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An investigation of the relationship between physical fitness, self-concept, and sexual functioning

Lia M. Jiannine

Abstract:

BACKGROUND: Obesity and inactivity have led to an increasing number of individuals with sexual dysfunctions (43% of women; 31% of men). Small bouts of exercise can drastically improve sexual functioning. Thus, the present study is designed to examine the effects of physical fitness and self-concept on sexual functioning.

MATERIALS AND METHODS: Fitness assessments and questionnaires were administered to 133 participants between the ages of 18 and 50 years. Physical fitness was assessed through body composition, cardiovascular endurance, muscular strength, and muscular endurance. Self-concept was presented as a total self-concept score and as six individual concepts of self. Sexual function was presented as both an aggregate score and five separate constructs of sexual functioning – fantasy/cognition, arousal, orgasm, behavior/experience, and drive/desire.

RESULTS: The results indicated that sexual behavior/experience was predicted by body fat percentage. In men, fantasy was related to total self-concept; sexual behavior/experience was related to likeability. In women, arousal was predicted by cardiovascular endurance. Total self-concept was related to both orgasm and sex drive/desire. Power and muscular strength were significantly related to number of sexual partners in women but not men.

CONCLUSIONS: The present study adds to the growing body of evidence indicating a positive relationship between physical fitness and sexual health. Individuals with sexual dysfunctions, particularly women, who are not persuaded by the currently publicized benefits of physical activity, may be inclined to exercise to improve sexual functioning.

Keywords:

Exercise, physical fitness, self-concept, sexual behavior, sexual functioning

Department of Health
and Human Performance,
Health Professions
Division, College of Health
Care Sciences, Nova
Southeastern University,
FL 33314, USA

Address for correspondence:

Dr. Lia M. Jiannine,
Department of Health
and Human Performance,
Health Professions
Division, College of Health
Care Sciences, Nova
Southeastern University,
3301 College Ave.,
Ft. Lauderdale, FL 33314,
USA.
E-mail: ljannine@nova.edu

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Introduction

Sex is an essential part of human existence and plays a vital role in sustaining and improving quality of life. Sexual health impacts both emotional and physical health, and a satisfying sex life can play a crucial role in intimate relationships.^[1]

Sexual dysfunctions are adversely affecting an increasing number of individuals due to the lowered rates of physical activity and the rise of obesity.^[2] Men with a high body mass

index (BMI) had a 30% higher risk for erectile dysfunction than those with a healthy BMI. Half of obese men reported difficulty with sexual performance, while over 40% reported problems with sexual desire. Similarly, 40% of obese women reported that they did not enjoy sexual activity.^[3]

In addition to the physiological impacts, Weaver and Byers^[4] also found an association between body mass, a negative body image, and the avoidance of sexual situations. An overweight or obese person is more likely to report a negative perception in appearance suggesting relationships between body fat percentage, sexual function, and self-concept.

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The present study aims to compare the relationship between physical fitness, self-concept, and sexual functioning. This is significant in that the information about the association between the variables may be an important link in the development of interventions that challenge negative self-concept and promote positive sexual health. In addition, previous studies only compared physical fitness to a unidimensional conceptualization of self-esteem thereby missing possible more nuanced understandings of self-esteem's multidimensional links for physical fitness.^[1,5] The present study also extended the previous research by investigating six different facets of self-concept – likability, morality, task accomplishment, giftedness, power, and vulnerability and its association with sexual functioning. Further, prior research was limited to examining sexual function through just sexual behavior and experience, most notably through frequency and sexual satisfaction,^[5] but this research also investigated cognition/fantasy, arousal, behavior and experience, orgasm, and drive/desire as additional well-researched operationalizations of sexual functioning.^[1]

With regard to exercise, past research has also tended to focus solely on self-reported exercise.^[1,4,6] Yet, there is an intrinsic concern regarding the legitimacy of self-report measures, which are exacerbated when examining physical activity because of possible social desirability effects; therefore, individuals may overestimate their true level of activity.^[7] Consequently, the researcher measured health-related physical fitness/exercise (muscular strength, muscular endurance, cardiovascular endurance, and body composition) by direct observation to address this concern.

Earlier studies^[4,7] have analyzed the relationship between sex drive and BMI. BMI is often used as a measure of physical fitness because it is inexpensive, convenient, and minimally intrusive; however, it does not account for the differentiation of muscle and fat mass. Therefore, BMI is an inaccurate measurement of obesity.^[8] Skinfold analysis was used in place of BMI analysis for more accurate results.

The purpose of this research was 3-fold; first, to examine the hypothesized relationship between physical fitness and sexual functioning; second, to analyze the hypothesized relationship between self-concept and sexual functioning; and third, to examine the hypothesized relationship between physical fitness, self-concept, and number of sexual partners.

Materials and Methods

A total of 148 participants volunteered for this study. The objectives of the study were explained and informed

consent was obtained. Approval was granted by the Institutional Review Board (IRB), and procedures were followed in accordance with the ethical standards of the IRB. Participants were assigned numbers, and all information was anonymous. Fifteen individuals were disqualified (10.14%) for antidepressants, sexual inactivity, or failure to complete physical fitness testing. Participants ranged in age from 18 to 50 years. Ninety-one (68.4%) participants were women and 42 (31.6%) were men. The majority of participants were heterosexual ($n = 116, 87.2\%$), followed by bisexual ($n = 10, 7.5\%$) and homosexual ($n = 7, 5.3\%$).

Anthropometric measurements consisted of height, weight, and body fat percentage. Body composition was assessed through a three-site skinfold analysis. Handgrip dynamometer measured muscular strength, and the push-up test and plank tests assessed muscular endurance. Oxygen uptake (VO_2 max) was assessed through the Rockport fitness submaximal test.

Participants filled out two well-studied and validated scales. The first was the six-factor self-concept scale, 36-item multidimensional measure of self-concept which assess and individual's perceived likability, morality, task accomplishment, giftedness, power and vulnerability.^[9] The second survey was adapted from the Derogatis Interview for Sexual Functioning,^[10] which contains 26 questions and are arranged into five domains: sexual cognition/fantasy, sexual arousal, sexual behavior and experience, orgasm, and sexual drive. Sexual function was measured as both one aggregate score and as the five separate constructs of sexual functioning. Questions pertaining to sexual partners were also included.

Results

Men and women were separated in the analysis because men traditionally have been shown to have greater physical fitness and report higher levels of sexual functioning.^[11] There were significant differences in physical fitness scores. Men had less body fat, more muscular strength, more muscular endurance, and greater cardiovascular strength. Women were more flexible.

Results of the general linear model showed statistically significant differences in sexual function between men and women. Men and women reported significantly different answers in almost all aspects of sexual functioning. In the ANOVA analyses, men reported significantly higher rates of sexual cognition/fantasy ($F = 6.65, P = 0.01$), arousal ($F = 15.03, P < 0.001$), behavior/experience ($F = 4.93, P = 0.030$), orgasm ($F = 15.54, P < 0.001$), and total sexual functioning ($F = 15.41, P < 0.001$). However, there were no significant differences in drive/desire

between men and women. There were no statistically significant differences in the self-concept scores of men and women, except for the category of vulnerability.

When examining the link between physical fitness and sexual functioning through regression analysis, behavior/experience was predicted by percent body fat ($\beta = 0.52$, $T = 2.04$, $P = 0.05$). When women were isolated in the analysis, arousal was predicted by VO_2 ($\beta = 0.28$, $t = 2.28$, $P = 0.03$).

In the examination of the link between self-concept and sexual functioning through regression analysis, total self-concept was linked positively to fantasy ($F = 6.07$, $P = 0.02$) for men and was a predictor of orgasm ($F = 8.02$, $P = 0.01$) and drive/desire ($F = 5.23$, $P = 0.02$) for women.

When examining through regression analysis, only men using the separate dimensions of self-likability positively predicted sexual behavior and experience ($\beta = 0.79$, $t = 2.94$, $P = 0.01$), and task accomplishment was inversely predicted sexual behavior and experience ($\beta = -0.70$, $t = -2.94$, $P = 0.01$). In the investigation of only women, giftedness positively predicted cognition/fantasy ($\beta = 0.61$, $t = 2.92$, $P = 0.004$), arousal ($\beta = 0.27$, $t = 2.09$, $P = 0.04$), orgasm ($\beta = 0.22$, $t = 2.00$, $P = 0.05$), and total sexual functioning ($\beta = 1.51$, $t = 3.19$, $P = 0.01$). In addition, task accomplishment also negatively predicted arousal ($\beta = -0.34$, $t = -2.35$, $P = 0.02$); vulnerability negatively predicted drive and desire ($\beta = -0.11$, $T = -2.13$, $P = 0.04$).

No aspect of physical fitness was related to the number of sexual partners in men. However, handgrip ($\beta = 0.37$, $t = 2.73$, $P = 0.01$) and power ($\beta = 0.27$, $t = 3.29$, $P = 0.009$) were significant predictors of the number of sexual partners.

Discussion

Although improvements in cardiovascular functioning can help alleviate male dysfunction, the results of this study indicate that it may also be beneficial for women. This is crucially important because hypoactive sexual desire disorder affects 32% of women.^[12] Thus, improving cardiovascular function in women may increase pleasure, arousal, and orgasm in women who once believed that their sexual dysfunctions were incurable or only treatable with hormonal supplements.

Prior research indicates that an increased physical activity in men is associated with enhanced testosterone levels and thus an increased sexual desire and behavior.^[13] However, this present study did not show a link between cardiovascular endurance, muscular endurance and/or muscular strength, and male sexual functioning scores.

It is important to note that the majority of participants who volunteered for the study were physically fit and there was not a large variation in physical fitness levels between individuals. If the sample had included individuals with low levels of physical fitness and higher levels of sexual dysfunction, the results may have differed.

Sexual behavior/experience was positively related to likability and inversely related to task accomplishment in men. Natural selection and biology may have played a role as to why likability is the only positive predictor of sexual behavior/experience of men. It is also possible that an increased number of sexual experiences and the pursuit of these experiences deterred men from accomplishing tasks. However, when women were analyzed individually, arousal was the only deterrent to task accomplishment, indicating that sexual urges and arousing thoughts might be more distracting than sexual experiences in women. Vulnerability was inversely related to drive/desire for women. Since self-concept plays such a large role in sexual drives,^[4] a woman who feels weak or defenseless might not desire sexual activity. Giftedness was related to cognition/fantasy, arousal, orgasm, and total sexual functioning. Further research is needed to examine if women who identify themselves as gifted are more likely to have better sexual cognition/fantasy, arousal, orgasm and total sexual functioning, and/or if women rate themselves as better in each of the sexual categories are more inclined to identify themselves as gifted.

Consistent with a literature review conducted by Baumeister *et al.*,^[11] men desired more sexual companions. The present study found that men had approximately three more sexual partners than women. It has been posited that the discrepancy in the sexual partners is due to sexual strategies^[14] resulting from the biological requirements of mating.^[15] Although these inherent differences may be rooted in evolutionary history, a divergence of gender-related societal pressures may also be a cause.

Although some men may be motivated to exercise so as to increase their desirability, none of the physical fitness aspects in men were related to the number of sexual partners. This was contrary to common belief because exercise stimulates testosterone,^[16] a libido-dependent hormone, that affects sex drive, sexual interest, and sexual function.^[1] When men were isolated in the analysis, there were no relationships found between testosterone-producing activities (cardiovascular endurance, muscular endurance, and muscular strength) and sexual functioning. To accurately predict the role of testosterone-producing activities in sexual functioning and sexual partners, future research needs to measure

testosterone levels of men and women who have a wide range of physical fitness scores and varying levels of body fat percentage.

In women, the number of sexual partners was significantly related to both muscular strength and power as a construct of self. It is possible that the strong relationship between muscular strength and number of partners is rooted in unconventional ideals of how women should respond sexually. Women who focus on increasing muscular strength may be less concerned about society's ideals of femininity and thus their perceived promiscuity. It is possible that women who have more physical strength are more assertive and thus are more inclined to initiate sexual situations.

In the past, most studies only compared physical fitness to self-esteem and evaluated sexual function through sexual behavior and experience, most notably through frequency and sexual satisfaction.^[5] This research also examined cognition/fantasy, arousal, behavior and experience, orgasm, and drive/desire. In past research, self-esteem was not measured as a multidimensional construct.^[1,5] The present study differed by investigating six different dimensions of self-concept – likability, morality, task accomplishment, giftedness, power, and vulnerability. Examining the relationship of the five components of physical fitness and the six constructs of self-concept to each of the five sexual components provided a more detailed analysis of the relationship between physical fitness, self-concept, and sexual function.

This study utilized more precise body composition measurements than previous literature. Body fat percentage was used instead of BMI, which does not account for the differentiation of muscle and fat mass.^[8]

Previous studies focused solely on self-reported exercise.^[1,4,6] There is an intrinsic concern regarding the legitimacy of self-report measures. These self-reported biases are exacerbated when examining physical activity because perceptions of intensity and duration are often based in prior exercise experience and current health status.^[17]

Prior studies demonstrated a positive relationship between physical activity and sexual function, particularly arousal, in subpopulations of men.^[18,19] The present study provides evidence that there may be a similar relationship in women. Women who want to improve their sexual arousal may also benefit from cardiovascular training. In addition, a reduction in body fat may improve sexual behavior and experience for both men and women.

The present study may add to the emerging evidence that enhanced physical fitness is related to improvements in

self-concept and sexual satisfaction. This may encourage sedentary individuals with sexual dysfunctions who were not motivated by any other factor to begin physical activity and begin a weight loss regime. Furthermore, improvements in sexual satisfaction and sexual functioning may improve overall quality of life.

Conclusions

The present study adds to the growing body of evidence indicating a positive relationship between physical fitness and sexual health. Individuals with sexual dysfunctions, particularly women, who were not persuaded by the currently publicized benefits of physical activity, may be inclined to exercise to improve their sexual functioning.

Women who have greater amounts of muscular strength and define themselves as powerful are more likely to have a greater number of sexual partners, which may be a result of the following:

- Women who define themselves as intrinsically powerful may be more inclined to lift weights (possibly increasing testosterone levels) and thus enlist sexual partners
- Muscular training and/or testosterone levels may cause women to define themselves as powerful and thus become more aggressive when recruiting sexual partners
- A lowered allegiance to gender-based norms is the origin of the cycle. Nonconformist women, who are less constrained by feminine ideals, might be more likely to lift weights and thus more inclined to solicit sex partners.

Limitations and recommendations for future research

Generalizability was a significant limitation. This study is not generalizable across all ethnic backgrounds because 41% of participants were of Hispanic descent, so future research should be designed to have more proportional representation of different ethnic groups. In addition, because far more heterosexuals participated in the research study, future research should also be representative of a homosexual, bisexual, or transgender populations.

Self-selection bias may have played a role because individuals who do not consider themselves physically fit may avoid participating in study that requires physical fitness testing.

Moreover, research indicates that those willing to participate in sex research may hold less traditional values about sex, may be more sexually experienced, and may report a higher sexual self-esteem.^[20] Future research could be designed to examine random samples

to help combat issues with perceptions of physical fitness and sexual values, experience, and self-esteem. Future research could also to examine the testosterone levels of individuals with a variety of fitness levels to better determine the role of testosterone in sexual functioning for both physically active and inactive individuals.

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Conflicts of interest

There are no conflicts of interest.

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