International Journal of Intellectual Disability

E-ISSN: 2710-3897
P-ISSN: 2710-3889
IJID 2024; 5(1): 46-51
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www.rehabilitationjournals.com/intellectual-disability-Journal
Received: 21-02-2024
Accepted: 30-03-2024

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Impact of exercise on health behaviour

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Abstract
The paper explores the intricate relationship between exercise and health behaviors, emphasizing how regular physical activity acts as a fundamental health behavior linked to overall well-being. Through a comprehensive review of literature and primary data collected via interviews from 16 participants aged 18 to 35, the study delves into the positive correlations and barriers associated with exercise. It discusses the enhancement of both mental and physical health through exercise, the promotion of positive health behaviors, and the challenges that impede regular engagement in physical activities. The research highlights strategies to overcome these barriers, thereby advocating for integrated approaches to promote consistent and beneficial exercise habits as a cornerstone of health behavior.

Keywords: Health behavior, exercise, physical activity, mental health

Introduction
Exercise is a subset of physical activity that is planned, structured, and repetitive. It enhances or maintains physical fitness and overall health and wellness. It generally involves the movement of the body's muscles, requiring energy expenditure above resting levels. It can take many forms, such as running, cycling, swimming, weightlifting, yoga, dancing, and team sports, among others. The World Health Organization recommends that adults engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity aerobic exercise per week, in addition to muscle-strengthening activities at least two days per week. It is also essential to choose activities that you enjoy and that fit your lifestyle to increase the likelihood of maintaining a consistent exercise routine.

Types of Exercise
Exercise is a key for good health and well-being. There are various types of exercises which an individual can include in their life. Some of the exercises are following:

1. **Strength training exercises:** This is also called resistance training exercises. These help in strengthening the muscles. It is based on the principle that muscles of the body will work to overcome a resistance force when they are required to do so. Squats, push-ups, deadlift, lunges are examples of resistance training exercises.
2. **Balance exercises:** It aims to Strengthen balance control in everyday activities leading to improved fall-related self-efficacy, reduced fear of falling and increased walking speed. It improves physical function and quality of life. Some of the examples are tightrope walk, flamingo stand and Rock the boat.
3. **Aerobic exercise:** It is a structured and repetitive physical activity that uses large muscle groups. The term aerobic means "with oxygen," which summarises how the exercise works. During aerobic exercise, the heart pumps out oxygenated blood to all the working muscles, burning fat and carbohydrates. Walking, cycling, and Zumba are examples of aerobics exercises.
4. **Flexibility exercises:** Flexibility exercises are the ones that involve stretching the muscles. These exercises make it easier for your joints to move in all possible directions (Improved range of motion). Yoga, tai-chi are a few examples of flexibility exercises.

Benefits of regular exercise
Regular Body activity is one of the most important things one can do for their health. Exercise has a multitude of benefits for both physical and mental health. Some of the key benefits of exercise include.

1. **Improved cardiovascular health:** Regular exercise helps to improve the health of heart and blood vessels, reducing the risk of heart disease, stroke, and high blood pressure.

2. **Improved bone density:** Weight-bearing exercise, such as running or weightlifting, can help to improve bone density and reduce the risk of osteoporosis.
3. **Reduced risk of chronic diseases:** Regular exercise can help to reduce your risk of chronic diseases such as diabetes, certain types of cancer, and depression.
4. **Increased energy levels:** Exercise can help to increase energy levels, makes the individual more alert and productive throughout the day.
5. **Better mental health:** Exercise has been shown to improve mood, reduce stress and anxiety, and improve overall mental well-being.

Health Behavior

Health behaviour refers to the actions, habits, and choices that individuals make, either consciously or unconsciously, that affect their health status. It encompasses a wide range of behaviours and lifestyle choices that can either promote or hinder an individual's physical, mental, and social well-being. Health behaviour can include both positive and negative actions.

Positive health behaviours are actions and habits that contribute to improving or maintaining an individual's health and well-being. Here are some examples of positive health behaviours.

1. **Regular Physical Activity:** Engaging in moderate-intensity aerobic activities, such as brisk walking, jogging, swimming, or cycling, for at least 150 minutes per week. Regular exercise helps strengthen muscles, improve cardiovascular health, maintain a healthy weight, and enhance overall fitness.
2. **Balanced and Nutritious Diet:** Consuming a variety of fruits, vegetables, whole grains, lean proteins, and healthy fats. A balanced diet provides essential nutrients, supports optimal body function, and helps prevent chronic diseases such as heart disease, diabetes, and certain cancers.
3. **Adequate Sleep:** Establishing consistent sleep patterns and aiming for 7-9 hours of quality sleep each night. Sufficient sleep promotes physical and mental well-being, improves cognitive function, boosts immune function, and enhances overall energy levels.
4. **Stress Management:** Adopting effective stress management techniques such as meditation, deep breathing exercises, yoga, or engaging in hobbies and activities that promote relaxation. These practices can help reduce stress levels, improve mental health, and enhance resilience.
5. **Personal Hygiene:** Maintaining good personal hygiene practices, including regular hand washing, oral hygiene, and proper sanitation. These habits help prevent the spread of infectious diseases and promote overall well-being.

Negative health behaviours refer to actions and habits that have a detrimental effect on an individual's health and well-being. Here are some examples of negative health behaviours.

1. **Sedentary Lifestyle:** Engaging in minimal physical activity and spending long periods sitting or being inactive. Lack of physical activity increases the risk of obesity, cardiovascular diseases, diabetes, and other chronic conditions.
2. **Unhealthy Diet:** Consuming a diet high in processed and sugary foods, saturated and trans fats, and low in fruits, vegetables, and whole grains. This type of diet can lead to weight gain, nutrient deficiencies, and an increased risk of chronic diseases like heart disease and type 2 diabetes.
3. **Excessive Alcohol Consumption:** Regularly consuming alcohol in large quantities or binge drinking. Excessive alcohol consumption can lead to liver damage, addiction, increased risk of accidents, and various health issues, including cardiovascular problems and mental health disorders.
4. **Substance Abuse:** Engaging in the non-medical or recreational use of illicit drugs or misusing prescription medications. Substance abuse can lead to addiction, physical and mental health problems, and negatively impact relationships and overall well-being.
5. **Lack of Health Literacy:** Not seeking or utilizing accurate health information, and not taking an active role in making informed decisions about personal health and healthcare. Limited health literacy can result in misunderstanding health risks, ineffective self-care practices, and inadequate utilization of healthcare resources.

Association between exercise and health behaviour

Exercise is considered as fundamental health behaviour and is closely linked to overall health and well-being. The correlation between exercise and health behaviour is generally positive, meaning that individuals who engage in regular exercise are more likely to exhibit other positive health behaviours. Some key points that shows associations between exercise and other health behaviours.

1. **Lifestyle Factors:** Exercise is commonly associated with an overall healthy lifestyle. People who prioritize exercise tend to have a greater awareness of their health and are more likely to engage in behaviors that support well-being. They may also have higher levels of health literacy and seek out information and resources related to various health behaviors.
2. **Improved Body Awareness:** Regular exercise often leads to a heightened sense of body awareness. Through exercise, individuals may become more attuned to their physical sensations, energy levels, and overall well-being. This increased awareness can motivate individuals to take better care of their bodies through other health behaviors, such as eating nutritious foods and seeking preventive care.
3. **Exercise and Cognitive Function:** Regular exercise has been shown to have positive effects on cognitive function and brain health. It enhances memory, attention, and executive function. Physical activity promotes blood flow to the brain, stimulates the release of growth factors that support brain health, and reduces the risk of cognitive decline and neurodegenerative diseases, such as Alzheimer's disease.
4. **Exercise and Chronic Disease Prevention:** Engaging in regular exercise is associated with a lower risk of developing chronic diseases such as heart disease, stroke, type 2 diabetes, and certain types of cancer. Physical activity helps maintain healthy blood pressure, cholesterol levels, and blood sugar regulation. It also supports cardiovascular health, improves insulin sensitivity, and reduces inflammation in the body.

Factors that act as barriers in engaging exercise and adopting other positive health behaviors

The barriers can vary among individuals and can influence their ability or willingness to participate in regular physical activity and maintain healthy behaviors. Some of the common barriers are.

1. **Lack of Time:** Time constraints, such as busy work schedules, family responsibilities, or other commitments, can make it challenging to find time for exercise and prioritize other health behaviors. Limited time availability can lead to a sedentary lifestyle and difficulty in implementing healthy habits.
2. **Lack of Motivation or Willpower:** Some individuals may struggle with a lack of motivation or willpower to initiate and sustain exercise and other health behaviours. Lack of intrinsic motivation, low self-efficacy, or feeling overwhelmed by the effort required can hinder adherence to healthy behaviours.
3. **Lack of Social Support:** Having a lack of support from family, friends, or community can be a significant barrier to maintaining exercise and health behaviors. Supportive social networks and encouragement from others play a crucial role in sustaining motivation, accountability, and adherence to healthy habits.
4. **Limited Access to Resources:** Limited access to resources, such as fitness facilities, safe outdoor spaces, healthcare services, or healthy food options, can hinder the adoption of exercise and health behaviors. Socioeconomic factors, geographic location, and availability of affordable options can impact individuals' ability to engage in and maintain healthy habits.
5. **Cultural and Social Norms:** Cultural beliefs, societal norms, and personal values can influence attitudes toward exercise and health behaviours. Certain cultural or social norms may prioritize other aspects of life over health or view exercise as unnecessary or incompatible with traditional values.

Several strategies can be employed to eliminate these barriers or obstacles

1. **Time Management:** Prioritize exercise and health behaviors by scheduling them into daily or weekly routines. Identify time slots that work best for you and treat them as non-negotiable appointments with yourself. Break down exercise sessions into shorter bouts if time is limited.
2. **Goal Setting and Motivation:** Set specific, realistic, and achievable goals that align with your interests and values. Break down large goals into smaller milestones to track progress and maintain motivation. Find personal reasons for wanting to engage in exercise and focus on the benefits it brings to your overall well-being.
3. **Access Resources:** Explore resources that facilitate exercise and health behaviors. This can include fitness facilities, community centers, online workout programs, apps, or home exercise equipment. If access to resources is limited, explore low-cost or free alternatives, such as walking, bodyweight exercises, or utilizing public parks and trails.
4. **Seek Social Support:** Surround yourself with supportive individuals who encourage and motivate you to engage in exercise and adopt positive health behaviors. Find workout buddies, join exercise groups or classes, or involve friends and family members in activities. Sharing experiences and progress can enhance accountability and enjoyment.

Review of literature

The present research work entitled as impact of exercise on health behaviour, for this the following review of literature were researched;

First study was conducted by Gabrielle F Miller, Kelly Sarmiento and Sherry Everett Jonesin 2023 which aimed to examine the association between sports- or physical activity-related concussion and health risk behaviours among middle and high school students in 9 states. It is a Cross-sectional study. The study found that 18.2% of middle school students and 14.3% of high school students self-reported having experienced at least one sports- or physical activity-related concussion. The prevalence of concussions was higher among students who played on a sports team, were physically active 5 or more days per week, had engaged in risky behaviours like cigarette smoking and using electronic vapor products, and had experienced suicidal ideation, planning, or attempts. The study's findings suggest that sports- and physical activity-related concussions are a significant public health concern among middle and high school students, particularly those who engage in physical activity and risky behaviours. Additionally, the study highlights the need for prevention efforts targeted at these populations, such as improving concussion education and awareness, promoting safe sports and physical activity practices, and addressing risk factors for concussions like mental health issues.

In the second study, Emily Buteau, Rachel A Smith and Xun Zhu analyzed the relationship between weight stigma and health behaviours in 2022. The study conducted a meta-analysis of 54 studies comprising over 40,000 participants from 11 countries to estimate the relationship between weight stigma and health behaviours and to test potential moderators of this relationship. The results showed that weight stigma was positively related to unhealthy behaviours and negatively related to healthy behaviours, regardless of the type of stigma (Self-stigma vs. stigmatization) or the focus of health behaviours (dietary behaviours vs. physical activities). The findings of this study have important implications for public health campaigns and interventions that aim to promote healthy behaviours. The study suggests that stigmatising individuals with higher weights is counterproductive and may even be harmful, as it can lead to the adoption of unhealthy behaviours. Instead, interventions should focus on reducing weight stigma and promoting positive health behaviours in a supportive and non-judgmental environment.

The third study on Health behaviours of young adults during the outbreak of the Covid-19 pandemic which is a longitudinal study was conducted by Ewelina Czenczek-Lewandowskam and her colleagues in 2021. The aim of the study is to understand the health behaviours of young adults during the outbreak of the Covid-19 pandemic. The study was conducted on 506 people aged 18 to 34 who filled in an online survey and were qualified for the study. Assessment was made of eating habits, physical activity and sedentary behaviours, sleep quality, and generalized anxiety. The results revealed that during the pandemic, young adults changed their dietary preferences toward sweets and cereal

products, increased alcohol and fat intake. Their physical activity were reduced and the quality of sleep was decreased. There was an increase in the sedentary lifestyle. In overall, The Covid-19 pandemic worsened health behaviours and intensified the feelings of generalized anxiety in young adults. During obligatory lockdown, the impact on sedentary behaviours and sleep quality was negative.

The fourth study conducted by Sehrish Naveed, Timo Lakka and Eero A Haapala in 2020 which aims to provide an overview of the associations between health behaviours and cognition and academic achievement in children and adolescents under 18 years of age with a special reference to diet quality. The researchers found that dietary patterns with low consumption of fish, fruits, and vegetables, and high in fast food, sausages, and soft drinks are linked to poor cognition and academic achievement. However, studies on the associations between the high intake of saturated fat and red meat and low intake of fiber and high-fiber grain products with cognition are limited. The review also discusses the potential direct, indirect, and synergistic effects of diet on brain and cognition, in conjunction with physical activity, sedentary behaviours, cardiometabolic health, and sleep. The researchers suggest that integrating a healthy diet, physically active lifestyle, and adequate sleep may provide optimal circumstances for brain development and learning.

The fifth study was conducted by Charrlotte Seib and her colleagues in 2018. The study reviews research on lifestyle interventions aimed at improving health and health behaviours in women with type 2 diabetes mellitus (T2DM). The researchers conducted a systematic review of 18 intervention studies conducted between 2011 and 2017. The interventions included education/counseling, exercise, diet, or combined components of varying duration. The study findings suggest significant heterogeneity in the interventions and the study outcomes.The study highlights that exercise interventions tended to yield the most consistent benefit in relation to glycaemic control, while exercise/dietary interventions generally improved anthropometric indices. However, the findings did not consistently suggest the greater value of any one type of intervention. It recommends that future research should consider interventions that target multiple health behaviours and emphasize health literacy, self-efficacy, and problem-solving skills. In the sixth study conducted by Tom Barth and other colleagues that aims to explain the effective behaviour change techniques for physical activity and healthy eating in overweight and obese adults in 2017. The study consists of 48 studies evaluating the effectiveness of interventions to promote behavior change. The study reports effect sizes (ES) with 95% confidence intervals (CI) for short-term and long-term outcomes, as well as measures of heterogeneity (I2) across studies.The results suggest that the interventions had a small to moderate effect on behavior change, with a larger effect observed in the short-term compared to the long-term. The number and type of behavior change techniques (BCTs) used in the interventions were found to be important predictors of their effectiveness, with certain BCTs (Such as goal setting and self-monitoring) being more effective than others.

The seventh study was conducted by Jorge Gleser and Hava Mendelberg in 2016. It focuses on the psychological effects of exercise on anxiety reduction, mood elation, and self-esteem. The study highlights the research methodology employed and the explanations given for the positive effects observed in the literature. The study concludes that physical activity or associated factors have been found to be effective in the prevention and treatment of state anxiety, moderate depression, and/or low self-esteem. The study suggests that exercise may often be recommended as a practical approach, as it is less costly than other therapeutic methods and may bring additional physical, psychological, and social benefits.

The eighth study was conducted by Amanda L Rebar and her colleagues which aims to effect physical activity on depression and anxiety in non-clinical adult populations in 2015. The study was based on a total of 92 studies with 4,310 participants for the effect of physical activity on depression and 306 study effects with 10,755 participants for the effect of physical activity on anxiety. The study found that physical activity reduced depression by a medium effect and anxiety by a small effect. Neither effect showed significant heterogeneity across meta-analyses. These findings suggest that physical activity is an effective means of reducing depression and anxiety in non-clinical populations. The ninth study was conducted by WanChen Hsu, ChiaHsun Chiang and ShuChing Yang which examines the associations among individual factors, eHealth literacy, and health behaviours using the Integrative Model of eHealth Use (IMeHU) framework in 2014. A nationally representative sample of 525 college students in Taiwan was surveyed, and two instruments were used to measure eHealth literacy and health behaviours. The study found that better health status perceptions and greater concern for health influenced college students' development of eHealth literacy and adoption of healthy eating, exercise, and sleep behaviours. Additionally, eHealth literacy played an intermediary role in the association between individual factors and health behaviours, with higher levels of critical eHealth literacy promoting positive health behaviours.

The last study was conducted by Elias Dayoub and Anupam B Jena which attempts to explain the trends in the prevalence of obesity, diabetes, hypertension, and coronary artery disease, as well as several health behaviours (smoking, alcohol use, and exercise) among health care professionals in comparison to the general US population in 2013. The study used data collected by the National Health Interview Survey between 2002 and 2013 and conducted multivariate logistic regressions of each disease and behavior adjusted for age, race, sex, geographic region, and year.The study found that rates of obesity, diabetes, and hypertension were lower among health care professionals compared to the overall population, but disease was still common among health care professionals and increased over time at a rate similar to that of the overall population. For example, although obesity prevalence was lower among health care professionals, it increased similarly from 2002 to 2013, and the same pattern was observed for diabetes and hypertension prevalence. However, coronary artery disease prevalence declined over time among health care professionals, which is a positive finding.

Research methodology

Aim: To understand the impact of exercise on health behaviour.

Objectives

- Understanding the association between exercise and

health behaviour.
- Ways to adopt exercise and health behaviours successfully and eliminating the barriers.
- Understanding the perspective of people regarding how exercise impacts health behaviour.

Tool Used: Interview Method is used for data collection. An interview is a method of collecting data from participants through a structured or semi-structured conversation. Interviews are commonly used in qualitative research, where the goal is to gather in-depth information about participants' experiences, perspectives, and opinions. In Research Interviews, the interviewer usually has a set of questions or topics to cover, but may also follow up on the participant's responses with additional questions to gather more detailed information. The interviews are conducted in person and it last over a few minutes, depending on the research objectives and the depth of information required.

Questions Asked in the Interview Are

1. From how long you're into fitness?
2. How much exercise are recommended for optimal health And what type of exercise are most effective according to you?
3. How does exercise impact mental health and physical health according to you?
4. Do you think exercise impacts individuals' motivation to engage in other health promoting behaviours?
5. What are some of the barriers that prevent individuals from engaging in regular exercise according to you?
6. Do you think exercise helps in preventing chronic diseases?
7. Do you think an individual's environment impacts their ability to engage in health promoting behaviours?

Type of data collection: The type of data collection used in the research is primary data. Type of research: The research is qualitative in nature.

Total number of participants: 16 participants voluntarily participated in the research of the age group 18 to 35.Out of which 10 were males and 6 were females.

Procedure: The interviews were conducted in Snip Fitness and The bold strength which are fitness centers. It is located in Prashant Vihar, New Delhi. Before conducting the interview, permission was granted from the GYM owner and the participants. The participants were asked to fill out the informed consent. The participants were asked to feel comfortable and relax by a friendly conversation which was held between the interviewer and the participants. Introduction was done and the participants were told about the interview and the assurance of confidentiality was given to the participants.After the interview, all the participants were thanked and were allowed to leave.

Discussion

The aim of this research is to understand the impact of exercise on health behavior. The exercise is a subset of physical activity that is planned, structured and repetitive. It enhances and maintains physical fitness and overall health and wellness. There are various types of exercise such as aerobics, strength training, balance exercise etc. Exercise plays an important role in promoting health behaviour. Health behaviour refers to the action and habits that encourage individuals to promote and maintain their health and well-being. Health behaviour can be positive or negative and can include a wide range of behaviour such as exercising regularly, eating a healthy diet, avoiding tobacco and alcohol etc. Exercise is considered as fundamental health behaviour and is closely linked to overall health and well-being. The correlation between exercise and health behaviour is generally positive, meaning that individuals who engage in regular exercise are more likely to exhibit other positive health behaviours. Some key points that show the associations between exercise and other health behaviours are lifestyle factors, improved body awareness, exercise, cognitive functions and prevention of chronic diseases. Various factors such as lack of motivation, social support and time act as barriers in engaging exercise and adopting other positive health behaviors. Several strategies which can help in eliminating these barriers are time management, access to resources, seeking social support, goal setting and motivation.

The researcher had gone through a few collections of reviews of literature on exercise and health behaviour. The studies shed light on various public health concerns related to different populations like addressing these issues and taking steps to promote the well-being of individuals involved in sports and physical activities, combat weight stigma, and support healthy behaviors during challenging times. Through the studies, It was revealed that the people have started recognizing the importance of exercise and adopting other health behaviors. People acknowledge the need for personalized approaches to improve health behaviors and the importance of promoting nutritious food choices and reducing the intake of fast food, sausages, and soft drinks among young individuals. It is also highlighted that exercise and adopting health behaviours helps in the prevention of chronic diseases and improving the mental and physical state of individuals. During the COVID-19 pandemic, people faced many challenges as the pandemic disrupted routines and led to changes in dietary habits, physical activity levels, and sleep quality. The increase in sedentary lifestyles may be seen as a consequence of limited opportunities for outdoor activities and reduced access to gyms or fitness facilities.

To conduct the present study, the interview method was used for data collection. There were 16 participants who voluntarily participated in the research Out of which 10 were males and 6 were females. The research was conducted on adults whose age ranges from 18 to 35. All the participants have a similar perspective towards exercise and health behaviour. All the participants were into fitness for a long time. According to them, exercise impacts health behaviour in various ways such as preventing chronic diseases, improving mental and physical health. It helps them in managing stress, anxiety and keeps them calm and relaxed. It helps them in keeping their body in shape. It encourages them to follow other health promoting behaviours such as healthy diet, meditation, avoiding tobacco and alcohol etc. Exercise has increased their motivation to adopt other health behaviour. Most of the participants expressed that sometimes, they could not engage in health behaviour due to environmental barriers while others mentioned that they have a very high determination and motivation level that highly impacted their consistency that gave them positive results.

Conclusion

The aim of the study is to understand the impact of exercise on health behaviour. Exercise is a subset of physical activity that is planned, structured, and repetitive. It enhances or maintains physical fitness and overall health and wellness. The exercise plays an important role in promoting health behaviour. Health behavior refers to the actions and habits that individuals engage in to promote and maintain their health and well-being. Health behavior can be both positive and negative, and can include a wide range of behaviours such as exercising regularly, eating a healthy diet, avoiding tobacco and alcohol etc.

Through Interview, it can be easily interpreted that exercise does impact the healthy behavior and encourage the individuals to adopt other positive health behaviors. The participants in the interview have a similar perspective regarding the impact of exercise on health behaviour. The responses of the participants were similar to the information which was carried out of literatures that were reviewd by the researchers. The individuals who have given the interviews told that exercise impacts their health behaviour in various ways. They revealed that their mental and physical health has been improved as compared to earlier. They feel more active, motivated and energetic. Exercise has helped them in managing stress and anxiety. It makes them calm and relaxed. It helps them in keeping their body in shape. It encourages them to follow other health promoting behaviours such as healthy diet, meditation, avoiding tobacco and alcohol etc. According to them, exercise helps in preventing chronic diseases such as heart disease, diabetes and improving their mental state.

Learning outcomes

- Through this research, I have developed a deeper understanding of mental health issues among university students.
- I am able to understand the link between attitudes and mental health in the university context.
- Increased awareness of the experiences and challenges faced by university students concerning mental health.
- Learned about the perspectives of university students regarding the impact of mental illness on their well-being.

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