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APPLICATION OF HEALTH PROMOTION MODEL: ANALYSIS FACTORS ASSOCIATED WITH PHYSICAL ACTIVITY IN PREHYPERTENSION ADULTS

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ABSTRACT
The 2018 Basic Health Research (Riskesdas), showed that 33.5% of Indonesian adolescents and adults engage in a sedentary lifestyle, marked by insufficient physical activity. A lack of physical activity can lead to health risks, especially complications related to non-communicable diseases. This study aims to determine the relationship between physical activity and its determinants among adults with prehypertension. This study used a quantitative approach with a cross-sectional study design. A total of 262 adults with prehypertension in Ciputat Timur participated in the study, The sampling technique used was purposive sampling. Data were collected using self-administered questionnaires. Data analysis was conducted using the chi-square test to examine the relationship between physical activity and its determinants, and logistic regression to identify predictors of physical activity. The study found that 64.6% of respondents had low physical activity levels. There was a significant relationship between physical activity and factors such as gender, perceived benefits, perceived barriers, self-efficacy, and social support. In conclusion, social support was identified as the most significant determinant of physical activity among adults with prehypertension. These findings may contribute to the development of interventions and strategies aimed at promoting physical activity participation among adults.

Keywords: adult prehypertension; health promotion model (HPM); physical activity

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INTRODUCTION

As part of its strategic initiative to promote public health and well-being, the Ministry of Health of the Republic of Indonesia launched the Healthy Living Community Movement (Gerakan Masyarakat Hidup Sehat, GERMAS) in 2015. This program was developed as a concrete manifestation of the Three Pillars of the Healthy Indonesia Program, aiming to foster a health-oriented paradigm within the community. One of the central objectives of GERMAS is to cultivate sustainable health behaviors that contribute to the maintenance and improvement of individual and population health status. The program comprises six core activities, among which the promotion of regular physical activity is emphasized. In this context, physical activity is defined as any bodily movement generated by skeletal muscles that requires energy expenditure, encompassing a wide range of actions including occupational tasks, domestic chores, leisure activities, and structured exercise. The Ministry of Health recommends engaging in at least 150 minutes of moderate-intensity activity or 75 minutes of vigorous-intensity activity per week, corresponding to a minimum of 600 metabolic equivalents of task (METs) (Kemenkes RI, 2020).

Despite the government's concreted efforts to institutionalize active living through public health policy, physical inactivity remains a pervasive and escalating concern. Recent global estimates underscore that insufficient physical activity constitutes a leading risk factor for approximately 3.2 million deaths and 31.2 million injuries annually (WHO, 2022). A growing body of literature has

consistently demonstrated that physical inactivity is associated with an increased incidence of non-communicable diseases (NCDs), including hypertension, cardiovascular disease, obesity, depression, and stroke. Furthermore, longitudinal analyses indicate a persistent upward trajectory in global inactivity rates, notwithstanding widespread health promotion campaigns (Su et al., 2020). According to the American Heart Association (2018), nearly one-third of the global adult population fails to meet the recommended physical activity guidelines. Nationally, this trend is also evident. The 2013 Basic Health Research (Riset Kesehatan Dasar, RISKESDAS) reported that 26.1% of Indonesians did not achieve adequate physical activity levels, a figure that increased substantially to 33.5% in the 2018 RISKESDAS survey (Kemenkes RI, 2018). This alarming rise signals a pressing public health challenge that warrants integrated, evidence-based interventions, particularly within the domains of community health nursing and preventive care.

The national trends are further reflected at the provincial level, with Banten Province exhibiting one of the most concerning increases in physical inactivity across Indonesia. According to the 2018 Banten Provincial Health Research (Riskesdas), the prevalence of insufficient physical activity rose sharply from 22.9% in 2013 to 42.81% in 2018, nearly doubling within five years. Among the eight districts and cities in Banten, South Tangerang City reported the highest prevalence, with more than 61.86% of its residents not meeting the recommended physical activity guidelines. This figure significantly exceeds both the national average and the WHO threshold of concern. The persistently high rates of inactivity in this region may contribute to the increasing burden of non-communicable diseases (NCDs) such as hypertension, cardiovascular disease, cancer, and stroke conditions that are strongly associated with sedentary behavior (Bull et al., 2020).

From a healthcare economics perspective, the escalating prevalence of NCDs imposes a substantial financial burden on the national health insurance system. According to data from BPJS Kesehatan (2021), 30% of the IDR 4.09 trillion medical expenditure budget was allocated to treat catastrophic illnesses, including those directly linked to physical inactivity. These findings underscore the urgency of reinforcing health promotion initiatives such as the Healthy Living Community Movement (GERMAS), particularly its focus on encouraging sufficient physical activity as a primary preventive measure (Kemenkes RI, 2020).

Considering these concerns, it is essential to examine specific populations that are particularly susceptible to developing NCDs. One such group comprises individuals with prehypertensive blood pressure levels, who are increasingly recognized as being at elevated risk for the onset of chronic conditions. Prehypertension, a classification introduced by the Seventh Joint National Committee (JNC 7) in 2003, is defined as a systolic blood pressure of 120–139 mmHg or a diastolic pressure of 80–89 mmHg (American Heart Association, 2018). Although often asymptomatic, this condition represents a critical intermediary stage with a strong propensity to progress to hypertension. Kar et al. (2020) note that approximately 90% of adults diagnosed with prehypertension already exhibit multiple risk factors for cardiovascular disease, thereby increasing their susceptibility to adverse outcomes such as stroke, renal failure, and myocardial infarction. Consequently, engagement in regular physical activity has been widely recommended as a non-pharmacological intervention to help normalize blood pressure and interrupt the progression to more severe cardiovascular outcomes (Jang, 2021; Mecha et al., 2020).

Furthermore, compelling evidence from a meta-analysis by Han et al. (2019), encompassing 47 cohort studies, reinforces these concerns by demonstrating a significantly elevated risk of coronary heart disease, cardiovascular disease, and stroke in individuals with prehypertension over a follow-up period of 5 to 15 years. Preventive strategies, particularly those focused on promoting physical activity, are therefore of critical importance. In the Indonesian context, Lydia et al. (2021), using data from the Indonesia Family Life Survey, reported that 32.5% of adults in 14 provinces were classified as prehypertensive. Complementing this, Ishikawa et al. (2017) noted that an average of

54% of prehypertensive adults across multiple countries engaged in insufficient physical activity. These findings highlight the imperative for targeted behavioural interventions aimed at promoting physical activity among prehypertensive populations as a means of reducing long-term disease burden (Gutenberg et al., 2022).

While several previous studies have explored the determinants of physical activity among women, students, and individuals diagnosed with hypertension or cardiovascular disease, there remains a paucity of research specifically addressing prehypertensive adults. To fill this gap, the present study adopts the Health Promotion Model (HPM) as its conceptual framework. The HPM, grounded in social cognitive theory and expectancy-value theory, emphasizes health as a dynamic and multidimensional construct shaped by personal experiences and environmental interactions. This model provides a comprehensive lens for examining physical activity behaviours in asymptomatic yet high-risk populations, such as adults with prehypertension, and can inform the design of contextually relevant preventive strategies.

A preliminary situational analysis in South Tangerang City—the locality with the highest reported rate of physical inactivity (61.86%) in Banten Province—revealed a notable absence of targeted interventions addressing prehypertension in the sub-district of East Ciputat, despite its dense adult population. This finding underscores the need for focused investigation into the behavioral patterns and determinants of physical activity within this group. The results of this study are anticipated to provide critical insights for the development of evidence-based health promotion programs aimed at reducing the incidence of non-communicable diseases (NCDs) through increased physical activity among prehypertensive adults. Therefore, the aim of this study was to investigate factors associated with physical activity in prehypertensive adults using the Health Promotion Model approach.

METHOD

This research employed a quantitative method with a cross-sectional design. The study was conducted in East Ciputat Subdistrict, South Tangerang City, Banten, from March to June 2023. The sample consisted of prehypertensive adults residing in East Ciputat Subdistrict. A total of 262 respondents were selected using a purposive sampling technique. The dependent variable in this study was the physical activity behavior of prehypertensive adults, classified based on MET (Metabolic Equivalent Task). The independent variables included gender, age, education level, employment status, family history of hypertension, BMI, perceived benefits, perceived barriers, self-efficacy, social support, and availability of sports infrastructure. The research instruments used included the Exercise Benefits/Barriers Scale (EBBS), the Self-Efficacy for Exercise (SEE) Scale, the Physical Activity and Social Support Scale (PASSS), and the Global Physical Activity Questionnaire (GPAQ) developed by the World Health Organization. Data analysis consisted of bivariate and multivariate approaches. Bivariate analysis was performed using the chi-square test to examine the relationship between physical activity and its determinants. Multivariate analysis was conducted using logistic regression to identify predictors of physical activity. This study received ethical approval from the Research Ethics Committee of the Faculty of Health Sciences, UIN Jakarta, with approval number UIN.01/F.10/KP.01.1/KE/SP/04.08.007/2023.

RESULT

Table 1.
Distribution of Respondents Based on Physical Activity (n=262)

Variabel		f	%
Physical Activity	Adequate physical activity	101	38,6
	Inadequate physical activity	161	61,4

Table 2.
Distribution of Respondents Based on Individual Characteristics (n=262)

Variabel		f	%
Age	Young adults	115	43,9
	Middle adults	147	56,1
Sex	Men	96	36,6
	Women	166	63,4
Employment Status	Unemployed	129	49,2
	Employed	133	50,8
Education	≤ Senior High School	189	72,1
	Bachelor's Degree	73	27,9
Family history of hypertension	Yes	116	44,3
	No	146	55,7
Body Mass Index	Not Overweight/obesity	168	64,1
	Overweight/obesity	94	33,9

Tabel 3.
Distribution of Respondents Based on Behavior-Specific Cognitions (n =262)

Variabel		f	%
Perceived Benefit	High	113	43,1
	Low	149	56,9
Perceived Barrier	High	152	58,0
	Low	110	42,0
Self efficacy	High	113	43,1%
	Low	149	56,9
Social Support	High	110	42,0
	Low	152	58,0
Sports facilities	Available	138	52,7
	Not available	124	47,3

Tabel 4.
Association Between Individual Characteristics and Physical Activity Among Prehypertensive Adults: Health Promotion Model Perspective (n =262)

Variabel	Physical Activity				f	%	P Value	OR
	Adequate		Inadequate					
	f	%	f	%				
Age								
Young adult	50	43,5	65	56,5	115	100	1	1,075
Late adult	43	29,3	104	70,7	147	100		(0,53-2,08)
Gender								
Man	56	58,3	40	41,7	96	100	0,002	2,923
Woman	37	22,3	129	77,7	166	100		(1,53-5,56)
Employment Status								
Unemployed	43	33,3	86	66,7	129	100	0,991	1,008
Employed	50	37,6	83	62,4	133	100		(0,53-1,70)
Education								
≤ Senior high school	43	22,8 %	146	77,2 %	189	100 %	0,324	0,669
University	50	68,5 %	23	31,5 %	73	100 %		(0,34-1,31)
Total	93	35,5 %	169	64,5 %	262	100 %		
Motivation								
High	73	59,3 %	50	40,7%	123	100 %	0,346	0,967
Low	20	14,4 %	119	85,6%	139	100 %		(0,47-2,11)
Jumlah	93	35,5 %	169	64,5%	262	100 %		
Family history of hypertension	56	48,3	60	51,7	116	100	0,677	1,014
Yes	37	25,3	109	74,7	146	100		(0,63-2,34)
No								
Body mass index								
Not obese	68	40,5	100	59,5	168	100	0,006	2,842
Obese	25	26,6	69	73,4	94	100		(1,49-5,39)

Tabel 5.
Association Between Behavior-Specific Cognitions and Physical Activity Among Prehypertensive Adults: Health Promotion Model Perspective (n =262)

Variabel	Physical Activity				f	%	P value	OR
	Adequate		Inadequate					
	f	%	f	%				
Perceived Benefit								
High	63	55,8	50	44,2	113	100	0,013	2,289
Low	30	20,2	119	79,8	149	100		(1,24–4,27)
Perceived Barrier								
High	33	21,7	119	78,3	152	100	0,002	2,558
Low	60	54,6	50	45,4	110	100		(1,48–5,85)
Self efficacy								
High	64	56,6	49	43,4	113	100	0,013	2,287
Low	29	19,5	120	80,5	149	100		(1,23 –4,27)
Social Support								
High	63	57,3	47	42,7 %	110	100	0,012	2,281
Low	30	19,8	122	80,2	152	100		(1,20-4,21)
Sports facilities								
Available	49	35,5	89	64,5	138	100	0,339	1,367
Non available	44	35,5	80	64,5	124	100		(0,91–2,80)

Tabel 6.
Multivariate Modeling of Physical Activity in Prehypertensive Adults

Variabel	B	P	OR	95% C.I. for EXP (B)	
				Lower	Upper
Sex	1,071	0,003	2,915	1,478	5,751
Body Mass Index (BMI) Perceived Benefit	0,843	0,025	2,317	1,114	4,376
Perceived Barrier	0,785	0,029	2,188	1,089	4,398
Self Efficacy	0,869	0,024	2,327	1,124	4,421
Social Support	0,943	0,012	2,421	1,321	4,913
	1,081	0,001	3,093	1,489	5,934

DISCUSSION

The present study revealed that the majority of respondents exhibited low levels of physical activity. This finding is consistent with the results of Abadini and Wuryaningsih (2018), who similarly reported that a substantial proportion of adults engaged in insufficient physical activity. In addition, the current study identified that 33.9% of participants had a Body Mass Index (BMI) within the overweight or obese category. This finding is linear with national data from the 2018 Basic Health Research (Riskesdas), which documented that approximately one-third (32.9%) of Indonesian adults were classified as overweight or obese. Ishikawa et al. (2021) further elaborated that elevated BMI is closely associated with modifiable lifestyle patterns, including prolonged sedentary behavior, limited engagement in physical exercise, and excessive consumption of energy-dense, nutrient-poor foods rich in fats, carbohydrates, and sodium. Generally, these findings underlined the urgent need to enhance promotive and preventive health interventions at both the community and health service levels to address the growing burden of overweight and obesity in the adult population.

In seeking to further understand behavioral determinants of physical activity, the study also examined the construct of perceived benefit. Notably, it was found that nearly half of the respondents reported a high level of perceived benefit regarding physical activity, defined as an individual's belief in the value, effectiveness, or positive outcomes of a given health behavior. These results are similar to those reported by Le et al. (2018) and Rafan et al. (2018), both of which indicated that adults generally maintain favorable perceptions of the benefits of physical activity. A plausible explanation for this trend is the progressive development of cognitive processes in adulthood. According to Labouvie-Vief's theory of adult cognitive development, adult thinking becomes increasingly pragmatic, contextually grounded, and characterized by greater cognitive

complexity. This advanced cognitive capacity allows individuals to synthesize diverse perspectives, evaluate conditional truths, and exercise reflective judgment in decision-making. However, such cognitive maturity is not universally attained, as developmental trajectories vary across individuals. Therefore, health promotion strategies should be designed with sensitivity to differing levels of cognitive readiness and motivational capacity, particularly among prehypertensive adults who are at increased risk for chronic disease.

According to Stanhope (2016), cognitive ability is one of the factors influencing a person's perception. Cognitive complexity plays a significant role in shaping how an individual perceives various aspects of life. If someone evaluates something solely in terms of good or bad, their understanding or perception of the matter is likely to be limited. According to Okzul (2021), the perceived benefits of physical activity are likely to increase when individuals engage in more physical activity through exercise. This is because participating in moderate or vigorous physical activity shapes their perception of its benefits not only through information but also through personal experience. According to Gisela Labouvie-Vief's theory, thinking in adulthood is characterized by pragmatism and cognitive complexity. Cognitive complexity enables individuals to better understand their own and others' perspectives, increases awareness of multiple truths, and integrates logic with reality. According to Pender et al. (2011), one essential outcome of physical activity is enjoyment. However, in this study, most respondents did not find physical activity enjoyable, as they perceived it to be exhausting. The feelings of fatigue and discomfort discouraged them from engaging in physical activity. Meanwhile, according to Sitansu et al (2020), one of the main barriers to physical activity is lack of time. Respondents reported spending more time at work or doing light household activities, which limits opportunities for more intensive physical activity. Another significant barrier is lack of motivation. Access to convenient facilities can serve as a motivator; however, without such access, respondents tend to feel unmotivated, lazy, and less inclined to participate in physical activity.

Present study also found that most respondents had weak self-efficacy. Self-efficacy is a theoretical concept used to measure an individual's belief in their ability to successfully perform necessary actions based on situational conditions. It is a significant predictor of exercise adherence and can influence a person's choices regarding the frequency, type, and duration of physical activity. This study contrasts with the findings of Abadini and Wuryaningsih (2018), who reported that most respondents had strong social support for engaging in physical activity. This discrepancy can be attributed to the fact that the previous study's respondents were more homogeneous, sharing similar ages and workplaces, which fostered stronger social support. This study also revealed that most respondents have access to sports infrastructure near their homes. These findings align with research by Shaikh dan Dandekar (2019). which indicated that most respondents had access to sports facilities within their residential areas. This is consistent with the existing program at the *puskesmas* (community health center), where each *posbindu* (integrated development post for infectious diseases) provides a designated field for sports or gymnastics within its working area. Sports infrastructure refers to supportive resources, including sports venues, physical boundaries, and facilities that meet established requirements for proper implementation.

This study also found a relationship between perceived benefits and physical activity. This finding aligns with the research by Ha et al (2020), which demonstrated a significant relationship between the perception of benefits and physical activity in the adult group. Similarly, research by Abadini and Wuryaningsih (2019) identified a meaningful relationship between physical activity and perceived benefits in adults, where respondents with high perceived benefits were twice as likely to meet recommended levels of physical activity compared to those with low perceived benefits. These findings are also consistent with the research conducted by Ozkul (2021). In addition, there is a relationship between perceived barriers and physical activity levels. The results of this study are supported by research by Shaikh (2020), which demonstrated a significant relationship between

perceived barriers and physical activity in adult groups. Similarly, research by Abadini and Wuryaningsih (2019) found a significant relationship between physical activity and perceived barriers in adults, showing that respondents with low perceived barriers were twice as likely to meet recommended physical activity levels compared to those with high perceived barriers

These findings align with the Health Promotion Model theory, which posits that if the perceived benefits of an action are lower than the perceived barriers, the action is unlikely to occur. Conversely, when the perceived benefits outweigh the barriers, the likelihood of the action increases (Pender, 2011). A stronger commitment compared to perceived barriers leads to more consistent physical activity. Correspondingly, individuals who perceive more benefits than barriers are more likely to engage in physical activity. In contrast, those with high perceived barriers are less likely to participate in physical activity. Respondents with low perceived barriers generally tend to achieve sufficient levels of physical activity

CONCLUSION

The findings of this study indicate that a majority of respondents exhibited low levels of physical activity. Statistically significant associations were observed between physical activity and several factors, including gender, perceived benefits, perceived barriers, self-efficacy, and social support. Among these, social support emerged as the strongest predictor of physical activity in adults with prehypertension. These findings highlight the importance of developing targeted interventions and evidence-based health promotion strategies aimed at increasing physical activity engagement within this high-risk population

REFERENCES

Abadini, D. dan Wuryaningsih, C. E. (2018) 'Determinan Aktivitas Fisik Orang Dewasa Pekerja Kantoran di Jakarta Tahun 2018', Jurnal Promosi Kesehatan Indonesia, 14(1), pp. 15–28. doi: 10.14710/jpki.14.1.15-28

American Hearth Association. (2018). High Blood Pressure Statistical Fact Sheet 2018 Update. United of America: AHA.

BPJS Kesehatan RI. (2021). Penyakit katastropik berbiaya mahal. Edisi 104, 6–9. https://bpjs-kesehatan.go.id/bpjs/dmdocuments/ae3544d7f3382ebb639eba99192b5c76.pdf

Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J. P., Chastin, S., Chou, R., Dempsey, P. C., Dipietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., … Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. British Journal of Sports Medicine, 54(24), 1451–1462. https://doi.org/10.1136/bjsports-2020-102955

Gutenberg, J., Kulnik, S. T., Niebauer, J., & Crutzen, R. (2022). Determinants of Physical Activity in the Cardiac Population: Protocol for a Systematic Review. JMIR Research Protocols, 11(9). https://doi.org/10.2196/39188

Ha, A. S., Chan, W., & Ng, J. Y. Y. (2020). Relation between perceived barrier profiles, physical literacy, motivation and physical activity behaviors among parents with a young child. International Journal of Environmental Research and Public Health, 17(12), 1–15. https://doi.org/10.3390/ijerph17124459

Han Minghui ; Quanman Li; Leilei Liu; Dongdong Zhang; Yongcheng Ren; Yang Zhao; Dechen Liu; Feiyan Liu; Xu Chen; Cheng Cheng; Chunmei Guo; Qionggui Zhou; Gang Tian; Ranran Qie; Shengbing Huang; Xiaoyan Wu; Yu Liu; Honghui Li; Xizhuo Sun; Ming Zhang; (et al) (2019); Prehypertension and risk of cardiovascular diseases: a meta-analysis of 47 cohort studies. Journal of Hypertension; 37(12): 2325-2332

Ishikawa, Y., Ishikawa, J., Ishikawa, S., Kario, K., & Kajii, E. (2017). Progression from prehypertension to hypertension and risk of cardiovascular disease. Journal of Epidemiology, 27(1), 8–13. https://doi.org/10.1016/j.je.2016.08.001

Kar, S. S., Selvaraj1, K., GOmathi, Ramaswamy2, & K. C. Premarajan, Ganesh Kumar Saya, V. K. (2020). Original Article High Prevalence of Prehypertension and its Association with Modifiable Risk Factors: Findings of Household STEPS Survey from Urban Puducherry, South India Abstract. International Journal of Preventive Medicine, 8. https://doi.org/10.4103/ijpvm.IJPVM

Kemenkes RI. (2020). Tiga tahun GERMAS LESSONS LEARNED. Kementerian Kesehatan RI.

Kemenkes Rl. (2018). Riset Kesehatan Dasar 2018. https://www.litbang.kemkes.go.id/laporan-riset-kesehatan-dasar-riskesdas

Yoshioka, M., Choi, Y., Tagawa, K., Maeda, S., Kohmura, Y., Suzuki, K., Machida, S., Naito, H., & Fuku, N. (2022). Sports activities at a young age decrease hypertension risk—The J-Fit+ study. Physiological Reports, 10(12), 1–12. https://doi.org/10.14814/phy2.15364

Lee, T., Yang, C., Wu, S & Chang, F. (2011). Prehypertension. American Journal of Hypertension

Lydia, A., Setiati, S., Soejono, C. H., Istanti, R., Marsigit, J., & Azwar, M. K. (2021). Prevalence of prehypertension and its risk factors in midlife and late life: Indonesian family life survey 2014–2015. BMC Public Health, 21(1), 1–11. https://doi.org/10.1186/s12889-021-10544-y

Mecha, J. O., Kubo, E. N., Odhiambo, C. O., Kinoti, F. G., Njau, K., Yonga, G., & Ogola, E. N. (2020). Burden of prehypertension among adults in Kenya : a retrospective analysis of findings from the Healthy Heart Africa (HHA) Programme. 1–7.

Ozkul, C. (2021). Perceived Exercise Benefits and Barriers in Active and Inactive University Students. Türk Fizyoterapi ve Rehabilitasyon Dergisi, 32(3), 33–42. https://doi.org/10.21653/tjpr.794911

Pender, N.J., (2011), Heath Promotion Model Manual. University of Michigan. Available at: http://hdl.handle.net/2027.42/85350 [Accessed April 20, 2023]

Rafan, S. N., Rosnani, Z., Ismail, S. B., & Rosediani, M. (2018). Prevalence of prehypertension and its associated factors among adults visiting outpatient clinic in Northeast Malaysia. Journal Taibah University Medical Sciences, 13(5), 459–464.

Riskesdas provinsi Banten. (2018). Laporan Provinsi Banten. 575. http://ejournal2.litbang.kemkes.go.id/index.php/lpb/issue/view/229

Shaikh, A. A., & Dandekar, S. P. (2019). Perceived benefits and barriers to exercise among physically active and non-active elderly people. Disability, CBR and Inclusive Development, 30(2), 73–83. https://doi.org/10.5463/dcid.v30i2.839

Shaikh, A. A., Dandekar, S. P., Hatolkar, R. S., Mumbai, K., Professor, A., Brijlal Jindal, D., & Author, C. (2020). Perceived Benefits and Barriers to Exercise of Physically Active and Non-active School Teachers in an Education Society from Pune: An Analysis using EBBS. International Journal of Health Sciences and Research (www.ijhsr.org), 10(6), 2249–9571. www.ijhsr.org

Stanhope, & Lancaster. (2016). Community and public health nursing. St.Louis: Mosby-Year Book, Inc

Su, X., Mcdonough, D. J., Chu, H., Quan, M., & Gao, Z. (2020). Application of network meta-analysis in the field of physical activity and health promotion. 9, 511–520. https://doi.org/10.1016/j.jshs.2020.07.011

WHO. Physical Activity. 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/physical-activity.