ORIGINAL ARTICLE

WILEY International Journal of Rheumatic Diseases

Factors associated with health care seeking behavior for musculoskeletal pain in Indonesia: A cross-sectional study

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Funding information
This study was supported by PT Roche Indonesia Research Grant.

Abstract

Aim: To assess the factors defining healthcare-seeking behavior of people with musculoskeletal pain in the urban community of Malang City, East Java, Indonesia.

Methods: A cross-sectional survey was performed in Malang City, East Java, Indonesia. In total, 2067 participants aged 16-93 years were interviewed. The sociodemographic and socioeconomic factors of healthcare seeking behavior, musculoskeletal pain, disability, and adverse drug reactions were assessed using the validated Indonesian version of Community Oriented Program for the Control of Rheumatic Disease (COPCORD) protocol by International League of Associations for Rheumatology and the World Health Organization core questionnaire. Chi-square test was applied to assess the determinants of health-seeking behavior for musculoskeletal pain.

Results: Slightly more than one-third of the respondents (36%) with musculoskeletal pain, described as osteoarthritis, low back pain, gouty arthritis, soft tissue rheumatism, and autoimmune arthritis, were assessed for their health-seeking behavior. About 73% of all those participants sought treatment for their musculoskeletal symptoms. Treatment modality used was modern healthcare, traditional healthcare, self-treatment using traditional medication, self-treatment using modern medication with the proportions of 20.94%, 25.23%, 33.95%, 25.77%, respectively. Disability significantly affected health-seeking behavior as the major determinant (prevalence ratio [PR] 1.087, 95% CI 1.031-1.146, $P = 0.002$), followed by age (PR 1.043, 95% CI 1.000-1.087, $P = 0.049$). Healthcare-seeking behavior was associated with the presence of adverse drug reactions ($P < 0.001$).

Conclusion: Factors associated with musculoskeletal pain health-seeking behavior were disability and age. Self and traditional healthcare treatment were further associated with an adverse drug reaction.

KEYWORDS
adverse drug reaction, COPCORD, health seeking behavior, musculoskeletal pain

1 | INTRODUCTION

Musculoskeletal pain has become a public health priority as a major cause of pain and decreased quality of life.[1-3] In developing and developed countries, musculoskeletal disorders contribute 1.7% and 3.4% total burden of disease, respectively.[4] Musculoskeletal disorders globally caused 21.3% of the total years lived with disability (YLDs).[1] In 2013, about 11 per 100 Indonesians were newly diagnosed with some form of joint disease. East Java province is among the provinces with high joint diseases prevalence with slightly over 11% of its population affected by those diseases. Individuals with joint diseases tended to be female, had lower educational levels and worked as farmers, fishers or laborers.[5]

Musculoskeletal pain has various manifestations ranging from mild pain to death. Musculoskeletal complaints are, in most countries, common reasons for consulting with a physician and seeking treatment; they make up to 15%-20% of primary care consultations.[6] Prior studies demonstrated that healthcare-seeking behavior for musculoskeletal pain is likely to vary across the world, ranging around 28%-80%.[7-13] Variations in the treatment of the community are influenced by the sociodemographic, socioeconomic factors, and also increasing numbers of healthcare facilities and the types, methods, and equipment of health services available in healthcare facilities.[14,15] The 2001 Indonesian National Socioeconomic Survey (*Survey Sosial Ekonomi Nasional* or *Susenas*) differentiated the pattern of health-seeking behavior in Indonesia into self-treatment and outpatient treatment. In East Java, which has 9 488 953 inhabitants, outpatient treatment consists of modern medicine (84.3%), traditional medicine (28.7%), and others (8.5%). For self-treatment, people used modern drugs (81.2%), traditional medication (34.2%) and others (41.4%).[16]

Epidemiological data are very important to identify the magnitude of the problem and the effects of musculoskeletal pain, especially in developing countries like Indonesia. These data can be used to provide advice and assist in defining an intervention plan for both detection and therapy.[8,9,17] However, there is still lack of data collected in Indonesia, and this becomes a particular problem in health planning for musculoskeletal pain. An earlier study by Darmawan et al[18] used the Community Oriented Program for the Control of Rheumatic Disease (COPCORD) method to record the prevalence of musculoskeletal pain, disability and treatment-seeking behavior in stages I and II. It found high prevalence of musculoskeletal pain and disability in the population of a region in Central Java Province. On top of that, the most common care-seeking both in rural and urban areas was traditional health care, because of the shortage of professional health services.[18] These earlier published data suggest a need for an epidemiological survey on musculoskeletal pain as well as a variety of related effects on other populations in Indonesia, including Malang City, East Java Province. Hence, this study aimed to assess health-seeking behavior of people with musculoskeletal pain in Malang City, East Java, Indonesia.

2 | MATERIAL AND METHODS

2.1 | Study design and sample selection

This study was a cross-sectional survey to identify musculoskeletal pain in a population of Malang City, East Java Province during 3 months, October to December 2015. The inclusion criteria were people aged 16-93 years and willing to participate in the study. Informed consent was obtained from all subjects prior to the study. The representative population sample selected in this study was 2067 subjects, obtained using a stratified random sampling method. The selected group comprised 0.25% of the total 824 858 inhabitants of Malang City. The study protocol was approved by the Ethics Committee of the Faculty of Medicine, Universitas Brawijaya, Malang, Indonesia, and have been performed in accordance with the ethics standards of the Declaration of Helsinki.

2.2 | Data collection

The data were collected door-to-door by a trained physician. A questionnaire from the World Health Organization - International League of Associations for Rheumatology COPCORD which had been adapted into Bahasa Indonesia and validated was filled out during interviews. Informed consent was obtained from each subject if they agree to participate in this study. The study was conducted in three stages:

Phase I: Pain in individuals within the study population will be self-reported using the questionnaire otherwise using direct observation.

Phase II: More rigorous investigation of type, location, and source of pain, using the questionnaire and direct observation.

Phase III: A thorough anamnesis, physical examination, and possible laboratory tests to confirm the diagnosis and to assign to a disease group.

These investigatory phases and their interrelationship are shown schematically in Figure 1. The diagnoses were divided into five categories according to clinical and laboratory criteria: knee osteoarthritis[19]; low back pain; soft tissue rheumatism[20]; gout arthritis[21]; and autoimmune arthritis.[21,22] The health-seeking behavior was defined as care-seeking from the first time the subjects were diagnosed with musculoskeletal pain, and were divided into no-treatment, self-treatment using traditional medication, self-treatment using modern medication, treatment from traditional health care, and treatment from modern health care. The age category was divided based on the survey results. The subjects' ages were distributed around middle to upper age, with the highest mean at age 45 years. So, 45 years old was defined as a cut-off value (<45 years old and ≥45 years old).

2.3 | Statistical analysis

We performed univariate analysis to describe demographic factors associated with musculoskeletal pain. We then analyzed the significance of the association of a trait (eg age) with the health-seeking
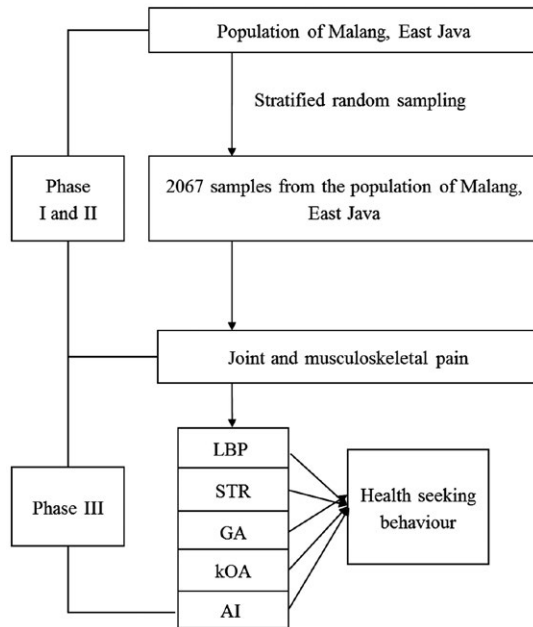
FIGURE 1 Study scheme. AI, autoimmune arthritis; GA, gout arthritis; kOA, knee osteoarthritis; LBP, low back pain; STR, soft tissue rheumatism

behavior using bivariate analysis (Chi-square test). Variables with significant results from the Chi-square test were then further analyzed using multivariate analysis (log-linear Poisson regression).[23] Data are presented as prevalence ratio (PR) with 95% confidence interval (CI). The result was significant if P value <0.05. Statistical analysis was performed with the SPSS Statistics software v.22 (IBM, Armonk, NY, USA).

TABLE 1 Sociodemographic profile of subjects with pain (n = 745)

Subject characteristics	n (%)
Age	
<45 years old	220 (29.53)
≥45 years old	525 (70.47)
Sex	
Male	241 (32.35)
Female	504 (67.65)
Education status	
Low-middle	466 (62.55)
Middle-high	279 (37.45)
Economy status	
Low	263 (35.30)
High	482 (64.70)
Disability	
Absent	193 (25.91)
Present	552 (74.09)
Adverse drug reaction	
Present	73 (9.80)
Absent	672 (90.20)
Pain duration	
<1 mo	637 (85.50)
≥1 mo	108 (14.50)
Pain intensity	
VAS 0-3	256 (34.36)
VAS 4-10	489 (65.64)

VAS, visual analog scale.

3 | RESULT

The total study population was 2067 adults aged over 15 years (16-93 years) with an average age of 47.07 ± 15.32 years. Characteristics of subjects were assessed using questionnaires and grouped based on musculoskeletal pain complaints. From the assessment, 745 subjects (36.19%) reported having musculoskeletal pain. Table 1 shows the characteristics of participants with musculoskeletal pain. They were mostly aged 45 years and older (70%), female (67%), had low education (62%) and had high economy status (64%). The proportions of participants with low back pain, soft-tissue rheumatic pain, gout arthritis, and osteoarthritis were 12.67% (262 individuals), 8.47% (175 individuals), 0.72% (15 individuals), 14.32% (296 individuals), respectively. There were 17 subjects included in the low back pain group as well as osteoarthritis and soft-tissue rheumatism pain.

More than two-thirds (73.29%) of respondents sought treatment. Of these, 31.54% and 25.77% underwent self-treatment with modern medication and the traditional medication, respectively (Figure 2). The percentages of those who sought treatment were 20.94% to modern healthcare and 25.23% to traditional ones. There

were subjects who sought a combined (self and healthcare) treatment (24.54%).

From Table 2, determinants of physician and non-physician (self-treatment and traditional care) health-seeking behavior are shown. The number of subjects who did self-treatment and went to traditional care were in total 659 individuals, mostly aged ≥45 years (86.7%), male (90.9%), had lower education background (88.6%), and had high economic status (87.8%). They also had no disability (91.1%), had pain with duration <1 month (89.2%), and had severe pain intensity (87.5%). Bivariate analysis showed that age (PR 1.070, 95% CI 1.018-1.125, $P = 0.018$) and the presence of disability (PR 1.127, 95% CI 1.047-1.213, $P = 0.000$) were significantly associated with health-seeking behavior. Further analysis using log-linear regression showed that disability (PR 1.087, 95% CI 1.031-1.146, $P = 0.002$) was the most determinant factor, followed by age (PR 1.043, 95% CI 1.000-1.087, $P = 0.049$).

Adverse drug reactions from musculoskeletal disease treatment was found in a total of 73 subjects (9.8%). The most prevalent adverse drug reaction was observed in 50 subjects with osteoarthritis (68.5%) followed by 12 subjects with hip pain (16.4%), 10 subjects with soft tissue rheumatism (13.7%) and one subject with
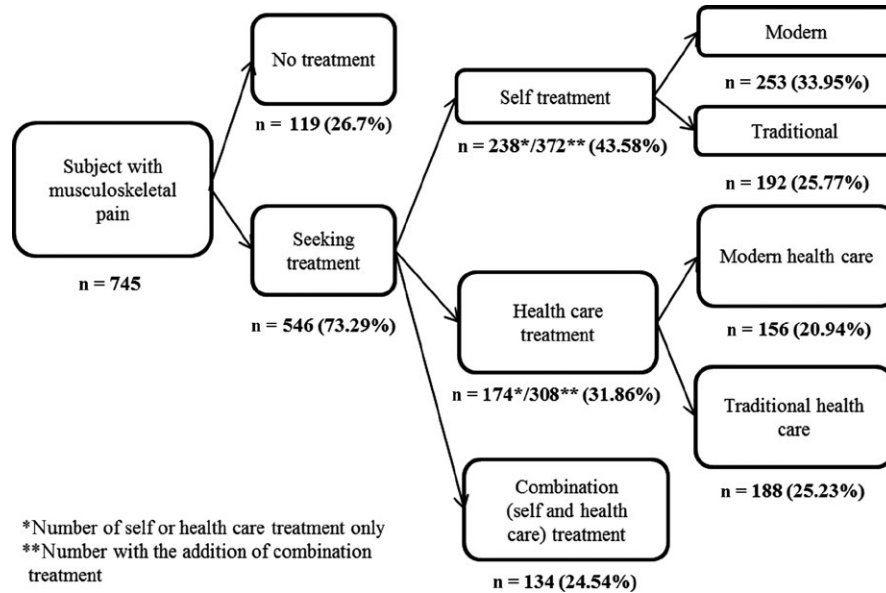
FIGURE 2 Healthcare seeking behavior of study participants

TABLE 2 Factors associated with health-seeking behavior (n = 745)

Factors	Self-treatment and traditional health care		Physician		Total	P	PR	95% CI
	n	%	n	%				
Age								
<45 years old	204	92.7	16	7.3	220	**0.018**	1.070	1.018-1.125
≥45 years old	455	86.7	70	13.3	525			
Sex								
Male	219	90.9	22	9.1	241	0.154	1.041	0.988-1.097
Female	440	87.3	64	12.7	504			
Disability								
Absent	503	91.1	49	8.9	552	**0.000**	1.127	1.047-1.213
Present	156	80.8	37	19.2	193			
Pain duration								
<1 mo	568	89.2	69	10.8	637	0.140	1.058	0.971-1.153
>1 mo	91	84.3	17	15.7	108			
Pain intensity								
Mild-moderate	231	90.2	25	9.8	256	0.272	1.031	0.978-1.086
Severe	428	87.5	61	12.5	489			
Education								
Low	413	88.6	53	11.4	466	0.851	1.005	0.952-1.061
High	245	88.2	33	11.8	279			
Socioeconomic								
Low	236	89.7	27	10.3	263	0.420	1.022	0.970-1.078
High	423	87.8	59	12.2	482			

P values in bold are significant.

PR, prevalence ratio.

autoimmune arthritis (1.4%). No adverse drug reaction was found in the treatment of subjects with gout arthritis. Subjects who experienced adverse drug reactions, especially in the form of gastrointestinal disorders, weres as many as 63 subjects (86.3%) followed by dizziness and headache in nine subjects (12.3%) and rash and itching in one subject (1.4%).

Individuals who experienced adverse drug reactions of treatment were mostly older (84.9%), female (80.8%), had a low education status (67.1%), wealthier (65.8%), and had no disability (58.9%). The proportions of individuals who experienced adverse drug reactions of treatment were higher among those who had self and traditional healthcare treatment (54%), duration of pain <1 month in 62 subject (84.9%), and severe pain intensity (75.3%). Healthcare-seeking behavior had a significant association with the presence of adverse drug reactions ($P < 0.001$) (Table 3). The number of individuals who experienced adverse drug reactions was higher among those who underwent self-treatment and traditional care (n = 54) than those treated by physicians (n = 19).

4 | DISCUSSION

To determine a proper intervention plan for the detection and therapy of musculoskeletal pain in an Indonesian population, we investigated the health-seeking behavior of people with musculoskeletal pain in Malang city, East Java.

In this present study, among 745 subjects, about 73% (n = 546) received treatment for musculoskeletal complaints, in contrast to the treatment-seeking patterns study in Mexico,[10] Australia[7] and Venezuela,[24] where only around 30%-45% of subjects with musculoskeletal complaints received therapy. However, other studies in Asian countries, namely Kuwait,[8] Malaysia,[9] and India[11] showed that 58.5%, 68.8%, and 79.1% of subjects, respectively, had sought care for it. Latter numbers were similar to the finding of our study. Thus, the difference may be due to the sociocultural differences in Asian and other countries. Moreover, a data analysis from a National Health Survey (NHS)[16] in Indonesia stated that subjects with health complaints who received treatment were 96% of the total population. This difference can be due to the different types of diseases studied; our study examined the disease musculoskeletal while NHS gathered information for all types of diseases. Differences in health perceptions of illness between one type of disease and other diseases and also the sociocultural differences between one region with others may also affect the percentage difference of subjects who received treatment.

Furthermore, we found that in the group of subjects who received treatment, the number of subjects who did self-treatment was higher than the subjects who received treatment from health care (68.1% vs 56.4%). This finding is similar to the results of prior studies in Indonesia[16,25] (54.6% vs 45.4%, 36% vs 21%, respectively). However, our results are different from the study in an Indian population where most subjects (79.06%) obtained treatment from health services.

Subjects who did self-treatment in our study mostly chose modern medication over the traditional ones (68.0% vs 51.6%). This is similar to the study by Darmawan et al[18] in which self-prescribed medicines is the most common method used by the rheumatic diseases community in Indonesia. Moreover, the National Health Service in Indonesia[26] showed that only 28.1% of self-treated subjects use traditional medication. This result was also similar to a study from the Kuwait region.[8] The underlying reason is probably that the treatment is easier and cheaper and can be given only when it is needed.[18,26]

Furthermore, previous studies[18,26] in Indonesia stated that the use of modern health care is still less than traditional health care, both in urban and rural areas. This is similar to the result found in an Indian population where modern health care had higher percentage usage than the traditional ones (68% vs 1.8%). In contrast, our study showed that subjects chose traditional health care over modern health care (61% vs 50.6%). Most subjects in our study were self-treated with the combination of both traditional and modern medication. This finding is similar to other developing countries as described in the previous study.[17]

Factors related to healthcare-seeking behavior patterns have been extensively studied. Sociodemographic and socioeconomic factors play a role in determining the pattern of healthcare-seeking behavior. In our study, significant associations were found in age, disability, and adverse drug reactions. Further, disability from musculoskeletal disease was the most influential factor. This result is consistent with a previous study which said supportive variables for treatment seeking were older age, more severe pain, and disability.[24]

TABLE 3 Association of adverse drug reactions with health-seeking behavior (n = 745)

Health-seeking behavior	Adverse drug reaction								
	Present		Absent		Total				
	n	%	n	%	n	%	P	PR	95% CI
Self-treatment and traditional health care	54	8.2	605	91.8	659	100	**0.000**	0.371	0.176-0.562
Physician	19	22.1	67	77.9	86	100			

P values in bold are significant.
PR, prevalence ratio.

Prevalence of middle-aged subjects and older (age ≥45 years) in this study was about 70.47%. This finding was higher than the previous study in Kuwait (34.1%).[8] However, this number was similar to Malaysia[9] which ranges from 30.7% to 75%. Older age is said to be an influential factor for the use of traditional medicine, and especially in rural populations. This result may be because older people prefer the use of traditional medicine because it is easier and more practical, whereas the physician services are considered difficult, high-cost, and have a different scope of service.

In our study, those <45 years old tended to not seek treatment from physicians and rheumatologists, which may be due to the notion of a mild rheumatic disease which will heal by itself. Public perception of disease is a determinant factor of treatment-seeking behavior.[27] On top of that, younger people are likely to have jobs or other activities as their priority and also it may be easier for them to obtain good analgesic medications without a physician prescription. The results of this study also support that in the absence of disability, the subject will be at risk of self-treatment and traditional healthcare behavior (PR 1.127, 95% CI 1.047-1.213). Further, older age (>45 years) was related to the seeking of physician treatment. This could be due to high chances of disability in older adults that further encourage the search for a comprehensive treatment.

Disability was a significant factor of health-seeking behavior in this study. The presence of a disability is related to the chance of subjects to seek treatment by a physician. According to the theory of treatment-seeking patterns, the severity of the disease will encourage a person to seek better-quality treatment although it requires a greater cost. A previous study showed that the use of traditional medicine was more often on the perception of mild pain.[26] Furthermore, the presence of disability was associated with disruption of daily activities. At a mild disability level, subjects can still undergo daily activities, while on a severe disability level disruption of activities becomes more prevalent. Hence, people often need help from their surrounding environment. In this study, the presence of disability was associated with the adverse effects of treatment. The more severe the disability, the duration of illness and treatment will be longer, so are the side effects of the treatment.[28]

This study showed that health-seeking behavior was associated with the adverse drug reactions of treatment. However, a cross-sectional study cannot provide conclusions about causation, while adverse drug reactions of treatment, in this case, may be a good factor which encourages the occurrence of certain treatment patterns and may also be the result of certain treatment patterns. An individual who experiences an adverse drug reaction will become more aware and if initially self-treated or getting treatment from traditional health care, for the next treatment will be seeking a treatment from a physician.

The most common side-effect of the treatment we observed was gastrointestinal disorders, which can be due to the common use of the combination of non-steroidal anti-inflammatory drugs in one package. The previous study stated that the most common combinations were 5 mg of prednisone, 200 mg phenylbutazone and 300 mg of paracetamol combined with antacids and then taken three times a day.[19] The steroid doses used were large enough to cause adverse drug reactions, even in the short period. Another study in Malaysia also explained the tendency of adding steroids to over-the-counter traditional medicines or through traditional health services, causing fears of the emergence of steroid adverse drug reactions.[29]

In this study, the number of women was greater than male subjects. Similar to previous studies in Kuwait[8] and Malaysia,[9] our study showed that women had greater risks of having musculoskeletal pain. However, sex was not associated with health-seeking behavior. This finding may be because both men and women have the same educational, socioeconomic, and educational backgrounds. These conditions further resulted in no effect on decision-making regarding health-seeking behavior.[9,29]

Duration of the disease influences people's perception. Longer duration can lead to a perception of more severe disease. Also, longer duration of disease will cause people to seek treatment. If there is no improvement, then people will seek other types of treatment. The results of this study indicated no relationship between the length of illness with treatment-seeking. A study by Tiomarni[30] showed that long-duration illness could be related to the search for treatment in the short term, but it will decrease at certain times. This difference may be because there has been a change in the type of treatment seeking and also a combination of both self-treatments, treatment to modern and traditional health care on the condition and the duration of the disease.

The intensity of pain in this study was not related to the pattern of health-seeking behavior. Perceptions about the intensity of pain may be related to the underlying type of disease. Also, the intensity of pain was associated with the duration of pain and disability. Severe but short-term pain which disappears on its own without disrupting activity may cause a person to not seek a treatment. However, mild pain conditions with prolonged duration and disruption of activity may cause a person to seek treatment, even to the use of various combinations of health care.

In this study, we did not obtain a relationship between education and economic status with health seeking behavior. These results were in contrast to previous studies where the economic status and education significantly affected health-seeking behavior.[14,31] This may be due to the different types of diseases being studied. Furthermore, the previous studies investigated diseases about which the community complained, while this study only focuses on musculoskeletal disease. The type of musculoskeletal disease itself can affect the pattern of healthcare-seeking behavior. In this study, diseases other than soft-tissue rheumatic pain such as low back pain, osteoarthritis, gout arthritis and autoimmune arthritis have different treatment-seeking patterns. Subjects with low back pain were more likely not to go to a physician. This result may be because most diseases with low back pain have a short duration with mild pain, do not interfere with physical activity, and are self-limiting.[32] Other types of diseases, such as osteoarthritis, gout arthritis, and autoimmune arthritis, tend to have more severe disability conditions that may encourage the patients to seek help from physicians.

This study was limited by the nature of cross-sectional design. The results of this present study could not show the causal relationship between musculoskeletal pain and healthcare-seeking behavior. Moreover, tendency of subjects to forget or not exactly remember about their health-seeking behavior history could cause memory bias. Hence, a use of prospective study design is more appropriate. This study was conducted in the community using the door-to-door method, so the majority of subjects surveyed were people who stayed at home or were older, mostly female, while most men and younger people go to work or school. So, there was a huge difference between male and female subjects, as well as between ages <45 years and ≥45 years.

5 | CONCLUSION

Disability levels and age seem to be important determinants in healthcare-seeking behavior on people with musculoskeletal pain in Malang City, East Java Province, Indonesia. Self-treatment and traditional healthcare treatment were further associated with an adverse drug reactions.

AUTHOR CONTRIBUTIONS

Conception and design of study: H Kalim, S Andarini, K Handono. Acquisition of data: AZ Arif, CS Wahono, K Handono. Analysis and interpretation of data: S Andarini, HA Rasyid, AZ Arif. Drafting the manuscript: S Andarini, AZ Arif, CS Wahono, K Handono. Revising the manuscript critically for important intellectual content: S Andarini, H Kalim. Approval of the version of the manuscript to be published: S Andarini, AZ Arif, HA Rasyid, CS Wahono, H Kalim, K Handono.

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