

Factors related to the Perception of Acupressure as Prevention of Anemia in the Elderly at the Nursing Home

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ABSTRACT

Background: Anemia or known by the public as anemia in the elderly often occurs unknowingly. The prevalence of anemia in Indonesia in the elderly is 42.3%. Acupressure utilizes stimulation on the body's acupuncture points, ears and scalp to affect the flow of the body's bioenergy called qi as one of traditional medicine. Perceptions of the use of traditional medicine are of three types: holding belief in conventional medicine, doubting conventional medicine, and holding belief in both traditional medicine and conventional medicine. The purpose of this study was to determine the factors associated with the perception of acupressure as a prevention of anemia in the elderly at nursing homes.

Subjects dan Method: This study was a cross-sectional study in January 2023. The sample used was 110 elderly people in nursing homes in the Surakarta area, selected using a purposive random sampling technique. The dependent variable of this research is the perception of acupressure as prevention of anemia. The independent variables in this study were education of the elderly, knowledge of acupressure, history of anemia, safety of acupressure and willingness to do acupressure. Data collected by questionnaire. Data analysis used multiple logistic regression with Stata 13.

Results: Factors related to positive perceptions of acupressure as prevention of anemia in the elderly were higher education in the elderly (OR= 12.77; 95% CI= 1.842 to 88.74; p=0.010), high knowledge about acupressure (OR= 13.05; 95% CI= 2.22 to 76.78; p=0.004), had a history of anemia (OR= 13.50; 95% CI= 2.15 to 84.59; p=0.005), safety of acupressure (OR= 32.85; 95% CI= 4.96 to 217.55; p<0.001), and willingness performed acupressure (OR= 11.03; 95% CI= 1.97 to 61.71; p=0.006).

Conclusion: Factors related to the perception of acupressure as prevention of anemia in the elderly are the elderly's higher education, high knowledge of acupressure, history of anemia, safety of acupressure, and willingness to do acupressure.

Keywords: perception of acupressure, prevention of anemia, the elderly.

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Cite this as:

Sholihah IA, Haryanti T, Ani N (2023). Factors related to the Perception of Acupressure as Prevention of Anemia in the Elderly at the Nursing Home. J Epidemiol Public Health. 08(02): 265-274.
<https://doi.org/10.26911/jepublichealth.2023.08.02.11>.



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BACKGROUND

Anemia or known by the public as anemia is defined by WHO (2015) namely low blood hemoglobin concentration, and is a public health problem in low, middle and income

countries, and has a negative impact on social and economic development (WHO, 2015). There are several types of anemia, one of which is nutritional anemia. Nutritional anemia occurs due to low intake of

certain nutrients to meet the needs for synthesis of hemoglobin and erythrocytes. Iron deficiency is the most common cause of nutritional anemia, where the population groups most susceptible to iron nutritional anemia include toddlers, adolescents, and women of reproductive age (15–49 years), pregnant women, and the elderly (Ani, 2016).

A systematic review of 34 studies showed that, in people aged >65 years, the prevalence of anemia was 12% in people living in the community, 40% in people who were hospitalized and 47% in residents of nursing homes (Katsumi et al., 2021). One study in the United States explained that the prevalence of anemia was around 20% in community-dwelling older adults and around 48-63% among nursing home residents (Greenblum et al., 2022). While the prevalence of anemia in Indonesia in the elderly aged 55-64 years was 24.5%, elderly aged 65 to 74 years was 31.7%, and elderly aged >75 years was 42.3% (Ministry of Health RI, 2019).

Previous studies explained that among older adults showed that iron stores were reduced, independent of anemia status, possibly related to inflammation, increased risk of physical and cognitive impairment and increased overall morbidity and mortality (Stahl-Gugger et al., 2022). Anemia in the elderly often occurs without realizing it. The elderly are part of the elements of society whose existence tends to receive less attention. Anemia in the elderly is most often chronic. The cause could be due to decreased digestive function, poor nutritional intake, or due to other diseases suffered. Attention to the incidence of anemia in the elderly is very less compared to the incidence of anemia in women of childbearing age or young women. The program for administering iron tablets also targets women of reproductive age (Rosyidah et al., 2021).

Perception is etymologically derived from the Latin: *perceptio* or *percipioc*, meaning the act of compiling, recognizing, then interpreting information received by the sensory senses so as to provide an overview of understanding the environment which includes all signals in the nervous system, which are the result of physical or chemical stimulation of the sensory organs. Perception is a person's process of knowing several things through the five senses. Perception does not appear to exist because it occurs outside of awareness, but perception depends on the complex functions of the nervous system (Utami and Nanda, 2019).

Traditional Chinese Medicine (TCM) is also considered a Complementary and Alternative Medicine (CAM), which was originally used in China, Japan, Korea, and elsewhere around the world. According to WHO (2019) in Chen et al (2019) that TCM has been included in the International Classification of Diseases according to Revision 11 (Chen et al., 2019).

Acupressure makes use of stimulation on the patient's body's acupuncture points, ears and scalp to affect the flow of the body's bioenergy called qi. Qi flows in a meridian (channel), so the essence of acupressure treatment is to restore the body's balance system (homeostasis) which is realized by the regular and harmonious flow of qi in the meridians so that the patient is healthy again. By strengthening qi, the body's resistance will be good, the causes of disease can be eliminated indirectly (Setyowati, 2018).

The prevalence of using traditional/alternative/complementary medicine ranges from 20.0 to 97.4% in Southeast Asian countries. A study from Hong Kong classified perceptions of the use of traditional medicine into three types: holding belief in conventional medicine (63%), doubting conventional medicine (24%), and holding belief in

both traditional medicine and conventional medicine (14%) (Xin et al., 2020).

This study aims to analyze the factors associated with the perception of acupressure as a prevention of anemia in the elderly in nursing homes. The benefit of this research is that it can be input and information material about the perception of acupressure as prevention of anemia in the elderly.

SUBJECTS AND METHOD

1. Study Design

This study used an analytic observational method with a cross sectional approach. The research was carried out at the AS Nursing Home, GSB Nursing Home and DBS Nursing Home in January 2023.

2. Population and Sample

The population in this study were all elderly people in nursing homes. The samples taken were 110 research subjects. Sampling in this study was carried out using purposive random sampling.

3. Study Variables

The dependent variable is the perception of acupressure as anemia prevention. Independent variables in this study were: education of the elderly, knowledge about acupressure, history of anemia, safety of acupressure, and willingness to do acupressure.

4. Operational Definition of Variables

The perception of acupressure as prevention of anemia: is a view or response from information obtained regarding beliefs about acupressure therapy as an effort to prevent anemia. Measuring tool used is a questionnaire. Continuous data scale for the purposes of data analysis is changed to a dichotomy. Code 0= negative and 1= positive. Elderly education is the level of formal education of the elderly in developing something or information to make it better. Measuring tool used is a questionnaire. The categorical data scale for the purposes of data

analysis was changed to a dichotomy. Code 0= low and 1= high.

Knowledge of acupressure: is an understanding that is known by the elderly regarding information about acupressure therapy. Measuring tool used is a questionnaire. Continuous data scale for the purposes of data analysis, changed to a dichotomy. Code 0= low and 1= high.

A history of Anemia: is an elderly who has suffered from Anemia and then recovers after taking medication or recovers without special treatment. Measuring tool used is a questionnaire. Categorical data scale. Code 0= no and 1= yes.

Safety of Acupressure: is the assumption of the elderly who consider Acupressure to have no side effects. Measuring tool used is a questionnaire. Categorical data scale. Code 0= unsafe and 1= safe.

Willingness to do acupressure: is the elderly who are willing to do acupressure therapy to prevent anemia. Measuring tool used is a questionnaire. Categorical data scale. Code 0= no and 1= yes.

5. Study Instruments

The data collection instrument in this study used a questionnaire or questionnaire. The questionnaire contains the characteristics of the respondents and research variables.

6. Data Analysis

The researcher conducted data analysis and statistical tests on the research data which included: univariate analysis, namely describing each dependent and independent variable and grouping according to the type of data entered. Bivariate analysis using chi square, namely knowing the relationship of each independent variable to the dependent variable. Multivariate analysis uses Multiple Logistic Regression which analyzes the relationship between one or several independent variables that are continuous or binary with variables that are binomial or dichotomous.

RESULTS

1. Univariate Analysis

The sample description explains the continuous data of research variables including the perception of acupressure as prevention of anemia and knowledge about acupressure

in table 1.

Table 1 shows that from all respondents the average score of acupressure perception as prevention of anemia was 31.98 and the average score of knowledge about acupressure was 5.99.

Table 1. Description of the characteristics of the research subjects

Variable	N	Mean	SD	Min.	Max.
Perception of acupressure as prevention of anemia	110	31.98	7.40	18	48
Knowledge of acupressure	110	5.99	2.10	2	10

Table 2 shows that of the 110 elderly, the majority of positive perceptions of acupressure as prevention of anemia were 72 (65.45%), the education of the elderly was low by 67 (60.91%), the knowledge about

acupressure was high by 63 (57.27%), they had a history of anemia by 73 (66.36) %, the safety of acupressure was 70 (63.64%), and the willingness to do acupressure was 76 (69.09%).

Table 2. Univariate analysis of factors related to the perception of acupressure as prevention of anemia in the elderly

Characteristics	Category	N	%
Perception of Acupressure as prevention of anemia	Negative (score < 32)	38	34.55
	Positive (score ≥ 32)	72	65.45
Elderly education	Low (< SHS)	67	60.91
	High (≥ SHS)	43	39.09
Knowledge of acupressure	Low (score < 6)	47	42.73
	High (score ≥ 6)	63	57.27
History of Anemia	No	37	33.64
	Yes	73	66.36
Acupressure safety	Unsafe	40	36.36
	Safe	70	63.64
Willingness to do acupressure	No	34	30.91
	Yes	76	69.09

2. Bivariate Analysis

Table 3 shows the results of a bivariate analysis of factors related to the perception of acupressure as prevention of anemia: high elderly education (OR= 10.05; p<0.001), high knowledge of acupressure (OR= 7.81;

p<0.001), a history of anemia (OR= 6.35; p<0.001), safety of acupressure (OR= 14; p<0.001), and willingness to perform acupressure (OR= 13.46; p<0.001).

Table 3. Results of the chi-square test on factors related to the perception of acupressure as prevention of anemia in the elderly

Variable	Perception of Acupressure as Prevention of Anemia				OR	P
	Negative		Positive			
	N	%	N	%		
Elderly Education						
Low (< SHS)	34	50.75	33	49.25	10.05	<0.001
High (≥ SHS)	4	9.30	39	90.70		
Knowledge of acupressure						
Low (score < 6)	28	59.57	19	40.43	7.81	<0.001
High (score ≥ 6)	10	15.87	53	84.13		
History of Anemia						
No	23	62.16	14	37.84	6.35	<0.001
Yes	15	20.55	58	79.45		
Acupressure safety						
Unsafe	28	70.00	12	30.00	14	<0.001
Safe	10	14.29	60	85.71		
Willingness to do acupressure						
No	25	73.53	9	26.47	13.46	<0.001
Yes	13	17.11	63	82.89		

3. Multivariate Analysis

Table 4 shows the results of the multivariate analysis that the factors associated with the perception of acupressure as prevention of anemia were high elderly education (OR= 12.77; 95% CI= 1.842 to 88.74; p=0.010), high knowledge of acupressure (OR= 13.05;

CI 95) %= 2.22 to 76.78; p=0.004), history of anemia (OR= 13.50; 95% CI= 2.15 to 84.59; p=0.005), safety of acupressure (OR= 32.85; 95% CI= 4.96 to 217.55; p<0.001) , and willingness to do acupressure (OR= 11.03; 95% CI= 1.97 to 61.71; p=0.006)..

Table 4 Analysis of multiple logistic regression tests on factors related to the perception of acupressure as prevention of anemia in the elderly

Variable	Perception of acupressure as prevention of anemia			
	OR	CI (95%)		P
		Lower limit	Upper limit	
Elderly education (High)	12.77	1.84	88.74	0.010
Knowledge of acupressure (High)	13.05	2.22	76.78	0.004
History of Anemia (Yes)	13.50	2.15	84.59	0.005
Acupressure safety (Safe)	32.85	4.96	217.55	<0.001
Willingness to do acupressure (Yes)	11.03	1.97	61.71	0.006

DISCUSSION

1. The relationship between elderly education and the perception of acupressure as anemia prevention

Seniors with higher education are better at receiving positive perceptions of acupressure

as prevention of anemia than those with low education (OR= 12.77; 95% CI= 1.842 to 88.74; p= 0.010).

A recent study by Xin et al. (2020) revealed that education can increase under-

standing of traditional medicine and facilitate its use in China (Xin et al., 2020).

This is related, among other things, to the efforts made by these individuals in maintaining their health where individuals with a better level of education will make efforts to maintain health more precisely than those with lower education. According to Notoatmodjo (2014) that a person's education can increase his intellectual maturity so that he can and is able to make the best decisions in maintaining his health status. High education will enable individuals to have the ability to understand the potential of a situation to cause disease so that they pay more attention to efforts to maintain health (Nurhidayati et al., 2018).

The higher a person's education, the easier it is for them to receive information, and in the end, the more knowledge they have. Conversely, if someone has a low level of education, it will hinder the development of one's attitude towards acceptance, information and newly introduced values (Morowatisharifabad et al., 2019).

2. The relationship between knowledge about acupressure and perception of acupressure as prevention of anemia

The elderly who had high knowledge about acupressure were better at receiving positive perceptions of acupressure as prevention of anemia than the elderly with low knowledge about acupressure (OR= 13.05; 95% CI= 2.22 to 76.78; p=0.004).

Knowledge is the result of "knowing" and this occurs after people perceive a particular object. Sensing of objects occurs through the five human senses namely sight, hearing, smell, taste and touch. Most of human knowledge is obtained through the eyes and ears. Knowledge or cognitive is dominant which is very important in shaping one's actions (over behavior) (Notoatmodjo, 2014). Building positive knowledge

and values will largely influence a person's decisions by increasing their knowledge so that high knowledge can assist clients in making decisions that patients face in the future (Hawley et al., 2018).

A recent study in Australia suggested that providing traditional medicine knowledge interventions as Complementary and Alternative Medicine (CAM) could increase parents' awareness of the range of CAM available and broaden their perceptions of the benefits of using CAM (Gallego, 2019). Knowledge of CAM has been shown consistently in previous research, which shows that health education in the context of CAM is necessary to encourage people to make informed choices for their health (Shorofi et al., 2019).

3. Relationship between history of anemia and perception of acupressure as prevention of anemia

Elderly who have had a history of anemia are better at receiving positive perceptions of acupressure as prevention of anemia compared to elderly who have a history of anemia (OR= 13.50; 95% CI= 2.15 to 84.59; p= 0.005).

Elderly is one of the risk factors for decreased body function and immunity in humans, because the older a person gets, the aging process will occur which causes damage to molecular and cellular processes. In addition to decreased body function and immunity, in the elderly there is also a decrease in hemoglobin levels (Suherlim et al., 2018). Research conducted by Endrikinikapoulos et al. (2020) stated that the older you get, the more difficult it is for a person to meet daily iron needs because the function of the digestive organs begins to decline, so that serum iron levels will also decrease.

In line with this research, a study conducted by Xin et al. (2020) that a history of chronic disease is significantly related to

beliefs and use of traditional medicine, namely cultural perceptions and practices of traditional medicine in China. People are more likely to utilize traditional medicine when they have a history of cardiovascular disease, lung disease, cancer, prostatitis, arthritis and nervous system disease; at the same time, people with cancer, prostatitis and fractures are very likely to be trusted in the influence of traditional medicine (Xin et al., 2020). Traditional medicine provides a high chance of providing effectiveness because it has advantages in the treatment and prevention of disease compared to conventional medicine (Fan et al., 2018).

4. The relationship between the safety of acupressure and the perception of acupressure as prevention of anemia

Elderly who have confidence in the safety of acupressure are better at accepting positive perceptions of acupressure as prevention of anemia than the elderly who do not have confidence in the safety of acupressure (OR= 32.85; 95% CI= 4.96 to 217.55; $p < 0.001$).

The consumption of iron supplements is usually given to treat iron deficiency anemia. However, hemochromatosis or injury may occur due to indiscriminate use of oral iron, and poor adherence to treatment in patients, due to the side effect of high gastrointestinal frequency. In addition to western treatment, blood deficiency syndrome can be treated with traditional Chinese medicine (Dang et al., 2019).

One of the therapeutic methods that can be used is acupressure, which is a traditional Chinese medicine technique (Resano-Zuazu, 2020). Acupressure or applying pressure to certain points on the body is a non-pharmacological intervention that is very efficient and relatively safe because it does not involve invasive procedures, or injure the skin. Acupressure is an alternative treatment without drug dependence and

side effects. Acupressure can be done with the help of others or done independently. Assistance for elderly families is expected to be able to do acupressure independently (Dermawan et al., 2019).

In line with the research conducted by Le et al. (2022) that most respondents had a positive opinion about traditional medicine because it is safer than western medicine and does not cause side effects when applied. This is supported by the statement of the Sasang Constitution of Korean traditional medicine medical study program, suggesting special treatment of blood deficiency with traditional medicine consisting of acupuncture, acupressure and herbal medicine is an effective and safe treatment (Ha et al., 2020).

5. The relationship between willingness to do acupressure and perception of acupressure as anemia prevention

The elderly who were willing to do acupressure were better at accepting positive perceptions of acupressure as prevention of anemia than the elderly who were not willing to do acupressure (OR= 11.03; 95% CI= 1.97 to 61.71; $p = 0.006$).

According to Hmwe (2020) that the majority of respondents have a positive perception and are willing to do acupressure because they have knowledge about acupressure and can improve sleep quality. In line with previous research by Meng et al. (2020) that 33.4% of participants have a high level of willingness to pay for Traditional Chinese Medicine Services for disease prevention and health care. Participants' willingness was related to their educational status, monthly income, monthly expenses, medical examination of Traditional Chinese Medicine services for disease prevention and health care available in the community ($p < 0.050$).

This is supported by previous studies that people who have done acupressure feel that the services provided by healers, ranging from massage, therapy and existing medicines, are very good. Patients also do not need to go to the doctor directly. The reasons patients receive traditional acupressure treatment are as follows: traditional acupressure treatment does not cause side effects and also has a very satisfying effect because the body becomes more relaxed and comfortable (Tamalonggehe et al., 2021).

AUTHOR CONTRIBUTION

Imrok Atus Sholihah as the main researcher played a role in collecting research data, formulating research articles, and processing data. Titik Haryanti played a role in the formulation of the background and discussion of the research. Nur Ani played a role in the formulation of the framework and conceptual framework.

ACKNOWLEDGMENT

The researchers thanked the Head of the US Nursing Home, GSB Nursing Home and DBS Nursing Home for allowing this research to be carried out. Thank you to all the elderly who have been willing and cooperative to be research respondents.

FUNDING AND SPONSORSHIP

None.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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