

The Effect of Intentions, Outcome Expectancies and Self-Beliefs in the ability to carry out physical activities in patients with Hypertension

RIZA FIKRIANA¹, AL AFIK², LAILATUL KODRIYAH¹, DITA AYUHANA¹

¹Nursing Major, STIKes Kepanjen Malang, Indonesia

²Faculty of Medicine and Health Science, University of Muhammadiyah Yogyakarta, Indonesia

Correspondence to Riza Fikriana, Email :riza_fikriana@stikeskepanjen-pemkabmalang.ac.id, Phone :+6281803802136

ABSTRACT

Background: Physical activity in people with hypertension is needed. However, it was found that the ability to do physical activity on a regular basis is still relatively low.

Aim: To analyze the effect of intentions, outcome expectancies and self-beliefs on the ability to carry out physical activities in patients with hypertension.

Method: The study employed research design which was correlational study with a cross sectional study approach. The total sample of 103 patients with hypertension aged 26-45 years old were taken by simple random sampling technique. The research instrument was in the form of a questionnaire that measured intentions, outcome expectations, self-beliefs and physical activities. Data analysis was performed using a linear regression test.

Result: The results showed that there were a significant relationship between intentions, self efficacy, perceived benefits, perceived severity with expectancies outcomes, the relationship between intentions, expectancies outcomes, perceived benefits and perceived severity to self efficacy and the relationship between intentions, perceived severity and perceived benefits. However, the results of the linear regression test showed that intentions, outcome expectancies and self-beliefs (perceived severity, perceived barrier, perceived benefit and self efficacy) did not significantly influence the ability to do physical activities of hypertension sufferers. **Conclusion:** Intentions, outcome expectancies and self-beliefs do not significantly influence the ability to do physical activities in people with hypertension.

Keywords: intentions, outcome expectancies, self-beliefs, physical activities, hypertension.

INTRODUCTION

The prevalence of hypertension continues to increase every year. Blood pressure control through changes in healthy lifestyle and adherence to medication are important things that must be done by people with hypertension (Fikriana, R., et al, 2019). However, it was found that the ability to do a healthy lifestyle with hypertension is still relatively low (Huang, G., Xu, J., Zhang, T., & Li, Q., 2017). One important action that must be taken is to do regular physical activities.

Results of the study indicate that the physical activities of patients with hypertension are still relatively lower compared to someone who does not suffer from hypertension (Churilla, J. R., et al, 2010). The activities are closely related to blood pressure. Some research results show beneficial effects due to physical activities in people with hypertension. The physical activities can reduce blood pressure in patients with hypertension (Diaz, K. M., et al, 2013). Hypertension patients who do moderate to high intensity aerobic activity can reduce blood pressure by an average of 11/5 mmHg (Börjesson M, et al, 2016). Physical activities not only has a positive effect on patients with hypertension but also reduces the sedentary lifestyle of individuals which will reduce the risk of other chronic diseases (Egan, B. M., 2017).

Health Action Process Approach (HAPA) is a theory that supports the process of behavior change in terms of psychological construction. This theory was developed by Schwarzer who divides the process of behavior change into

two phases which are motivation phase and volitional phase. The two phases include intentions, risk perception, outcome expectations, self efficacy, planning and self-monitoring. Individual intentions are influenced by self efficacy, outcome expectation and risk perception. The good intentions of these individuals will be followed up with both actions planning and coping planning. Furthermore this planning will shape the individuals behavior (Schwarzer, R., 2016).

Beliefs also affect a person's behavior. According to the Health Belief Model, the main constructs of belief include perceived vulnerability, perceived seriousness, perceived threats, self-efficacy, perceived obstacles and perceived benefits (Glanz, Karen., Et al., 2008). The study aims to analyze the effect of intentions, outcome expectancies and beliefs on the ability to carry out physical activities of patients with hypertension.

METHOD

The study employs a correlational study with a cross sectional study approach. The research was conducted in Turen District of Malang Regency, Indonesia. The sample of the study is patients with hypertension aged 26 - 45 years old as many as 103 respondents. The sampling is done by simple random sampling.

The independent variables in this study consist of several variables which are intentions, expectancies outcomes and beliefs. Intentions is the commitment of hypertension sufferers in physical activity. The questionnaire uses Intentions behavior change with a Likert

scale ranging from no intention at all to very intending (Renner, B. &Schwarzer, R., 2005). Outcome Expecties is the desire of hypertension sufferers for the results obtained from the act of carrying out physical activities. The questionnaire that is used is exercise outcome expectancies with a Likert scale consisting of 4 point response scales ranging from not at all to exactly true (Renner, B. &Schwarzer, R., 2005). Belief is usually considered true and is shown by people with the sufferers regarding hypertension that they are experiencing. Subvariables of belief include: perceived severity, perceived benefit, perceived barrier and perceived self efficacy. The dependent variables in this study are the ability to do physical activity. The instrument used for the measurement of physical activity patterns is using a standard measuring instrument Baecke Physical Activity Scale questionnaire with a total of 16 questions. This study was approved by the Research Ethics Committee Poltekkes Malang Indonesia. The data analysis was performed using a linear regression test.

RESULT

General data in this study describes the demographic data of hypertension sufferers including gender, age, recent education, occupation and physical activity (table 1). The Spearman Correlation Analysis is listed in Tables 2 and 3

Table 1. Frequency distribution of respondent characteristics and Physical Activity

No	Characteristics	n (%)
A Gender		
1	Male	32 (31)
2	Female	71 (69)
B Age		
1	26 – 35 year	48 (46.6)
2	36 – 45 year	55 (53.4)
C Education		
1	Unschool	1 (1.0)
2	Elementary School	20 (19.4)
3	Junior High School	46 (44.7)
4	Senior High School	36 (34.9)
D Occupation		
1	Didn't have job	30 (29.1)
2	Entrepreneur	19 (18.4)
3	Civil Servants	5 (5.0)
4	Army / Police	1 (1.0)
5	Private	22 (21.4)
6	Labor	26 (25.2)
E Physical Activity		
1	Mild	4 (3.9)
2	Moderate	56 (54.4)
3	High	43 (41.7)

The results of linear regression analysis showed that intentions, outcome expectancies and beliefs (self efficacy, perceived benefit, barrier and severity) had no effect on the ability to perform physical activity. However, it was found that the outcome expectancies, perceived benefits and perceived barriers influence the self efficacy of doing physical activity of The linear regression equation obtained is:

$$\text{Self Efficacy} = 1,520 + (0.117 * \text{Outcome Expectancies}) + (0.296 * \text{Perceived Benefit}) + (-0.056 * \text{Perceived Barrier}).$$

While the linear regression results of the influence of intention, outcome expectancies, perceived benefit, perceived barrier, perceived severity and self efficacy to physical activity found that intention, outcome expectancies, perceived benefit, perceived barrier, perceived severity and self efficacy do not affect the physical activity of patients with hypertension.

Table 2: Results of Spearman's Correlation analysis between Intention, Outcome Expectations, Self Efficacy, Perceived Benefit, Perceived Barrier and Perceived Severity

	Outcome Expectancies
Intention	r = 0.631 p < 0.001 n = 103
Self Efficacy	r = 0.558 p < 0.001 n = 103
Benefit	r = 0.625 p < 0.001 n = 103
Perceived Severity	r = 0.417 p < 0.001 n = 103
	Self Efficacy
Intention	r = 0.488 p < 0.001 n = 103
Outcome Expectancies	r = 0.558 p < 0.001 n = 103
Benefit	r = 0.620 p < 0.001 n = 103
Severity	r = 0.294 p = 0.003 n = 103
	Benefit
Intention	r = 0.450 p < 0.001 n = 103
Perceived Severity	r = 0.361 p < 0.001 n = 103

Table 3: Results of Spearman's Correlation analysis between Intention, Outcome Expectations, Self Efficacy, Perceived Benefit, Perceived Barrier and Perceived Severity with Physical Activity

	Aktivitas Fisik
Intention	r = 0.069 p = 0.491 n = 103
Outcome Expectancies	r = -0.102 p = 0.304 n = 103
Self Efficacy	r = -0.122 p = 0.221 n = 103
Benefit	r = -0.139 p = 0.160 n = 103
Perceived Barrier	r = 0.063 p = 0.529 n = 103
Perceived Severity	r = 0.076 p = 0.445 n = 103

DISCUSSION

The ability to carry out physical activities of patients with hypertension is not influenced by intentions, outcome expectations, perceived benefits, perceived barriers, perceived severity and self efficacy. These results illustrate that there are other factors that are more dominant in affecting the ability to perform physical activity. This result is in line with the results of other studies which illustrate that self efficacy does not affect a person's behavior. However, self efficacy is a predictor of outcome expectancies of a person's behavior. It shows that here is an indirect relationship between self efficacy and behavior (Okuboyejo, S., et al, 2018).

The results in this study contradict the other studies that show self efficacy influences the ability to perform physical activity (Prodaniuk, T. R., et al, 2004). Self efficacy has an indirect effect on the ability to carry out physical activity through outcome expectations. Outcome expectations predict the intentions and behaviors of physical activity (Gellert, P., et al, 2012). Someone with positive outcome expectancies can be associated with high motivation to do physical activity (Morrison, J. D., et al, 2014).

Other studies also show that intentions can improve physical activity behavior (Antonio, M., et al, 2018). There are differences of intentions in physical activity according to age differences. As we get older, physical activity intentions decrease. The results showed that 60% of the elderly did not have the intention to carry out physical activity routinely in the next six months. The elderly who are still active in doing physical activity are found at least once a day with an intensity of less than 30 minutes to perform physical activity. Middle adults and the elderly prefer physical activity with slower movements compared to those who have younger age that choose faster movements (Alley, S. J., et al, 2017). A positive attitude toward physical activity is a strong predictor of active physical activity and decreases sedentary behavior (Poobalan, A. S., et al, 2012).

Studies of physical activity in women show that although women understand the benefits of physical activity, these women report various barriers to do it (McGuire et al, 2014). Socio-economic level, marital status, level of education and perception of health are predictors of barriers for someone to carry out physical activity (Herazobeltrán, Y., et al, 2017). Provision of intervention through health promotion for twelve weeks can provide opportunities for women to improve healthier behavior. So that women feel the benefits and reduce the obstacles that occur (McGuire et al, 2014). Physical activity for people with hypertension is important to control blood pressure and to prevent complications such as cardiovascular disease (Hegde, S. Met al, 2015; Diaz, K.M et al, 2015).

Health beliefs which include beliefs about the seriousness of the disease, beliefs in the benefits of the actions taken, and beliefs in the obstacles that occur in this study do not affect the physical activity of patients with hypertension. This is different from other studies that illustrate perceived benefit is a variable that can affect one's compliance behavior (Triharini, M., et al, 2018). The Health Belief Model illustrates that a person's health behavior is influenced by perceived severity, perceived

susceptibility, perceived threat, perceived benefit, perceived barrier, and self efficacy (Jones, C. L., et al, 2016). The highest score in this study found a major obstacle that affects physical activity of sufferers is the lack of confidence to do regular physical activity. Seeing these conditions, it is important for health workers or the people closest to the patients to provide motivation in order to make the sufferers have a high level of confidence to carry out physical activities.

Although the results did not show a significant effect, it was found that each variable had a meaningful relationship, such as the relationship between intentions, self efficacy, perceived benefits, perceived severity, and outcome expectations. A significant relationship was also found in the relationship between intentions, outcome expectations, perceived benefits, and perceived severity of self efficacy. In addition, the relationship among intentions, perceived severity, and perceived benefits was also significant. Other studies showed that self efficacy is related to physical activity. High self-efficacy is associated with a high level of physical activity. In addition, high outcome expectancies are also associated with high levels of physical activity (Mielenz, T. J., et al, 2013).

Outcome expectations affect self efficacy of hypertension sufferers in engaging physical activity. Outcome expectancies are the results expected by the patients in doing physical activity. This expectation will make a better health conditions and quality of life of them. Other than that, the sufferers do not experience increased blood pressure, can avoid complications, and feel a more meaningful life. This is in accordance with other studies which illustrate that outcome expectancies affect self efficacy (Williams, D. M. 2010). In this study, the highest expectancies outcome is that the hypertension sufferers have hope that if they do physical activity regularly, they will be healthier. This illustrates that the sufferers understand that the importance of physical activity can affect a patient's health status to be healthier.

CONCLUSION

Intentions, outcome expectancies, and beliefs (perceived severity, perceived barrier, perceived benefit, and self efficacy) do not affect the ability to perform physical activity in people with hypertension. Although the results of the analysis test did not have a significant effect, a significant relationship was found among the variables including the relationship between intentions, self-efficacy, perceived benefits, perceived severity with outcome expectancies the relationship between intentions, expected outcomes, perceived benefits, and perceived severity of self efficacy and the relationship between intentions, perceived severity, and perceived benefits.

Acknowledgements: Thank you to STIKes Kepanjen Malang for providing support in this research publication.

REFERENCES

1. Alley, S. J., Schoeppe, S., Rebar, A. L., Hayman, M., Vandelanotte, C. Age differences in physical activity intentions and implementation intention preferences. *Journal of Behavioral Medicine*. 2018;41, 406-415

2. Antonio, M., Id, S., & Franco, H. Impact of implementation intentions on physical activity practice in adults : A systematic review and meta-analysis of randomized clinical trials,PLOS ONE. 2018;25, 1–15.
3. Berman, A., Snyder, S. J., Frandsen, G., (2016). *Kozier and Erb's Fundamentals of Nursing Concepts, Process and Practice*. Tenth edition. USA : Pearson Education
4. Börjesson M, Onerup A, Lundqvist S, et al. Physical activity and exercise lower blood pressure in individuals with hypertension: narrative review of 27 RCTs *British Journal of Sports Medicine* 2016;50(6):356-361. <http://dx.doi.org/10.1136/bjsports-2015-095786>
5. Churilla, J. R., Ford, E. S. Comparing physical activity patterns of hypertensive and nonhypertensive US adults. *American Journal of Hypertension*. 2010. 23(9), 987-993. <https://doi.org/10.1038/ajh.2010.88>
6. Diaz, K. M., & Shimbo, D. (2013). Physical Activity and the Prevention of Hypertension. *Current Hypertension Reports*,15(6),659–668. <https://doi.org/10.1007/s11906-013-0386-8>
7. Egan, B. M. Physical activity and hypertension. *Hypertension*. 69(3), 404-406. <https://doi.org/10.1161/HYPERTENSIONAHA.116.08508>
8. Fikriana, R., Nursalam, N., Devy, S. R., Nurhudi, T., & Qodriyah, L. Factor Analysis of Patient with Hypertension on Self-Regulation Based on Self-Belief, *Journal of Global Pharma Technology*. 2019;11(8),173–182.
9. Fikriana, R., Nursalam, N., Devy, S. R., Ahsan, & Afik, A. Determinants of Drug Adherence on Grade Two and Three Patients with Hypertension, 2019;14(2), 193-198
10. Gellert, P., Ziegelmann, J. P., & Schwarzer, R. Affective and health-related outcome expectancies for physical activity in older adults, *Psychology & Health*, 2012;27(7), 37–41.
11. Glanz, K., Rimer, B. K., & Nath, K. V. *Health Behavior and health Education*. San Fransisco : Jossey-Bass. 2008
12. Hegde, S. M., & Solomon, S. D. (2015). Influence of Physical Activity on Hypertension and Cardiac Structure and Function. *Current Hypertension Reports*, 1–8. <https://doi.org/10.1007/s11906-015-0588-3>
13. Herazo-beltrán, Y., Pinillos, Y., Vidarte, J., Crissien, E., Suarez, D., & García, R. (2017). Predictors of perceived barriers to physical activity in the general adult population : a cross-sectional study. *Brazilian Journal of Physical Therapy*, 21(1), 44–50. <https://doi.org/10.1016/j.bjpt.2016.04.003>
14. Huang, G., Xu, J., Zhang, T., & Li, Q. (2017). Prevalence , awareness , treatment , and control of hypertension among very elderly Chinese : results of a community-based study. *Journal of the American Society of Hypertension*, 11(8), 503–512.e2. <https://doi.org/10.1016/j.jash.2017.05.008>
15. Jones, C. L., Jensen, J. D., Scherr, C. L., Brown, N. R., Christy, K., & Weaver, J. The health belief model as an explanatory framework in communication research : exploring parallel, serial and moderated mediation. *Health Community* .2016:30(6), 566–576. <https://doi.org/10.1080/10410236.2013.873363>.
16. McGuire, Amanda Mary, Seib, Charlotte, & Anderson, Debra J. (2014) Perceived benefits and barriers to physical activity in midlife Australian women: Results from the Women's Wellness Program Trial©. In *Women's Health 2014: 22nd Annual Congress*, 4 – 6 April 2014, Washington, D.C.
17. Mielenz, T. J., Kubiak-rizzone, K. L., Alvarez, K. J., Hlavacek, P. R., Freburger, J. K., Giuliani, C., ... Callahan, L. F. Association of Self-Efficacy and Outcome Expectancies with Physical Activity in Adults with Arthritis,Hindawi. 2013.
18. Morrison, J. D., & Stuijbergen, A. K. Outcome expectancies and physical activity in persons with longstanding multiple sclerosis. *Journal Neuroscience Nurs*. 2014: 46(3), 171–179.
19. Okuboyejo, S., Mbarika, V., & Omoregbe, N. The effect of self-efficacy and outcome expectancies on medication adherence, *Journal of Public Health in Africa*, 2018: 9, 141–145.
20. Poobalan, A. S., Aucott, L. S., Clarke, A., & Smith, W. C. S. Physical activity attitudes , intentions and behaviour among 18 – 25 year olds : A mixed method study. *BMC Public Health*. 2012: 12(1), 1. <https://doi.org/10.1186/1471-2458-12-640>
21. Prodaniuk, T. R., Plotnikoff, R. C., Spence, J. C., & Wilson, P. M. The influence of self-efficacy and outcome expectancies on the relationship between perceived environment and physical activity in the workplace, *International Journal of Behavioral Nutrition and Physical Activity*. 2004: 11, 1–11.
22. Schwarzer, R. (2016). Health Action Process Approach (HAPA) as a Theoretical Framework to Understand Behavior Change, *Actualidades en Psicología*, 30(121), 119–130.
23. Triharini, M., Nursalam., Sulistyono, A., & Adriani, M. (2018). Adherence to iron supplementation amongst pregnant mothers in Surabaya , Indonesia: Perceived benefits , barriers and family support. *International Journal of Nursing Sciences*, 5(3), 243–248. <https://doi.org/10.1016/j.ijnss.2018.07.002>
24. Williams, D. M. Outcome expectancy and Self-efficacy : theoretical implications of an unresolved contradiction. *SAGE Journals*. 2010. 14(4)
25. Zhu, X., Kam, F., Wong, Y., Lai, C., & Wu, H. (2018). Development and evaluation of a nurse-led hypertension management model: A randomized controlled trial. *International Journal of Nursing Studies*, 77, 171–178. <https://doi.org/10.1016/j.ijnurstu.2017.10.006>.