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Research Article

Strength as a Motivator for Women Participating in CrossFit

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ABSTRACT

Objective: Women are often less likely to engage in strength training than men, despite the health positives which this can confer. This disparity has been presented, at least in part, as a result of body image concerns - namely women are concerned about how they will look, including wanting to avoid becoming muscular or masculine. However, there are examples of women who are engaged in strength development but seem to experience less such image concerns. One environment where this has been observed is within the CrossFit community.

Methods: In response to a snowball sample, 161 CrossFit participants completed an online survey about body image and muscularity.

Results: Data indicated that women who participate in CrossFit are more motivated to develop strength and report to be more satisfied with their appearance compared to expected norms.

Conclusion: The more apparently gender-neutral training paradigm, such as that offered in CrossFit, is suggested as a possible key to helping more women into regular exercise participation in general but strength and conditioning in particular.

Keywords: Weightlifting, Gender, Body image, Muscularity, Exercise

1. Introduction

Women's body image has an influence on how or if, women engage in sport[1,2]. Unfortunately, standards of traditional feminine beauty can often reinforce an ideal body shape that is incompatible with sport. These ideals are often further bolstered by a negative public image for muscular frames and competitive drive in women athletes which are seen as stereotypically masculine.

Whether image issues are the sole reason or just one of several contributory factors, there is little doubt that some factor or combination of factors is acting to limit activity participation for women. For example, research commissioned by Sport England in 2014 highlighted that woman continued to find being involved in sport an uneasy challenge, with 2 million fewer women than men playing sport on a regular basis[3]. Over ten years later, despite the application of specific, much heralded and generally praised initiatives[4], the discrepancy has only narrowed to 1.5 million, a change which should be viewed against a parallel drop in male participation[5]. The issues raised by this research

echo the messages of other investigations on the gender gap in sport and further highlight that women are often limited by fears about negative appearance judgments from others[6]. Indeed, it is disappointing that, despite efforts towards gender equality in sport, there does not seem to be a great deal of improvement on the issues highlighted in the late-20th century, such as concerns over how athletic body shapes and muscularity in women are accepted[7-9], socially mediated difficulties with being seen as aggressive or competitive[10,11] and the challenge of fulfilling the demands of both sport and femininity[12].

Indeed, when discussing women in sport, the issue of body image is inescapable. Often, women become involved in sport or fitness primarily to lose weight[13], but can express fears of becoming too muscular[14]. While there is some evidence that, as women become more involved in sport, their body image improves, there are also women who remain highly critical of their own bodies, even as athletes[15]. The perceptions (we would argue, often misperceptions) which exercising women experience are frequently at the heart of their personal concerns which can, in turn, impact on adherence and ongoing commitment to this crucial health habit.

Of course, and thankfully, such issues are not universal. Female athletes can express more satisfaction with their bodies[16], describe performance as more important than appearance[17] and feel less constrained by limiting, gender specific beliefs about body shape and size[18]. Yet, clearly and unfortunately, this is not true for all women in sport. For example, Stewart and Pullen[17] describe a track and field team which prized muscular frames, yet who were also less confident outside of their sport setting and could express concern over how they looked in competition.

Therefore, given that body image for women in sport is far from straight forward, it is clear that, to encourage women into sport, they must find alternative forms of body image and identities less influenced by social norms of traditional feminine beauty. These shifts seem essential and are sold by Sport England's #ThisGirlCan campaign[5], which depicts women of all shape and size engaged in physical activity. Indeed and clearly contrary to stereotype, the campaign specifically showcases women sweating, looking uncomfortable and those with bodies outside of the thin, toned ideal often prized by society and media. While the campaign offers some welcome examples of positive role models and messages, however, how women can accomplish the shift from being concerned with appearance to celebrating performance is less clear.

There are some activities which may provide such an impetus, however. Recently, the UK has seen the growth of the fitness movement of CrossFit. Comprised of a mixture of Olympic lifting, gymnastics and various conditioning movements, CrossFit aims to build a broad base of overall fitness through functional movements[19]. Another key difference is that CrossFit takes a gender-neutral approach within a group exercise format. This approach asks women and men to complete the same training, scaled to their individual abilities. All participants are encouraged to develop positive attitudes towards competition, tracking performance and developing strength.

Notably however and despite this encouragingly egalitarian approach, Partridge, Knapp and Massengale[20] found a difference in the motivations between men and women taking part in CrossFit. Men's goals were more related to performance and competition with others, while women's motivations were more related to mastery. Importantly, women's mastery goals were geared towards avoiding looking inept or not good enough. Thus, while the focus in their study was not specifically about body image per se, the themes of appearance and the judgement of others were still evident. Considering what is known about the impediments for women entering sport, it might be reasonable to infer that fears about body judgements could also play a part in this.

In this regard, Salvatore and Marecek[21] evaluated the broad range of reasons that deter women from weightlifting. Their findings indicate that women avoided weightlifting because of culturally bound beliefs that they would be evaluated negatively by others for lifting weights and while using strength training equipment in a gym setting. Importantly, however, despite the strong possibility that evaluation concerns like these are also held by women in CrossFit, Partridge, et al[20] found that participants with longer membership in CrossFit generally reported performance goals over mastery goals. Thus, although it is impossible to determine how goals might have changed over time from this study, it might be worth considering that women found a way to be less constrained by appearance evaluation concerns as they became more involved in CrossFit.

There is also an emerging picture of CrossFit as a means of countering stereotypic views. For example, Marluka[9] remarks on how CrossFit offers an environment where female muscularity is prized over thinness and performances praised over socially endorsed examples of female beauty. Reflecting on these positives we wondered if whether, against the barriers which sport women confront, CrossFit could offer some potential solutions in terms of body image, providing stepping stones into sport. Additionally, we questioned whether women find that their beliefs about muscularity might change as they become more involved. And with involvement, whether women change their general attitudes about sport.

Therefore, the purpose of this investigation was to retrospectively examine the perceptions, aspirations and general views of women as they commenced, participated in and increasingly committed to CrossFit. Specifically, we were interested in key image and motivational issues and how these were moderated/mediated through experience of CrossFit. Such issues included:

- Concerns about body, appearance, self judgements on muscularity, perceptions of other judgements on muscularity;
- Attitudes about sport and athletic ambitions.

2. Method

2.1. Measures

The survey consisted of 74 questions and included the Multidimensional Body Self Relations Questionnaire (MBRSQ[22]), the Exercise Motivation Inventory (EMI[23]) items related to muscularity expanded by Loze and Collins[24] and demographic questions on sex, age, number of days trained per week and length of time doing CrossFit.

2.2. MBRSQ

The MBRSQ is a measure for assessing body image in terms of behaviors and beliefs about body, appearance, health and fitness. The MBRSQ provides information on the attitudes

related to body and also on the degree to which participant actions are orientated towards these attitudes, distinguishing between cognitive and behavioral elements of body image[25]. Likert scale ratings are used to determine the degree to which each statement applies. The MBRSQ includes an attitudinal and behavioral for each of the four factors of Appearance, Fitness, Health, Illness, along with ratings of Body Satisfaction, Overweight Preoccupation and Self-Classified Weight. Reliability for each factor is acceptable, ranging between a=0.70 and a=0.90 (Table 1).

Table 1: Cronbach's Alpha for MBSRQ, MBSRQ User Manual, 3rd Edition, 2000.

	MALES		FEMALES	
	CRONBACH'S Alpha	1-MONTH re test	CRONBACH'S Alpha	1-MONTH re-test
APPEARANCE EVALUATION	0.88	0.81	0.88	0.91
APPEARANCE ORIENTATION	0.88	0.89	0.85	0.90
FITNESS EVALUATION	0.77	0.76	0.77	0.79
FITNESS ORIENTATION	0.91	0.73	0.90	0.94
HEALTH EVALUATION	0.80	0.71	0.83	0.79
HEALTH ORIENTATION	0.78	0.76	0.78	0.85
ILLNESS ORIENTATION	0.78	0.79	0.75	0.78
ADDITIONAL SUBSCALES:				
BODY AREAS SATISFACTION	0.77	0.86	0.73	0.74
OVERWEIGHT PREOCCUPATION	0.73	0.79	0.76	0.89
SELF-CLASSIFIED WEIGHT	0.70	0.86	0.89	0.74

2.3. EMI

The EMI aims to clarify the relative importance of a range of motivations to exercise in terms of fitness or body goals. Lowe and Collins (24) identified that the original EMI lacked motivations related to muscular development. They demonstrated the need for 4 additional items related specifically to muscularity representing distinct factors from the original EMI. These additional factors related to exercise motivation for developing strength, gaining size, toning muscles and increasing muscle mass. Cronbach's alpha for the Muscular Development items demonstrated high internal reliability (a=.92). These 4 muscular development questions were included in the present survey.

3. Procedure

3.1. Data collection

CrossFit facilities in the north of England were asked to share the study information and survey link with members and social media posts provided information and the survey link. Those who clicked on the survey link were presented with study information and a statement that if they consented to take part, they could proceed with the survey. The information explained that they could stop the survey at any time. Only completed surveys were included in the analysis.

3.2. Statistical analysis

EMI scores and factors of the MBRSQ were compared with sex, age, length of involvement in CrossFit and number of days training. Descriptive statistics were examined to look for general trends, after which ANOVAs were used to look further at the differences between sex, length of involvement, number of days trained and EMI factor of 'Strength' and the MBRSQ factors of 'Appearance Evaluation/Orientation' and Body Satisfaction.

3.3. Ethics

All participants read an informed consent statement before proceeding to the anonymous survey. Prior approval for the study was obtained from the University of Central Lancashire's review board before data collection.

4. Results

4.1. Demographic variables

117 women and 45 men completed the survey. 40% of respondents were aged between 21-29, 32% were between 30-39, 20% were 40-49. 3 participants were aged 20 or under and 8 were aged 50-59. 62% of respondents worked out between 5-7 days per week. 33% had been doing CrossFit for 12-24 months. A further 29% had been doing CrossFit for 24-48 months. 25% had been doing CrossFit for under 12 months.

4.2. EMI variables

Descriptive statistics on EMI factors highlighted that developing strength was rated higher than the other factors for women (Table 2). Women in this study rated strength as a greater motivating factor than Tone, Size or Muscle Mass. The mean EMI-MD for women in this study was 3.304 (.075).

Table 2: Mean (sd) values on EMI Muscular Development items.

	Women	**Men**
Muscle Mass	3.28 (1.21)	3.43 (1.02)
Strength	4.20 (.935)	4.14 (1.05)
Tone	3.87 (1.05)	3.59 (1.15)
Size	1.86 (1.16)	3.07 (1.30)

A more in-depth examination, using a 2 X 4 (Sex X Factor) ANOVA revealed significant main effects for Factor ($F(3, 474) = 88.9$. $p<.001$, ES = .36) and a significant sex X factor interaction ($F(3, 474)=18.3$, $p<.001$, ES = .11). Follow up Tukey tests showed this to be due to higher strength gain motivations across all participants and the interaction as due to lower size gain motives in women.

Further analyses were conducted on the female data, regarding differences in motivation relating to length of time in CrossFit, number of training day per week and age. Using three one-way ANOVAs, no significant effects were found for length of time in CrossFit or age, but women who trained 5-7 days per week were significantly more motivated by strength than the other groups ($F (2, 114) = 3.13$, $p< .05$)).

4.3. MBRSQ variables

MBSRQ scores were compared to baseline scores from previous studies and the MBRSQ manual (Cash, 2000). (See Table 3 for MBSRQ scores).

Table 3: EMI Mean (sd) and MBRSQ mean (sd) for women participants in this survey compared with Mean (sd) of previous studies.

EMI, this survey, women	EMI, previous study, women involved in resistance training	
3.304 (.075)	2.63 (.77)	
MBSRQ factor	This Study, women	Previous Study, women
Appearance Evaluation	3.411(.851)	3.36 (.87)
Appearance Orientation	2.986 (.633)	3.91 (.60)
Fitness Evaluation	3.655 (.795)	3.48 (.97)
Fitness Orientation	3.959 (.482)	3.20 (.85)
Body Areas Satisfaction	3.435 (.712)	3.23 (.74)
Overweight preoccupation	2.653 (.983)	3.03 (.96)

Pertinent to our research aims, women respondents in this study were more similar to expected scores for men. Subsequently, independent T-tests were performed on MBRSQ factors using the male and female data from the present study. There were significant differences in overweight preoccupation ($t(16) = 2.87$, $p < .01$), fitness orientation ($t(160) = 1.99$, $p < .05$), health orientation ($t(16) = 1.98$, $p < ,05$) and illness orientation ($t(16) – 2.54$, , $p < .05$) with women scoring higher than men on these factors.

5. Discussion

EMI scores indicate that women in this study were highly motivated by developing strength. Furthermore, this motivation was rated significantly greater by women that train more frequently. It is notable that this group differs from resistance training women in the previous EMI Muscular Development study and their rating for strength. Female participants rated it as more of a motivator, reporting a score more similar to men's rating from previous studies using the same measure. In contrast, however, although there were no significant differences between sexes in this group for increased strength, tone or muscle mass as a motivator, women were significantly less motivated by increased size.

The women in this study also rated their appearance and fitness higher or more positively, than women in previous studies using the MBRSQ. Women's scores for appearance evaluation were not significantly different to the men who responded to the survey. Women were different on several factors, however, as shown by the scores for overweight preoccupation, fitness orientation, health orientation and illness orientation. So, although men and women responded as being satisfied with their bodies to roughly the same level, concerns about size are again suggested by the significantly higher scores in overweight preoccupation for women. Women additionally appear more cognitively orientated towards thinking about health, illness and fitness than men in this study based on their higher MBRSQ scores for health, illness and fitness orientation. These items measure the degree to which respondents experience themselves thinking about health, illness or fitness issues. In terms of body image, women then are more focused on issues of health and fitness, at least in this dataset. This may represent a positive shift towards motivations based on health and wellness over the kinds of goals more commonly seen in female exercisers such as weight loss and toning. This requires further investigation, but such a shift could be the kind of attitude change needed to encourage women into sport.

Another finding to consider in regards to Sport England's[2,5] research in the gender gap in sport is the greater appearance satisfaction and greater motivation for strength in this sample. Sport England highlighted that women's' concerns about how they look was a primary barrier to becoming involved with sport. Fears of becoming muscular or masculine were suggested as preventing women from being athletic, but perhaps less so for those in this kind of fitness routine even though a sex difference was still apparent. Although the women in this sample present different attitudes than those expected, the data lacks the scope to tell us why these women hold such different views. It also suggests that, although strength and muscle is a motivator rather than a concern for this group, body concerns related to becoming larger remain evident.

Some of the answer may lie in the nature of the environment where these women are exercising. As CrossFit participants, these men and women do the same movements. Women perform the same weightlifting and conditioning work as men, making CrossFit more gender neutral in its approach to training than other fitness routines. The environment perhaps offers some solutions to the kinds of issues highlighted by Salvatore and Marecek[21] that may keep women from venturing into the weightlifting sections of gyms. Participants in our study would be exercising in facilities that do not offer typical gym layouts of cardio and resistance equipment separated into zones. Although it is unclear if or how participants in this study dealt with the cultural expectations and evaluation concerns that often deter women from resistance training, it could be that the environment in some way helped to overcome these barriers.

Female study participants rated satisfaction with their bodies, appearance and level of fitness to similar level as men in this study compared to previous studies using the same measures. Partridge, et al[20] had also found that the women who had been in CrossFit for longer were more focused on their performance than how they appeared to others. These findings contrast with recommendations by Sport England. In the past, Sport England has recommended female-specific sports or exercise environments to encourage women into physical activity. However, this survey suggests women might be better served through integration with men, not separation. Although more information is needed on how women can be encouraged to become involved, such as further investigation on decision making when choosing a workout routine.

Considering the success the women respondents in this study report in terms of body image and athletic aspirations, it may also be useful to encourage the idea that the type of training for men and women need not differ. This is opposed to the dominant perspective of fitness portrayed in media and fitness advertisements. The women in this study are motivated by getting strong, a motivation more similar to men according to social norms. The fact that they were nearly identical to men in the ratings they gave on the EMI (size issues notwithstanding) seems to indicate that there is another way for women to approach sport than what is commonly offered in gyms and general societal norms. However, size, perceived muscularity or excess weight concerns remain, even for this group that actively

pursues strength. The ways that women can overcome size concerns, particularly when increased muscularity is needed for sport performance, is an area that warrants further investigation.

That these women do not seem to be struggling to the same extent with the same barriers as other women does not mean that they have never struggled with body image issues. The survey merely offers a snapshot of how they think currently. More investigation is needed into how body perceptions and motivations change over time in future studies. However, this survey may suggest that, rather than segregating sexes, women might find they can overcome these barriers by integrating. A happier body image might come from being immersed in a sport environment rather than segregated into a women-only zone.

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