

INFLUENCE OF PHYSICAL ACTIVITY PRACTICE ON SEXUAL FUNCTION IN MEN: A SYSTEMATIC REVIEW



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Hypothesis / aims of study

Some risk factors such as smoking, sedentary lifestyle, obesity, age over 40 years, prostate cancer, excessive drug and alcohol consumption impact sexual performance.

These are factors that lead to the emergence of comorbidities such as diabetes, hypertension, cardiovascular diseases, and dyslipidemias, which in turn directly affect penile vascularization and nitric oxide bioavailability, directly influencing the maintenance of penile function.

Some authors show that regular physical activity promotes better systemic vascularization. It is known that male sexual function is regulated by vascular function and when altered (either by sedentary lifestyle or specific comorbidities) it is a risk factor for the presence of erectile dysfunction.

There is divergence in the literature as to the impact of physical activity on male sexual function, so the objective of this study is to verify in the literature studies showing the benefits of regular physical activity practice on sexual function in men.

Study design, materials and methods

The method of knowledge synthesis adopted was the systematic review. To conduct this investigation, the recommendations and criteria described in the preferred reporting items for systematic reviews and meta-analyses (PRISMA) and Cochrane Handbook were followed.

The guiding question of this integrative review was "What is the available evidence in the literature on the influence of physical activity practice on sexual function in men? To construct this question, the PICO strategy was employed, with P as the population (men), I as the intervention (physical activity), and O as the outcome (sexual function). It is noteworthy that the C element, of comparison, was not considered and for this reason is not implicit in the guiding question.

This systematic review was conducted between september and october 2022 by searching 3 electronic databases in order to identify all relevant studies that evaluated the impact of physical activity on sexual function in men.

The databases were the National Library of Medicine (Medline® via PubMed®), Embase, and the Virtual Health Library (VHL). To compose the search strategy for the studies, the controlled descriptors indexed in the Medical Subject Headings (MeSH) and their respective synonyms in the Health Sciences Descriptors were used.

The descriptors were selected in order to broaden the search and answer the research question elaborated based on the PICO strategy, and therefore, for each component of the strategy, one or more keywords were selected. The Boolean operators OR and AND were used to cross-reference these keywords. Thus, the search strategy used was associated with the MESHs terms of the words men, sexual function, and physical activity. We included clinical trials and observational studies that addressed physical activity on sexual function in men, in english and portuguese. Studies that included women in their sample, reviews, posters, dissertations, and case reports were excluded. The studies obtained from the strategies were exported to Rayyan®, where duplicates were excluded and then sorted by title and abstract by two researchers, and in case of doubts a third collaborator was consulted.

Results and interpretation

A total of 893 studies were found in the electronic searches. Of these, 88 duplicates were identified and removed, resulting in 805 studies. After title and abstract review, 27 studies were included for full reading. Of these, 9 studies remained in this review, the others related to reviews, posters, and proceedings (n = 12), studies including women (n = 2), studies in other languages (n = 2), and older studies (n = 2, although this was not an inclusion criterion two studies were published in the year 1980 and were therefore excluded).

A total of 8,076 men participated in the selected studies. Of these studies, all were published in English. They were published in countries such as Japan, USA, Italy, Brazil, Korea and Switzerland.

The sample was composed of adult men aged 18 to 82 years with BMI ranging from 17.3 to 34.6 kg/m². The main dysfunction evaluated was erectile dysfunction, followed by premature ejaculation.

The participants have practiced physical activity varies from 8 weeks to more than 10 years, showing great variability in relation to the time and type of activity practiced.

Regarding the type of physical activity, walking and cycling were identified as the most frequent. Other activities were not specified, or were assessed as "level of physical activity/physical exercise).

The studies are controversial regarding the practice of cycling, since the articles by Balasubramanian, et al. And Kim; Kim; Kwan, evaluated this practice, and the first concluded that some specific characteristics can influence comfort and sexual function, generating complaints such as pelvic pain and numbness, predisposing practitioners to the onset of ED. The study by Kim; Kim; Kwan concluded that the practice does not offer any harm to the urinary or sexual function in men who cycle recreationally.

Two studies did not specify the type of exercise evaluated, because they performed a retrospective evaluation. The study by Mialon used a physical activity questionnaire classifying the participants in low, moderate or high activity level, while Parazzini used a physical activity questionnaire where participants classified self-reported physical activity in none, low, moderate or intense, therefore, in some studies in the next table, variables such as frequency, load and duration were not clarified and were replaced by N/I (not informed).

There was a predominance of cross-sectional studies, and in these, the evaluation was done retrospectively using a questionnaire to identify the level of physical activity of the participants, where characteristics such as load or frequency were not assessed.

Interpretation of results

Sedentary lifestyle collaborates with the emergence of non-transmissible chronic diseases and this favours the reduction of peripheral venous return and the production of the enzyme responsible for the synthesis of endothelial nitric oxide (eNOS: endothelial nitric oxide synthase). These changes inhibit the relaxation process of the smooth muscles of the penile corpus cavernosus, causing a decrease in vessel contractility and having a negative impact on the vascular tumescence necessary for the occurrence of erection. In relation to sexual activity, the human being has an energy expenditure between 2 to 4 METs, with a lower caloric expenditure in the pre-orgasmic phase and may reach the peak of exhaustion during orgasm. This indicates that individuals with good aerobic capacity have a greater chance of obtaining a healthy and satisfactory sexual function.

Conclusions

The main dysfunctions addressed were erectile dysfunction and premature ejaculation, respectively, and according to the studies included, it was possible to evidence favorable effects of physical activity regarding the improvement of vascularization, promoting systemic benefits to practitioners of physical activity.

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