Influence of Female Sports Dietitians’ Physical Characteristics on Athlete Perception of Effectiveness

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Research in sports-science disciplines such as sport psychology has demonstrated that practitioners’ physical characteristics influence clients’ perceptions of their effectiveness, potentially mediating the efficacy of subsequent interventions. However, very little research has been directed toward this issue for sports dietitians (SDs), the health professionals whom athletes are likely to engage to assist with manipulation of traits of physique. Therefore, the purpose of this investigation was to determine whether SDs’ phenotype, specifically body-mass index (BMI), and type of dress influence potential clients’ preference to consult them for dietetic support and if this affects their perceived effectiveness.

Methods:
One hundred volunteers (mean age 18.7 ± 0.8 years) all participating in regular competitive sport, classified by gender (male, n = 55, or female, n = 45) and competitive standard (elite/subelite, n = 68, or club/recreational, n = 32) viewed slides representing four concurrently presented computer-generated images of the same female SD manipulated to represent different BMIs and dress types. Participants were asked to rank the SDs in order of their preference to work with them and, second, to rate their perceived effectiveness of each of the SDs.

Results:
Key findings included the observation of a significant BMI main effect $F(6, 91) = 387.39, p < .001$ (effect size .96), with participants’ ranking of preference and rating of perceived effectiveness of female SDs decreasing with increasing BMI.

Conclusion:
SDs should consider their physical appearance when meeting with athletes, as this may affect their perceived efficacy.

Keywords: sport nutrition, physique, efficacy expectations

Despite an intolerance for prejudice based on gender, ethnicity, or race in society, prejudgment of overweight and obese individuals remains socially acceptable (Puhl, Wharton, & Heuer, 2009). This bias transcends professional barriers and includes health professionals whose career emphasizes the clinical management of obesity (Schwartz, Chambliss, Brownell, Blair, & Billington, 2003). Compared with “thin” people, health professionals perceive “fat” individuals to be more lazy, stupid, and worthless, confirming an implicit antifat bias (Schwartz et al., 2003) that is evident even among student practitioners (Puhl et al., 2009).

Given the significance of societal antifat bias, it should not be surprising to learn that health practitioner phenotype influences client confidence in health practitioner treatment. Indeed, patients of nonobese physicians indicate greater confidence in general health counseling and illness treatment than patients seeing obese physicians (Hash, Munna, Vogel, & Bason, 2003), although appearance is not always reported to influence perceived professionalism within health care (Brosky, Keefer, Hodges, Pesun, & Cook, 2003; Chandratilake, McAleer, Gibson, & Roff, 2010; Kanzler & Gorsulowsky, 2002; Wiggins, Coker, Hicks, Kanzler, & Gorsulowsky, 2009). In contrast, personal trainers’ physique traits are believed to influence client selection of trainers (Melton, Katula, & Mustian, 2008) and ultimately affect adherence to physical activity prescription (Basow & Silberg, 1987).

The impact of practitioner phenotype on presumed professionalism and confidence in the sporting environment is less well understood. Results from sport psychology have shown that athletes do make use of nonverbal cues related to the physical appearance of a consultant (Lovell, Parker, Brady, Cotterill, & Howatson, 2011; Lubker, Watson, Visek, & Geer, 2005). Sport psychologists within the healthy weight range wearing athletic clothing are rated higher on sport-specific knowledge and are more likely to be sought for services than consultants who are overweight or obese in formal attire. Similarly, college athletes have reported physical characteristics as important characteristics to be an effective sport psychologist (Lubker, Watson, Visek, & Geer, 2005). Assuming we can generalize such findings from sport psychology to sports nutrition, if an athlete forms negative efficacy expectations regarding the effectiveness of the potential support offered by a sports dietitian (SD), even if based on immediate and superficial information, the opportunity for the intervention to be successful is
reduced as the athlete is less likely to engage, or even meet with, the SD.

**Sport Psychology**

While previous research has reliably shown that gender, race, attractiveness, and perceived resemblance to people familiar to the client are important variables in influencing perceptions of service providers (Basow & Silberg, 1987; Dare, 1992; Goebel & Cashen, 1979; Hamner, Kim, Baird, & Bigoness, 1974; Lewis & Walsh, 1978; Surmann, 1997), these characteristics are generally not modifiable. With reference to enhancing SD acceptance by sporting clients, SDs have little control over these characteristics and as such are limited in how they can make use of such findings. However, phenotype and dress are two characteristics shown to be important in shaping clients’ attitudes toward practitioners, along with efficacy expectations of the ensuing therapeutic relationship and professional advice, which SDs do have greater control over.

It is clear that individuals rarely interact without forming expectations about others’ behaviors and competence and that these expectations shape subsequent attitudes and resultant actions (Gilbert, 1998). Despite consistent research findings from counseling, medicine, and sport psychology settings, very little attention has been directed toward how SD phenotype may affect athletes’ efficacy expectations. Therefore, the purpose of this investigation was to determine whether SDs’ phenotype, specifically body-mass index (BMI), and type of dress influence potential clients’ preference to work with them, along with perceptions of their potential effectiveness. Furthermore, this study sought to investigate whether these perceptions are affected by the potential clients’ gender or standard of competition—elite, subelite, or recreational. Finally, we aimed to compare how such results relate to findings from other sport-science disciplines, namely, sport psychology. To enable a direct comparison, this investigation adopted the methodology used by Lovell et al. (2011) in their examination of how BMI and dress affect athletes’ efficacy expectations of sport psychologists.

**Method**

This study was approved by the University of Gloucester (UK) ethics committee. The ethical guidelines followed for this investigation were the Research Ethics Framework by the Economic and Social Research Council.

**Participants**

One hundred volunteers ($M \pm SD$ age 18.6 ± 0.8 years) were recruited to take part in this investigation. The majority of participants were White and all engaged in regular competitive sport and participated in one of 17 different sports (athletics, badminton, basketball, cricket, dance, golf, gymnastics, hockey, kick boxing, lacrosse, netball, rugby, soccer, swimming, tennis, triathlon, and volleyball). Participants were grouped according to their competitive standard, elite/subelite ($n = 68$) or club/recreational ($n = 32$), and gender, male ($n = 55$) or female ($n = 45$).

**Procedure**

After providing written informed consent and demographic information, participants viewed two slides representing four concurrently presented computer-generated images of the same woman, of White appearance, said to be an SD. These slides represented the SD dressed either in sports attire (tracksuit) or in formal attire (trouser suit). Each of these two slides contained four concurrently presented images of the SD manipulated to represent a range of phenotypes based on BMI (23, 28, 33, and 38 kg/m²) typifying four World Health Organization classifications of body mass (normal range, preobese, Class I obese, and Class II obese), as described elsewhere (Lovell et al., 2011), with an emphasis on increasing adiposity. For each of these separate slides participants were asked to rank the images of the SD in order of their preference to work with them. Second, they were then asked to rate the perceived effectiveness of each of the four SD representations on a 7-point Likert scale (1 = totally ineffective, 3 = somewhat ineffective, 5 = somewhat effective, 7 = totally effective). The order of presentation was balanced for the sequence across the slides of the four SD representations of the different BMIs, as well as the order of the two slides representing the different types of attire. All data were deidentified and remained anonymous.

**Statistical Analysis**

To analyze the athletes’ responses to the presented slides, a gender (male and female) by competitive standard (elite/subelite and club/recreational) by SD BMI (normal range, preobese, obese Class I, and obese Class II), by SD dress (sports attire and formal attire) mixed-design multiple analysis of variance (MANOVA) with repeated measures on the last two factors was conducted. The athletes’ rating of perceived SD effectiveness and rank of preferences constituted the multiple dependent measures. Univariate tests of the same design were then conducted where justified by significant MANOVA main effects and interactions and followed by post hoc tests. Magnitudes of interaction were interpreted qualitatively using Cohen’s effect-size scale: $r < .1$, trivial; $.1–.3$, small; $.3–.5$, moderate; >.5, large. Statistical significance was set at $p < .05$. All calculations were performed using the SPSS statistical-analysis software package. Data are presented as $M \pm SD$ unless otherwise specified.

**Results**

There was a significant main effect of BMI with a large effect size, $F(6, 91) = 387.37, p < .001, \eta^2 = .962$. 


Subsequent univariate tests revealed significant BMI main effects for both dependent measures—athletes’ rating of perceived SD effectiveness and rank of preference—$F(3, 288) = 252.230, p < .001, \eta^2 = .724$, and $F(3, 288) = 521.962, p < .001, \eta^2 = .845$, respectively. Post hoc paired-samples t tests ($p < .05$) showed that the normal and preobese SDs were rated and ranked significantly more positively than the Class I and II obese SDs by the athletes (see Figure 1).

The interaction between BMI and dress was also significant, $F(6, 91) = 3.796, p = .002, \eta^2 = .200$. This interaction followed the same trend as for the BMI main effect in that the normal and preobese SDs were evaluated more positively than the Class I and II obese SDs. However, the effect size for the interaction was small, and no consistent trends in terms of interaction between BMI and dress were seen. None of the other main effects (i.e., gender, competitive standard, or dress) or interactions were significant. However, there was a trend indicating that the participants rated and ranked (Figure 2, with similar observation for rating) the SD attired in sports dress more favorably.

**Discussion**

The most prominent finding of this investigation was the observation that athletes’ efficacy expectations of a female SD and their preference to work with them are influenced by the SDs’ phenotype. Nonobese SDs were ranked and rated more positively by the athletes in terms of their preference to work with them and their perceived effectiveness than the obese SDs. These observations are in accordance with conclusions from health and other sports-science disciplines, namely sport psychology. Hash et al. (2003) found that obesity is negatively associated with clients’ confidence in health practitioners’ advice. Similar to Lovell et al. (2011), Lubker et al. (2005) showed that sport psychologists who appeared “lean” were evaluated more positively than large-build sports psychologists. In comparison with the effect size observed by Lovell et al. in their examination of sport psychologists ($\eta^2 = .835$), the effect size for BMI in the current investigation is notably larger, suggesting that athletes pay even more attention to the phenotype of SDs than they do for sports psychologists when evaluating their potential usefulness.

Athletes who perceive SDs to be overweight may also infer that they have limited sports nutrition knowledge and understanding. However, we also suggest that the current findings can be explained by conclusions from previous research proposing that athletes’ perceptions of consultants’ sporting knowledge is important in the shaping of their evaluation of the practitioner (Lubker et al., 2008). If the athlete associates the SD’s being overweight with the SD also having limited sports knowledge, then it would be expected that the athlete would form negative evaluations. According to suggestions by Esters and LeDoux (2001), who examined counseling, a key factor in affecting the formation of positive efficacy expectations regarding a therapist is the perceived level of similarity between the practitioner and client. Thus, with reference to the findings from the current investigation, if an athlete’s perception of similarity in terms of attitude, values, and background with the practitioner is decreased by the SD’s being obese or wearing nonsports attire, the athlete is likely to develop a more negative evaluation of

![Figure 1 — Athletes’ mean ratings of perceived sports dietitian (SD) effectiveness and their ranking of preference to work with SDs of differing body-mass index (BMI).](image-url)
the SD. In terms of dress, it may well be that a balance exists whereby the SD must strike a compromise, dressing in such a fashion that conveys a sense of sporting background and similarity with the athlete yet still appearing professional and thus being judged as competent. However, the first impression that a SD is obese is likely to promote beliefs that the SD does not understand sport and is from a different culture than that of the athlete and as such would have little to offer the athlete.

The impact of physique traits on competitive success varies depending on the sport (Ackland, Lohman, Sundgot-Borgen, Maughan, & Müller, 2012). Our relatively small individual sport sample size precluded an exploration of perceived SD effectiveness by sport, and as such we are unable to specify whether athletes competing in aesthetically judged or weight-bearing sports are more or less influenced by SD phenotype than weight-supported-sport participants. Similarly, we are unaware of the impact of SD muscularity on perceived effectiveness among athletes, a population in which muscle hypertrophy is often sought. Given that athletes use nonverbal cues to form efficacy expectations regarding SDs based on the level of perceived similarity between the client and the consultant in terms of attitude, values, and background, these issues warrant further investigation.

Psychological factors have historically been considered paramount in setting the stage for dietary change. These include the individual’s perceived benefits of a change in diet, confidence that the necessary change can be made, and the symbolic and real role food plays in a person’s life (Dare, 1992). The current data allude to the possibility that SD appearance could also be a factor that affects dietary compliance. Certainly, dissatisfaction with a dietitian has been shown to result in nonattendance at dietetic clinics in a clinical environment (Esters & LeDoux, 2001), suggesting that this issue also warrants investigation in the sports nutrition context.

It must be highlighted that this investigation explored the impact of phenotype (specifically adiposity) on efficacy expectations of female SDs independent of other attributes shown to influence therapeutic relationships, such as expertise, trustworthiness, specific techniques used, and interpersonal skills of the practitioner (Martin et al., 2001), as well as showing honesty, compassion, and empathy to clients (Chandratilake et al., 2010). Future research should explore this issue so that the overall impact of phenotype on efficacy expectations of SDs can be ascertained across both male and female SDs.

**Conclusion**

These results have clear implications for SDs: Athletes do use nonverbal cues to form initial efficacy expectation regarding SDs, and these cues include physical characteristics such as BMI and, to a lesser extent, dress. If a client’s initial judgments of an SD based on BMI and dress are negative, the development of an effective therapeutic relationship between the client and the practitioner is likely to be compromised, at least initially, no matter the practitioner’s expertise and knowledge. Furthermore, athletes appear to judge the potential effectiveness of SDs based on their phenotype more than is found in other sport-science disciplines (e.g., sport psychology).
References


