

JPHSR - Bukti Korespondensi Yosi Irawati Wibowo

1. Submitted to the journal (March 8, 2021)
2. First round review: minor revision (May 8, 2021)
3. First round: revised version submitted (June 21, 2021)
 - Revised manuscript with track changes (attached)
4. Second round review: article accepted (July 14, 2021)
5. Notification from the journal: article proofs for publication (July 31, 2021)
6. Notification from the journal: article published (August 12, 2021)

1. Submitted to the journal (March 8, 2021)



Yosi Irawati Wibowo 202026 _ <yosi_wibowo@staff.ubaya.ac.id>

Journal of Pharmaceutical Health Services Research - Manuscript ID JPMS-21-0041 [email ref: SE-6-a]

1 message

Jac Keron <onbehalf@manuscriptcentral.com>

Mon, Mar 8, 2021 at 3:51 PM

Reply-To: jphsr.editorialoffice@oup.com

To: yosi_wibowo@staff.ubaya.ac.id

Cc: stevnvictoria@staff.ubaya.ac.id, yosi_wibowo@staff.ubaya.ac.id, rhezauyanto08@gmail.com, adji_ps@staff.ubaya.ac.id, ekosetiawan.apt@gmail.com, b.sunderland@curtin.edu.au

08-Mar-2021

Dear Dr. Wibowo:

Your manuscript entitled "Assessing readiness for research: A pilot study of Indonesian pharmacists" by Halim, Steven; Wibowo, Yosi; Uyanto, Rheza; Setiadi, Adji; Setiawan, Eko; Sunderland, Bruce, has been successfully submitted online and is presently being given full consideration for publication in Journal of Pharmaceutical Health Services Research.

Co-authors: Please contact the Editorial Office as soon as possible if you disagree with being listed as a co-author for this manuscript.

Your manuscript ID is JPMS-21-0041.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to ScholarOne Manuscripts at <https://mc.manuscriptcentral.com/jphsr> and edit your user information as appropriate.

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Thank you for submitting your manuscript to Journal of Pharmaceutical Health Services Research.

Sincerely,

Jac Keron
Editorial Office
Journal of Pharmaceutical Health Services Research
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2. First round review: minor revision (May 8, 2021)



Yosi Irawati Wibowo 202026 _ <yosi_wibowo@staff.ubaya.ac.id>

Journal of Pharmaceutical Health Services Research - Decision on Manuscript ID JPHS-21-0041 [email ref: DL-SW-2-a]

9 messages

Albert Wertheimer <onbehalf@manuscriptcentral.com>
Reply-To: albertw@temple.edu
To: yosi_wibowo@staff.ubaya.ac.id

Sat, May 8, 2021 at 2:26 AM

07-May-2021

Dear Dr. Wibowo:

Manuscript ID JPHS-21-0041 entitled "Assessing readiness for research: A pilot study of Indonesian pharmacists" which you submitted to Journal of Pharmaceutical Health Services Research, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended some minor revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript.

There are two ways to submit your revised manuscript. You may use the link below to submit your revision online with no need to enter log in details:

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Because we are trying to facilitate timely publication of manuscripts submitted to Journal of Pharmaceutical Health Services Research, your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision in a reasonable amount of time, we may have to consider your paper as a new submission. If you feel that you will be unable to submit your revision within the time allowed please contact me to discuss the possibility of extending the revision time.

Once again, thank you for submitting your manuscript to Journal of Pharmaceutical Health Services Research and I look forward to receiving your revision.

Sincerely,
Prof. Albert Wertheimer
Editor in Chief, Journal of Pharmaceutical Health Services Research
albertw@temple.edu, awertheime@nova.edu

Editor-in-Chief Comments to Author:

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

Thank you for sending this manuscript for review. Overall, this is a well-written showing the real-world readiness and factors that impact pharmacists' willingness to perform research in pharmacy profession from international perspective. In order to fully appreciate the impact and application of this study, a number of details need clarification or elaboration:

1. Since this study involved human subject, please include the statement of IRB review and approval.
2. Given the transtheoretical (Stage of Change) Model was applied in the study design, it is necessary to explore the results of

the study from its theoretical point of view.

3. The interval validity is widely stated in the survey research for the purposes of accessing internal consistency reliability of the questionnaires. Authors may consider providing this information.

Reviewer: 2

Comments to the Author

Re: JPHS- 21-0041: Assessing readiness for research: A pilot study of Indonesian pharmacists

Thank you for the opportunity to review the above-named manuscript. The investigators have conducted an important study primarily aimed to assess the readiness for research, as well as the associated demographic and attitudinal characteristics of pharmacists in a range of healthcare settings in East Java Province, Indonesia. The study is not novel as several previous studies were conducted from other places. However, to my knowledge, this is the first from Indonesia. If well-conducted and reported, the study will add important additional information to the existing body of literature related to involvement of pharmacists in practice-based research. I have made recommendations for improvement of the manuscript.

General

- The manuscript is generally well-written. However, it contains few grammatical errors and need for syntax improvement. The paper will benefit from proof-reading before it will be considered for publication in the journal.
- My major concern with the study is that the study sample is not representative of pharmacists in Indonesia or even East Java Province, calling into question the generalizability and external validity of the findings. This must be clearly noted as an important limitation.
- Another concern is that there is no sufficient evidence of validity and reliability of the questionnaire. Psychometric testing including several validity and reliability facets were not conducted. This must also be noted as a limitation as well as if there is any plan for this in future studies.
- There are unnecessary capitalization of terms throughout the paper (e.g. Primary Health Centers; Transtheoretical Stage of Change Model etc).
- As a normal scientific writing convention, abbreviations should always be defined in full-term at first use and the abbreviation used thereafter.

Abstract

- The abstract is well-written.

Introduction

- The Introduction is well-written, and has provided some insight about what is known in the literature and the gaps. However, the literature review is not comprehensive enough as several relevant studies were not cited in the Introduction and Discussion. Consider the following as appropriate:
 1. Shitu Z, Jatau A, Mustapha M, Gulma KA, Ado B, Sha'aban A. Factors Associated With an Interest in Practice-Based Research Among Pharmacists in Nigeria. *Journal of Pharmacy Technology*. 2019;35(3):98-104. doi:10.1177/8755122519831384
 2. Awaisu A, Bakdach D, Elajez RH, Zaidan M. Hospital pharmacists' self-evaluation of their competence and confidence in conducting pharmacy practice research. *Saudi Pharm J*. 2015; 23(3): 257-265. doi: 10.1016/j.jsps.2014.10.002.
 3. Awaisu A, Kheir N, Alrowashdeh HA, Allouch SN, Jebara T, Zaidan M, Mohamed Ibrahim MI. Impact of a pharmacy practice research capacity-building programme on improving the research abilities of pharmacists at two specialised tertiary care hospitals in Qatar: a preliminary study. *J Pharm Health Serv Res* 2015;6 (3):155-164.

- I believe, the rationale for the conduct of the study should be strengthened.
- Line 37 -38: Place a full-stop instead of a comma after "decision making (evidence-based practices). Also the word "decision" is incorrectly spelled.
- Line 39: There should be a full-stop at the end of the sentence.
- Line 43: Ministry of Research, Technology. Is it "Ministry of Research and Technology"?

Methods

- The Methods of the study are very detailed to allow replication, but can still benefit from some improvement in places.
- Sample and sampling technique: This is not very clear and more details or a section are needed on this. As previously mentioned, the study sample is not representative of pharmacists in Indonesia or even East Java Province, raising a concern on the generalizability and external validity of the findings. This must be clearly noted as an important limitation.
- Line 75: Put "...and" before "United States".
- Line 129 – 130: I do NOT know why one pharmacist should be representative for each PHC or community pharmacy? The study is not about the settings but the pharmacists themselves.

Results

- Generally well-written with clear tables to support the textual descriptions.
- Line 163: The term "post-graduate graduates" is very unusual. I suggest paraphrasing to "more than 50% of pharmacists in the hospital setting had post-graduate education..."

Discussion

- The Discussion needs to be more critical and supported by relevant literature and not merely a summary of the results.
- The discussions are redundant in places. These must focus on the major findings and citing relevant literature. Several important previous studies not cited.

Conclusion

- Can be better written to reflect the study objectives and finding. In addition, how would the readiness and competencies of pharmacists towards practice research be improved?

References

- I advise that the authors should strictly adhere to the journal's referencing style (please see authors instructions).
 - Some references are incomplete and do not contain the complete names of all authors (e.g. reference 12).
 - In addition, some journals names are not according to the journal's style.
-

- Revised manuscript with track changes (attached)

1 **Assessing readiness for research: A pilot study of Indonesian pharmacists**

2

3 **ABSTRACT**

4 **Objective** Readiness is a key factor that influences pharmacists' willingness to get involved
5 in research, thus promoting evidence-based pharmacy practice. While the data are lacking,
6 this study aimed to assess readiness for research, as well as the associated demographic and
7 attitudinal characteristics of pharmacists in a range of healthcare settings in East Java
8 Province, Indonesia.

9 **Methods** A questionnaire was administered to all pharmacists in a public hospital in Malang
10 (n=55); pharmacists from ~~p~~Primary ~~care~~ ~~Health~~ ~~Centres~~ ~~center~~ (PHCs) (n=63) and
11 community pharmacies (n=100) in Surabaya in 2017. The questionnaire consisted of three
12 sections: 1) demographic characteristics, 2) attitudinal aspects, and 3) readiness for research.
13 Descriptive analysis was used to summarise the data. Spearman correlation tests determined
14 the correlations between 'demographic characteristics' or 'attitudinal aspects' *versus*
15 'readiness'.

16 **Key findings** A total of 142 pharmacists responded which comprised hospital pharmacists
17 (n=46), community pharmacists (n=51), and PHC pharmacists (n=45), giving response rates
18 ranged from 51.0% to 83.6%. Approximately half of the participating pharmacists
19 demonstrated adequate 'readiness' to research [mean 2.5±0.7 (range 0-4)]. Compared to
20 hospital or PHC pharmacists, community pharmacists showed lower 'readiness' to research
21 (mean 2.76±0.71 *versus* 2.53±0.66 *versus* 2.31±0.68, respectively; p=0.005). Two
22 demographic characteristics positively correlated with 'readiness', i.e., prior research training
23 ($r_s=0.217$; p=0.010) and prior research experience ($r_s=0.221$; p=0.008). Meanwhile, all
24 'attitudinal aspects' were found to be positively correlated with research 'readiness' (all p-
25 values <0.001).

26 **Conclusion** Findings from this study provide baseline data to develop strategies to optimise
27 the involvement of pharmacist practitioners in research, thus enhancing evidence-based
28 pharmacy practice and quality use of medications in Indonesia.
29 **Keywords** Indonesia, Pharmacists, Research Readiness, Attitudinal Factors, Demographic
30 Characteristics
31

32 **INTRODUCTION**

33 Indonesia is a middle income country with a population greater than 265 million, spread over
34 17,500 islands.^[1] The Indonesian economy is among the largest in the Asia Pacific region,
35 thus enabling its fast development in various sectors, including health.^[2] One of the goals of
36 the national health development program in Indonesia is to provide effective, safe, and
37 quality healthcare for the population.^[3] To achieve the goal, there is a need to translate or
38 apply evidence from research into daily patient care practices or decision making (evidence-
39 based practices).^[4] Hence, the availability of well-designed research to understand needs in the
40 local context, including in the overall Indonesian context, plays an important role.

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41
42 Based on database SCImago in 2016, Indonesia produced lower research output when
43 compared to Malaysia, Singapore and Thailand; while citation wise, Indonesia additionally
44 ranked lower than Vietnam.^[4] Hence since 2017, The Ministry of Research and Technology
45 has launched a number of structured programs and incentives to encourage Indonesian
46 academics to be more involved in research and thus increase publications. Collaboration with
47 practitioners is of importance to ensure research findings address the needs in the current
48 practice. Thus, pharmacist practitioners, as the primary providers of evidence-based
49 pharmaceutical care, have a crucial role in research. In Indonesia, pharmacists could provide
50 pharmaceutical care in various settings, including hospitals, ~~p~~Primary ~~primary~~ ~~h~~Health
51 ~~c~~Centres (PHC or *Pusat Kesehatan Masyarakat, Puskesmas*), and community pharmacies.^[5-7]

52
53 The implementation of evidence-based pharmaceutical care has been reported to provide
54 positive outcomes for patients. Employing clinical guidelines enables pharmacists to
55 recommend optimum therapy for a specific patient, and it is often necessary to justify
56 financial rewards or incentives for pharmacists as a profession.^[8] Considering the importance

57 of research, the International Pharmaceutical Federation (FIP) and the World Health
58 Organisation (WHO) through the concept of "Seven Star Pharmacist", clearly stated that it is
59 expected for pharmacists to have skills in conducting research.^[9] In Indonesia, pharmacists'
60 involvement in research has been supported by the National Committee of Pharmacy (*Komite*
61 *Farmasi Nasional, KFN*) by giving 10 credit points for pharmacists who are involved in
62 either individual or joint research projects.^[9]

63

64 Pharmacist practitioners' involvement in research is related to their level of readiness. Based
65 on the ~~f~~Trans~~s~~theoretical ~~s~~Stage of ~~c~~Change ~~M~~Model, readiness ('preparation') is the final
66 step for implementing change ('action').^[10,11] Previous studies have suggested that readiness
67 to research among pharmacists could be influenced by multifactors. Stewart et. al. (2014)
68 reported that attitude towards research has been a key factor influencing readiness.^[12] In
69 addition, it is known that readiness to research is affected by a pharmacist's demographic
70 characteristics, including: gender,^[13,14] age,^[15,16] qualifications,^[13,15-20] ~~(13,15-17,19,20)~~ work
71 experience in the area of pharmacy,^[15] prior research training,^[17,21]^[17] and prior research
72 experience.^[15-17]

73

74 While collaboration with pharmacist practitioners is paramount to produce quality research
75 and to practice evidence-based medicines. ~~t~~To date, data on Indonesian pharmacists'
76 involvement in research is lacking. A systematic review on the involvement and attitudes of
77 pharmacists in conducting research included articles from six countries: United Kingdom
78 (5), Australia (3), Canada (3), Qatar (2), Thailand (1), and United States (1).^[17] In addition to
79 the studies included in the review, there were four related research articles, each conducted in
80 Saudi Arabia^[22], Qatar^[12], Pakistan^[23], and Malaysia.^[24] As there are limited data available
81 for Indonesia, this study aimed to assess readiness for research, as well as the associated

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82 demographic and attitudinal characteristics of pharmacists in a range of healthcare settings in
83 East Java Province, Indonesia.

84

85 **METHODS**

86

87 *Research design and participant recruitment*

88 This cross-sectional study used a questionnaire to collect the data. Ethics approval for this
89 study was obtained from the Medical and Health Research Ethical Committee in the Faculty
90 of Medicine, Universitas Islam Indonesia (No 57/Ka.Kom.Et/70/KE/XI/2018). East Java
91 Province was chosen as the study setting since the province has the greatest spread of
92 pharmacists in Indonesia, i.e., across 38 regions/cities. Participants included pharmacists
93 working in a range of healthcare settings, i.e. hospital, PHC and community pharmacy.
94 Hospital pharmacists were recruited from one of the public hospitals in Malang, taking into
95 the consideration that the hospital has the highest number of pharmacists in East Java
96 Province and also in Indonesia (n=55); while PHC and community pharmacists were
97 recruited from Surabaya, since Surabaya has the highest number of PHCs (n = 63) and
98 community pharmacies (n = 791) across East Java. Involvement in this study was voluntary
99 and no rewards were given, in any form, for the participants.

100

101 *Questionnaire development*

102 A questionnaire was developed to collect data from participants. The questionnaire was
103 drafted based on prior literature,^[12-19] which could be detailed as follows:

104 1) 'Readiness' was determined using a question "*Are you ready to get involved in*
105 *research?*" with four possible answers in a 4-point Likert scale (i.e., 1='not ready at
106 all', 2='not quite ready', 3='ready', and 4='very ready').

107 2) Factors affecting 'readiness' included 'demographic characteristics' (i.e. age, gender,
108 education level, work experience, prior research training and prior involvement in
109 research) and 'attitudinal aspects' (i.e., general attitudes towards aspects of research;
110 confidence, motivation and resources; research culture; and support from others).
111 'Attitudinal aspects' were assessed using 5-point Likert scale statements (ranging
112 from 1='strongly disagree' to 5='strongly agree').

113 Subsequently, the questionnaire draft was forward translated (from English to Bahasa
114 Indonesia) by one of the researchers (ES); and the Indonesian version was then compared to
115 the original English version by a bilingual academic (YIW) to ensure that there were no
116 contextual differences. Face validity was conducted with a panel of academics (n=4), and the
117 questionnaire was piloted to final year pharmacy students (n=3) and pharmacist practitioners
118 (n=2); this resulted minor changes to the questionnaire. The final questionnaire consisted of
119 three sections: 1) 'demographic characteristics', 2) 'attitudinal aspects', and 3) 'readiness' for

120 research. ~~The final questionnaire was pretested with 30 pharmacists, and the internal~~
121 ~~consistency consistency of the 'attitudinal aspects' of 4 constructs of 'attitudinal aspects' was~~
122 ~~tested among 30 participants and it was further analyzed by analysed using Cronbach's alpha~~
123 ~~The Cronbach's alpha values for four attitudinal domains, i.e. The reliability test showed~~
124 ~~that alpha internal consistencies of general attitudes towards aspects of research: confidence,~~
125 ~~motivation and resources, research culture, and support from others were were 0.89, 0.93,~~
126 ~~0.94, and 0.90, respectively, which were considered as good reliability.~~

127 128 Data collection

129 Hospital pharmacists were recruited during a seminar in April 2017, ~~the seminar was~~
130 ~~conducted~~ in a public hospital in Malang, where all pharmacists in the hospital (n=55) were
131 invited. While the recruitment of PHC pharmacists and community pharmacists were

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132 conducted through a seminar in Universitas Surabaya in November 2017. The seminar aimed
133 to promote the 'Smart Use of Medication Movement' (*Gerakan Masyarakat Cerdas*
134 *Menggunakan Obat, GeMa CerMat*), thus the material was not related to the current research
135 topic. ~~While there were no records of pharmacists' placement in East Java available,~~
136 ~~pharmacists in community pharmacies and PHCs were recruited according to their workplace~~
137 ~~settings. A sample of~~ ~~The invitation was distributed to a sample of~~ 100 community
138 pharmacies were conveniently selected from a list of community pharmacies registered in
139 Surabaya Health Office to include across five areas in Surabaya (i.e. 20 community
140 pharmacies for each area, were conveniently i.e. selected from each area of West, East,
141 Central, North, and South Surabaya; while based on the community pharmacies' list
142 provided by Surabaya Health Office) and all 63 PHCs in Surabaya were included in this
143 study. An invitation was distributed to the sample of community pharmacies and PHCs in
144 which one pharmacist was asked to be a representative for each community pharmacy or
145 PHC. In the beginning of the seminar, one of the researchers (AP) introduced the research to
146 pharmacists attending the seminar, and asked for their participation. Written consents were
147 obtained from those who were willing to participate, and they were given the developed
148 questionnaire and information sheet. The pharmacists were provided some time to fill the
149 questionnaire and submit it before the seminar began.

150

151 Data analysis

152 For each setting (i.e. hospital, community pharmacy or PHC), pharmacists' responses were
153 summarised using descriptive analysis, and presented as percentages (%) for categorical data
154 or mean \pm standard deviation (SD) for continuous data (interval or ratio). With regards to the
155 'readiness' section, responses for the 4-point Likert scale were scored: '1' for 'not ready at
156 all', '2' for 'not quite ready', '3' for 'ready', and '4' for 'very ready' for each participant;

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157 subsequently, mean score \pm SD was calculated for all participants and participant groups.
158 Responses from the 5-point Likert scale statements on 'attitudinal aspects' were scored from
159 '1 for 'strongly disagree' to '5' for 'strongly agree' for each participant; the scores were
160 reversed for negative statements. Mean score \pm SD was then calculated for all participants
161 both for each statement as well as for each group of 'attitudinal aspects' (i.e. general attitudes
162 towards aspects of research; confidence, motivation and resources; research culture; and
163 support from other). Differences with regards to 'readiness', 'attitudinal aspects' and
164 'demographic characteristics' across settings were analysed using Kruskal-Wallis tests, with
165 p-value of <0.05 considered as statistically significant. Spearman Rho correlation tests were
166 used to determined 'demographic characteristics' and 'attitudinal aspects' contributing to
167 research 'readiness'. The analysis was conducted using SPSS version 23 (IBM Corp.,
168 Armonk, NY, USA).

169

170 RESULTS

171 A total of 142 pharmacists consented to participate in this study, which consisted of:
172 pharmacists in the hospital setting (n=46/55), pharmacists in community pharmacies
173 (n=51/100), and pharmacists in PHCs (n=45/63); thus, the response rates achieved were
174 83.6%, 51.0%, and 71.4%, respectively. The detailed characteristics of the participants can be
175 seen in Table 1. In the hospital setting, the majority of the pharmacists were male (80.9%);
176 while in community pharmacies and PHCs, the majority of the pharmacists were female
177 (94.1% and 84.4%, respectively). In addition, more than 50% of pharmacists in the hospital
178 setting ~~were post-graduate graduates~~ had post-graduate education, compared to only less
179 than 15% among community or PHC pharmacists. The majority of pharmacists in this study
180 had prior research training (68.3%) and/or had been involved in research (67.6%).

181

182 Detailed responses with regards to the 'attitudinal aspects' can be seen in Table 2. The mean
183 scores from all participants for each 'attitudinal aspect' were: general attitudes towards
184 aspects of research (3.6948/5); confidence, motivation and resources (3.40/5); research
185 culture (3.17/5); and support from others (3.28/5). Hospital pharmacists had higher mean
186 values than those working in community pharmacies and PHCs for three groups of
187 'attitudinal aspects', i.e. confidence motivation and resources (3.52 *versus* 3.26 *versus* 3.44,
188 respectively; $p < 0.05$); research culture (3.57 *versus* 2.80 *versus* 3.17, respectively; p
189 < 0.001); and support from others (3.70 *versus* 2.95 *versus* 3.22, respectively; $p < 0.001$).

190

191 Further, responses on 'readiness' to research can be seen in Table 3. Pharmacists working in
192 hospital perceived higher 'readiness' for research compared to those in community
193 pharmacies or PHCs. This was indicated by the mean value of 'readiness' among hospital
194 pharmacists, which was significantly higher than those among community or PHC
195 pharmacists (2.76 \pm 0.71 *versus* 2.31 \pm 0.68 *versus* 2.53 \pm 0.66, respectively; $p=0.005$). The
196 results of correlation tests between 'demographic characteristics' or 'attitude aspects' *versus*
197 'readiness' can be seen in Table 4. Two participants' characteristics showed significant
198 positive correlation with 'readiness', i.e., prior research training ($r_s = 0.217$, $p = 0.010$) and
199 prior research involvement ($r_s = 0.221$; $p = 0.008$). While all of the four 'attitudinal aspects'
200 significantly affected 'readiness' to research, i.e., general attitudes towards aspects of
201 research ($r_s = 0.53748$; $p < 0.001$); confidence, motivation and resources ($r_s = 0.470$; $p < 0.001$);
202 research culture ($r_s = 0.381$; $p < 0.001$); and support from others ($r_s = 0.470$; $p < 0.001$).

203

204 DISCUSSION

205 This study provides preliminary data on readiness to research and the associated factors
206 among pharmacists in varied healthcare settings in Indonesia. In general, pharmacists

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207 participating in this study demonstrated an adequate level of research 'readiness' (mean score
208 2.5 ± 0.7 ; range 0-4). ~~Based on~~ While according to transtheoretical (stage of change) model,
209 'Readiness' can be considered as one key step before taking 'action' ~~or in this case is getting~~
210 ~~involved in research, this finding could be considered a good basis for-~~ Pharmacists'
211 ~~involvement to be involved in research, thus optimising the use of evidences in practices~~
212 ~~could contribute towards providing quality healthcare in Indonesia, particularly in optimising~~
213 ~~evidence-based pharmaceutical care.~~

214

215 Participating pharmacists in the hospital setting reported a significantly higher readiness
216 compared to those practicing in community pharmacies or PHCs. ~~This might indicate that~~
217 ~~more hospital pharmacists had prior involvement in research than those in the two other~~
218 ~~settings. This might due to the fact that more hospital pharmacists had prior involvement in~~
219 ~~research than those in the two other settings; it was.~~ Further, the correlation test confirmed in
220 ~~the correlation test~~ that research experience was a significant predictor of readiness for
221 research. Similar findings have been reported from several studies conducted in other
222 countries.^[15-17,22] In addition to research experience, hospital pharmacists showed more
223 positive attitudes toward research compared to those in the other two settings, particularly
224 with regards to the aspects of 'confidence, motivation and resources', 'research culture', and
225 'support from others'. It should be noted that the hospital used for this study is a teaching
226 hospital and has a high number of pharmacists (n=55) and almost half were held post-
227 graduate qualifications; all of which might contribute to the more positive attitudes, and thus
228 impacted on the readiness to get involved in research.

229

230 ~~Findings in this study indicated that~~ Among 'demographic characteristics', ~~i.e.~~ research
231 experience and prior research training; ~~had showed~~ positive correlations with 'readiness'.

232 These positive correlations could be explained with an *a priori* hypothesis that prior training
233 and research experience might improve research knowledge and skill; while other studies
234 have suggested that research knowledge and skill have been the key factors that determine
235 interest and active involvement in research.^[15,17,19,21] ~~Most pharmacists involved in~~
236 this research (81.4%) reported that they had received research training as part of their final
237 project in their bachelor degrees. Considering that the activity of research has not been
238 integrated in pharmacists' daily practice in most settings, continued training would be of
239 importance for practitioner pharmacists to improve their readiness for research. Fakeye *et al.*
240 (2017) reported that ~~most 89.5%~~ practitioner pharmacists (89.5%) agreed that additional
241 research-oriented training is essential for conducting research effectively.^[25] Hence,
242 establishing regular Continuing Professional Development (CPD) programs related to the
243 fundamentals of conducting research warrants further consideration.

244

245 Further, ~~it was prior studies~~ suggested that educational level and work experience were
246 significant predictors of pharmacists' readiness to research.^[13,15-20] ~~This study reported~~
247 ~~positive correlations between the~~ ~~While both two~~ ~~factors were positively~~
248 ~~correlated~~ with 'readiness' ~~in this present study~~, however the correlations were not
249 significant. This might relate to the external factors, such as in the organisational level. It was
250 acknowledged that organisational commitment to support research has played an essential
251 role in nurturing research environment.^[19,24] When ~~institutions where pharmacists are~~
252 ~~employed~~ ~~pharmacists' workplaces showed~~ ~~have~~ inadequate commitment to research,
253 resources made available ~~for research~~ would also tend to be limited. Further research would
254 be required to understand research commitment among leaders or policy makers in
255 pharmacists' workplaces; this is particularly important in settings with limited health care
256 resources, such as in Indonesia. Moreover, organisational commitment in allocating specific

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257 time for pharmacists to get involved in research warrants further consideration, especially in
258 the era of Universal Health Coverage (*Jaminan Kesehatan Nasional, JKN*) where demand for
259 patient care has significantly increased.^[26] Previous studies have suggested that Indonesian
260 pharmacists generally have had high workloads;^[27-29] hence, without a commitment to
261 allocate specific time for research, pharmacists would tend to choose urgent tasks to ensure
262 continuity in providing daily care for patients rather than get involved research.

263

264 This study confirmed positive correlations between all 'attitudinal aspects' with pharmacists'
265 readiness for research ($p < 0.001$). ~~This implied that pharmacists would have better readiness~~
266 ~~when they: (1) have positive attitude towards aspects of research; (2) have adequate level of~~
267 ~~confidence, motivation, and resources (particularly access to research literature and training);~~
268 ~~and (3) are working in institutions with a strong research culture and adequate support from~~
269 ~~others to conduct research.~~ While participating pharmacists in all settings showed adequate
270 'attitude towards aspects of research' as well as 'confidence, motivation, and resources' (all
271 mean values > 3); they believed some improvements were necessary in the organisational
272 level with regards to 'research culture' and 'support from others' (all mean values < 3),
273 particularly in community pharmacy settings. It should be noted that community pharmacies
274 in Indonesia do not have to be owned by a pharmacist, some are even corporately owned or
275 franchised. Community pharmacies often employ one or two pharmacists; hence, a range of
276 tasks from planning to stock monitoring and counselling are often done by limited human
277 resources. All of which are challenges for community pharmacies in creating a research
278 culture and providing adequate support for their pharmacist employees to get involved in
279 research. While community pharmacies could be seen as primary health providers for many
280 people;^[20,29-34] community pharmacists are expected to be more active in research and use the
281 findings to enhance quality health care.

282

283 Based on these study findings, some practical points could be suggested to improve
284 pharmacists' readiness to research. Firstly, collaboration is needed between academic and
285 practitioner pharmacists. Academic pharmacists could have roles in the conceptualisation of
286 research, while the main role of practising pharmacists could relate to data collection in their
287 workplace. Prior studies have reported that such research networks have been successfully
288 established;^[35-37] and this could also be considered for the Indonesian context. Secondly, the
289 technical procedures for research should be integrated to the practitioner pharmacists' daily
290 routine; this is expected to help in reducing the additional burden related to research.

291

292 This study has some limitations. First, convenience sampling was applied to recruit the
293 pharmacists, particularly those practising in community pharmacies; hence caution should be
294 made when generalising data to East Java or Indonesian context. However, this approach
295 was considered a feasible option as there are no records of pharmacists' placements in East
296 Java available. In addition, an adequate response rate was achieved (>50.0%), so that the
297 study is expected to provide valuable insights on pharmacists' research readiness in East
298 Java, Indonesia. Secondly, this study used self-reported data and the data collection was
299 conducted during a seminar. This might be subjected to social desirability bias, in which
300 participants tend to give their answers according to what they perceive to be socially
301 desirable. However, pharmacists' involvement in research has not been regulated in the
302 Indonesian standards of pharmacy practice, thus there were no right or wrong answers, and as
303 such it is expected that the participants could provide their honest responses. Thirdly, this
304 study was conducted in two of the largest cities in East Java, in which many educational
305 institutions in the area of pharmacy are located. The existence of these institutions
306 ~~provide~~ provides opportunities for local pharmacists to be exposed to various research

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307 activities conducted by pharmacy academics, and as such it might not represent the views of
308 those in more remote areas of Indonesia. However, this research provides baseline data on the
309 readiness for research among Indonesian pharmacists; a large-scale study could be considered
310 to confirm the findings.

311

312 CONCLUSION

313 This study provides preliminary data on the readiness for research among pharmacists in a
314 range of health settings in East Java, Indonesia. In general, the participating pharmacists
315 perceived adequate readiness to ~~become~~ involved in research, particularly those practising in
316 the hospital setting. Participation in reseach training and involvement in prior research would
317 provide a good basis for pharmacists to get involved in the future research. ~~Research training~~
318 ~~and collaboration with pharmacist academics could enhance the participation of pharmacist~~
319 ~~practitioner to conduct practice-based research.~~ In addition, it is also necessary to improve the
320 level of commitment from pharmacists' workplace, in terms of developing a research culture
321 and good cooperation among employees. While this study focused on the pharmacists related
322 factors, further study is required to understand more about the contributing external factors;
323 all of which should provide a basis to develop appropriate strategies to enhance pharmacists'
324 roles in research and thus promote evidence-based care in Indonesia.

325

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3. First round: revised version submitted (June 21, 2021)



Yosi Irawati Wibowo 202026 _ <yosi_wibowo@staff.ubaya.ac.id>

Journal of Pharmaceutical Health Services Research - Manuscript ID JPHS-21-0041.R1
[email ref: SE-8-a]

1 message

Jac Keron <onbehalf@manuscriptcentral.com>

Mon, Jun 21, 2021 at 10:56 AM

Reply-To: jphsr.editorialoffice@oup.com

To: yosi_wibowo@staff.ubaya.ac.id

Cc: stevenvictoria@staff.ubaya.ac.id, yosi_wibowo@staff.ubaya.ac.id, rhezauyanto08@gmail.com, adjj_ps@staff.ubaya.ac.id, ekosetiawan.apt@gmail.com, b.sunderland@curtin.edu.au

20-Jun-2021

Dear Dr. Wibowo:

Your revised manuscript entitled "Assessing readiness for research: A pilot study of Indonesian pharmacists" by Halim, Steven; Wibowo, Yosi; Uyanto, Rheza; Setiadi, Adji; Setiawan, Eko; Sunderland, Bruce, has been successfully submitted online and is presently being given full consideration for publication in Journal of Pharmaceutical Health Services Research.

Co-authors: Please contact the Editorial Office as soon as possible if you disagree with being listed as a co-author for this manuscript.

Your manuscript ID is JPHS-21-0041.R1.

For your reference: the manuscript number of the PREVIOUS manuscript version is: JPHS-21-0041.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to ScholarOne Manuscripts at <https://mc.manuscriptcentral.com/jphsr> and edit your user information as appropriate.

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Thank you for submitting your manuscript to Journal of Pharmaceutical Health Services Research.

Sincerely,

Journal of Pharmaceutical Health Services Research Editorial Office

4. Second round review: accepted for publication (July 14, 2021)



Yosi Irawati Wibowo 202026 _ <yosi_wibowo@staff.ubaya.ac.id>

Journal of Pharmaceutical Health Services Research - Decision on Manuscript ID JPHS-21-0041.R1 [email ref: DL-RW-1-a]

2 messages

Albert Wertheimer <onbehalf@manuscriptcentral.com>
Reply-To: albertw@temple.edu
To: yosi_wibowo@staff.ubaya.ac.id

Wed, Jul 14, 2021 at 10:22 PM

14-Jul-2021

Dear Dr. Wibowo:

It is a pleasure to accept your manuscript entitled "Assessing readiness for research: A pilot study of Indonesian pharmacists" in its current form for publication in Journal of Pharmaceutical Health Services Research. Please see the foot of this letter for any reviewer comments made this time round.

The Production Editor will be in contact in due course regarding PDF proofs of your paper.

The journal is keen to expand its reviewer pool. If you are interested in becoming a reviewer for the journal, please contact the Editorial Office at jphsr.editorialoffice@oup.com.

Thank you for your fine contribution. On behalf of the Editor of Journal of Pharmaceutical Health Services Research, we look forward to your continued contributions to the Journal.

Sincerely,
Prof. Albert Wertheimer
Editor in Chief, Journal of Pharmaceutical Health Services Research
albertw@temple.edu, awertheime@nova.edu

Editor-in-Chief Comments to Author:

Reviewer(s)' Comments to Author:

Reviewer: 2

Comments to the Author

The investigators have addressed my major concerns. I believe there remains some linguistic, punctuation, and referencing issues that could be addressed with care reading.

1. Abstract: The first sentence of the Methods does not need a semi-colon but a comma: "... in a public hospital in Malang 10 (n=55);"
2. Some references still have problems. For example, first letters of references 16 and 20 are capitalized, which is not the case for other references. Reference 25 uses "dan" which is Bahasa Indonesian Language for "and". All these minor errors should be corrected.
3. There are others if the investigators carefully read the paper.

Yosi Irawati Wibowo 202026 _ <yosi_wibowo@staff.ubaya.ac.id>
To: STEVEN VICTORIA HALIM _ <stevenvictoria@staff.ubaya.ac.id>

Thu, Jul 15, 2021 at 7:55 AM

[Quoted text hidden]

5. Notification from the journal: article proofs for publication (July 31, 2021)



Yosi Irawati Wibowo 202026_ <yosi_wibowo@staff.ubaya.ac.id>

Journal of Pharmaceutical Health Services Research: 10.1093/jphsr/rmab044 [JPHS-21-0041.R1] – check your proof

1 message

jphsre_oup@newgen.co <jphsre_oup@newgen.co>
To: yosi_wibowo@staff.ubaya.ac.id

Sat, Jul 31, 2021 at 1:00 AM

Dear Dr. Yosi Wibowo,

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3. Approve your proof for publication or submit minor formatting corrections within one working day.

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Best wishes,

Journal of Pharmaceutical Health Services Research production team

Oxford University Press

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6. Notification: article published (August 12, 2021)

On Thu, Aug 12, 2021 at 4:15 AM Oxford University Press <noreply@academic.oup.com> wrote:

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