A RANDOMISED TRIAL OF THE ROLE OF MEDICINE AND PHARMACISTS
ON CHRISTIAN COMMUNITY

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ABSTRACT

Introduction: Medicine has been an inseparable part of human civilization since there will always be a health problem in human life. In developing countries, certain religions and beliefs may distort the perception of medicine which lead to social problems that are faced by pharmacists and clinicians. Indonesia has a social background of animism and dynamism that it inherited from its ancestors and it made the community still believe in shaman healers and traditional or alternative medicine without scientific proof. **Objective:** This study measures community trust in medicine and pharmacists, especially Christian communities based on their spiritual beliefs and provides a descriptive description based on the measure. Variables involved include age, baptism status, and level of education. The benefit of this research for pharmacists is to provide pharmaceutical services based on community spiritual trust to create a comprehensive pharmaceutical care design, both scientifically and spiritually. **Method:** The research method used is cross-sectional. The measurement is done by a questionnaire with a Likert scale. The results of this study indicate that the role of medicine and pharmacists in the Christian community is influenced by age, baptism status, and education level. **Result:** High scores from the questionnaire results were obtained from the adult age group (17-60 years), high school education level, diploma and bachelor's degree, as well as the status of being baptized. **Conclusion :** the role of medicine and pharmacists in the Indonesian Christian community is more prevalent at a more mature age, higher educational level, and baptized status.

Keywords : the role of medicine, the role of pharmacist, christian community, public health, age, education level, spiritual status

INTRODUCTION

As stated by WHO, health is a condition of a complete physical, mental, and social well-being, and not limited to the absence of disease (Huber et al., 2011). Health is not always related to medicine and medical treatment, but also requires the role of competent people in mental and social well-being. Religion and spiritual mentoring by religious leaders are an effort to improve mental and social well-being. In comparison to other countries, developing countries have a lower standard of life,

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underdeveloped industries, and a low human development index. Accessible, qualified, and responsive human resources are widely agreed upon by policymakers, researchers, and practitioners as a significant driver of population health (Schwerdtle et al., 2017).

Since prehistoric times, the concept of health has developed as an inseparable part of human civilization. As long as humans live, there will always be health problems, where at that time medicine became an inseparable part of prehistoric religion.The Ayurvedic medical system is thought to be the oldest in the world. Medicinal herbs were used by many tribes as medicine ever since prehistoric times. This system of medicine appears to have been used by the people of the Indus Valley civilization, according to evidence (Tiwari et al., 2021). Moreover, in the pre-Hellenistic period, the concept of medicine was not fully established as an illness was usually regarded as a divine punishment, and its treatment was entrusted to priests who prayed to the gods for healing. The most similar job compared to medical practice was a derivation from Egyptian therapeutic tradition which was solely based on experience and was performed by people who knew mostly plant-based remedies, but it had no theoretical basis for the mechanism of action. Ancient priests of Asclepius practiced Greek medicine that was established on belief about human nature and the origins of illness and healing. Philosophy, on the other hand, would become an intrinsic element of medicine and its progress as a result of the evolution of mind for the continual exploration of "κόσμος" (world) knowledge. The Greek physician Galen, who lived during the Roman Empire, affirmed the close relationship between philosophy and medicine. Spiritualism and religion is closely related to the history of medicine and cannot be separated from it. Treatment of a disease begins with a belief in the existence of a power that is beyond human ability and can heal someone. Modern medicine began with the industrial revolution, whereas the logical cognitive aspects of medicine were separated from belief in the reality of supernatural powers (Castiglioni, 2019; Santacroce et al., 2017; Sebastian, 2018). Likewise, church history cannot be separated from science, including medical and medical science, and since learning was more likely to be done in the church, they also play an important role in the development of science. Since the industrial revolution, the church's role in science began to be separated and various educational institutions outside the church emerged, including medical and pharmaceutical education (Landberg, 2020).

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (Callahan, 1973). Health problems in developing countries are still struggling with physical illness and have not yet reached the level of mental and social well-being. Health problems cannot be separated from social problems. Health problems are not only disease problems as stated by WHO, but also social conditions that accompany a disease require a separate approach. Gender, economic conditions and education affect public health. Various studies have been conducted

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to observe the relationship between health and social problems in society (Stonington et al., 2018; Heine et al. 2021). Gender also affects a person's assessment of pharmacist drugs, where it is found that women trust the role of pharmacists more than men. On the other hand, male is more rational and logical in assessing and using drugs (Bartz et al. 2020).

However, in the implementation in the community, there are counterproductive efforts from medical health services, clinicians and pharmacists, with religion and beliefs taught by ancestors and religious leaders from generation to generation. Indonesia, as in other Asian countries, has a social background of animism and dynamism as a system of indigenous culture and religion inherited from their ancestors. This cultural and religious system inherits beliefs in spiritual and mystical things that have no scientific basis for analysis, including in terms of health, disease, and medicine. The existence of shaman healer and traditional or alternative medicine in Indonesia is still widely found and trusted by the community. The importance of this research and its novelty is to get an overview of the role of medicine and pharmacists in developing countries that face challenges from religious doctrines and beliefs taught by their ancestors from generation to generation. This study measures how much the Christian community trusts in medicine and pharmacists compared to their spiritual beliefs by separating various variables, including age, baptism status, and level of education. The purpose of this study is to provide a descriptive account of the Christian community's attitude toward medicine and pharmacists. While for pharmacists, the research can allow them to provide pharmaceutical services based on community spiritual trust, which allows them to construct a comprehensive pharmaceutical care design that is both scientific and spiritual.

METHOD

The research method used is cross-sectional. The measuring instrument used is a questionnaire with a Likert scale. Variables in this study are age, level of education and baptism status as independent variable; the role of medication and pharmacists as dependent variable; Christianity and setting population as intervening variable.

The population of the Christian community is 20.400.000 people. The Slovin's Formula is given as follows: $n = N/(1+Ne2)$, where n is the sample size, N is the population size and e is the margin of error to be decided by the researcher. From the Slovin's formula, total participants obtained for samples amount 400 people. Participants in this study were obtained from population data recorded as Christians in each province and district. The selection of participants from the data was carried out randomly based on the division of the province and district area, thus each province was represented by the same percentage of participants to ensure that the data was evenly distributed and could be replicated.

Participants who were selected in this study had the right to refuse, so that in determining the participants were given a 10% reserve (440 participants) and 50 participants for validity and reliability test for this questionnaire. Participants must fill out informed consent in order to confirm their willingness to participate in the study.

The questionnaire is 50 questions divided in 2 sections, 10 questions are about perception of the medication and 40 questions about perception of pharmacists. All questions used are closed questions and scaled with Likert scale 1-5. Construct validity was examined by comparing item scores. In addition, 2-week and 4-week test-retest reliability were studied in the study.

Figure 1. Research design
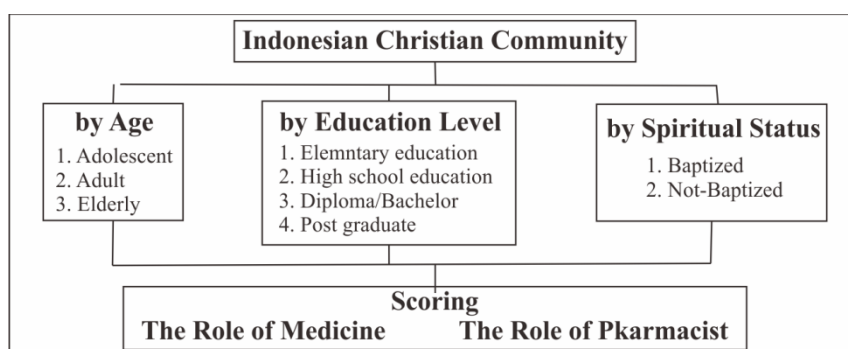
(Soegiantoro et al., 2021)

RESULT AND DISCUSSION

A total of 50 participants answered the questionnaire. 22 out of 50 participants completed the 2-week test-retest reliability questionnaire, while 28 participants completed the 4-week test-retest reliability questionnaire. The 2-week and 4-week test-retest reliability varied between ICCagreement from 0.39 to 0.70 and 0.58 to 0.78. Moderate inter-items correlations were observed between the role of medication and the role of pharmacists. The questionnaire items showed the expected correlations with r -0.11 to 0.21, thus it showed that the questionnaire used in this study is valid and reliable.

The participants in this study were 531 people who were randomly selected based on the percentage of the Christian population in each province and district. The number of participants obtained has exceeded the minimum sample size based on the Slovin's formula, so it can be concluded that this study can reflect the population value.

Table 1. Medication and pharmacist role scores by age

Age	Score of Medication	Score of Pharmacist

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Under 17	30.35 ± 0.621	148.71 ±1.708
17 - 25	32.25 ± 0.411	154.43 ± 0.991
26 - 40	33.30 ± 0.599	154.40 ± 1.524
41 - 60	32.42 ± 0.983	153.17 ± 2.419
More than 61	28.60 ± 0.507	139.80 ± 3.904
Maximum Score	50.00	200.00

Statistical analysis of the score for the role of medication and pharmacists, there was no significant difference between the age groups of 17-25 years, 26-40 years, and 41-60 years. Meanwhile, the age group under 17 years old and above 61 years old were significantly different. From the scale of 100, the highest score for the role of treatment is 67, while for the role of pharmacist is 77 (table 1). Age affects the maturity of the mindset and ability to analyze a health problem. Therefore, the value of understanding the role of medicine and pharmacists will increase as the age increases. But, as people get older, their ability to think critically declined thus resulted in the decrease in the score of understanding the role of medicine and pharmacists in elderly group.

Table 2. Medication and pharmacist role scores by education level

Education	Score of Medication	Score of Pharmacist
Elementary School	27.71 ± 1.614	143.71 ± 6.896
Junior High School	31.44 ± 0.701	148.55 ± 1.803
Senior High School	31.50 ± 0.407	151.55 ± 1.065
College/University	33.11 ± 0.478	152.88 ± 1.115
Maximum Score	50.00	200.00

Statistical analysis of the score for the role of medication, there was no significant difference between the education level groups of junior and senior high school. Meanwhile, according to the score for the role of pharmacist, there was no significant difference between the education level groups of senior high school and college/university. The highest score for the role of treatment is 66, while for the role of pharmacists is 76 out of a scale of 100. Education level greatly affects thinking maturity and analytical skills, this is proved by higher scores on understanding the role of medicine and pharmacists amongst participants with higher education level (table 2).

Table 3. Medication and pharmacist role scores by baptism status

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Baptism Status	Score of Medication	Score of Pharmacist
Not Baptized	30.04 ± 0.388	147.58 ± 1.503
Baptized	32.61 ± 0.545	154.24 ± 1.322
Maximum Score	50.00	200.00

According to statistical analysis for the role of medication and pharmacists, there was a significant difference between baptism status groups (table 3). Higher score in the baptized group indicates not only spiritual maturity, but also mental maturity. As a baptized individual, it does not mean that a person blindly believes in spiritual things. Having been baptized, an individual may distinguish what should be received spiritually and which should be received by reasoning.

CONCLUSION

In developing countries, especially those with animism and dynamism background, the role of medicine and pharmacists in the public health sector is closely related to religion. As a result, there is still a lack of understanding of the role of medicine and pharmacists among people. Based on the study, The role of medicine and pharmacists in the Indonesian Christian community is more prevalent at a more mature age, higher educational level, and baptized status.

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