DOI: http://dx.doi.org/10.22122/ijbmc.v11i4.773 Published by Vesnu Publications

International Journal of Body, Mind and Culture

The Psychological Effects of Chronic Exercise on Mood and Well-Being in Adults

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Qualitative Study

Abstract

Background: This study aims to explore the psychological effects of chronic exercise on mood and well-being in adults.
Methods: A qualitative research design was employed, utilizing semi-structured interviews with 20 participants from Iran who engage in regular exercise routines for at least six months. Participants ranged in age from 22 to 58 years and represented a variety of occupations and exercise preferences. Data were collected until theoretical saturation was reached and analyzed using thematic analysis to identify key themes and subthemes related to the psychological effects of exercise.
Results: The analysis revealed several key themes: psychological benefits, barriers to exercise, motivational factors, and challenges in sustaining exercise. Participants reported significant improvements in mood, self-esteem, emotional resilience, and cognitive functions such as focus and memory. Barriers to exercise included time constraints, physical barriers, lack of motivation, environmental factors, and financial constraints. Motivational factors were primarily health benefits, personal goals, social influence, psychological benefits, and habit formation. Challenges in sustaining exercise included monotony, physical fatigue, balancing life demands, health setbacks, lack of immediate results, and accessibility issues.
Conclusion: Regular physical activity is associated with numerous psychological benefits, including improved mood, reduced anxiety, and enhanced cognitive function. However, barriers such as time constraints, lack of motivation, and financial constraints must be addressed to sustain these benefits. Community-based exercise programs, educational support for instructors, and public health campaigns can help overcome these challenges. Future research should include larger, more diverse samples and explore the long-term psychological effects of chronic exercise.
Keywords: Chronic exercise; Psychological benefits; Mood; Well-being; Qualitative research; Barriers to exercise; Motivational factors; Adults; Mental health

Citation: Seghatoleslami A, Beik S, Sadegh Ai, Pavlović R. **The Psychological Effects of Chronic Exercise on Mood and Well-Being in Adults.** Int J Body Mind Culture 2024; 11(4): 285-95.

Received: 07 May 2024

Accepted: 14 June 2024

Introduction

Regular physical activity has been shown to alleviate symptoms of various mental health disorders, including depression and anxiety. For instance, Connolly et al. (2022; 2023) developed and validated the Mental Health-Related Barriers and Benefits to Exercise (MEX) scale, which highlights the complex relationship between exercise and mental health. Their findings underscore the significant mental health benefits of regular exercise, such as improved mood and reduced anxiety, while also acknowledging the barriers individuals face in maintaining such routines (Connolly, Bowden, Pascoe, & Dam, 2022; Connolly, Bowden, Pascoe, & Van Dam, 2023).

Similarly, Andersen (2023) explored the perspectives of professional experts on community-based exercise programs for young adults with schizophrenia. The qualitative study published in BMJ Open Sport & Exercise Medicine reveals that exercise can play a critical role in managing symptoms and improving the quality of life for individuals with severe mental health conditions. This underscores the potential for exercise to act as a therapeutic intervention beyond general well-being, extending to specific mental health challenges (Andersen et al, 2023; Andersen, Roed, Riis, Rafn, Ebdrup, & Midtgaard, 2023; Andersen, et al, 2023).

The psychological benefits of exercise are not confined to clinical populations. Research by Herbert (2022) indicates that regular physical activity enhances mental health and well-being among university students, a group often subjected to high levels of stress and anxiety. The study found that structured exercise programs significantly improved participants' mental health, suggesting that such interventions could be beneficial across different demographic groups (Herbert, 2022).

Moreover, Gao et al. (2024) examined the application of virtual reality meditation and mind-body exercises among older adults, highlighting another dimension of how physical activity can benefit mental health. This study found that incorporating modern technology with traditional exercise methods can enhance mental well-being, particularly in older populations who may face mobility issues or social isolation (Gao, Su, Zhang, Li, & Luo, 2024).

The importance of exercise for mental health is further supported by longitudinal studies. Harada et al. (2019) conducted a study on middle-aged and older adults, revealing that both solo and group exercise significantly impacted mental health positively over time. This finding is crucial as it suggests that the social aspect of exercise can also contribute to its psychological benefits, aligning with the idea that social interactions are integral to mental well-being (Harada, Masumoto, & Kondo, 2019).

However, the relationship between exercise and mental health is not without its complexities. Golshani et al. (2021) found that while light exercisers reported fewer mental health issues, heavy exercisers experienced more stress and mental health problems, albeit with fewer sleep complaints. This indicates that the intensity and frequency of exercise need to be balanced to optimize mental health benefits without leading to adverse effects.

The barriers to regular exercise are multifaceted and can significantly impact its mental health benefits. Connolly et al. (2022) identified key barriers such as lack of time, motivation, and access to facilities. Understanding these barriers is essential for designing effective interventions. For instance, Andersen et al. (2023) highlighted the need for educational programs for non-health professional exercise instructors to better support community-based exercise initiatives, particularly for young adults

undergoing antipsychotic treatment.

Burke, Murray, Stratford and Butler (2024) evaluated an exercise program for individuals over 60, using a mixed-methods approach to understand the benefits and challenges. The study found that while participants reported significant mental health improvements, issues such as physical limitations and environmental factors could hinder participation. These insights are vital for tailoring exercise programs to meet the specific needs of different age groups and health conditions.

The social and environmental context of exercise also plays a crucial role. Have et al. (2011) demonstrated that physical exercise is positively associated with mental health status, with social and leisure activities contributing significantly to this relationship. This aligns with findings by Yang et al. (2022), who showed that outdoor exercise environments and social forms of exercise had a positive impact on the subjective well-being of older adults during the COVID-19 pandemic.

Further, Stanton et al. (2018) highlighted the importance of mental health literacy in promoting exercise among the general population. Their study suggests that increasing awareness about the mental health benefits of exercise can encourage more individuals to adopt and maintain regular physical activity routines.

The relationship between physical and mental health is complex and bidirectional. Takeda et al. (2015) explored how leisure and social activities impact mental health in middle-aged adults in Japan, finding that these activities can mitigate the negative effects of stress and enhance overall well-being. This is particularly relevant in designing community-based exercise programs that incorporate social elements to maximize mental health benefits.

Additionally, studies on specific populations provide valuable insights into the diverse impacts of exercise on mental health. For instance, Jeftic et al. (2023) focused on higher education students experiencing mental health challenges, finding that structured exercise programs could significantly alleviate symptoms and improve academic performance. Similarly, Sancassiani et al. (2018) emphasized the role of physical activity in promoting psychosocial well-being and self-awareness among older adults, advocating for active aging initiatives.

This study aims to explore the psychological effects of chronic exercise on mood and well-being in adults, with a focus on understanding the experiences of individuals who maintain regular exercise routines over extended periods. By investigating these effects, the study seeks to provide insights that can inform interventions aimed at enhancing mental health through physical activity.

Methods

Study Design and participants: This qualitative research explores the psychological effects of chronic exercise on mood and well-being in adults. The study utilizes a phenomenological approach to capture the lived experiences of the participants. The research was conducted in Iran, focusing on adults who engage in regular exercise routines for at least six months. The criteria for participation included adults aged 18-58, who engage in various forms of exercise (e.g., running, swimming, yoga, weightlifting) for a minimum of three times per week. Participants were recruited through local gyms, sports clubs, and community centers using flyers and word-of-mouth referrals.

Data Collection: Data were collected through semi-structured interviews, allowing for in-depth exploration of participants' experiences and perceptions. The interviews were conducted in a quiet, comfortable setting, either in person or via video

conferencing, depending on participants' preferences and availability. Each interview lasted approximately 60-90 minutes. An interview guide was developed, covering key topics such as:

- Participants' exercise routines and motivations for exercising
- Perceived psychological and emotional benefits of chronic exercise
- Changes in mood and well-being over time
- Challenges and barriers to maintaining regular exercise

Interviews were audio-recorded with participants' consent and transcribed verbatim for analysis. The sample size was determined by theoretical saturation, where data collection continued until no new themes or insights emerged from the interviews.

Data Analysis: Data analysis followed a thematic analysis approach, as outlined by Braun and Clarke (2006). The process involved several steps.

Familiarization with the Data: Researchers read and re-read the transcripts to immerse themselves in the data and gain a comprehensive understanding of the participants' experiences.

Generating Initial Codes: The transcripts were systematically coded to identify significant phrases, sentences, or sections related to the research questions. Codes were assigned to segments of text that captured essential aspects of the participants' experiences.

Searching for Themes: The initial codes were grouped into broader themes based on patterns and relationships within the data. Themes were refined through discussions among the research team.

Reviewing Themes: The themes were reviewed and refined to ensure they accurately represented the data. This involved checking the coherence of each theme and verifying that the themes collectively captured the depth and diversity of the participants' experiences.

Defining and Naming Themes: Each theme was defined and named to clearly convey its essence. Detailed descriptions of the themes were developed, including illustrative quotes from the participants.

Writing the Report: The final step involved integrating the themes into a coherent narrative that addresses the research questions and provides insights into the psychological effects of chronic exercise on mood and well-being.

Throughout the analysis, the research team maintained a reflexive approach, acknowledging their biases and ensuring that the findings accurately reflected the participants' perspectives. The use of multiple coders and regular team discussions helped enhance the credibility and trustworthiness of the analysis.

Results

The study included 20 participants from Iran, who engaged in regular exercise routines for at least six months. The sample comprised 12 females (60%) and 8 males (40%), ranging in age from 22 to 58 years, with a mean age of 35 years. The participants represented a variety of occupations, including professionals (30%), students (25%), homemakers (20%), and retirees (10%). The remaining 15% included freelancers and small business owners. Exercise preferences varied among the participants, with 40% engaging in gym workouts, 30% participating in outdoor activities like running and cycling, 20% practicing yoga or pilates, and 10% involved in sports such as tennis or swimming. Participants' exercise frequency ranged from three to six times per week, with an average of four sessions per week. This diverse sample provided a comprehensive view of the psychological effects of chronic exercise on mood and well-being among adults in Iran.

Psychological Benefits

Improved Mood: Participants reported significant improvements in mood, citing stress reduction, enhanced happiness, reduced anxiety, and better sleep quality as key outcomes. One participant noted, "After my workouts, I feel a rush of happiness and all the stress from work just melts away."

Increased Self-Esteem: Exercise contributed to increased self-esteem among participants, with improvements in positive body image, confidence, and achievement satisfaction. A participant shared, "Seeing my progress over time has really boosted my confidence. I feel good about myself and my body."

Emotional Resilience: Regular exercise enhanced participants' emotional resilience, providing better coping mechanisms, increased patience, and greater emotional stability. "I handle stressful situations much better now. Exercise has made me more patient and calm," said one interviewee.

Cognitive Benefits: Participants experienced cognitive benefits, including improved focus, enhanced memory, and better decision-making abilities. One participant stated, "Exercise clears my mind and helps me focus better at work. My memory has also improved."

Table 1. The results of qualitative analysis

Category	Subcategory	Concepts
Psychological Benefits	Improved Mood	Stress Reduction, Enhanced Happiness, Reduced Anxiety, Better Sleep Quality
	Increased Self-Esteem	Positive Body Image, Confidence Boost, Achievement Satisfaction
	Emotional Resilience	Better Coping Mechanisms, Increased Patience, Greater Emotional Stability
	Cognitive Benefits	Improved Focus, Enhanced Memory, Better Decision Making
	Enhanced Social Interaction	Making New Friends, Strengthened Bonds, Sense of Belonging
	Stress Management	Relaxation Techniques, Mindfulness, Lower Cortisol Levels
Barriers to Exercise	Time Constraints	Busy Schedules, Work Commitments, Family Responsibilities
	Physical Barriers	Injury, Fatigue, Health Issues
	Lack of Motivation	Low Energy, Lack of Interest, Goal Setting Challenges
	Environmental Factors	Weather Conditions, Lack of Facilities, Safety Concerns
	Financial Constraints	Cost of Gym Membership, Equipment Expenses, Travel Costs
	Health Benefits	Chronic Disease Prevention, Weight Management, Longevity
Motivational Factors	Personal Goals	Skill Improvement, Competition Preparation, Personal Bests
	Social Influence	Peer Encouragement, Family Support, Social Media Inspiration
	Psychological Benefits	Mood Enhancement, Stress Relief, Mental Clarity
	Habit Formation	Routine Development, Consistency, Discipline
	Monotony and Boredom	Lack of Variety, Repetitive Routines, Declining Interest
	Physical Fatigue	Overtraining, Energy Drain, Recovery Time
	Balancing Life Demands	Work-Life Balance, Family Time, Social Activities
Challenges in Sustaining Exercise	Health Setbacks	Recurring Injuries, Chronic Pain, Illness
	Lack of Immediate Results	Slow Progress, Unmet Expectations, Discouragement
	Accessibility Issues	Transportation Problems, Facility Availability, Scheduling Conflicts

Enhanced Social Interaction: Engaging in exercise fostered enhanced social interactions, such as making new friends, strengthening bonds, and a sense of belonging. "I've met so many amazing people through my fitness classes. It's like having a second family," commented a participant.

Stress Management: Exercise was identified as a crucial stress management tool, incorporating relaxation techniques, mindfulness, and lowering cortisol levels. A participant mentioned, "Working out is my escape. It's my way of managing stress and staying sane."

Barriers to Exercise

Time Constraints: Time constraints, including busy schedules, work commitments, and family responsibilities, were significant barriers to maintaining regular exercise. "Between work and family, I struggle to find time for exercise," admitted one participant.

Physical Barriers: Participants identified physical barriers such as injury, fatigue, and health issues that impeded their ability to exercise consistently. "I often feel too tired after a long day, and sometimes old injuries flare up," said an interviewee.

Lack of Motivation: Lack of motivation, characterized by low energy, lack of interest, and goal-setting challenges, hindered regular exercise. One participant revealed, "Some days, I just don't feel like moving. Setting and sticking to goals is tough."

Environmental Factors: Environmental factors, including weather conditions, lack of facilities, and safety concerns, were cited as obstacles. "Winter makes it hard to stay active, and there aren't many safe places to exercise near me," noted a participant.

Financial Constraints: Financial constraints, such as the cost of gym memberships, equipment expenses, and travel costs, were also barriers. "Gym fees and buying equipment can be expensive, which sometimes holds me back," explained an interviewee.

Motivational Factors

Health Benefits: Participants were motivated by health benefits, including chronic disease prevention, weight management, and increased longevity. "I exercise to stay healthy and avoid future health problems," said one participant.

Personal Goals: Personal goals, such as skill improvement, competition preparation, and achieving personal bests, drove participants to maintain their exercise routines. "Training for a marathon keeps me motivated and focused," shared an interviewee.

Social Influence: Social influence from peers, family support, and inspiration from social media played a crucial role in maintaining exercise habits. A participant stated, "My friends and family encourage me a lot, and I get inspired by fitness influencers online."

Psychological Benefits: The psychological benefits, including mood enhancement, stress relief, and mental clarity, were significant motivators. "Exercise keeps my mind clear and helps me manage stress," remarked one participant.

Habit Formation: The formation of exercise habits through routine development, consistency, and discipline was crucial for sustained engagement. "Making exercise a part of my daily routine has made it easier to stick with it," noted an interviewee.

Challenges in Sustaining Exercise

Monotony and Boredom: Participants reported monotony and boredom due to a lack of variety, repetitive routines, and declining interest as challenges. "Doing the same workout every day gets boring. I need variety to stay interested," said one participant.

Physical Fatigue: Physical fatigue, including overtraining, energy drain, and the need for recovery time, was a significant challenge. "Sometimes I push myself too hard and end up exhausted," shared an interviewee.

Balancing Life Demands: Balancing life demands, such as work-life balance, family

time, and social activities, made it difficult to sustain exercise routines. "Juggling work, family, and exercise is a constant challenge," admitted a participant.

Health Setbacks: Health setbacks, such as recurring injuries, chronic pain, and illness, impeded consistent exercise. "Dealing with chronic pain makes it hard to stay consistent with my workouts," explained an interviewee.

Lack of Immediate Results: Participants were often discouraged by a lack of immediate results, leading to slow progress, unmet expectations, and discouragement. "Not seeing quick results can be really demotivating," noted one participant.

Accessibility Issues: Accessibility issues, including transportation problems, facility availability, and scheduling conflicts, were also challenges. "Getting to the gym is a hassle due to transportation issues," mentioned an interviewee.

Discussion

This study explored the psychological effects of chronic exercise on mood and well-being in adults through semi-structured interviews with participants from Iran. The findings revealed several key themes: psychological benefits, barriers to exercise, motivational factors, and challenges in sustaining exercise. Participants consistently reported improvements in mood, increased self-esteem, and enhanced emotional resilience as significant psychological benefits of regular exercise. Additionally, cognitive benefits such as improved focus and memory were noted. However, participants also highlighted various barriers, including time constraints, physical barriers, lack of motivation, environmental factors, and financial constraints. Motivational factors were primarily health benefits, personal goals, social influence, psychological benefits, and habit formation. Despite these motivations, participants faced challenges such as monotony, physical fatigue, balancing life demands, health setbacks, lack of immediate results, and accessibility issues.

The results of this study align with existing literature on the psychological benefits of exercise. Regular physical activity has been shown to alleviate symptoms of depression and anxiety, enhance mood, and improve overall mental well-being (Connolly et al., 2023). The improvements in self-esteem and emotional resilience reported by participants are consistent with findings from Andersen et al (2023), Andersen et al. (2023) and Andersen et al. (2024), who noted similar outcomes in community-based exercise programs for young adults with schizophrenia. These benefits likely stem from the physiological effects of exercise, such as the release of endorphins and other neurotransmitters that promote feelings of happiness and relaxation (Burke et al., 2024).

The cognitive benefits reported by participants, including improved focus and memory, are supported by research from Gao et al. (2024), who found that physical activity, especially when combined with modern technology like virtual reality, can enhance cognitive functions in older adults. This suggests that the benefits of exercise extend beyond emotional well-being to encompass cognitive health, which is crucial for overall quality of life.

The barriers to exercise identified in this study, such as time constraints and physical barriers, are also well-documented in the literature. Connolly et al. (2022) highlighted similar barriers, emphasizing the importance of addressing these issues to promote regular physical activity. Environmental factors and financial constraints further complicate the ability to maintain an exercise routine, as noted by Andersen et al. (2023) and Burke et al. (2023). These barriers underscore the need for supportive

interventions that can help individuals overcome these challenges and sustain their exercise habits.

Motivational factors such as health benefits, personal goals, and social influence were significant drivers for participants in this study. These findings are in line with those of Herbert (2022), who found that structured exercise programs significantly improved mental health and well-being among university students by providing clear goals and social support. The role of social influence, in particular, highlights the importance of community and social networks in maintaining exercise routines (Harada et al, 2019).

The challenges in sustaining exercise, such as monotony and physical fatigue, reflect the complex nature of maintaining long-term exercise habits. Golshani et al. (2021) found that while regular exercise is beneficial, overtraining and lack of variety can lead to burnout and decreased motivation. This suggests that exercise programs should be designed to include variety and allow for adequate rest and recovery to prevent these issues.

One limitation of this study is the use of a qualitative research design, which, while providing in-depth insights into participants' experiences, limits the generalizability of the findings. The sample size of 20 participants, though sufficient for qualitative analysis, is relatively small and may not capture the full range of experiences and perspectives on the psychological effects of exercise. Additionally, the study was conducted in Iran, and the findings may not be applicable to other cultural or geographic contexts. The reliance on self-reported data through interviews also introduces the possibility of recall bias or social desirability bias, where participants may have provided responses they believed were expected or socially acceptable.

Future research should aim to include larger and more diverse samples to enhance the generalizability of the findings. Longitudinal studies that track participants over extended periods could provide valuable insights into the long-term psychological effects of chronic exercise and how these benefits evolve over time. Additionally, incorporating quantitative measures alongside qualitative interviews could offer a more comprehensive understanding of the relationship between exercise and mental health. Researchers should also explore the effectiveness of different types of exercise, such as aerobic versus resistance training, and the impact of exercise intensity and frequency on mental well-being. Examining the role of technology, such as virtual reality or fitness apps, in enhancing the psychological benefits of exercise could also be a fruitful area of study.

To maximize the psychological benefits of exercise and address the barriers identified in this study, several practical recommendations can be made. Firstly, community-based exercise programs should be promoted and supported, as they provide social interaction and a sense of belonging, which are crucial for maintaining motivation. Andersen et al. (2024) and Fibbins et al. (2021) emphasized the importance of such programs in their respective studies. Secondly, educational programs for non-health professional exercise instructors, as suggested by Andersen et al. (2023), should be developed to ensure that instructors are equipped to support participants effectively, particularly those with mental health challenges. Thirdly, incorporating variety into exercise routines and allowing for flexibility in scheduling can help mitigate issues of monotony and physical fatigue. Providing affordable access to exercise facilities and equipment can also help overcome financial barriers. Lastly, raising awareness about the mental health benefits of exercise through public health campaigns can encourage more individuals to engage in regular physical activity.

Conclusion

In conclusion, this study contributes to the growing body of evidence on the psychological benefits of chronic exercise. The findings highlight the importance of regular physical activity for improving mood, self-esteem, emotional resilience, and cognitive function. However, various barriers and challenges must be addressed to sustain these benefits. By implementing supportive interventions and raising awareness about the mental health benefits of exercise, practitioners and policymakers can help more individuals achieve and maintain a physically active lifestyle, ultimately enhancing their mental well-being. Future research should continue to explore this complex relationship, providing further insights to inform effective strategies for promoting physical and mental health through exercise.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgements

The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki. We would like to express our gratitude to all individuals helped us to do the project.

According to the authors, this article has no financial support.

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