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REVİEW ARTICLE

The Effect of Regular Exercise and Physical Activity in Psoriasis

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ABSTRACT

Psoriasis is an important health problem that negatively affects people's quality of life. Psor asis, a chronic skin disease, is usually characterized by redness, rash, itching, and scaling of the skin. Although psoriasis is usually treated with pharmacologic methods, recent studies suggesting that exercise has positive effects on psoriasis have increased interest in this subject and thus the positive effect of exercise on psoriasis has diversified treatment strategies. In this context, this study aimed to examine the potential effects of exercise on the course of psoriasis by comparing the results of studies on exercise and psoriasis in the literature. This review includes a systematic analysis of scientific studies related to the research topic. In this study, an extensive literature review was conducted to examine the effect of physical exercise on psoriasis. The review of studies on the effect of exercise on psoriasis was conducted in Web of Science, Pub-Med, Scopus, and Google Scholar electronic databases. Ten academic articles were included in the current study. The conclusion section of the present study was formed by compiling the results of the studies. As a result, it was found that regular exercise had positive effects on skin lesions, inflammation, and overall quality of life in individuals with psoriasis. The results of our study suggest that exercise may positively affect the course of psoriasis. Given the positive effects of regular exercise in alleviating disease progression, controlling symptoms, and improving quality of life, it is important to create more awareness among coaches, conditioners, healthcare professionals, and patients about the integration of exercise. However, exercise programs need to be personalized and tailored to the individual, considering individual differences and disease severity. Further research and clinical studies on the effect of exercise on psoriasis are needed.

Keywords: Exercise, healthy behavior, healthy lifestyle, quality of life, psoriasis

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INTRODUCTION

Psoriasis is recognized as a multifactorial disease resulting from the interaction between genetic predisposition and exposure to environmental risk factors (Naldi et al. 2014). 2-4% of the world population suffers from psoriasis (Wilson et al. 2012; Nowowiejska et al. 2021; Shafiulla and Dhaneshwar, 2022). Psoriasis is a genetically determined chronic inflammatory skin disease with a high prevalence in the general population that can cause serious health problems such as intense itching, rash, scaling, and reduced quality of life (Figure 1) (Deniz et al. 2021; Balato et al. 2014; Yeroushalmi et al. 2022; Custurone et al. 2021). This disease has a higher prevalence in Western societies (Diaz et al. 2023). Plaque psoriasis is the most common type in the community (Weigle and McBane, 2013). The skin is a structure that provides protection against environmental stressors and plays a fundamental role in cellular signaling and maintenance of homeostasis. Psoriasis has strong genetic links and is also influenced by the environment and lifestyle, including nutritional factors and, depending on the patient's condition, physical activity (Duchnik et al. 2023). The redness, intense itching, and scaling of the skin cause significant physical and psychosocial problems for affected individuals. Patients experience feelings of anger, frustration, helplessness, and shame throughout their lives (Custurone et al. 2021; Shafiulla and Dhaneshwar, 2022). Since skin lesions are not only an aesthetic defect, psoriasis is a factor that negatively affects and severely limits individuals' social life, quality of life, sleep patterns, and leisure activities (Balato et al. 2014; Nowowiejska et al. 2022). Psoriasis also significantly affects sexual behavior and work productivity, and fatigue and musculoskeletal pain are very common in these patients (Custurone et al. 2021; Diaz et al. 2023).

Fig. 1. *Appearance of psoriasis on the skin (WEB 1, 2024).*

Psoriasis patients are at high risk of developing other systemic diseases such as metabolic syndrome, cardiovascular disease, type 2 diabetes, and obesity. For this reason, psoriasis can be perceived as a kind of psychosomatic disorder (Auker et al. 2020; Balato et al. 2014; Wilson et al. 2012; Nowowiejska et al. 2022; Custurone et al.

2021). Regular physical activity is recognized as a vital component for the prevention and treatment of these systemic diseases (Wilson et al. 2012). Regular moderate physical activity should be encouraged for all individuals with psoriasis (Auker et al. 2020; Frankel et al. 2012). As with other systemic diseases, the risk of developing psoriasis is associated with body weight (Yeroushalmi et al. 2022; Naldi et al. 2014). In particular, psoriasis patients are more often overweight or obese than the general population (Figure 2) (Custurone et al. 2021; Naldi et al. 2014).

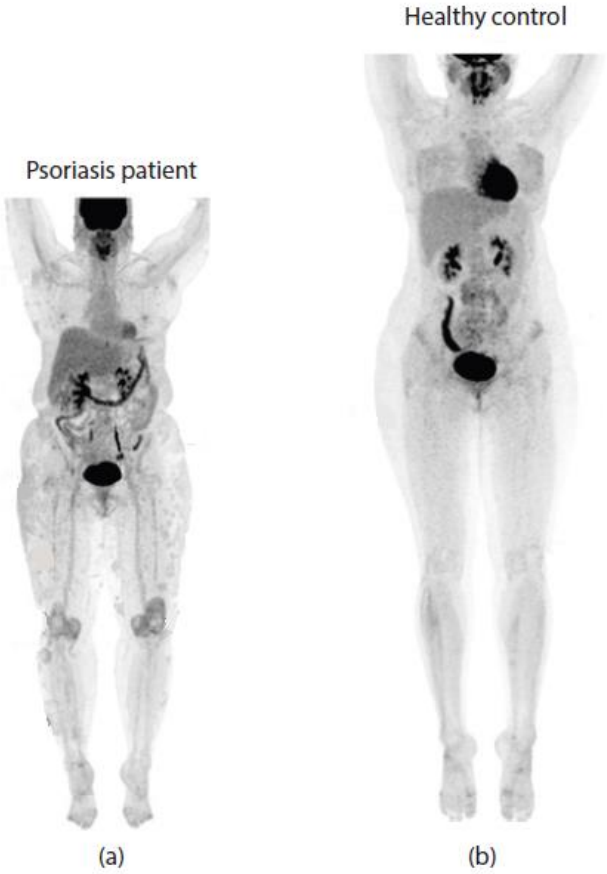

Fig. 2. *Computed tomography images of a psoriasis patient (a) and a normal healthy (b) individual. The risk of psoriasis is higher in individuals with high body fat. (Menter et al. 2019).*

Psoriasis patients are much less likely to participate in physical activity than healthy individuals, probably for both psychological and physiological reasons (Do et al. 2015; Torres et al. 2014). Both high body mass index and high body fat are associated with an increased risk of developing psoriasis (Yeroushalmi et al. 2022; Custurone et al. 2021; Duchnik et al. 2023). On the other hand, the skin lesions associated with psoriasis and the associated psychological problems have long been the focus of psoriasis researchers (Wilson et al. 2012; Nowowiejska et al. 2022). Depression is one of the major triggers of psoriasis (Yeroushalmi et al. 2022; Weigle and McBane, 2013). The chronic course of the disease causes anxiety and intense stress that patients will have to suffer and deal with this problem for the rest of their lives, negatively affecting their quality of daily life (Auker et al. 2020; Custurone et al. 2021). As regular physical activity is a vital component in the prevention and treatment of cardiovascular disease, it is effective in reducing the risk of psoriasis, which can be caused by cardiovascular risk factors (Torres et al. 2014). Similarly, as regular exercise improves mood, it reduces

depression and stress levels in individuals, thereby positively affecting the course of psoriasis (Yeroushalmi et al. 2022). In short, regular exercise can be an effective preventive strategy against psoriasis (Wilson et al. 2012; Yeroushalmi et al. 2022).
Although regular physical activity is an effective treatment method for psoriasis, unfortunately, there are few studies examining regular physical activity in psoriasis. In this context, the present study aimed to examine the potential effects of regular exercise on the course of psoriasis by comparing the results of studies examining the relationship between regular exercise and psoriasis in the literature. It is thought that evaluating the literature on the effect of regular exercise in psoriasis will be useful in terms of guiding future research and clinical practice. Figure 3 illustrates the potential mechanisms by which physical activity may reduce the severity of psoriasis and/or cardiometabolic comorbidities.

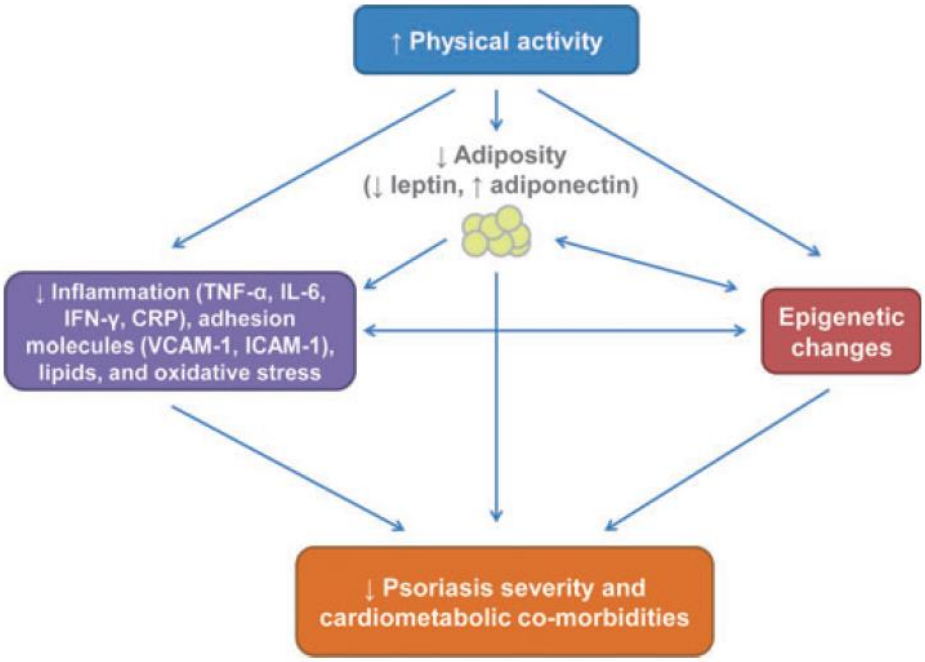

Fig. 3. *Potential mechanisms by which physical activity may reduce psoriasis severity and/or cardiometabolic comorbidities (Wilson et al. 2012).*

Related Literature Review

In the literature review, there are many studies on the theme of "The Effect of Regular Exercise on Psoriasis". In these studies, it was concluded that regular exercise has a positive effect on the course of psoriasis and has both a therapeutic effect on the disease and reduces the risk of developing psoriasis, thus increasing the quality of life of individuals. Table 1 presents the scientific studies examined on the subject.

Table 1. *The Published literature of regular exercise in psoriasis*

Reference	Participant (n)	Title	Average age of participants	The effect of regular exercise on the course of psoriasis
(Nowowiejska et al., 2022)	92 Control group: 17 male/19 female Psoriasis group: 31 male/25 female	Assessment of Life Quality, Stress and Physical Activity Among Patients with Psoriasis	Control: 51.40 ±2.8 Psoriasis:49.03±2.2	+
(Wilson et al., 2012)	Review	Psoriasis and physical activity: a review	Review	+
(Balato et al., 2014)	1305 Sportive group: 150 male/266 female Control group: 297 male/192 female Psoriasis group: 212 male/188 female	Psoriasis and sport: a new ally?	Sportive: 19.6± 13.1 Control: 21.6±15.6 Psoriasis: 42.9±18.1	+
(Yeroushalmi et al., 2022)	Review	Psoriasis and Exercise: A Review	Review	+
(Duchnik et al., 2023)	Review	The Impact of Diet and Physical Activity on Psoriasis: A Narrative Review of the Current Evidence	Review	+
(Custurone et al., 2021)	Review	Mutual Influence of Psoriasis and Sport	Review	+
(Do et al., 2015)	6166 Never diagnosed with psoriasis (n= 6011): female, %50.8 Little or no psoriasis (n = 84): female, %59.6 Few patches to extensive psoriasis (n = 71): female, %49.3	Association between psoriasis and leisure-time physical activity: Findings from the National Health and Nutrition Examination Survey	20-59 years old	+
(Naldi et al., 2023)	303 (215 male/88 female)	Diet and physical exercise in psoriasis: a randomized controlled trial	18-80 years old	+
(Torres et al., 2022)	250 Psoriasis group: (n= 90): male, %61.1 Control group: (n = 160): male, %56.9	Levels of Physical Activity in Patients with Severe Psoriasis: A CrossSectional Questionnaire Study	Psoriasis: 47.7 ± 10.9 Controls: 46.8 ± 12.2	+

(Frankel et al., 2012)	86,655 female	The Association Between Physical Activity and the Risk of Incident Psoriasis	middle age	+

"+": regular exercise has a positive effect on psoriasis. "-": regular exercise has no effect on psoriasis.

MATERIALS AND METHODS

This review includes a systematic analysis of scientific studies related to the research topic, and the research data was obtained through a literature review. In this framework, 8 academic studies were compiled. The scanning of the studies related to our research topic was carried out in Web of Science, PubMed, Scopus, and Google Scholar electronic databases. The databases were searched with both Turkish and English translations of the keyword combinations "Psoriasis", "Physical Activity and Psoriasis", "Regular Exercise and Psoriasis" and "Exercise and Psoriasis". Studies examining the effect of regular exercise on psoriasis in the literature were selected according to the level of relevance. Ten scientific academic articles were included in the current study. By making detailed analyses of the findings and results of these 10 selected articles, the common points between the studies were determined and solution suggestions were presented.

DISCUSSION

In this study, " The Effect of Regular Exercise on Psoriasis" was investigated. The conclusion section of our research was formed in light of the findings obtained from the studies compiled by examining the research subject in the literature in depth. According to the findings obtained from these studies, regular exercise has positive and curative effects on the course and treatment of psoriasis. The discussion section prepared according to the results of the studies compiled in the literature is presented below.

In a large-scale review study conducted by Wilson et al., 301 academic articles were compiled and the results of these articles were discussed and a conclusion was reached. In this study, articles were eliminated according to relevance, and 9 studies focusing on the effect of physical activity on psoriasis patients were focused. The study concluded that exercise can be a potentially effective treatment for conditions associated with psoriasis (Wilson et al. 2012). Similarly, Do et al. surveyed 6549 participants aged between 20-59 years to find out their participation in moderate-intensity exercise in their free time. According to the results of the study, compared to people without psoriasis, those with psoriasis were less likely to have engaged in moderate-intensity exercise in their leisure time in the past 30 days, although this difference was not statistically significant. This study suggests that clinicians should encourage psoriasis patients, especially those who avoid physical activity, to become more physically active and should also help identify possible psychological and physical barriers to their patient's physical activity and seek solutions (Do et al. 2015).

Torres et al., who argued that regular physical activity has a positive effect on the course of psoriasis, aimed to determine the rate of participation in physical activity in individuals with severe psoriasis. The study included 250 participants (90 psoriasis patients and 160 healthy individuals without psoriasis). As a result of the study, it was found that psoriasis patients wanted to participate in physical activity less than normal healthy individuals (Torres et al. 2014). Similarly, in another study, 86,655 female participants aged 27-44 years were surveyed to examine the relationship between total physical activity, walking, and intense exercise rates practiced by women and the prevalence of psoriasis in these women. According to the results of the study, a decrease in psoriasis risk factors was found in female participants who engaged in intense physical activity. However, it was reported

that walking, a type of physical activity, was not associated with psoriasis risk (Frankel et al. 2023).

A review of 29 articles suggested that physical activity has positive effects on the course of psoriasis and improves quality of life. However, it was argued that more research is needed in this field to determine which type and intensity of exercise is more effective in the effect of exercise on psoriasis (Custurone et al. 2021). Duchnik et al. conducted an in-depth analysis of 7 articles and argued that regular physical activity provides a significant effect in reducing the negative psychological and physical effects of psoriasis (Duchnik et al. 2023). Yeroushalmi et al. analyzed 28 academic articles in their study and aimed to reveal the link between physical exercise and psoriasis. They concluded that patients with moderate to severe psoriasis exhibited a more sedentary lifestyle than the general healthy population and were much less likely to participate in exercise. The study also reported that regular exercise may be an effective preventive strategy against psoriasis and could potentially treat the disease in overweight patients (Yeroushalmi et al. 2022). A study of 56 psoriasis patients (31 male/25 female) found that psoriasis patients had lower scores in social, environmental, and psychological domains. The study found that patients had higher levels of stress and less satisfaction with their sex life and physical appearance than the control group. It was also reported that psoriasis patients tended to engage in less physical activity than the control group. Thus, this study emphasizes that psoriasis not only affects the skin but also has a huge impact on the psychological and internal state (Nowowiejska et al. 2022). Balato et al. in their survey study with 1305 participants (male: 659/female: 646) concluded that regular physical activity may reduce the risk of psoriasis and may have a beneficial effect on the natural course of the disease. However, the limitation of this study was that the mean age of the psoriasis group (age: 42.9±18.1) was much higher than the mean age of the control group (age: 21.6±15.6), so a direct comparison between the experimental and control groups could not be made (Balato et al. 2014). In another study, it was reported that the severity of psoriasis was reduced with a 20-week exercise protocol and diet applied to 303 overweight or obese psoriasis patients with active psoriasis and treated systemically. It has been argued that the positive effect of physical activity on psoriasis occurs due to the weight loss provided by physical activity in individuals (Naldi et al. 2014).

These results support the results of our current study. There is no study in the literature that contradicts our research results. There are no studies in the literature suggesting that regular physical exercise increases the risk of psoriasis, and almost all of the studies reported that regular exercise or physical activity positively affected the course of psoriasis. Only one study (Frankel et al. 2023) found no association between regular physical activity such as walking and psoriasis risk. However, the same study also argued that regular exercise has a very positive effect on the course of psoriasis.

CONCLUSIONS

In conclusion, regular exercise programs have positive effects on the course of psoriasis. Decreased levels of regular exercise may lead to psoriasis and associated cardiometabolic diseases, adiposity, inflammation, oxidative stress, lipids, and adhesion molecules. On the other hand, physical and psychosocial impairments caused by psoriasis may make it difficult to participate in regular physical activity. Further studies are needed in this area.

Recommendations

More research is needed to examine the specific effects of different types of exercise (aerobic, resistance, yoga, stretching, etc.) on psoriasis symptoms.
Long-term follow-up studies and large-scale clinical trials to determine the optimal dosage of exercise in psoriasis treatment will contribute to a better understanding of the subject.
Community-based health programs and seminars focusing on psychosocial support and motivational strategies should be organized to increase the participation of individuals with psoriasis in exercise programs and ensure sustainability.
Researchers and clinicians should be encouraged to adopt a multidisciplinary approach to follow current developments in this field and to better understand the role of exercise in psoriasis management.

Author Contributions

Conceptualization, M.Ö. methodology, İ.G. and M.Ö; formal analysis, İ.G., M.Ö and A.G.; investigation, İ.G., A.G. and M.Ö; data curation, İ.G. and M.Ö; writing-original draft preparation, İ.G. and M.Ö; writing-review and editing, M.Ö.

Informed Consent Statement:

The research was conducted in line with the Declaration of Helsinki.

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Conflicts of Interest:

The authors declare that no conflicts interest.

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