

## The Relationship Between Physical Activity and the Incidence of Non-Communicable Diseases in Indonesia (Literature Review)

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### ARTICLE INFORMATION

#### Article history

Accepted (29 November 2024)

Revised (25 December 2024)

Accepted (30 December 2024)

#### Keywords

PTM,  
DM,  
Hypertension,  
Literature Review

### ABSTRACT

**Introduction:** Non-communicable diseases (NCDs) such as hypertension, diabetes, and heart disease have become serious global health problems and their prevalence continues to increase especially in developing countries like Indonesia. Non-communicable diseases contribute to the majority of mortality and morbidity, and further research is needed to understand the factors that contribute to the occurrence of these diseases. **Objective:** To analyze the relationship between physical activity and the incidence of non-communicable diseases in Indonesia using a collection of research journals. **Methods:** This study uses a systematic literature review method using the source of this article through Google Scholar searches published in 2019 to 2024, and 13 articles were identified according to the inclusion criteria that I got. **Results:** The study showed that people with low levels of physical activity have a higher risk of developing NCDs, but sufficient physical activity can significantly reduce the risk of NCDs. **Conclusion:** There is a significant relationship between physical activity and the incidence of non-communicable diseases. A more structured intervention program with the provision of advice and supporting facilities is expected to reduce the prevalence of non-communicable diseases and improve the quality of life of the population.

## Introduction

Non-communicable maladies (NCDs) have ended up one of the major wellbeing challenges confronted by numerous nations within the world, counting Indonesia, in later decades. NCDs incorporate different hypertensive maladies such as diabetes, heart illness, and cancer, which are right now the driving causes of passing around the world. Agreeing to the WHO report, around 71% of passings around the world are caused by non-communicable maladies, with more than 15 million individuals matured between 30 and 69 a long time biting the dust from these illnesses each year (WHO, 2020). Agreeing to information from the Indonesian Service of Wellbeing, the prevalence of hypertension within the grown-up populace come to 34.1% and the predominance of diabetes come to 10.9% (Service of Wellbeing of the Republic of Indonesia, 2019). These figures clearly reflect the require for more successful intercessions to address this wellbeing emergency.

One of the most causes of the expanding rate of non-communicable maladies is the expanding predominance of a inactive way of life (need of physical action) in society. This way of life is characterized by diminished physical movement and expanded sitting time both at work and at domestic. Inquire about appears that individuals who are less physically dynamic have a much higher chance of encountering different wellbeing issues, counting corpulence, diabetes, and cardiovascular infection (Prudential, 2024). In today's computerized time, where innovation and electronic gadgets overwhelm daily life, the drift of a stationary way of life is expanding so that endeavors to overcome this issue are progressively pressing.

Satisfactory physical movement is basic for keeping up physical wellbeing and preventing non-communicable illnesses. WHO suggests that grown-ups lock in in at slightest 150 minutes of



moderate-intensity physical movement each week to realize ideal wellbeing benefits (WHO, 2020). Physical movement not as it were contributes to physical wellbeing, but too has positive impacts on mental wellbeing, such as decreasing side effects of discouragement and uneasiness. Inquire about appears that individuals who are physically dynamic tend to have the next quality of life and more noteworthy bliss (Make & Perna, 2004).

Indonesian society faces a few challenges in keeping up an dynamic way of life. One of the greatest challenges is whether there are enough sports offices. Numerous communities, particularly in provincial regions, don't have satisfactory get to to green spaces and foundation for physical action, such as bicycle ways and sports offices. This could diminish a person's inspiration to take part in physical movement (Sallis et al., 2012). In expansion, back from the social environment too plays an vital part, where people are frequently impacted by the standards and traditions of those around them.

Undesirable eating propensities are too a major figure in expanding the hazard of non-communicable maladies. Diets tall in soaked fat, sugar, and salt are broad in society and contribute to corpulence and other wellbeing issues. Inquire about has appeared that dietary changes combined with expanded physical movement can have a critical positive affect on overall wellbeing (Hu, 2013). Hence, it is critical to teach the open approximately the significance of a adjusted and nutritious slim down as portion of a solid way of life (Muhimah & Farapti, 2023).

Wellbeing instruction is an compelling instrument to extend openmindfulness of the significance of physical movement and solid eating propensities. Well-designed instructive programs can encourage people to get it the benefits of physical action and alter their way of life propensities (Glanz, K., Rimer, and Viswanath, 2015). A few thinks about have appeared that wellbeing instruction programs that include coordinate interaction with members are more compelling in changing behavior than conventional approaches.

Community-based intercessions have too been appeared to be compelling in expanding physical movement in communities. Programs such as wellness classes, strolls, and indeed other community occasions empower interest in physical movement. Inquire about appears that community support in these programs is fundamental to making a steady environment (Gonhowiardjo, 2019). By empowering individuals to work out, they not as it were pick up wellbeing benefits but too construct solid social bonds.

Family bolster moreover plays an imperative part in increasing physical action. Inquire about appears that children whose guardians are dynamic tend to be more physically dynamic and keep up a solid way of life (Hanifah, 2021). Families can be sparks and part models for their children to live a solid way of life. Subsequently, it is vital to include families in wellbeing programs that point to extend physical action.

The challenge of changing people's ways of life isn't as it were related to the accessibility of physical facilities, but moreover social, financial, and social variables that impact wellbeing behavior. Thorp et al.'s think about, 2011, found that changing wellbeing behavior requires a social relevant approach. For case, in a few societies, work out may not be considered an critical action that impacts person cooperation.

Proactive wellbeing approaches are moreover important to make an environment that underpins physical movement. The government encompasses a part in giving offices that empower physical activity, such as parks, bicycle ways, and green spaces. Research shows that get to to sports facilities can increment physical movement within the community (Pudyastuti et al., 2024). In addition, measures to increment physical movement within the work environment can too offer assistance diminish stationary behavior among representatives. Innovation is additionally a potential device to extend physical activity. Portable applications and wearable gadgets can offer assistance people reinforce physical action propensities and propel them to accomplish certain objectives (Kurniawan, 2023). Much obliged to innovative progresses,

individuals can effectively get to data approximately wellbeing and physical movement and interface with communities that share comparative interface.

The significance of advance investigate in this region cannot be exaggerated. Longitudinal ponders can give more profound bits of knowledge into the relationship between physical action and NCDs. Understanding the instruments behind this relationship can offer assistance plan more suitable and viable mediations (Indra, 2024). In expansion, inquire about can offer assistance distinguish variables that impact person interest in physical action and plan programs that way better meet community needs.

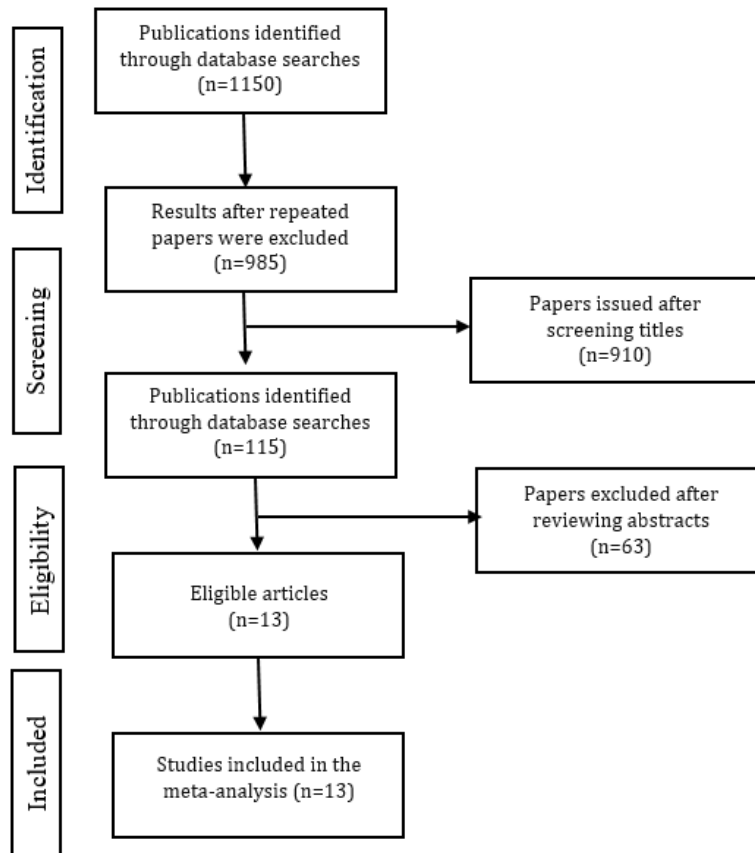
An imperative to begin with step is to raise open mindfulness of the significance of physical action. Wellbeing campaigns can offer assistance alter open recognitions of physical action and make it an indispensably portion of lifestyle (Alfiansyah Putra Karo Karo et al., 2024). In terms of instruction, schools too play an important role in expanding physical action among children. The proper work out program can offer assistance energize dynamic propensities from a youthful age (Sallis et al., 2012). Moreover, in terms of mental wellbeing, physical movement has been appeared to have a positive affect on a person's mental state. Work out can offer assistance decrease indications of sadness and uneasiness and make strides rest quality (Make & Perna, 2004). This appears how vital keeping up physical and mental adjust is for by and large wellbeing.

Diminishing the predominance of NCDs requires a multi-stakeholder collaborative approach. Governments, wellbeing educate, instruction and communities have to be work together to make an environment that bolsters physical action. This inquire about is anticipated to supply an critical contribution to efforts to decrease the predominance of non-communicable illnesses through expanded physical action (Glanz, K., Rimer, & Viswanath, 2015). The relationship between physical movement and the rate of non-communicable illnesses could be a complex but exceedingly significant subject. Given the expanding predominance of NCDs, there's an critical require for encourage inquire about on physical movement that contributes to open wellbeing, particularly NCDs (WHO, 2020).

The reason of this think about was to analyze the relationship between physical movement and the rate of non-communicable infections in Indonesia based on a collection of diaries looked into through a writing survey.

## Method

This study uses a literature review method that aims to identify the relationship between physical activity and non-communicable diseases in Indonesia. Articles were published from 2019 to 2024. The ponder was conducted from September to October 2024, information was collected from diary distributions from different districts in Indonesia, and 1,150 articles were looked in logical databases such as Google Scholar. As it were 13 articles met the consideration criteria. Papers chosen for peer survey met the consideration criteria, to be specific composed in Indonesian or English, distributed between 2019 and 2024, and centered on exercises related to the predominance of hypertension in Indonesia. The title must contain a writing audit direct that appears the substance of the term paper. Creators, inquire about strategies, and inquire about comes about of each paper. Underneath could be a portrayal of the things chosen for survey. Channels for looking articles utilizing the PRISMA strategy:



Picture 1. Prism Year 2020 flow diagram For systematic review Which including look for from database And other Source

## Research result

Table 1. List of Articles

No	Author Name	Title	Method	Results	Source
1	(Ulfatul Latifah et al., 2024)	Physical Activity and the Incidence of Non-Communicable Diseases in Sinduharjo Ngaglik Sleman Yogyakarta	<i>cross-sectional</i>	Based on the research results, there is a relationship between physical activity and the incidence of non-communicable diseases in Sinduharjo Ngaglik Sleman Yogyakarta.	Google Scholar
2	(Zahara & Rayasari, 2023)	Analysis of Risk Factors for Non-Communicable Diseases (Hypertension, Diabetes Mellitus and Obesity) in Kamal Market Traders	<i>cross-sectional</i>	Based on the research results, physical activity (Pv = 0.009) with the occurrence of non-communicable diseases in Kamal Market Traders	Google Scholar



3	(Fajri et al., 2023)	Determinant Factors of Non-Communicable Diseases (Hypertension and Diabetes Mellitus) in Productive Age in Banjarnegara Regency	<i>case control.</i>	Based on research results, risk factors associated with the occurrence of non-communicable diseases (hypertension and diabetes) are smoking, family history, physical activity.	Google Scholar
4	(Ramdhika et al., 2023)	The Relationship between Physical Activity and the Incidence of Hypertension in Minangkabau Ethnic Women in Padang City The Relationship between Physical Activity and the Incidence of Hypertension in Minangkabau Ethnic Women in Padang City	<i>case control</i>	Based on the research results, there is a significant relationship between physical activity and hypertension (p value = 0.046) in Minangkabau ethnic women.	Google Scholar
5	(Kamriana et al., 2024)	The Relationship Between Physical Activity and Hypertension Incidence in the Elderly in the Pattalassang Health Center Work Area, Takalar Regency	<i>cross-sectional</i>	Based on the research results, there is a significant relationship between physical activity and the incidence of hypertension in the elderly with a p-value = 0.000.	Google Scholar
6	(Jasmin et al., 2023)	The Relationship between Physical Activity and Hypertension Levels in the Elderly at the Pancasan Health Center, West Bogor District in 2021	<i>cross-sectional</i>	Based on the research results, there is a significant relationship between physical activity variables and hypertension levels in the elderly (p-value = 0.000) at the Pancasan Health Center, West Bogor District in 2021.	Google Scholar
7	(Lay et al., 2019)	The Relationship Between Physical Activity and Hypertension Incidence at Bakunase Health Center, Kupang	<i>cross-sectional</i>	Based on the research results, there is a significant relationship between physical activity and the incidence of hypertension in pre-elderly women at the Bakunase Kupang Health Center.	Google Scholar
8	(Triana et al., 2024)	The Relationship Between Physical Activity and Blood Pressure in Employees at Malahayati University, Bandar Lampung	<i>cross-sectional</i>	Based on the research results, there is a significant relationship between physical activity and blood pressure in employees at Malahayati University, Bandar Lampung (p-value = 0.021: OR = 4.24)	Google Scholar

9	(Sinaga, 2022)	The relationship between physical activity and blood pressure in housewives with hypertension in RW 05, Bongas Village, Cililin District, West Bandung Regency	<i>cross-sectional</i>	Based on the research results, there is a relationship between physical activity and blood pressure in housewives with hypertension in RW 05, Bingas Village, West Bandung Regency, with a significant value, namely p-value = 0.002 <math>< \alpha (0.05)</math>	Google Scholar
10	(Aryanti & Pardede, 2023)	Physical Activity Levels are Related to Blood Pressure Levels in Hypertension Patients	<i>cross-sectional</i>	Based on the research results, there is a significant relationship between the level of physical activity and the degree of blood pressure in hypertension patients at the UPTD Bintara Health Center, Bekasi City.	Google Scholar
11	(Hasanudin et al., 2023)	Relationship Between Diet and Physical Activity with Hypertension Incidence	<i>cross-sectional</i>	There is a relationship between diet and the incidence of hypertension (p=0.000). There is a relationship between physical activity and the incidence of hypertension (p=0.000).	Google Scholar
12	(Eliani et al., 2022)	Daily Physical Activity is Related to the Degree of Hypertension in Pre-Elderly and Elderly in the Work Area of East Denpasar I Health Center	<i>cross-sectional</i>	there is a relationship between daily physical activity and the degree of hypertension in pre-elderly and elderly people at the Denpasar I Health Center Team	Google Scholar
13	(Aryanti, 2023)	The Relationship Between Physical Activity and Changes in Blood Pressure in Hypertension Patients at the UPTD Bintara Health Center, Bekasi City	<i>cross-sectional</i>	There is a significant relationship between physical activity and changes in blood pressure in hypertensive patients at the UPTD Bintara Health Center, Bekasi City.	Google Scholar

The comes about of the writing survey appear that there's a critical relationship between physical movement and the event of non-communicable maladies such as hypertension and diabetes. A few ponders have appeared that higher levels of physical movement are related with a lower hazard of these illnesses in different populaces, counting the elderly and ladies. In expansion to physical movement, other chance variables such as slim down and family history moreover contribute to the advancement of non-communicable illnesses. This ponder included different bunches, counting showcase dealers and the elderly, which appeared consistency of discoveries in numerous social and statistic settings. Subsequently, in Indonesia, it is imperative to advance physical movement as portion of the procedure to anticipate non-communicable maladies, and the significance of the part of physical action in progressing open wellbeing.

## Discussion

Investigate appears that physical action encompasses a noteworthy relationship with the frequency of non-communicable maladies (NCDs). Different considers have appeared that individuals who routinely do physical action have a lower chance of creating infections such as tall blood weight, diabetes, and weight. For illustration, inquire about in Sinduharjo Locale, Gaglik, Yogyakarta (Ulfatul Latifah et al., 2024) found a relationship between physical action and the



event of non-communicable infections, which appears that support in physical movement is related with a low frequency of irresistible illnesses. infection. Investigate appears that it can be diminished. the hazard of getting this malady.

In expansion, (Zahara and Rahayasari, 2023) conducted a hazard calculate examination and appeared that physical movement is straightforwardly related to the rate of non-communicable diabetes. The comes about appeared that advertise dealers who were physically dynamic had a lower chance of creating this malady with a noteworthy p esteem ( $P_v = 0.009$ ). These comes about back the contention that expanded physical action makes a difference control blood sugar levels. Inquire about

(Fajri et al., 2023) too backed these comes about by distinguishing risk factors related with the rate of NCDs within the working age bunch. Analysts found that smoking propensities, family history, and decreased physical action contributed to an expanded hazard of non-communicable maladies such as hypertension and diabetes. This proposes the require for interventions targeting these hazard components to decrease the predominance of NCDs.

Within the setting of the elderly, (Kamriana et al., (2024)) examined the relationship between physical action and the event of hypertension. The comes about of this study demonstrate that adequate physical movement is straightforwardly related to the low frequency of hypertension within the elderly. The p-value gotten in this think about appears solid factual importance, supporting the significance of physical action in keeping up heart wellbeing within the elderly.

In expansion, a consider conducted by (Ramdhika et al., 2023) found a noteworthy relationship between physical movement and the improvement of hypertension in Minangkabau ladies. This consider appeared that ladies who were physically dynamic had a lower chance of hypertension, with a noteworthy p-value ( $p\text{-value} = 0.046$ ). These comes about show that wellbeing mediations for ladies, particularly expanding physical movement, are required.

Investigate moreover appears that physical action helps improve mental wellbeing and quality of life. (Jasmin et al., 2023) found that individuals who work out routinely tend to have less stretch and distant better; a much better; a higher; a stronger; an improved" > a distant better quality of life. Physical movement not as it were makes strides physical condition, but moreover has extraordinary mental benefits.

Be that as it may, in spite of the clear benefits of physical action, numerous individuals still confront challenges in adopting an active lifestyle. Components such as constrained time, get to to sports offices, and inspiration are regularly boundaries. Hence, it is imperative to create wellbeing advancement programs that can overcome these obstructions. It is additionally imperative the significance of family and community back in expanding physical action. Families play a imperative part in empowering their individuals to be dynamic, and communities can give offices and programs that bolster solid ways of life. In expansion, collaboration between the wellbeing, instruction, and natural segments is basic to building an environment that underpins physical action.

Looking at the different considers conducted, it is vital to note that the relationship between physical movement and NCDs isn't as it were physical, but too incorporates social and mental angles. Investigate appears that gather physical action is successful, counting: B. Working out with companions and family increments social supportability and increments person inspiration to stay active. This can be in understanding with inquire about appearing that social back makes a difference increment the recurrence of physical action (Eliani et al., 2022).

In this setting, community-based programs are exceptionally viable in empowering cooperation in physical movement. For illustration, community sports programs with a assortment of ages and foundations can make a strong environment and persuade person support. (Triana et al., 2024) highlighted the significance of such programs in advancing solid

ways of life and lessening the hazard of non-communicable maladies. Be that as it may, extending access to sports offices and open spaces for physical action is additionally vital. Numerous individuals are incapable to work out due to constrained get to to offices. Subsequently, it is fundamental to fortify arrangements that bolster the improvement of user-friendly sports offices. Investigate conducted by (Aryanti & Pardede, 2023) appears that the openness of sports offices is positively correlated with the level of physical movement of a community.

In expansion, there's a got to increment instruction almost the significance of physical movement and how to do it safely and viably. Clear and easy-to-understand information about the benefits of physical movement can increment individuals' inspiration to take an interest. Instructive programs in schools and working environments are the primary step in building a energetic culture within the community. Numerous individuals do physical action at domestic or utilize online wellness apps. Inquire about appears that even in spite of the fact that physical movement in general has diminished, people who receive unused strategies are still able to preserve satisfactory levels of physical movement (Zahara & Rahayasari, 2023).

The positive affect of physical action isn't restricted to the anticipation of non-communicable maladies, but moreover contributes to mental wellbeing and enthusiastic well-being. Studies have appeared that individuals who lock in in regular physical action are less likely to suffer from uneasiness and discouragement. Physical movement increments the generation of endorphins, known as feel-good hormones, which can offer assistance decrease negative feelings (Jasmin et al., 2023). Within the setting of intercessions, it is critical to create programs that not as it were point to extend physical movement but too coordinated mental wellbeing components. For example, exercises that combine unwinding procedures with work out, such as yoga or tai chi, can give double benefits for physical and mental wellbeing. This appears the significance of a all encompassing approach in wellbeing advancement.

On the other hand, it is vital to consider statistic contrasts when planning programs to advance physical action. Age, sexual orientation, and financial foundation can impact an individual's inclination and capacity to take part in physical movement. Programs planned particularly for particular bunches, such as guardians and children, may be more successful in expanding interest (Kamriana et al., 2024). One viewpoint that's frequently ignored is the significance of community-based inquire about. Including the community in investigate gives more profound experiences into their propensities and needs. Inquire about conducted (Fajri et al., 2023) appears that community interest within the plan of wellbeing programs increments the victory of mediations and cessation rates.

In expansion, closer collaboration between the wellbeing and instruction divisions is required. School programs that advance physical movement and sound ways of life can offer assistance create great propensities from an early age. Compelling wellbeing instruction in schools can diminish the hazard of future non-communicable maladies and make strides children's quality of life. In general, the comes about of this ponder demonstrate that physical movement incorporates a critical affect on generally wellbeing. With the correct approach, physical movement can be an viable instrument for anticipating non-communicable maladies. This think about highlights the require for collaboration, development, and proceeded back to attain superior open wellbeing objectives.

## Conclusion

Investigate writing has appeared a relationship between physical action and non-communicable maladies (NCDs). Physical action plays an vital part in anticipating NCDs such as hypertension and diabetes. There's prove that individuals who work out routinely have a lower hazard of NCDs and have a positive affect on their mental wellbeing. To be compelling, physical movement advancement must be inserted in open wellbeing approaches and bolstered by





families and communities. With a comprehensive approach and bolster from different partners, physical action can be a key technique to move forward open wellbeing and diminish the burden of NCDs. Advance inquire about is required to recognize more successful mediations to advance dynamic ways of life.

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