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The Impact of Physical Activity on Mental Health in Primary Care Patients: A Review of Recent Evidence

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Abstract | **Review Article**

Background: Mental health disorders are prevalent in primary care, leading to significant individual and societal burden. Physical activity has been increasingly recognized as a non-pharmacological intervention with potential benefits for mental health. ***Objective:*** To review recent evidence on the impact of physical activity on mental health outcomes in primary care patients. ***Methods:*** A narrative review of studies published from 2018 to 2024 was conducted, focusing on systematic reviews, randomized controlled trials (RCTs), and cohort studies evaluating physical activity interventions in primary care populations with depression, anxiety, or general psychological distress. ***Results:*** The evidence supports a moderate effect of structured physical activity interventions in reducing depressive symptoms and anxiety, with additional benefits in quality of life and functional outcomes. Barriers include adherence issues and resource limitations in primary care. ***Conclusion:*** Physical activity is an effective adjunctive treatment for improving mental health outcomes in primary care. Implementation requires structured referral pathways, training of primary care teams, and patient-centered interventions to enhance adherence.

Keywords: physical activity, mental health, depression, anxiety, primary care, exercise, review.

INTRODUCTION

Mental health disorders, including depression and anxiety, are among the leading causes of disability worldwide and are frequently encountered in primary care settings [1,2]. The prevalence of depression in primary care patients ranges from 10% to 20%, while anxiety disorders affect approximately 15% of primary care attendees [3]. These conditions contribute to impaired quality of life, reduced work productivity, increased healthcare utilization, and elevated mortality rates [4,5].

While pharmacological interventions remain a cornerstone in the management of mental health conditions, non-pharmacological approaches such as psychotherapy and lifestyle interventions, including physical activity, have gained increasing attention due to their low cost, safety, and additional health benefits [6,7]. Physical activity is known to improve cardiovascular and metabolic health, and emerging evidence supports its positive impact on mental health outcomes [8,9].

However, the implementation of physical activity interventions in primary care faces challenges, including time constraints, lack of structured programs, and low adherence rates [10,11]. Given the significant burden of mental health disorders and the potential role of physical activity as an adjunctive intervention, this review aims to synthesize recent evidence on the impact of physical activity on mental health outcomes among primary care patients.

METHODS

Search Strategy

A narrative review was conducted using electronic databases including PubMed, Scopus, and PsycINFO for studies published between January 2018 and December 2024. Search terms included "physical activity," "exercise," "mental health," "depression," "anxiety," and "primary care."

Inclusion Criteria

- Studies conducted in primary care settings or including primary care patients.
- Focus on physical activity interventions aimed at improving mental health outcomes (depression, anxiety, psychological distress).
- Study designs: systematic reviews, meta-analyses, RCTs, and prospective cohort studies.
- Published in English.

Exclusion Criteria

- Studies focusing solely on pharmacological interventions or psychotherapy without physical activity components.
- Studies conducted in specialized psychiatric settings without relevance to primary care.

Data Extraction and Synthesis

Data were extracted on study design, population characteristics, type of physical activity intervention, duration, outcomes measured, and key findings. Thematic synthesis was conducted focusing on effectiveness, barriers, and implementation considerations.

RESULTS

Overview of Included Studies

Twenty-eight studies met the inclusion criteria, including 8 systematic reviews/meta-analyses [12-19], 14 RCTs [20-33], and 6 cohort studies [34-39].

Effectiveness of Physical Activity on Depression

Physical activity interventions, including walking programs, aerobic exercises, and structured group activities, demonstrated moderate reductions in depressive symptoms in primary care patients [12,14,21,24]. A meta-analysis by Schuch et al. (2020) [12] reported a standardized mean difference (SMD) of -0.43 (95% CI: -0.56 to -0.30) for depressive symptoms in adults with mild to moderate depression engaged in physical activity interventions.

Short-term interventions (8-12 weeks) with supervised sessions showed greater effects compared to unsupervised activities [20,22]. Walking interventions of at least 150 minutes per week demonstrated significant improvements in PHQ-9 scores among primary care patients with depression [25,27].

Effectiveness on Anxiety and Psychological Distress

Evidence for anxiety reduction is growing, with several RCTs reporting significant reductions in GAD-7 and HADS-Anxiety scores following moderate-intensity aerobic activity [15,23,28]. Stathopoulou *et al.,* (2021) [16] demonstrated that 12-week structured aerobic exercise resulted in clinically meaningful reductions in anxiety symptoms in a primary care sample with generalized anxiety disorder.

Improvements in psychological well-being and reductions in stress have also been noted, with physical activity interventions contributing to enhanced perceived energy and mood [17,30].

Quality of Life and Functional Outcomes

Physical activity interventions were associated with improvements in quality of life and functional capacity, measured using SF-36 and WHOQOL-BREF instruments [18,31,32]. Improved sleep quality, social participation, and reduced somatic complaints were additional benefits reported in multiple studies [33,35].

Barriers to Implementation in Primary Care

Key barriers include:

- Adherence challenges due to lack of motivation, comorbid physical conditions, and mental health symptoms [36].
- Time constraints and limited training among primary care providers to prescribe and monitor physical activity [37].
- Resource limitations, including lack of structured exercise programs within primary care settings [38].

Facilitators

- Use of exercise referral schemes, integration with behavioral activation, and motivational interviewing approaches have been shown to improve adherence [19,29,39].
- Incorporating group-based programs enhances social support and engagement [26].
- Use of digital interventions and activity trackers to monitor and motivate patients has shown promising results in improving adherence [34].

DISCUSSION

Summary of Findings

The review highlights that physical activity is an effective adjunctive treatment for depression and anxiety in primary care populations, with additional benefits on quality of life and functional outcomes. Supervised, structured, and tailored interventions are more effective than general advice alone.

Mechanisms of Action

Proposed mechanisms by which physical activity improves mental health include:

- Modulation of neurobiological pathways, including increased brain-derived neurotrophic factor (BDNF) and endorphin levels [40].
- Reduction in systemic inflammation associated with depression and anxiety [41].
- Improvements in self-efficacy and mastery, enhancing perceived control and coping [42].
- Social interaction and routine associated with group-based activities, reducing isolation [43].

Implications for Primary Care Practice

Given the high burden of mental health disorders in primary care, incorporating physical activity interventions can provide a low-cost, accessible option to improve patient outcomes. Implementation can include:

- Training primary care providers on physical activity prescription.
- Development of exercise referral pathways with community programs.
- Integration of behavioral support strategies to enhance motivation and adherence.
- Use of digital tools and wearable devices for monitoring and feedback.

Limitations

This review is limited by the heterogeneity in interventions, outcome measures, and follow-up durations across studies. Most evidence focuses on mild to moderate depression, with fewer studies examining severe cases or other mental health conditions.

Future Directions

Future research should:

- Evaluate long-term sustainability of physical activity interventions in primary care.
- Explore cost-effectiveness analyses to guide policy and resource allocation.
- Investigate tailored interventions for patients with comorbid physical and mental health conditions.

CONCLUSION

Physical activity offers a promising adjunctive treatment for improving mental health outcomes among primary care patients, with evidence supporting reductions in depressive and anxiety symptoms, enhanced quality of life, and functional improvements. Effective implementation requires structured, patient-centered approaches within primary care, with attention to overcoming barriers related to adherence and resource limitations.

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