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**ORIGINAL RESEARCH** **E-ISSN:**

# INDIVIDUAL HEALTH BELIEFS ABOUT OSTEOPOROSIS ON ADULT SELF-CARE BEHAVIOR IN MOJO SURABAYA

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**ABSTRACT**
**Background:** Osteoporosis occurs due to imbalance between new bone formation and bone resorption resulting decline in bone mass so that bones become prone to fracture. Person with osteoporosis should have good health beliefs toward their illness in which affect to how they do self-care properly.
**Objective:** This was a descriptive study that aim to identify the individual characteristics and health beliefs about osteoporosis on adult self-care behavior.
**Methods:** The sample was 30 adults with osteoporosis in community that selected by simple random sampling technique. The data analysis using PLS (Partial Least Square). The variable in this study were the individual characteristics, individual health beliefs about osteoporosis, and their self-care behavior.
**Results:** The data analysis using PLS (Partial Least Square) got three points; there were significantly influence of individual characteristics toward their health beliefs ($t = 2.20, > 1.96$), significantly influence of individual health beliefs toward their self-care behavior ($t = 3.90, > 1.96$), and influence of individual characteristics toward their self-care behavior ($t = 0.34, > 1.96$).
**Conclusion:** Nurses should educate the community about osteoporosis including perceptions of susceptibility and severity, barriers, benefits and self eficacy about a healthy diet, activity (exercise) and decreased risk. Control program that is comprehensive, integrated, lifelong and gradually implemented urgently needed to overcome this.

**Key words:** Osteoporosis, health beliefs, self-care behavior.

## INTRODUCTION

Osteoporosis occurs due to imbalance between new bone formation and bone resorption resulting decline in bone mass so that bones become prone to fracture (Cooper & Lindsay, 2005). The prevalence of osteopenia (early osteoporosis) of 41.7% and 10.3% prevalence of osteoporosis (Brunner & Suddarth, 2006). Risk factors that may influence the occurrence of osteoporosis is a factor that cannot be modified and that can be modified. Factors that can be modified is related to lifestyle such as smoking, drinking alcohol, caffeine, physical activity, nutrition (food is not enough calcium, vitamin D, and phosphorus), the use of drugs, and exposure to sunlight (National Osteoporosis Foundation, 2010; Brunner & Suddarth, 2006). Factors that can be modified shows self-care to be done for adults to prevent the onset of osteoporosis. The preliminary study in RW 7 Mojo district showed that five people have risk factors for osteoporosis because they do not have good self-care. They do not exercise regularly, do not pay attention to the intake of calcium and vitamin D in the diet, and never pay

attention to exposure to sunlight. One of them has the habit of smoking. When linked with individual health beliefs, these 5 people do not have a perception of the severity, barriers, and self-efficacy benefits associated with self-management (self-care) against osteoporosis. The purpose of this study to analyze the influence of individual health beliefs about osteoporosis towards self-care behaviors in adults in RT.03 RW.07 Mojo Surabaya.

## METHODS

*Study Design*

The method used was descriptive study.

*Setting*

This research conducted in RT. 03 RW.07 Mojo District of Surabaya.

*Research Subject*

This study population was all citizens RT. 03 RW.07 Mojo district of Surabaya aged 35-50 years, and the sample was 30 respondents with simple random sampling technique.

*Instruments*

The variable in this study were the individual characteristics, individual health beliefs about osteoporosis, and their self-care behavior. The individual characteristics include age, gender, education, occupation, marital status. Individual health beliefs about osteoporosis include perceptions of susceptibility and seriousness, barriers, benefits, and self-efficacy. The implementation of self-care includes a healthy diet, exercise, reduction in risk factors.

*Data Analysis*

This study using PLS (Partial Least Square) to analyze the results.

*Ethical Consideration*

Before collecting data, the researcher conducted ethical clearance from the Ethics Committee of Nursing Diploma 3 Program of Surabaya Health Ministry Polytechnic and obtained permission from National Unity and Politics of Surabaya Regency. The authors confirmed that all respondents had obtained appropriate informed consent.

## RESULTS

*Characteristics of Respondents*

**Table 1.** Distribution of Frequency of Respondents in the RT 03 RW 07, Mojo District, Surabaya (n = 30).

| NO | DESCRIPTION | FREQUENCY | % |
|---|---|---|---|
| GENDER | | | |
| 1 | Male | 8 | 27 |
| 2 | Female | 22 | 73 |
| | Total | 30 | 100 |
| AGE | | | |
| 1 | 30-35 Years | 6 | 20 |
| 2 | 36-40 Years | 11 | 36 |
| 3 | 41- 45 Years | 8 | 27 |
| | 46-50 Years | 5 | 17 |
| | Total | 30 | 100 |
| MARITAL STATUS | | | |
| 1 | Married | 29 | 97 |
| 2 | Not married | 1 | 3 |
| | Total | 30 | 100 |
| JOB | | | |
| 1 | Housewife | 8 | 27 |
| 2 | PNS | 6 | 20 |
| 3 | TNI | 1 | 3 |
| 4 | Employe | 3 | 10 |
| 5 | Private | 12 | 40 |
| | Total | 30 | 100 |
| FAMILY MEMBERS ARE SUFFERING OF OSTEOPOROSIS | | | |
| 1 | Yes | 6 | 20 |
| 2 | No | 24 | 80 |
| | Total | 30 | 100 |

*Individual Health Belief toward Osteoporosis*

**Table 2.** Distribution of Frequency of Individual Health Belief toward Osteoporosis in the RT 03 RW 07, Mojo District, Surabaya (n = 30).

| NO | DESCRIPTION | FREQUENCY | % |
|---|---|---|---|
| PERCEPTION OF OSTEOPOROSIS SEVERITY | | | |
| 1 | Very good | 17 | 56.7 |
| 2 | Good | 12 | 40.0 |
| 3 | Fair | 1 | 3.3 |
| 4 | Poor | 0 | 0 |
| 5 | Very poor | 0 | 0 |
| | Total | 30 | 100 |
| PERCEPTION OF BARRIERS TO OSTEOPOROSIS TREATMENT | | | |
| 1 | Very good | 4 | 13.3 |
| 2 | Good | 26 | 86.7 |
| 3 | Fair | 0 | 0 |
| 4 | Poor | 0 | 0 |
| 5 | Very poor | 0 | 0 |
| | Total | 30 | 100 |
| PERCEPTION OF THE BENEFITS OF OSTEOPOROSIS TREATMENT | | | |
| 1 | Very good | 20 | 66.7 |
| 2 | Good | 10 | 33.3 |
| 3 | Fair | 0 | 0 |
| 4 | Poor | 0 | 0 |
| 5 | Very poor | 0 | 0 |
| | Total | 30 | 100 |
| PERCEPTION OF SELF-EFFICACY | | | |
| 1 | Very good | 14 | 46.7 |
| 2 | Good | 16 | 53.3 |
| 3 | Fair | 0 | 0 |
| 4 | Poor | 0 | 0 |
| 5 | Very poor | 0 | 0 |
| | Total | 30 | 100 |

*Self-Care Behavior toward Osteoporosis*

**Table 3.** Distribution of Frequency of Self-Care Behavior toward Osteoporosis in the RT 03 RW 07, Mojo District, Surabaya (n = 30).

| NO | DESCRIPTION | FREQUENCY | % |
|---|---|---|---|
| A HEALTHY DIET | | | |
| 1 | Very good | 5 | 16.7 |
| 2 | Good | 18 | 60.0 |
| 3 | Fair | 4 | 13.3 |
| 4 | Poor | 3 | 10.0 |
| 5 | Very poor | 0 | 0 |
| | Total | 30 | 100 |
| SPORTS | | | |
| 1 | Very good | 4 | 13.3 |
| 2 | Good | 9 | 30.0 |
| 3 | Fair | 13 | 43.3 |
| 4 | Poor | 4 | 13.3 |
| 5 | Very poor | 0 | 0 |
| | Total | 30 | 100 |
| DECREASING RISK FACTORS | | | |
| 1 | Very good | 3 | 10.0 |
| 2 | Good | 2 | 6.7 |
| 3 | Fair | 5 | 16.7 |
| 4 | Poor | 20 | 66.7 |
| 5 | Very poor | 0 | 0 |
| | Total | 30 | 100 |

Analysis techniques in this study using Partial Least Square (PLS). PLS is a powerful analytical method that neither assume the data with measurement scale nor small sample. PLS approach is a free distribution or in other words do not assume certain distribution data, can be nominal, category, ordinal, interval and ratio (Ghozali, 2006). The research data related to the characteristics of the respondent nominal scale form such as gender, occupation and more. While other variable data models believe that health and self-care in the form of interval scale. PLS is suitable because it does not require data with a particular distribution and very flexible for this study because it does not require too many samples. In the processing of Partial Least Square (PLS) is done in two stages:

1. The first stage is to test the outer models. In this phase is to test:
   a. Convergent validity. Indicators considered valid if it has a value of loading factor greater than or equal to 0.5 or has a value of t > 1.96.
   b. Construct validity. Construct validity value is measured using value Average variance extracted (AVE). Value AVE said to be good if it has a value greater than 0.5.
   c. Discriminant validity. Indicators considered valid if it has a value in a variable loading factor is greater than any other variable. Value standard factor loading greater than or equal to 0.5.
   d. Reliability. Reliability of the study was measured using a composite reliability. The reliability value is said to be good if more than 0.6.
2. The second stage is to test the inner workings of the model. In this phase aims to determine whether there is influence between variables. Tests carried out using t-test. The results of the hypothesis with testing are carried out using the t test. Variables are said to have an effect if t count is greater than t table. t table in this study is 1.96. Likewise, if the relationship between negative variables, the decision is if - t count is smaller than - t table. Calculation results can be seen in the following picture:

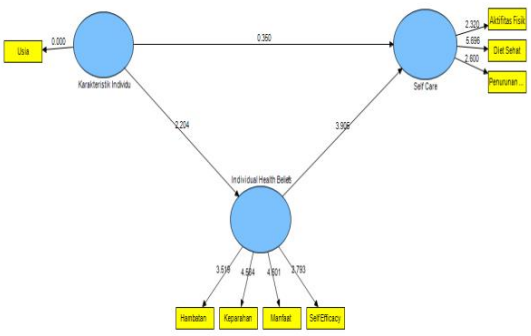


**Figure 1.** Structural Model Test

The test results of structural models:

a. The coefficient estimate of the individual characteristics of the individual health beliefs is 0.408375. The coefficient is positive which was further enhanced when individual characteristics, the higher individual health beliefs. And conversely the lower the individual characteristics, the lower the individual health beliefs Based on values obtained t value 2.203932. The value is greater than the standard value of 1.96 t so that no significant effect.
b. The coefficient estimate of individual health beliefs to self-care is 0.627929. The coefficient is positive that if further enhanced individual health beliefs, the higher the self-care. And conversely the lower the individual health beliefs will get low self-care. Based on the values obtained t value 3.904653. The value is smaller than the standard value of 1.96 t so that there is a significant influence individual health belief to self-care.
c. The coefficient estimate of the individual characteristics of the self-care is 0.069679. The coefficient is positive that if further enhanced the individual characteristics of the higher self-care. And conversely the lower the individual characteristics will get low self-care. Based on the values obtained t value 0.349724. The value is smaller than the standard value of 1.96 t so that there is no significant effect on the individual characteristics of self-care.

## DISCUSSION

The results showed that the characteristics of the residents RT.03

RW.07 Mojo district Surabaya significantly affect the health of individual belief, it shows that when someone is getting old, the higher the education, the experience will make the belief in an individual's health is also good. In individuals who have full-time jobs and has the support of a couple (married) will also get an individual's belief in the better health.

The results showed that the characteristics of the residents RT.03 RW.07 Mojo district Surabaya no significant influence on self-care, this shows that these characteristics influence but not directly to individual self care but through individual health belief first.

The results showed that the health belief affects self care significantly, it could be explained that the perception of the severity of a disease in this regard osteoporosis, perceptions of barriers in the treatment, the perception of the benefits of prevention and perceptions of self-efficacy will greatly affect how a person can take care of himself (self care) either through a healthy diet, exercise, and reduction in risk factors for disease (osteoporosis).

Statistical analysis showed that there was a significant relationship between individual characteristics of the health individual beliefs. This shows that the confidence (belief) is defined as a subjective probability of object relationships of trust and some objects, values, concepts, or specific attributes. The model proposed to explain the health behaviors related to health care utilization is specifically based on two classes of variables: first, the psychological condition of readiness to take certain actions, and secondly, the extent to which a particular action is believed to be, overall, to be helpful in reducing the threat. Readiness to act is defined in terms of the individual's point of view of vulnerability and seriousness than professional views of reality. Belief that determines readiness has elements of cognitive and emotional elements. Emotional aspect has a greater value in a number of behaviors of the cognitive elements (Glanz, 2008). There are two concepts of value-expectations can be formulated in health behavior, assuming that a person 1) hopes to avoid disease or regain health, and 2) hopes that certain health measures can prevent (or improve) disease. The expectation is further illustrated in the case of individual estimates of the personal vulnerability and perceived severity of a disease, and the possibility to reduce the threat of a disease through his actions.

## CONCLUSION

There was a significant influence on the characteristics of the individual against individual health beliefs about osteoporosis in adults. There is a significant relationship between individual health beliefs about osteoporosis on the implementation of self-care in adults. There was no significant effect of individual characteristics on the implementation of self-care osteoporosis in adults.

## SUGGESTION

Given counseling on society RT.03 Mojo Surabaya RW.07 village of osteoporosis include perceptions of susceptibility and severity, barriers, benefits and self-efficacy about a healthy diet, activity (exercise) and decreased risk. To prevent the occurrence of osteoporosis in Surabaya community needs to do a similar study in Surabaya

## REFERENCES


Brunner & Suddrath. (2006). *Textbook of Medical-Surgical Nursing, tenth edition*. Jakarta: EGC.

Cooper & Lindsay. (2005). *Prevention and Treatment of Osteoporosis: A Clinician's Guide*. New York: Taylor and Francis.

Devine, Amanda, et al. (2009). Tea Drinking is Associated with Benefits on Bone Density in Older Women. *The American Journal of Clinical Nutrition 86*(4): 1243-7.

Glanz, K., Rimer, K., Viwanath, K. (2008). *Health behavior and health education theory, research and practice, 4th Edition*. San Francisco: Jossey-Bass.

Ghozali, Imam. (2006). *Aplikasi Analisis Multivariate dengan Program SPSS, edisi keempat*. Semarang: Badan Penerbit Universitas Diponegoro.

Kementrian Kesehatan Republik Indonesia RI. (2008). *Keputusan Menteri Nomor 1142/Menkes/SK/XII/2008 Tentang Pedoman Pengendalian Osteoporosis*. Jakarta: Menteri Kesehatan Republik Indonesia.

Jehle, P.M. (2003). Steroid-induced osteoporosis; how can it be avoided? *Oxford Journals 18(5): 681-4.*

Lane, N.E. (2003). *Osteoporosis Petunjuk Untuk Penderita dan Langkah-Langkah Penggunaan Bagi Keluarga*. Jakarta: Raja Grafindi Persada.

Lindsay R, et al. (2008). *Harrison's principle of internal medicine 17 ed*. USA: Mc Grow-Hill.

National Osteoporosis Foundation. (2010). *Clinician's Guide to Prevention and Treatment of Osteoporosis*. Washington, DC: National Osteoporosis Foundation.

Tomison, T. (2013). Health-seeking behaviour and strategic healthcare planning in Sierra Leone. *International Development, Working paper series ISSN 1470-2320 No.13-*139.

Wardhana. (2012). Faktor Risiko Osteoporosis Pada Pasien Dengan Usia Di Atas 50 Tahun. Laporan Hasil *Karya Tulis Ilmiah. Semarang: Fakultas Kedokteran Universitas Diponegoro.*