, 2004; Rose, 2008; Steinfeldt et al., 2011; Wiggins & Moode, 2000), while one used an Internet format (Hoag, 2012). Survey format was not identified in two studies (Fellows, 1999; Finkenberg et al., 1998).

Sampling methodology was not reported for either the athlete or non-athlete group in one study (Finkenberg et al., 1998). All nine remaining studies recruited athletes through team coaches, although one obtained initial permissions at a higher administrative level (i.e., NCAA conference representatives; Hoag, 2012). For the non-athlete group, eight studies used non-random sampling and one combined snowball sampling (requested non-athlete names from athletes) with non-random sampling (Hoag, 2012).

Three studies (DiBartolo & Shaffer, 2002; Finkenberg et al., 1998; Krane et al., 2002) did not operationally define the term *female athlete*. One of these studies (Finkenberg et al., 1998) did not identify the competition level (Division) or sports in which the surveyed athletes participated. The two other studies identified as Division

I (Krane et al., 2002) or Division III (DiBartolo & Shaffer, 2002), but reported including sports never governed, nor listed as emerging, by the NCAA (precision figure skating and squash respectively; NCAA, 2012). Thus, while these studies appear to include some sports considered eligible for NCAA membership (NCAA, 2012), this apparent eligibility does not confirm they are sanctioned under the auspices of the NCAA. For example, softball, which is an NCAA-eligible sport, is also offered as an intramural or club sport; colleges and universities can have both club-softball and an NCAA-governed team. Thus, the extent to which non-NCAA athletes comprised the samples in these studies (DiBartolo & Shaffer, 2002; Finkenberg et al., 1998; Krane et al., 2002) is unclear. One of these studies (Krane et al., 2002) used a non-athlete comparison group comprised solely of aerobic exercisers, while the other nine studies used a non-athlete comparison group comprised of female non-athlete undergraduate students. This difference in research design, combined with the unknown extent to which the athlete group is comprised of club athletes, led our research team to determine that the Krane et al. (2002) study did not fit the general characterization of athletes versus non-athletes as defined in other reviewed investigations. Due to the study's noted incompatibility with the other nine reviewed studies, we chose to exclude the results from Krane et al.'s (2002) study.

**Sport groupings.** Most studies predominantly included athletes from sports considered less objectified (e.g., basketball, soccer, and track). Table 2 provides data from Parsons and Betz (2001) that report how athletes in each sport are objectified according to their peers. These data provide an accessible comparison of mean objectification ratings for each rated sport that is included in each reviewed study. Also, athletes were grouped differently in the reviewed studies. Five studies grouped all athletes from several sports into one large athlete group (D'Arcy, 2007; DiBartolo & Shaffer, 2002; Finkenberg et al., 1998; Steinfeldt et al., 2011; Wiggins & Moode, 2000). Two studies divided the athlete group to facilitate comparisons based on body-related pressures (Fellows, 1999) or determination of success (Robinson & Ferraro, 2004). Two other studies used athlete group(s) representative of only one sport each (Hoag, 2012; Rose, 2008). These types of comparisons are warranted, as researchers have posited that BIC could vary according to sport-type (e.g., Parsons & Betz, 2001; Reel et al., 2010).

**Measurement of body image.** The most commonly used measure to assess body image was the EDI-BD (body shape dissatisfaction), which was administered in five studies. Three studies used traditional (thin) ideal/actual figure measures (e.g., Figure Ratings Scale [FRS]; Stunkard, Sorenson & Schulsinger, 1983), and two studies used athletic ideal/actual figure measures (i.e., AIS) to compare athletes and non-athletes on body size dissatisfaction. Three studies measured internalization of the thin ideal: two with the SATAQ-3 internalization-general subscale, and one with the body shame subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996). The two studies administering the thin-internalization subscale of the SATAQ-3 also administered the other three SATAQ-3 subscales: pressures, information, and internalization-athlete. Three studies measured weight preoccupation with the EDI Drive for Thinness subscale (EDI-DT), and three others measured SPA with the Social Physique Anxiety Scale (SPAS; Hart, Leary, & Rejeski, 1989). Of the three studies that administered the Body Esteem Scale (BES; Franzoi & Shields, 1984), one reported on overall body esteem, another reported on the three constructs of body esteem (i.e., physical condition, sexual attractiveness, and weight concern), and the third reported on both overall body esteem and its three components. The Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998) and Body Appreciation Scale (BAS; Avalos et al., 2005) were used in one study each.

**Table 1**  
Characteristics of reviewed articles.

Study	Sample type and size	School, type or region (Division)	Measures <sup>a</sup>	Results
D'Arcy (2007) <sup>b</sup>	Athletes, <i>n</i> = 88 Nonathletes, <i>n</i> = 105	York University, Canada (N/A)	BMI FRS AIS EDI-BD EDI-DT SATAQ-3	Athletes had a higher BMI; larger current figure (AIS) and ideal figure (AIS); and internalized the athletic ideal more. Non-athletes had significantly greater body dissatisfaction (FRS & EDI-BD); used the media for information about appearance more; and perceived greater pressure from the media to conform to sociocultural beauty ideals.
DiBartolo and Shaffer (2002)	Athletes, <i>n</i> = 115 Non-athletes, <i>n</i> = 94	Liberal arts college, northeastern (Division III)	EDI-BD BIS	Non-athletes experienced greater BIC, as evidenced by greater body dissatisfaction (EDI-BD; BIS).
Fellows (1999) <sup>b</sup>	All athletes, <i>n</i> = 111 Lean sport athletes, <i>n</i> = 21 Appearance sport athletes, <i>n</i> = 21 Other sport athletes, <i>n</i> = 69 Non-athlete, <i>n</i> = 164	University, western U.S. (Division I)	BES WC SA PC	All athletes had more positive body esteem and PC than non-athletes. Lean athletes also had more positive SA and WC than non-athletes. Other athletes had more positive overall body esteem and WC than appearance-focused athletes. No differences between other athletes and lean athletes.
Finkenberget al. (1998)	Athletes, <i>n</i> = 108 Kinesiology majors, <i>n</i> = 87 Control, <i>n</i> = 63	University, southwestern (not noted)	SPAS	SPA was lower for athletes; however, the groups were not discriminated by SPA.
Hoag (2012) <sup>b</sup>	All Volleyball players, <i>n</i> = 209 Division I volleyball, <i>n</i> = 33 Division II volleyball, <i>n</i> = 83 Division III volleyball, <i>n</i> = 92 Non-Athlete, <i>n</i> = 117	33 universities, across the U.S. (All Divisions)	BMI AIS EDI-BD SPAS BAS SATAQ-3	Athletic status was related to body image after controlling for BMI, as was competition level. Compared to non-athletes, athletes had a larger, more athletic actual and ideal figure (AIS), as well as greater internalization of the athletic ideal. Division I athletes had greater body shape dissatisfaction (EDI-BD) than non-athletes.
Krane et al. (2002)	All athletes, <i>n</i> = 204 Revealing uniform, <i>n</i> = 85 Baggy uniform, <i>n</i> = 65 Mixed uniform, <i>n</i> = 54 Aerobic exercisers, <i>n</i> = 198	Four universities, Midwest (Division I)	EDI-BD EDI-DT SPAS	Body satisfaction did not differ between groups, nor did physique about anxiety. The two body satisfaction variables were the strongest predictors of social physique anxiety in both exercisers and athletes.
Robinson and Ferraro (2004)	All athletes, <i>n</i> = 53 Speed-focused, <i>n</i> = 37 Technique-focused, <i>n</i> = 16 Non-athlete, <i>n</i> = 55	University of North Dakota (Division II)	EDI-BD EDI-DT Current/ideal weight Current/ideal body type	Non-athletes were more weight preoccupied (EDI-DT), and dissatisfied with body weight and shape than both athlete groups. Non-athletes had higher BMI than speed-focused athletes. No differences between the two athletes groups.
Rose (2008) <sup>b</sup>	Gymnastics, <i>n</i> = 29 Water polo, <i>n</i> = 41 Non-athlete, <i>n</i> = 22	Two universities, West coast (Division I)	SOQ OBCS-BS	Non-athletes self-objectified more than water polo athletes, but similarly to gymnasts. Combined self-objectification and body shame predicted group membership with 46% accuracy. Body esteem significantly correlated to athletic status ( $r = .28, p < .001$ ).
Steinfeldt et al. (2011)	Athletes, <i>n</i> = 78 Non-athletes, <i>n</i> = 65	Private college (Division III)	BES	Body esteem significantly correlated to athletic status ( $r = .28, p < .001$ ).
Wiggins and Moode (2000)	Athletes, <i>n</i> = 57 Non-athletes, <i>n</i> = 67	Two universities, southern medium-sized (Not noted)	WC SA PC	Athletes felt more positively about their physical condition than non-athletes. No difference between groups on the body esteem constructs of WC or SA.

BMI: Body Mass Index; FRS: Figure Ratings Scale; AIS: Athletic Image Scale; EDI-BD: Eating Disorders Inventory-Body Dissatisfaction Scale; EDI-DT: Eating Disorder Inventory-Drive for Thinness; SATAQ-3: Sociocultural Attitudes Toward Appearance Questionnaire-3; BIS: Body Image Survey; BIC: Body Image Concerns; BES: Body Esteem Scale; WC: Weight Concern; SA: Sexual Attractiveness; PC: Physical Condition; SPAS: Social Physique Anxiety Scale; BAS: Body Appreciation Scale; SOQ: Self-Objectification Questionnaire; OBCS-BS: Objectified Body Consciousness Scale-Body Shame.

<sup>a</sup> Only measures used to compare BIC in athlete and non-athlete groups were included.

<sup>b</sup> Unpublished Doctoral dissertation or Master's thesis.

**Table 2**  
Included sports in the reviewed studies alongside Parsons and Betz (2001) objectification scores.

Sport	Objectification score	Reviewed study								
		D'Arcy <sup>a,b,c</sup>	DiBartolo and Shaffer <sup>d</sup>	Fellows	Hoag	Krane et al. <sup>e</sup>	Robinson and Ferraro	Rose <sup>b</sup>	Steinfeldt et al. <sup>c</sup>	Wiggins and Moode
Golf	2.09					X	X			
Lacrosse	2.12					X				
Crew <sup>f</sup>	2.17		X							
Field Hockey	2.25	X	X					X		
Basketball	2.27	X	X	X		X		X		X
Soccer	2.33	X	X	X		X		X		
Cross Country	2.51	X	X	X		X		X		X
Softball	2.58			X		X				X
Track	2.60	X	X	X		X	X			X
Volleyball	2.93	X	X	X	X	X	X		X	X
Diving	2.99									
Swimming	3.17	X				X	X			
Tennis	3.29			X		X		X		
Gymnastics	4.02			X		X		X		
<b>Overall Mean</b>	2.67									

Notes: Objectification scores were averaged from appearance and femininity scores for each sport. Rating scales were based on 1–5 ratings, where 1 indicated little focus on appearance or least feminine, while 5 indicated strong focus on appearance or most feminine ( $n = 195$ ); reports are based on a sample of first-year undergraduate students at a large public University). Fourteen of the 17 sports from Parsons and Betz's (2001) study are included. Dance Team, Synchronized Swimming, and Cheerleading were removed from the table, as they are not governed by the NCAA, nor are they listed as emerging sports. The line in the middle of the table indicates where the mean score (2.67) falls for the athletes representing these sports.

Finkenberg et al. (1998) is not included, due to no sport list provided by the authors.

<sup>a</sup> Included, but not listed in Parsons and Betz (2001): Ice Hockey.

<sup>b</sup> Included, but not listed in Parsons and Betz (2001): Water Polo.

<sup>c</sup> Included, but not listed in Parsons and Betz (2001): Rugby.

<sup>d</sup> Included, but not listed in Parsons and Betz (2001): Skiing; Squash.

<sup>e</sup> Included, but not listed in Parsons and Betz (2001): Precision Figure Skating.

<sup>f</sup> Designated as "Rowing" by NCAA.

## Differences in BIC between Athletes and Non-Athletes

In nine reviewed studies (excluding Krane et al., 2002 as previously noted), athletes and non-athletes differed significantly on at least one body image construct. Of these nine studies, athletes overall scored more positively in all but one study (i.e., Hoag, 2012). Specifically, the three studies measuring ideal/actual body size discrepancy with a traditional rating scale found non-athletes to be more dissatisfied with their body size (D'Arcy, 2007; DiBartolo & Shaffer, 2002; Robinson & Ferraro, 2004). Compared to non-athletes, athletes reported more positive overall body esteem (Fellows, 1999; Steinfeldt et al., 2011); as well as more positive feelings about their body's physical condition, a component of body esteem (Fellows, 1999; Wiggins & Moode, 2000). Two other body esteem components, weight concern (body parts modifiable with diet and exercise) and sexual attractiveness (body parts not modifiable with diet and exercise), trended higher (more positive) in athletes, but were not statistically significant in one of the two studies (Wiggins & Moode, 2000). Fellows (1999), however, noted statistically significant differences between athletes and non-athletes on all three BES subscales, reporting moderate to large effect sizes for each outcome (physical condition  $d = 1.11$ ,  $p < .001$ ; weight concern  $d = 0.80$ ,  $p < .001$ ; and sexual attractiveness  $d = 0.39$ ,  $p = .001$ ).

Although athletes and non-athletes did not differ in their athletic ideal/actual figure discrepancies, athletes did identify a larger and more muscular current (actual) figure and ideal figure than did non-athletes (D'Arcy, 2007; Hoag, 2012). Additionally, the two studies measuring internalization of the athletic ideal found that athletes internalized the athletic ideal more so than non-athletes (D'Arcy, 2007; Hoag, 2012). With regards to internalization of the thin ideal, the three studies measuring this construct reported no statistical differences between athletes and non-athletes (D'Arcy,

2007; Hoag, 2012; Rose, 2008). Also, according to two studies, SPA appeared unrelated to athletic status (Finkenberg et al., 1998; Hoag, 2012). These results, and others, are further described in the context of sport type and competition level.

## Relationship between BIC and Sport Type

Three studies found that athletes competing in the endurance sports of swimming, track, and water polo experienced less BIC than non-athletes. Specifically, endurance athletes reported less self-objectification and weight preoccupation (Robinson & Ferraro, 2004; Rose, 2008); and better general body esteem, including more positive feelings about their physical condition, sexual attractiveness, and weight-affected body parts (Fellows, 1999). On the other hand, three of four studies that compared non-athletes to athletes participating in the more feminine sports of gymnastics, tennis, and volleyball found no differences in BIC. This was noted for constructs specific to appearance of the body and body parts (Fellows, 1999), body appreciation (Hoag, 2012), and self-objectification (Rose, 2008). The fourth study (Robinson & Ferraro, 2004) reported that golf and volleyball athletes experienced less weight preoccupation than non-athletes.

Between sport-type comparisons revealed that athletes defined as participating in "appearance-focused" sports (gymnastics and tennis) experienced lower positive body esteem and greater weight concern than athletes in sports labeled as "non-appearance/non-lean" focused (volleyball, soccer softball, track and field, and basketball; Fellows, 1999). In another study, combined body shame and self-objectification scores were able to predict group membership to a non-appearance focused endurance sport (water-polo) or highly appearance-focused sport (gymnastics; Rose, 2008).

## Relationship between BIC and Competition Level

Three studies reported that athletes at lower competition levels (e.g., Division II or III) were more satisfied with their body shape (via the EDI-BD) than non-athletes (D'Arcy, 2007; DiBartolo & Shaffer, 2002; Robinson & Ferraro, 2004), while a fourth study reported no significant difference in body shape dissatisfaction between non-athletes and volleyball players at either the Division II or III level (Hoag, 2012). On the other hand, Division I volleyball players were significantly more dissatisfied with their body shape than non-athletes (Hoag, 2012). The single study comparing non-athletes to volleyball players across all three competition levels noted a linear trend between body shape dissatisfaction and competition level, with Division I athletes reporting the highest body shape dissatisfaction (Hoag, 2012). These findings could indicate that competition level and body shape dissatisfaction as experienced by athletes are related. Or, these results might not be specific to competition level, but to volleyball, or sports that could be grouped as similar to volleyball. A negative linear trend was also noted for competition level when looking at body appreciation in volleyball players. That is, volleyball players' body appreciation increased as competition level decreased, although these differences were not significant (Hoag, 2012).

Two reviewed studies found that athletes at various levels idealized an athletic physique more so than non-athletes (D'Arcy, 2007; Hoag, 2012), with one of these studies (Hoag, 2012) reporting that the difference was more pronounced as competition level increased. Comparison between the groups on the SATAQ-3 measures of pressures and information were mixed. While one study (Hoag, 2012) reported no difference between non-athletes and athletes across all three competition levels on these measures, another study (D'Arcy, 2007) found that less competitive athletes perceived less pressure from the media and reported using the media less as a source of information about beauty than non-athletes. Again, the differences in the two studies could be attributable to the type of sports included in the athlete groups, and not just competition level.

## Discussion

Female athletes have been marginalized in the media for decades; however, in the last 15 years, the sexual objectification of the female athlete seems to have risen in concurrence with a modified beauty ideal of athletic and thin (APA, 2010; Kim et al., 2010). We aimed to identify changes in BIC among female athletes since this shift. A thorough search process revealed 10 studies spanning from 1998 to 2012 that compared various body image constructs among collegiate female athletes and non-athletes. When considering that BIC are associated with increased risk of adverse psychological (e.g., depression) and behavioral (e.g., disordered eating) consequences (Fitzsimmons-Craft et al., 2012; Grabe et al., 2008; Szymanski et al., 2011), the deficiency of body image research in the athlete population is a bit startling. Moreover, during our search process, we found that most research conducted between 1997 and 2012 comparing athletes to non-athletes was focused on eating pathology and not differences in body image. This is unfortunate, given that BIC are more common than eating disorders and often a strong predictor of eating pathology as well as other disorders (e.g., depression, sexual dysfunction; Carr & Szymanski, 2010; Szymanski et al., 2011). Thus, assessing and targeting body image may help identify and help those at risk before disorder develops (Farrell, Shafran, & Lee, 2006; Thompson et al., 1999).

Five of the reviewed studies assessed body image with the EDI-BD, making the EDI-BD the most commonly used instrument

administered across the 10 reviewed studies. This was surprising to us, given that researchers have questioned whether the EDI-BD can adequately assess overall body image (Bailey et al., 1990; Hausenblas & Downs, 2001). Three studies also reported assessing body size dissatisfaction using a type of figure rating or silhouette scale. Researchers in these three studies asked participants to select one of seven (Robinson & Ferraro, 2004) to nine (D'Arcy, 2007; DiBartolo & Shaffer, 2002) figures that most closely represented their actual body-size and select the figure that most closely represented their ideal size. The discrepancy between perceived and ideal size was used to determine body size dissatisfaction. The psychometric validity of such scales, however, has been questioned. Some scholars suggest these scales do not assess the distress participants feel when they have not met the indicated ideal, but rather an awareness of the attractiveness stereotype (Hildebrandt & Walker, 2006). Others note that the number of response options is too limited and that successive images do not occur on a true interval scale, potentially causing inflated test-retest reliability scores and scale coarseness (over- or under-estimation of moderated regression effect sizes; Gardner, Friedman, & Jackson, 1998). There are other indications that these scales do not represent ethnic and racial diversity of body size preferences for specific body parts, such as breasts or buttocks (Grabe & Hyde, 2006; Swami, Jones, Einon, & Furnham, 2009). Other researchers' findings indicate that the scales' results can be misleading when considered alone (Forbes & Jung, 2008; Grabe & Hyde, 2006).

Advancements in body image research within the last 15 years have sparked the development of several new instruments for measuring body image; as such, we expected that some of these newer instruments would have been used in place of the EDI-BD and silhouette scales. We were also surprised to find that only one study compared female athletes and non-athletes using self-objectification measures. Considering the increase in sexual objectification of female athletes, it would seem that more researchers would be exploring female athletes' self-objectification. Despite these concerns, our systematic and narrative analytic approach led us to identify two critical findings: (a) female athletes desire a slightly heavier, more athletic physique and (b) BIC of female athletes may differ across competition level and sport type on various body image constructs.

## The Athletic Physique

Athletes, compared to non-athletes, desire a more muscular body (D'Arcy, 2007; Hoag, 2012) that more closely resembles their current figure (D'Arcy, 2007; DiBartolo & Shaffer, 2002; Robinson & Ferraro, 2004). As indicated by Hausenblas and Downs (2001) in their meta-analysis, the results of this review also suggest that athletes are more satisfied with their body shape in general. Despite the increased sexualization and objectification of female athletes in the past decade, it appears female athletes continue to be more satisfied with the overall shape of their body than non-athletes. As such, it comes as no surprise that collegiate female athletes also feel more positively about the functions and abilities of their body (e.g., strength, stamina, and coordination; Fellows, 1999; Wiggins & Moode, 2000).

As would be expected, collegiate female athletes internalize the athletic ideal more so than non-athletes (D'Arcy, 2007; Hoag, 2012). However, studies at the highest competition level (Division I) noted that athletes and non-athletes have similar sociocultural attitudes related to thin-ideal internalization, perceived media pressure, and using the media as a source for beauty information (Hoag, 2012; Rose, 2008). Research in the general female population has demonstrated a positive directional relationship between sociocultural attitudes and body size dissatisfaction (Forbes, Jove, & Revak, 2006). Yet, for female athletes, the desire to look athletic might protect



them from body size dissatisfaction, despite their similar attitudes regarding sociocultural variables. Whether or not this is accurate is difficult to discern, as previous literature has not determined whether athletic internalization or desiring an athletic figure contributes positively or negatively to body image.

### Competition Level Differences

University competition (Division) level differences were not examined by Hausenblas and Downs (2001). Our findings indicate there may be competition level differences within the college athlete group. This finding is in line with other research that indicates Division I and Division III college athletes experience BIC differently, depending on the construct of measure (Kato et al., 2011). Specifically, prior research indicates that athletes at the Division I level experience more body dissatisfaction than athletes at the Division III level (Kato et al., 2011). Our results supported this, as Division I athletes were the only athletes to report being more dissatisfied with their body shape (Hoag, 2012), while athletes at other competition levels reported feeling more satisfied with their body shape (D'Arcy, 2007; DiBartolo & Shaffer, 2002; Robinson & Ferraro, 2004).

The issue of weight concern may also differ across competition levels. However, it was the Division I and II athletes that felt more positively regarding weight concern and preoccupation (Fellows, 1999; Robinson & Ferraro, 2004), while other athletes did not (D'Arcy, 2007; Wiggins & Moode, 2000). This finding supports other research that indicates Division III athletes experience greater weight preoccupation than Division I athletes (Kato et al., 2011). Notably, the results of our review indicate that the difference in weight concern may disappear among Division I athletes and non-athletes, when the athlete group is comprised of athletes in more feminine sports such as gymnastics and tennis (Fellows, 1999).

Among females in general, the relationship between greater weight preoccupation and body dissatisfaction to thin-ideal internalization has been documented (Grabe et al., 2008; McKinley & Hyde, 1996). For that reason, our finding that competitive athletes are *less* concerned with their weight, yet *more* dissatisfied with their body shape is counterintuitive, considering these athletes experience levels of thin internalization similar to non-athletes (Hoag, 2012; Rose, 2008). This apparent contradiction could be partly explained by highly competitive female athletes struggling to reconcile two separate identities: being an athlete *and* female (Krane, Choi, Baird, Aimar, & Kauer, 2004). Research has demonstrated the positive linear relationship between a female's athletic identity and BIC (Krane et al., 2004; Larabee, 2011). The more pronounced the athletic identity and the more internalized the thin ideal, the more likely the athlete will self-objectify and will experience body shame (Larabee, 2011). Thus, the highly competitive female athlete's internalization of the thin ideal, which is similar to the non-athlete's, is conflicted with her identity of being an athlete, thereby linked to greater BIC.

It is also possible that these competition level differences are confounded by the different types of sports included in each study. In other words, competition level and sport type may have been confounded, or may have had an interactive effect. Thus, while the results of this review indicate that Division I athletes appear to be at greater risk for body shape dissatisfaction than their college-aged peers, this same difference might be explained by the fact that these Division I athletes participated in more feminine sports.

### Sport Differences

Despite conjecture that lean-focused athletes and appearance-focused athletes are at greater risk for BIC, the results of Hausenblas

and Downs' (2001) meta-analysis indicated no difference between aesthetic (appearance), endurance (lean), and ball game sports. Our findings differed from Hausenblas and Downs (2001), as we found that BIC varied by sport grouping with athletes in more feminine sports (e.g., gymnastics, volleyball, and tennis) found to be at greater risk for BIC and athletes in endurance sports (e.g., swimming, long-distance running, and water polo) at lower risk for BIC. Specifically, endurance athletes reported higher body esteem, less self-objectification, and greater overall body satisfaction than non-athletes (Fellows, 1999; Robinson & Ferraro, 2004; Rose, 2008), while feminine athletes did not (Fellows, 1999; Hoag, 2012; Rose, 2008). Further, athletes in more feminine sports felt less positively about their weight-affected body parts when compared to athletes in less feminine sports (Fellows, 1999). These results indicate that athletes in more feminine sports may feel more negatively about parts of the body that are significantly changed by weight fluctuations (e.g., weight, figure, and waist) when compared to other athletes.

As noted previously, the grouping of sports as appearance- or lean-focused is inconsistent in the literature, as different researchers use these terms to refer to different sports. This confusion was inherent in at least one reviewed study. Fellows (1999) compared athletes by appearance-focus, lean-focus, and non-lean/non-appearance focus. Fellows' (1999) inclusion of tennis as an appearance-focused sport was not clear, since the author defined appearance-focused as "sports (gymnastics, diving, ballet) where performance and appearance are judged, and the degree to which the athlete meets the prevailing ideal for body shape and size may greatly influence her score" (p. 11). Additionally, no other literature has identified tennis as an appearance sport. However, several researchers do indicate that both gymnastics and tennis are considered more "feminine" sports (Clavio & Eagleman, 2011; Kim et al., 2010; Parsons & Betz, 2001). In light of this research, we refer to this grouping as "more feminine sports." The term "lean-focused" is also inconsistently used in the literature. Thus, we use the term "endurance" to include sports that emphasize leanness for performance, or require training that is mostly aerobic (e.g., long-distance running and swimming).

Body image research among athletes has traditionally focused on the performance aspect of pressure related to appearance, yet has failed to examine the sociocultural aspect. Our results indicate that the pressures associated with being an athlete extend beyond performance expectations to sociocultural expectations as projected and perpetuated by the media's sexualization and objectification of athletes performing in sports considered more feminine. It appears that it is now necessary to revise groupings of sport-types, as sports that have not traditionally been considered appearance-focused (e.g., tennis, volleyball) are now being overtly sexualized in the media (Clavio & Eagleman, 2011; Fink & Kensicki, 2002; Kim et al., 2010), objectified by peers (Parsons & Betz, 2001), and seem to be at increased risk for BIC.

### Limitations

One consistent limitation of this review was that all studies used non-random sampling techniques to recruit non-athlete comparison groups. As such, the generalizability of studies analyzed in this review may be limited. Also, almost all studies collected survey responses from athletes during or immediately following sport practices and/or meetings. Previous literature indicates response bias may be of concern in these types of environments (Garner, 2004), because athletes may not feel assured of response anonymity or confidentiality in these settings. One of the studies (Robinson & Ferraro, 2004) reported that coaches were not present during survey administration, and athletes were assured of confidentiality.

Three reviewed studies (DiBartolo & Shaffer, 2002; Finkenberg et al., 1998; Krane et al., 2002) did not operationalize the term “collegiate female athlete,” diminishing the ability of our review to make unequivocal conclusions about the research. Without an operational definition of the term “athlete,” we are unable to confirm if all athletes included in these studies were varsity level, NCAA sport athletes. In many cases, athletes were grouped differently across studies, which made specific between-sport comparisons difficult. Additionally, the variation of included sports at different competition levels means that we might have attributed some differences to competition level, when the difference was actually due to sport type. In other words, competition level and sport type may have been confounded, or may interact.

## Conclusions and Future Research

Evidence indicates participation in athletics is related to enhanced body esteem and valuing the human body for its physical abilities. The latter is not surprising given that successful athletic performance requires a certain level of bodily skill, endurance, stamina, and strength. Perceiving the body as a useful instrument is the antithesis of self-objectifying, so it seems plausible that athletic involvement could provide some protection against self-objectification. This is unknown, however, as only one reviewed study compared athletes and non-athletes on self-objectification. In fact, the most commonly used scale in the reviewed studies was the EDI-BD, despite indications that the subscale is not a good single measure of body image or even general body dissatisfaction. Given the sexual objectification of individuals from this population, researchers should consider instruments that assess outcomes that are more salient and temporally relevant to female athlete populations. Selection of such measures can also assist researchers in examining the relationship between BIC and the media’s increased sexualization of female athletes. Examples of constructs that need to be measured include self-objectification and body comparison, as well as body esteem. The latter focuses on the traditional body image measures of perceived self-attractiveness as well as demonstrable physical abilities (e.g., strength, endurance). In a similar vein, researchers should consider measuring other positive body image constructs such as body appreciation and body functionality.

Additionally, results from this review suggest that enhanced athletic internalization may not indicate decreased risk for BIC; but rather there may be other, unexplored variables serving to moderate this relationship. Possible examples include sport objectification level (Parsons & Betz, 2001) and gender norm conformity (Steinfeldt et al., 2011). Looking more closely at female athletes’ conformity to gender norms (both male and female norms) could be particularly informative considering that female athletes may find it difficult to reconcile their female identity from their athletic identity (Krane et al., 2004; Larabee, 2011); and that female athletes are engaging in some performance-enhancing and appearance-modifying behaviors that are similar to their male athlete counterparts (Muller, Gorrow, & Schneider, 2009). Considering society’s idealization of the athletic physique, continued research in this area is critical, as is the use of instruments that attempt to measure constructs salient to the athletic ideal. In addition to the AIS and internalization-athlete subscale, researchers should consider administering Smolak and Murnen’s (2008) Drive for Leanness Scale.

Results of this review indicate that there may be body image differences across the competition (NCAA Division) levels; although these differences might be confounded by the types of sports included in each Division level. Thus, more research should be conducted comparing Division I female athletes to female athletes in other Divisions and to non-athletes on relevant body image constructs with consideration to the level at which the included sports

are perceived as feminine and/or the level at which athletes from the sport are objectified by society and the media. This is important because the results of this review indicate that athletes in more feminine (e.g., gymnastics) and objectified (e.g., tennis) sports experience greater BIC than other athletes.

It is apparent that society’s view of what defines an athlete as feminine has changed, and sports that were once considered to be more feminine (e.g., golf; Kane, 1988) may no longer be viewed as such (Parsons & Betz, 2001). Further, recent research indicates that society’s perception of an athlete’s femininity is affected by the media’s portrayal of the athlete (Daniels & Wartena, 2011; Hardin & Greer, 2009; Harrison & Secarea, 2010). Thus, researchers should examine how current definitions of athletic femininity are developed. Specifically, researchers should study the relationship between what society defines as a feminine sport and the media’s objectification of athletes from these sports. Additionally, researchers should seek to determine how the media’s sexual objectification of high-profile, sport-specific female athletes affect the BIC of female athletes participating in that sport.

Continued research examining body image and female athletes can help researchers and clinicians better understand the ways in which athletic involvement can protect against BIC. This enhanced understanding can also contribute to improved programming for non-athlete females. For example, understanding that athletes value the abilities of their body more than non-athletes suggests that interventionists should identify ways to enhance non-athletes’ feelings regarding their body’s abilities. Participation in college-level varsity sports is not possible for every female, and regular participation in general exercise and physical activity may not be sufficient to enhance non-athletes feelings toward the utility of their body. Researchers and interventionists should explore how dedication to perfecting a physical skill (e.g., roller blading or rock climbing), even outside of the sports realm, may enhance body esteem. Continued empirical and conceptual efforts will develop new knowledge that can assist researchers and practitioners in the selection of effective methods for addressing BIC in female athletes, especially with respect to internalized sociocultural beauty norms and objectification.

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