Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com>

Manuscript submitted to Dove Medical Press

1 message

Ms Elferink <jessicaelferink@dovepress.com> Tue, Sep 1, 2020 at 7:39 AM
Reply-To: Ms Elferink <jessicaelferink@dovepress.com>
To: Dr Sulistyawati <sulistyawatisuyanto@gmail.com>

Dear Dr Sulistyawati,

Thank you for your recent submission to Journal of Multidisciplinary Healthcare, titled "Knowledge, attitude, practice and information needs during COVID-19 pandemic in Indonesia" which has been received.

You uploaded the following files with this submission:
279567-ms.docx
279567-figure-sulis-et-al.docx
279567-table-sulis-et-al.docx

CONFLICT OF INTEREST DISCLOSURE
Please now complete the disclosure form by clicking on the following link:
https://www.dovepress.com/icmje_coi.php?submission_id=279567&author_id=1362211&l=f9w6FjplmWtf2rX2jRdMfFEl1362211

The purpose of this form is to provide the Editor-in-Chief of Journal of Multidisciplinary Healthcare with important information about your possible conflicts of interests. The composition of this form follows that of the International Committee of Medical Journal Editors (ICMJE) standard and further demonstrates our commitment to the highest ethical and professional standards.

The form is designed to be completed and stored electronically. Each author will receive an individual email like this and should submit a separate form. Each author is responsible for the accuracy and completeness of the submitted information.

What happens next:
==========
Your submission will be given an initial review to ensure its suitability for Journal of Multidisciplinary Healthcare. Once that has been completed, peer review will commence, and we will be in contact again when that has been completed.

If your paper is accepted for publication you will need to pay an article publishing charge of USD 2500 (plus VAT if applicable).

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==========
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==========
Please note that your submission has been received on the basis of your agreement with the terms and conditions which you were asked to consent to during the submission process. These are outlined again below and are available in full on the website (http://www.dovepress.com/author_guidelines.php?content_id=771):

- The submission is in compliance with the author guidelines and any applicable journal-specific guidelines; and,

- My co-authors (if any) have authorized me to submit our manuscript; and,

- I am not in a conflict of interest; and,

Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com>

Form for Disclosure of Potential Conflicts of Interest [ID 279567] Completed

3 messages

Ms Elferink <jessicaelferink@dovepress.com> Tue, Sep 1, 2020 at 7:41 AM
Reply-To: Ms Elferink <jessicaelferink@dovepress.com>
To: Dr Sulistyawati <sulistyawatisuyanto@gmail.com>

Dear Dr Sulistyawati

Regarding your manuscript 'Knowledge, attitude, practice and information needs during COVID-19 pandemic in Indonesia'

I confirm we have received your completed Conflict of Interest disclosure.

If I can be of further assistance, please do not hesitate to contact me.

Kind regards
Ms Elferink

Editorial Department
Dove Medical Press
www.dovepress.com - open access to scientific and medical research
[ID: 279567]

Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com> Tue, Sep 1, 2020 at 7:50 AM
To: Ms Elferink <jessicaelferink@dovepress.com>

Dear Ms. Elferink,

I am submitting my manuscript to this reputable journal because I saw the acceptance notification from this journal is quite fast.
So, I hope my manuscript will go to the next step as expected.

Best regards,

Sulistyawati Sulistyawati
Department of Public Health, Universitas Ahmad Dahlan, Indonesia
+62-8170402693 | sulistyawatisuyanto@gmail.com

[Quoted text hidden]

Elferink, Jessica <jessicaelferink@dovepress.com> Wed, Sep 2, 2020 at 3:15 AM
To: Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com>

Dear Dr Sulistyawati,

Thank you for your email.

Your submission is currently with the Consulting Editor for the first checks. They will be in touch with you if they require further information.

In the meantime, please do not hesitate to contact me if I can be of further assistance.

l

Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com>

Manuscript submitted to Dove Medical Press - Response Required

1 message

Valida Delalic <valida@dovepress.com> Wed, Nov 18, 2020 at 9:01 AM
Reply-To: Valida Delalic <valida@dovepress.com>
To: Dr Sulistyawati <sulistyawatisuyanto@gmail.com>

Dear Dr Sulistyawati,

Thank you for your manuscript submission to Risk Management and Healthcare Policy. On behalf of the Editor, I would like to inform you that your submitted manuscript 'Knowledge, attitudes, practices and information needs during the COVID-19 pandemic in Indonesia' (288579) has been peer-reviewed and may be considered for publication after the necessary revisions are completed to the Editors satisfaction.

IMPORTANT
We require you to confirm that you wish to proceed and intend to submit a revised manuscript within 21 days. You can do this by confirming your intention to revise by using the calendar supplied on your author dashboard; or you can reply to this email.

https://www.dovepress.com/manuscript_revision.php?submission_id=288579&l=MkCHPsWMhyQEv73k2FjPH9n91383206

Once you confirm your intention to revise, we will send a confirmation email which contains a link to submit your revised files.
If, after you have considered the reviewer comments, you decide that you require longer than 21 days to revise and resubmit, please let us know immediately.

EDITOR EVALUATION
• You can download your reviewer comments from your author interface below:
https://www.dovepress.com/manuscript_revision.php?pa=reviewer_comment&submission_id=288579&l=MkCHPsWMhyQEv73k2FjPH9n91383206

EDITORIAL CORRECTIONS:
• Abstract: Please shorten your abstract to under 300 words.

• Abstract: Original research papers require a structured abstract. A structured abstract is an abstract with distinct, labelled sections (e.g., Introduction, Methods, Results, Discussion) for rapid comprehension. Please amend accordingly prior to re-submission.

• Citations: Citations should be written as superscript numerals, without brackets, and placed after punctuation marks. For more information, please visit: https://www.dovepress.com/author_guidelines.php?content_id=2967

• Figures: Please remove the figures from amongst the main text - figures should either be supplied in a separate MS Word or .jpeg, .tiff file, and in highest quality possible.

• Tables: Please remove the tables from amongst the main text - tables should either be supplied in a separate MS Word or MS Excel file, or included following the reference list at the end of the manuscript file.

• Figures: We note that the figures are not yet of sufficiently high quality. Please supply all figures in high quality .jpg, .tif or .pdf format, one file for each figure. If the figures have also been placed in your manuscript, please remove. See the figure page on our website for further details (https://www.dovepress.com/author_guidelines.php?content_id=3511).

When submitting your revised manuscript, please also provide a separate response letter addressed to the Editor. Please address every comment made by the Reviewers and Editor, and all the requested Editorial and Ethical corrections in both the manuscript and response letter. This will ensure your revised manuscript proceeds through our system without delays. Any comments or corrections not addressed or responded to will result in your submission being placed on hold while we await the corrections to be made.

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Manuscript ID number:

288579

Title of paper:

Knowledge, attitudes, practices and information needs during the COVID-19 pandemic in Indonesia

Reviewer 1

Evaluations (peer review comments for the author)

1. In general, how do you rate the degree to which the paper is easy to follow and its logical flow?
Fair

2. Do the title and abstract cover the main aspects of the work?
No. Remdisvir is approved for COVID-19. Kindly make your background information on why KAP is important Indonesia is not having COVID-19 cases.

Kindly structure your abstract the present abstract is junky and was not clear methodology. Snowball sampling is not good for cross-sectional studies and why authors selected 819 samples to answer the study objective was not clear. What are the factors, %, mean values, OR, 95% CI?

The abstract is highly descriptive.

3. If relevant are the results novel? Does the study provide an advance in the field?
No. Nothing novel and not added any new information to the field.

4. Did the study gain ethical approval appropriate to the country in which the research was performed if human or animal subjects, human cell lines or human tissues were involved and is it stated in the manuscript?
Yes

Does the paper raise any ethical concerns?
Yes. But authors did not specify the Informed consent and other patient concerns information in the manuscript.

5. If relevant, are the methods clear and replicable?
No. Methodological issues, not validated the questionnaire, not properly described the study sample, and several pitfalls.

6. If relevant, do all the results presented match the methods described?
No. Too many tables and figures. Almost distracting

7. If relevant, is the statistical analysis appropriate to the research question and study design?
No. I dont understand why authors are applying all analysis without a proper study objective.

8. If relevant, is the selection of the controls appropriate for the study design. Have attempts been made to address potential bias through analytic methods, eg., sensitivity analysis
No. Not clear methods and not able to clarify the sensitivity of the test

9. How do you rate how clearly and appropriately the data are presented
Fair. Not so good and not suitable for high impact journals

10. If relevant, did the authors, make the underlying data available to the readers?
No. This is a cross-sectional study, there is no use of making data available to readers

11. Do the conclusions correlate to the results found?
No. The authors are stating something that is not related to their study objective

12. Are the figures and tables clear and legible?

No. Too many

Are images clear and free from unnecessary modification?
Yes

13. I have serious concerns about the validity of this manuscript
No. but parts of the manuscript where information is provided without proper references

14. Does the paper use appropriate references in the correct style to promote understanding of the content?
No. Not reviewed the right papers to use for this study.

15. If relevant, do any of the authors competing interests raise concerns about the validity of the study i.e. have the authors' competing interests created a bias in the reporting of the results and conclusions?.
NA

16. Do you think the manuscript requires English editing to correct the grammar or flow?
Yes

Evaluation
The manuscript requires significant revision and not truly novel. There are several pitfalls and ambiguous sentences that are irrelevant to the aim and objectives of the study.
Remdisvir is approved for COVID-19. Kindly make your background information on why KAP is important Indonesia is not having COVID-19 cases.

Kindly structure your abstract the present abstract is junky and was not clear methodology. Snowball sampling is not good for cross-sectional studies and why authors selected 819 samples to answer the study objective was not clear. What are the factors, %, mean values, OR, 95% CI?

Reviewer 2

Evaluations (peer review comments for the author)

1. In general, how do you rate the degree to which the paper is easy to follow and its logical flow?
Good

2. Do the title and abstract cover the main aspects of the work?
Yes

3. If relevant are the results novel? Does the study provide an advance in the field?
Yes. Novel for a country like that being investigated.

4. Did the study gain ethical approval appropriate to the country in which the research was performed if human or animal subjects, human cell lines or human tissues were involved and is it stated in the manuscript?
Yes

Does the paper raise any ethical concerns?
Yes. Yes; collecting names and stating that google froms were reviewed by contacting the participants indicate that identifiers were collected. This is a concern as online surveys should not collect such and participants should not be easily traced and contacted.

5. If relevant, are the methods clear and replicable?
Yes. Details about the questions for each of the KAP domains should be stated in the instrument section. Coding of the responses as well should be clearly stated. The choice of statistical tests should be clearly explained. Why non-parametric tests used.

6. If relevant, do all the results presented match the methods described?
Yes

7. If relevant, is the statistical analysis appropriate to the research question and study design?
Yes. See note in section 5.

8. If relevant, is the selection of the controls appropriate for the study design. Have attempts been made to address potential bias through analytic methods, eg., sensitivity analysis
NA

9. How do you rate how clearly and appropriately the data are presented
Excellent

10. If relevant, did the authors, make the underlying data available to the readers?
Yes

11. Do the conclusions correlate to the results found?
Yes. Conclusion could be further shortened to include only a sentence or two that are related to the results without any extra statements.

12. Are the figures and tables clear and legible?
Yes

Are images clear and free from unnecessary modification?
Yes

13. I have serious concerns about the validity of this manuscript

Yes. Multiple variables could be collapsed into less categories to better reflect on statistical testing. Marital status, for example, could be collapsed into Never married and ever married. This will increase the power of comparison as the numbers within each cell will increase.
Age and education could be confounded and this is a limitation that should be stated.
70% females is a clear introduction bias that limits generalizability.
Authors should discuss how socio-demographics of the sample reflect on the reference population.

14. Does the paper use appropriate references in the correct style to promote understanding of the content?
Yes

15. If relevant, do any of the authors competing interests raise concerns about the validity of the study i.e. have the authors' competing interests created a bias in the reporting of the results and conclusions?.
No

16. Do you think the manuscript requires English editing to correct the grammar or flow?
No

Evaluation

Paper is well written but can be fine tunes to correct some English editing. Objectives are clear and very well presented in the results.
In the introduction: Non-Pharmacutical Intervention measures have a major role in mitigating the risk of COVID-19. No where does the paper present this term(s). Also, NPI measures have been successful in mitigating the risk; but data may not be available from the country under investigation.
I suggest editing this part t include these comments, especially when stating that" The effectiveness of these interventions is not known".
"In this case, KAP is essential for health authorities on developing COVID-19 prevention measures in the community." developing here is better changed into adjusted and fine tuned.
In the objective; please use "information needs and seeking behaviors".
Study design:
How the signed consent form was signed and returned? Not sure this is feasible in google forms.
This sentense is better deleted as it is confusing: "This age group was categorised as teenagers, according to the Indonesian Ministry of Health".

Instruments:
Details on questions used for each of the 4 main domains are needed. What answer options were available; was it a Likert scale? Yes/no?
Any statistics about reliability?
WHy were names collected? Was this approved by IRB?

How was this feasible in google forms: "To maintain the participant validity, we limited each account to only one response. At the end of the survey, the link was collapsed, and the data downloaded for data completeness. If there was any vague answer, we clarified the response with the participant via WhatsApp or telephone."
Stat analysis: the maximum score: What is the maximum total? How was it calculated?
WHy were the Mann-Whitney U and Kruskal Wallis tests selected? This section needs clear clarifications of what was compared.
Results:
Socio-characteristics: valid is better changed to eligible and said to reported.
Marital status, occupation, and education are better collared into less categories to be able to properly compare. FOr example, MSc and PhD could be combined together, marries and divorced into ever married.

3.3 attitude
Indonesia might with the fight against. Change with to win.

In tables, use one decimal point for the percentages.

Limitations:
Sample design and having 70% females is a selection bias and limits generalizability. This is a major limitation.

Suggestions for analysis:
What will be the results of correlating knowledge to Attitudes and Precautionary measures? WIll higher knowledge transfer to good precautionary measures?

Reviewer 3

Evaluations (peer review comments for the author)

1. In general, how do you rate the degree to which the paper is easy to follow and its logical flow?
Good

2. Do the title and abstract cover the main aspects of the work?
Yes

3. If relevant are the results novel? Does the study provide an advance in the field?
Yes

4. Did the study gain ethical approval appropriate to the country in which the research was performed if human or animal subjects, human cell lines or human tissues were involved and is it stated in the manuscript?
Yes

Does the paper raise any ethical concerns?
No

5. If relevant, are the methods clear and replicable?
Yes

6. If relevant, do all the results presented match the methods described?
Yes

7. If relevant, is the statistical analysis appropriate to the research question and study design?
Yes

8. If relevant, is the selection of the controls appropriate for the study design. Have attempts been made to address potential bias through analytic methods, eg., sensitivity analysis
Yes

9. How do you rate how clearly and appropriately the data are presented
Good

10. If relevant, did the authors, make the underlying data available to the readers?
No. Authors should provide a data availability statement.

11. Do the conclusions correlate to the results found?
Yes

12. Are the figures and tables clear and legible?
No. Graphs and images need to be produced at higher resolution

Are images clear and free from unnecessary modification?
Yes

13. I have serious concerns about the validity of this manuscript
No. Graphs need editing and higher resolutions.

14. Does the paper use appropriate references in the correct style to promote understanding of the content?
Yes

15. If relevant, do any of the authors competing interests raise concerns about the validity of the study i.e. have the authors' competing interests created a bias in the reporting of the results and conclusions?.

No

16. Do you think the manuscript requires English editing to correct the grammar or flow?
Yes

Evaluation
Methods: Provide equations/methods for sample size determination.
Results: add frequency before each percentage. On each percentage add the 95% CI for each.
I also think you used minitab, if so, is it possible to find another software to improve the quality of the images/graphs?
Fig 3 is difficult to read. Can you redraw and present an editable version or attach it as a supplementary file to the editorial office?

Reviewer 4

Evaluations (peer review comments for the author)

1. In general, how do you rate the degree to which the paper is easy to follow and its logical flow?
Good

2. Do the title and abstract cover the main aspects of the work?
Yes

3. If relevant are the results novel? Does the study provide an advance in the field?
No. This area of research was studied in different countries before.

4. Did the study gain ethical approval appropriate to the country in which the research was performed if human or animal subjects, human cell lines or human tissues were involved and is it stated in the manuscript?
Yes

Does the paper raise any ethical concerns?
No

5. If relevant, are the methods clear and replicable?
Yes

6. If relevant, do all the results presented match the methods described?
Yes

7. If relevant, is the statistical analysis appropriate to the research question and study design?
Yes

8. If relevant, is the selection of the controls appropriate for the study design. Have attempts been made to address potential bias through analytic methods, eg., sensitivity analysis
NA

9. How do you rate how clearly and appropriately the data are presented
Excellent

10. If relevant, did the authors, make the underlying data available to the readers?
Yes

11. Do the conclusions correlate to the results found?
Yes

12. Are the figures and tables clear and legible?
Yes

Are images clear and free from unnecessary modification?
Yes

13. I have serious concerns about the validity of this manuscript
No

14. Does the paper use appropriate references in the correct style to promote understanding of the content?
Yes

15. If relevant, do any of the authors competing interests raise concerns about the validity of the study i.e. have the authors' competing interests created a bias in the reporting of the results and conclusions?.

No

16. Do you think the manuscript requires English editing to correct the grammar or flow?
No

Evaluation
1- I would rather if the authors conduct regression analysis to identify the association between demographics and knowledge and practice score.

2- line 25, the statement "have a positive attitude, but they provided an inadequate response to government policies" is contradictory.

3- line 108, It is not mentioned how the authors employed the snowball sampling technique.

4- line 125, Chi-squared test is not used to analyse association but to see if there is a statistically significant difference between groups.

REVIEWER 1 EVALUATION

1- I would rather if the authors conduct regression analysis to identify the association between demographics and knowledge and practice score.

Regression analysis for knowledge and practice have been done

2- line 25, the statement "have a positive attitude, but they provided an inadequate response to government policies" is contradictory.

Statement modified

3- line 108, It is not mentioned how the authors employed the snowball sampling technique.

Formerly, we thought about snowball sampling because the link of the questionaries that we shared will continue shared by everyone that received our messages.
But, since we employed cross sectional study so, random sampling is more proper in our case.

4- line 125, Chi-squared test is not used to analyse association but to see if there is a statistically significant difference between groups.
The statement has been modified according your suggestion

REVIEWER 2 EVALUATION

The manuscript requires significant revision and not truly novel. There are several pitfalls and ambiguous sentences that are irrelevant to the aim and objectives of the study.

Dear reviewer, thank you for your advice. Previously we conducted language editing to expert language but seems they not in health scope. So here, we here read and re write.

Remdisvir is approved for COVID-19.
Kindly make your background information on why KAP is important Indonesia is not having COVID-19 cases.
The statement about this already added in the introduction

Kindly structure your abstract the present abstract is junky and was not clear methodology. Snowball sampling is not good for cross-sectional studies and why authors selected 819 samples to answer the study objective was not clear. What are the factors, %, mean values, OR, 95% CI?

The abstract already structured. About snowball sampling: Formerly, we thought about snowball sampling because the link of the questionaries that we shared will continue shared by everyone that received our messages.
But, since we employed cross sectional study so, random sampling is more proper in our case.

Why we end up with 819 respondents, it was according to our setting during the data collection. We limited our date of collection on particular date, so regardless of the amount on the deadline we will collect it and perform the analysis accordingly.

About What are the factors, %, mean values, OR, 95% CI?
The analysis has been modified using logistic regression for knowledge and practice. So, the OR and CI has been clearer.

REVIEWER 3 EVALUATION

Methods: Provide equations/methods for sample size determination.
Dear Reviewer
Like other online surveys, we did not determine the sample size in the beginning. During the data collection, we limited the response during 13 - 20 August 2020., after that we included all responses came to us on analysis

Results: add frequency before each percentage.
The suggestion has been made for each table

On each percentage add the 95% CI for each.
The suggestion has been made for Table 3 and 6

I also think you used minitab, if so, is it possible to find another software to improve the quality of the images/graphs?
No, I not used minitab. I used excel program, I tried to save as jpg with better resolution now, otherwise please let me know.

Fig 3 is difficult to read. Can you redraw and present an editable version or attach it as a supplementary file to the editorial office?

I prefer to put it into supplementary file as Sup Figure 1.

REVIEWER 4 EVALUATION

Paper is well written but can be fine tunes to correct some English editing. Objectives are clear and very well presented in the results.
Thank you

In the introduction: Non-Pharmacutical Intervention measures have a major role in mitigating the risk of COVID-19. No where does the paper present this term(s). Also, NPI measures have been successful in mitigating the risk; but data may not be available from the country under investigation.
Explanation has been made in introduction according to your suggestion

I suggest editing this part t include these comments, especially when stating that" The effectiveness of these interventions is not known".
I put something about NPI in the last part of Introduction as a gap that we want to fulfil

"In this case, KAP is essential for health authorities on developing COVID-19 prevention measures in the community." developing here is better changed into adjusted and fine-tuned.
Thank you, the suggestion has been made.

In the objective; please use "information needs and seeking behaviors".
Thank you, the suggestion has been made

Study design:
How the signed consent form was signed and returned? Not sure this is feasible in google forms.
We provided two buttons on the consent form, "agree and disagree to participate". By clicking on one of these buttons we assume they are signing consent

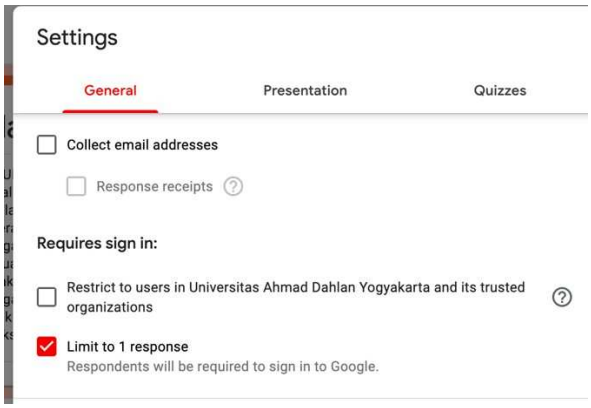
This sentence is better deleted as it is confusing: "This age group was categorised as teenagers, according to the Indonesian Ministry of Health".
Thank you, the suggestion has been made

Instruments:
Details on questions used for each of the 4 main domains are needed. What answer options were available; was it a Likert scale? Yes/no?
The information about the question type has been added in study instrument

Any statistics about reliability?
No, we don't have that since we perform the validity and reliability through expert review

WHy were names collected? Was this approved by IRB?
On the IRB we stated all analysis will do on anonymous and avoid person identification. While on the google form, we stated as optional – so respondent can state their name, initial or keep it blank.

How was this feasible in google forms: "To maintain the participant validity, we limited each account to only one response. At the end of the survey, the link was collapsed, and the data downloaded for data completeness. If there was any vague answer, we clarified the response with the participant via WhatsApp or telephone."
It is feasible to do response limit for each google account, we can set it limit to one response (as figure attached).



Stat analysis: the maximum score: What is the maximum total? How was it calculated?
WHy were the Mann-Whitney U and Kruskal Wallis tests selected? This section needs clear clarifications of what was compared.
We add information on the line 138 about total score

Results:
Socio-characteristics: valid is better changed to eligible and said to reported.
Said have changed to reported
Valid have changed to eligible

Marital status, occupation, and education are better collared into less categories to be able to properly compare. FOr example, MSc and PhD could be combined together, marries and divorced into ever married.
Thank you, the suggestion has been made

3.3 attitude
Indonesia might with the fight against. Change with to win.
Thank you, the suggestion has been made

In tables, use one decimal point for the percentages.
Thank you, the suggestion has been made

Limitations:
Sample design and having 70% females is a selection bias and limits generalizability. This is a major limitation.
Yes, we acknowledge that, but it was out our control due to the online setting. We also found the similar phenomenon in the KAP study in Saudi Arabia – a paper that also published in Risk Management and Healthcare Policy. I also cited this paper in my study.

Suggestions for analysis:
What will be the results of correlating knowledge to Attitudes and Precautionary measures? WIll higher knowledge transfer to good precautionary measures?
Thank you, I try to follow your suggestion

Education
1. SMA – senior high school → code 1
2. D1-D4 – diploma → code 2
3. S1 – higher education → code 3
4. S2 – higher education → code 3
5. S3 - higher education → code 3

Marriage status categorsed as
Ever married: married and divorce
Never married: never marir

1 Belum menikah → code 1
2 Sudah menikah → code 2
3 Sudah menikah → code 2

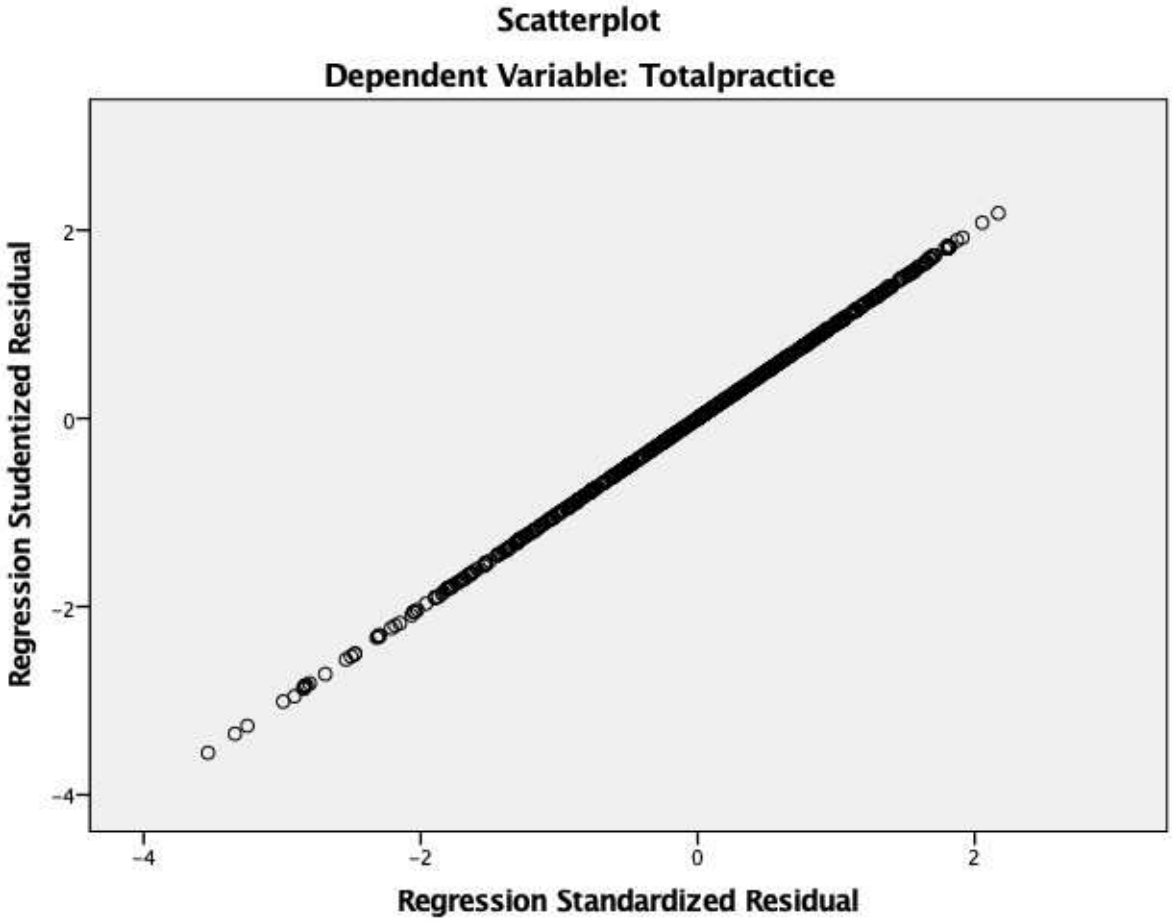
Occupation

1. Tidak kerja → 1 not working
2. Student → 2 student
3. Public sector → 3 working
4. Private sector → 3 working
5. Self employed → 1 not working
6. Other retire → 1 not working

Uji normalitas – Normal

Cut off practice 23.5

Logistic regression


Scatterplot
Dependent Variable: Totalpractice
Regression Studentized Residual
Regression Standardized Residual
2
0
-2
-4
-4
-2
0
2

ORIGINAL ARTICLE

Knowledge, attitudes, practices and information needs during the COVID-19 pandemic in Indonesia

Sulistyawati Sulistyawati[1]*, Rokhmayanti Rokhmayanti[1], Budi Aji[2], Siwi Pramatama Mars Wijayanti[2], Siti Kurnia Widi Hastuti[1], Tri Wahyuni Sukesi[1] and Surahma Asti Mulasari[1]

[1] Department of Public Health, Universitas Ahmad Dahlan, Yogyakarta 55164, Indonesia;

[2] Department of Public Health, Faculty of Health Sciences, Jenderal Soedirman University, Purwokerto 53122, Indonesia

*Correspondence: Sulistyawati
Department of Public Health, Universitas Ahmad Dahlan, Yogyakarta.
Jl. Prof Dr Soepomo, Janturan, Umbulharjo, Yogyakarta, Indonesia. 55164.
Tel +628170402693
Email: sulistyawati.suyanto@ikm.uad.ac.id

Abstract

Introduction: In the absence of vaccines and specific drugs~~,~~; prevention effort, has been attributed as the primary control mechanism of COVID-19. Knowledge, attitude, and practice are used to determine the current situation and also formulate appropriate control interventions ~~of a particular disease.~~as well as risk communication. This study, therefore, aims to assess knowledge, attitude, and practice about COVID-19 in Indonesian society.

Methods: A cross-sectional study was conducted through an online survey in the third week of August 2020. Purposive and ~~snowball~~random sampling was used to select the respondents. People with a minimum age of 18 years and residing in Indonesia were allowed to participate in this study. The survey was conducted with an online questionnaire~~.~~ using several platforms such as WhatsApp, Instagram and Facebook by distributing the link and continuous chain messages on that platform. Data were analysed using descriptive, chi-square~~, Mann Whitney, and Kruskal Wallis tests.~~ and logistic regression test.

Results: A total of 816 respondents were included in this study. In general, public knowledge about COVID-19 ~~is~~was sufficient, but some areas ~~a~~were still low. Most people ha~~ve~~d a positive attitude about the COVID-19, but they provided ~~an inadequate~~a negative response to government policies. Most of the community has taken preventive measures for COVID-19. However, some behaviours received a low percentage. Information about how to prevent COVID-19 was the most wanted information during this pandemic. Social media ~~is~~was a favourite source of information,

with the most popular type of visualisation ~~is~~was a table containing numbers. ~~Women~~Age and ~~people more than 50 years of age have the best COVID-19~~ education were significantly associated with knowledge. ~~Attitude is~~Some attitudes were affected by age and occupation~~. Women, people > 50 years old, married people, persons with a diploma, person working in the government sector, and those with health insurance are among the groups that have the best preventive measures compared to other groups. The knowledge, attitude, and prevention measures towards COVID-19 was affected by gender, age, marital status, education, work~~ scope~~,~~. Gender and health insurance ownership~~.~~ significantly associated with preventive measures.

Conclusion: This research highlights the importance of providing valid, effective, efficient, and continuous information to the public through appropriate channels to increase understanding about COVID-19 precautions.

Keywords: COVID-19; KAP; information needs; information-seeking behaviour

1. Introduction

The occurrence of the coronavirus disease (COVID-19) in Wuhan, China emerged as a rude shock to the entire globe.[1] This incident was accompanied by rapid transmission and spread all around the world. A total of 215 countries were reported to have been affected by COVID-19 by August 22, 2020, with over 23 million human infections, 807,618 deaths, and more than 15 million recoveries.[2,3] With no vaccine to date, the pandemic continues to claim ever more victims.

The first two cases in Indonesia were confirmed in March 2020[4] and rapidly spread throughout the 34 provinces in this country. About 151,000 sufferers and a mortality rate above 6,000 were recorded as of August 22, 2020.[5,6] The government, therefore, has exerted numerous efforts towards the COVID-19 pandemic response, including a national budgeting policy, the documentation as a health emergency, along with large-scale social restrictions.[7] A massive health campaign was created to educate the society about these regulations, including the preventive measures, and also to encourage compliance with the national precautionary guidelines by all parties.[8]

The Indonesian government imposed social distancing rules and implemented comprehensive social restrictions in the 18 selected provinces such as Jakarta and Makasar[9] rather than a lockdown to alleviate the economic deterioration resulting from the COVID-19 pandemic.[10,11] These regulations were intended to terminate the spread of COVID-19 by reducing contact amongst individuals. To reinforce these directives, the government limited all public activities and shut all school down, restricted religious gatherings and public events, as well as facilities,[10,12] including public transportation to avoid the generation of new cases theoretically triggered by crowds. The government closed traditional workplaces but encouraged the continuation of productive activities.[13] The effectiveness of these interventions is not known. The government of Indonesia has changed its level of intervention to focus prevention of COVID-19 transmission through individual prevention efforts, promulgated by the president of Indonesia's invitation of citizens to enter a new era of living with coronavirus on May 16, 2020.[3]

Considering the transmission COVID-19 is possible from person to person, the World Health Organization (WHO) stipulated the disease prohibition as a collective responsibility. Also, for universal protection, some practices were to be implemented including frequent washing of hands, coughing and sneezing in the elbow, inhibiting public meetings, evading congested spaces, maintaining distances with sick people, as well as cleaning and sanitising objects and surfaces.[14],[15] These behaviours are required by the government of Indonesia to help prevent viral transmission.[13],[16] The participation of every individual was required to adequately accomplish the COVID-19 control program initiated by the government .adequately.[8] A previous study revealed that societal conformity between the proposed regulations, along with a readiness to tackle the disease was influenced by the possession of knowledge, attitudes, and practices (KAP).).[17] KAP is a useful tool to assist on plan development, implementation, advocacy, communication and social mobilisation on the health program.[18] In this case, KAP is essential for health authorities on developingadjusting COVID-19 prevention measures in the community.

COVID-19 is considered as a newly emerging disease.[19–21] Recently, the US Food and Drug approved Remdesivir as a substance for COVID-19 treatment in the hospital setting.[22] This good news does not mean that awareness about transmission of the disease is unnecessary anymore. A study revealed the importance of non-pharmaceutical interventions (NPIs) on reducing the reproduction number of COVID-19 virus,[23]. Thus, rapid scientific research on this disease is still lacking, particularly in Indonesia. Understanding KAP is important but may limited data in Indonesia about it. Understanding KAP is essential to identify and overcome false rumours about a disease that may negatively influence community prevention behaviour., including NPI.[24] To rapidly understand COVID-19 KAP as well as the information needs and seeking behaviours in Indonesia, we surveyed several of the most popular platforms: WhatsApp, Facebook, and Instagram.[25] This research contributed to inform thestrengthening risk communication effort by related authorities on providing COVID-19 information needed and to which group the informationadvocation should be targeted.

2. Materials and Methods

2.1. Study design

A cross-sectional study was used to assess KAP as well as the information needs during the COVID-19 pandemic in Indonesia. Subjects were recruited by an online survey between 13 - 20 August 2020. Respondents were invited to refer others to complete the survey by snowballthrough random sampling. Eligibility requirements were age 18 years or older and residence in Indonesia. Interested respondents returned signed consent forms and were then surveyed. This age group was categorised as teenagers, according to the Indonesian Ministry of Health . by pressing the button "agree to participate" and were fulfilling the questionnaire.

2.2. Study instruments

The questionnaire consisted of thirty-six items categorised into five sections including 1) socio-demographic data of respondents (name, -optional-, sex, age, marital status, education, occupation, city of residence, salary estimation, health insurance ownership, and phone number), 2) COVID-19

knowledge that presented in “Yes/No“ question - including (general symptoms, transmission modes, and preventive measures), 3) related attitudes using five Likert scales (how the virus was to be ~~surmounted~~overcome and people perception about Indonesia’s situation), 4) ~~Control~~ practices that posted in “Yes/No“ question (protective activities: face mask and hand sanitiser use, hand washing, exercise routines, advancements in the food supply, maintaining social distance and where to seek more information), 5) Information needs (the type of material ~~sought~~desired, source of this information, and the favourite data visualisation preferred). These KAP questions were adapted in part from previous research,[17] ~~augmented with~~ then we added queries related to respondents’ information needs. The poll was executed in Bahasa Indonesia and translated into English ~~through~~during manuscript writing. To help improve question validity, questions were kept short and simple, pre-tested via expert review, and further pre-tested in a similar respondent group ~~of seven persons.~~ similar to the anticipated respondent ~~group~~.

2.3. Data collection procedure

A Google form link was circulated by networks and colleagues through numerous WhatsApp private messages, groups and other social media platforms (Facebook and Instagram) during the research period. To maintain the participant validity, we limited each account to only one response~~.~~ based on their email. At the end of the survey, the link was c~~o~~llaposed, and the data downloaded for data completeness. If there was any vague answer, we clarified the response with the participant via WhatsApp or telephone. Responses from persons under 18 years of age, residing outside Indonesia, or unwilling to sign a consent form were not included in analysis.

2.4. Statistical analysis

The evaluation was performed by employing the Statistical Package for Social Sciences (SPSS) version 24.0 (IBM, Armonk, NY, USA). The socio-demographic data and informational needs of the respondents were analysed descriptively. On knowledge, questions were scored with one and zero for the correct and wrong answers, respectively. Also, points of one and zero were allocated to signify agreement and disagreement, respectively, for the attitude category. Finally, the practice questions were graded from zero to two, with the highest value representing the best practice. A total score was calculated for each correct, positive and good answer for K, A and P – respectively. The maximum total scores for knowledge, attitude, and practice were 14, 3, and 34, respectively.

~~The Mann-Whitney U and Kruskal Wallis~~Logistic regression test was applied to ~~compare~~see the ~~socio-demographic characteristic against the~~ association between knowledge and practice category and socio-demographic respondent. Knowledge and practice were divided into 2 groups poor and good – less than the mean score~~. A~~ as poor attitude and practice and vice versa. Significance was determined at 5% level (*P*-value ≤ 0.05). The attitude was analysed using chi-square test ~~was employed to analyse the associations between the attitude and socio-demographic scores of the respondents. We present~~and last the information needs and information-seeking behaviour was presented descriptively.

2.5. Ethical considerations

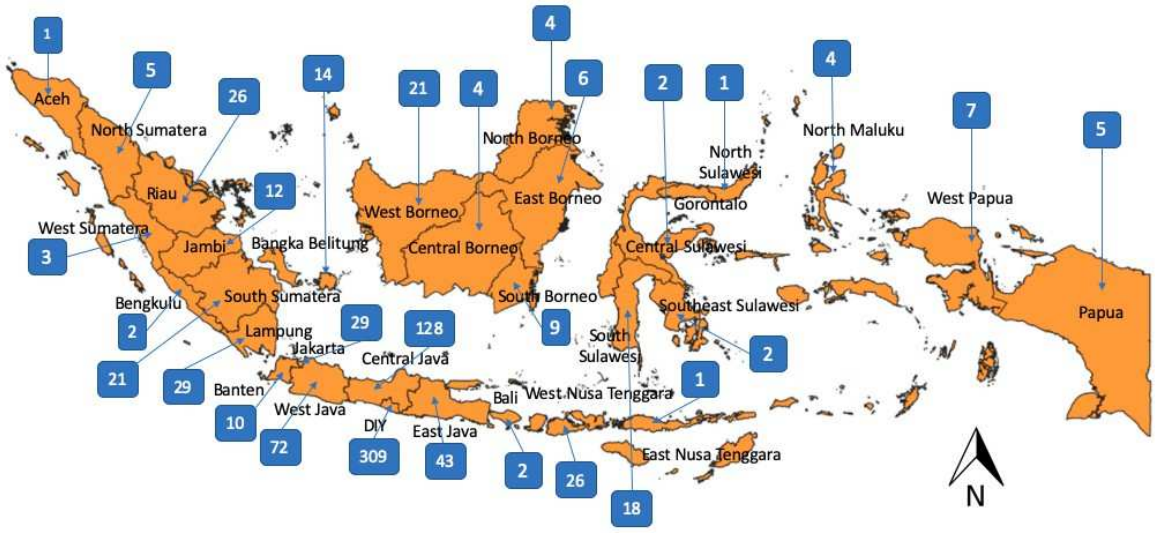
The study was approved by the Ethical Review Board of Ahmad Dahlan University, Yogyakarta, Indonesia (ethical approval code: 012008029).

3. Results

3.1. Socio-demographic characteristics

This study received a total of 858 responses during the online survey, 42 of them were excluded because aged less than 18 years (37), not able to participate (2), and living overseas (3). Therefore, only 816 responses were considered ~~valid~~eligible in this study. Figure 1 shows the respondents, spread across 31 out of 34 provinces in Indonesia.

The socio-demographic of respondents are presented in Table 1. Respondent comprised mainly of females (73%), between 18-29 years of age (56.9%). Furthermore, more than half of the participants were single or had never been married (51.6%). Also, 41.8% of the participants were graduates with bachelor's degrees, 40.1% were unemployed. Regarding salary, more than 40% of respondents ~~said~~reported they were not paid because they were not working anymore. Over half of the participants (55.8%) reported having health insurance.



~~**Figure 1.** Participant number and the distribution by the province in Indonesia.~~

~~**Table 1.** Socio-demographic characteristics of respondents.~~

~~Characteristic~~	~~Number (N=816)~~	~~Percentage (%)~~
~~Gender~~		
~~Male~~	~~220~~	~~27.0~~
~~Female~~	~~596~~	~~73.0~~
~~Age group~~		

18-29	464	56.9
30-49	315	38.6
>50	37	4.5
Marital status		
Single (never married)	421	51.6
Married	385	47.2
Divorced	10	1.2
Education		
Senior high school	270	33.1
Diploma	81	9.9
Bachelor	341	41.8
Magister	113	13.8
Doctoral	11	1.3
Occupation		
Unemployed	327	40.1
Student	46	5.6
Government sector	209	25.6
Private sector	179	21.9
Self-employed	53	6.5
Other (Retiree)	2	0.2
Salary Range (million IDR)		
Not paid	377	46.2
<1	32	3.9
1-3	174	21.3
3-5	149	18.3
>5	84	10.3
Health insurance ownership		
Yes	455	55.8
No	361	44.2

3.2. Knowledge about COVID-19

The information in Table 2 shows over 70% of respondents correctly answered questions related to COVID-19 general symptoms, transmission mo~~r~~des, and prevention measures. ~~By~~In contrast, only 51.3% correctly answered about the common cold symptoms consisting of nasal congestion, runny nose, and sneezing, are less common in people infected with COVID-19 virus. And only 40% correctly answered the COVID-19 virus spreads through the air.

Table 2. Participant knowledge about COVID-19.

Questions	True N (%)	False N (%)
- The main symptoms of an individual infected with COVID-19 include fever, feeling of tiredness, dry cough, and body aches	**747 (91.5)**	69 (8.5)
- The common cold symptoms consisting of nasal congestion, runny nose, and sneezing, are less common in people infected with COVID-19 virus.	**419 (51.3)**	397 (48.7)
- There is currently no effective cure for COVID-19, but early detection and supportive treatment can help most patients recover from infection.	**804 (98.5)**	12 (1.5)
- Not everyone infected with COVID-19 develops severely. This only occurs in children, the elderly, and/or people with chronic diseases.	**670 (82.1)**	146 (17.9)
- Eating or touching wild animals will cause transmission of the COVID-19 virus	228 (27.9)	**588 (72.1)**
- People with COVID-19 cannot transfer the virus to others if they don't have a fever	56 (6.9)	**760 (93.1)**
- The COVID-19 virus spreads through the respiratory droplets of an infected person	**764 (93.6)**	52 (6.4)
- The COVID-19 virus spreads through the air	490 (60.0)	**326 (40.0)**
- People can use masks to prevent COVID-19 infection	**809 (99.1)**	7 (0.9)
- One of the preventions against COVID-19 is using hand sanitiser or washing hands with soap using running water	**816 (100.0)**	0
- Children and young people do not require to take precautions for COVID-19 infection	19 (2.3)	**797 (97.7)**
- To prevent COVID-19 infection, we must avoid going to crowded places and avoid using public transportation	**794 (97.3)**	22 (2.7)
- Isolation and treatment of people infected with COVID-19 is an effective way to reduce the virus's spread	**808 (99.0)**	8 (1.0)
- People who come into contact with someone infected with COVID-19 must be immediately isolated in a particular place, generally an isolation period of 14 day	**809 (99.1)**	7 (0.9)

Bold text indicates the correct answer.

Furthermore, among the respondent's socio-demographic features, only sex and age groups and education had significantly differenta significant association with knowledge of COVID-19. The female group possessed a Having age more than 50 years was associated with 0.59 – fold higher odds of good knowledge score than men. However,towards COVID-19 compare to people over 50 years of age aged 18-29 years (P< 0.05). Respondent graduated from higher education associated with 1.98 – fold higher odds to have the bestgood knowledge of this virus.about COVID-19 than people hold senior high school education (P< 0.05). This information is shown in Table 3.

Table 3. Socio-demographic characteristics and knowledge score (N = 816).

Characteristic	Knowledge Score Mean (SD)	Mean Rank	P-value
Gender			
Male	11.97 (1.22)	379.36	0.026**
Female	12.21 (1.08)	419.26	
Age group			
18-29	12.03 (1.14)	384.57	0.001**
30-49	12.27 (1.08)	434.24	
>50	12.49 (1.14)	489.47	
Marital status			
Single	12.08 (1.12)	392.78	0.102
Divorced	12.20 (1.68)	468.55	
Married	12.22 (1.11)	424.13	
Education			
Senior high school	12.13 (1.10)	405.02	0.084
Diploma	12.43 (1.15)	474.27	
Bachelor	12.11 (1.15)	398.74	
Magister	12.08 (1.07)	395.31	
Doctoral	12.36 (1.12)	447.73	
Occupation			
Unemployed	12.14 (1.09)	405.72	0.426
Student	12.02 (1.12)	383.98	
Government sector	12.25 (1.09)	429.89	
Private sector	12.07 (1.17)	393.11	
Self-employed	12.09 (1.12)	406.80	
Other (Retiree)*	13.00 (0)	614.00	
Monthly Salary Range (million IDR)			
None	12.16 (1.08)	408.04	0.575
<1	11.91 (1.17)	363.20	
1-3	12.24 (1.17)	428.07	
3-5	12.12 (1.07)	403.52	
>5	12.04 (1.24)	396.11	
Health insurance ownership			

Yes	12.19 (1.10)	419.10	0.134
No	12.09 (1.15)	395.14	

*other includes retiree and daily labour. **significant at p<0.05.

3.3. Attitude regarding COVID-19

Most respondents (95.5%) agreed that COVID-19 might be controlled. Most (80.8%) also believed Indonesia might with the fightto win against this virus. However, only 48.7% of respondents agreed that the Indonesian government handled COVID-19 well. Answers to how well the government handled COVID-19 were positively associated with age groups (Figure 2 and Table 4).

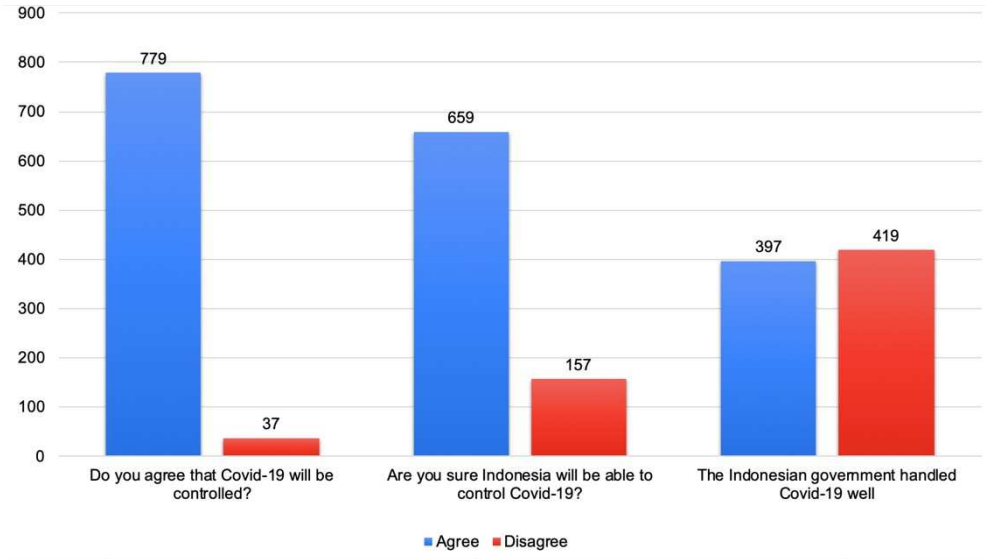


Figure 2. Attitudes towards COVID-19 among participant (N=816).

Table 4. Socio-demographic characteristic and attitude (N = 816).

Characteristic	Do you agree that COVID-19 will be overcome?	Are you sure Indonesia will be able to control COVID-19?	The Indonesian government handled COVID-19 well.
	N (%)	N (%)	N (%)

	Disagree	Agree	Disagree	Agree	Disagree	Agree
Gender						
Male	13 (5.91)	207 (94.09)	42 (19.09)	178 (80.91)	115 (52.57)	105 (47.73)
Female	24 (4.03)	572 (95.57)	115 (19.30)	481 (80.70)	304 (51.01)	292 (48.99)
Age group						
18-29	21 (4.53)	443 (95.47)	101 (21.77)	363 (78.23)	261 (56.25)	203 (43.75)**
30-49	16 (5.08)	299 (94.92)	52 (16.51)	263 (83.49)	146 (46.35)	169 (53.65)
>50	0	37 (100)	4 (10.81)	33 (89.19)	12 (32.43)	25 (57.57)
Marital status						
Single	18 (4.28)	403 (95.72)	85 (20.19)	336 (79.81)	228 (54.16)	193 (45.84)
Divorced	0	10 (100)	3 (30.00)	7 (70.00)	5 (50.00)	5 (50.00)
Married	19 (4.94)	366 (95.06)	69 (17.92)	316 (82.08)	186 (31.90)	397 (68.10)
Education						
Senior high school	10 (3.70)	260 (96.30)	46 (17.04)	224 (82.96)	129 (47.78)	141(52.22)
Diploma	4 (4.94)	77 (95.06)	17 (20.99)	64 (79.01)	36 (44.44)	45 (55.56)
Bachelor	19 (5.57)	322 (94.43)	71 (20.82)	270 (79.18)	184 (53.96)	157 (56.04)
Magister	3 (2.65)	110 (97.35)	20 (17.70)	93 (82.30)	65 (57.52)	48 (42.48)
Doctoral	1 (9.09)	10 (90.91)	3 (27.27)	8 (72.73)	5 (45.45)	6 (54.55)
Occupation						
Unemployed	11 (3.36)	316 (96.94)**	58 (17.74)	269 (82.26)**	168 (51.38)	159 (48.62)
Student	2 (4.35)	44 (95.65)	12 (26.09)	34 (73.91)	23 (48.94)	24 (51.06)

Government sector	4 (1.91)	205 (98.09)	29 (13.88)	180 (86.12)	93 (44.50)	116 (55.50)
Private sector	17 (9.50)	162 (90.50)	50 (27.93)	129 (72.07)	109 (60.89)	70 (39.11)
Self employed	3 (5.66)	50 (94.34)	8 (15.09)	45 (84.91)	25 (47.17)	28 (52.83)
Other (Retiree)*	0	2 (100)	0	2 (100)	1 (50.00)	1 (50.00)
Monthly Salary Range (million IDR)						
None	12 (3.18)	365 (96.82)	71 (18.83)	306 (81.17)	194 (51.46)	183 (48.54)
<1	1 (3.13)	31 (96.88)	6 (18.75)	26 (81.25)	17 (53.13)	15 (46.88)
1-3	13 (7.47)	161 (92.53)	29 (16.67)	145 (83.33)	85 (48.85)	89 (51.15)
3-5	8 (5.37)	141 (94.63)	27 (18.12)	122 (81.88)	76 (51.01)	73 (48.99)
>5	3 (3.57)	81 (96.43)	24 (28.57)	60 (71.43)	47 (55.96)	37 (44.05)
Health insurance ownership						
Yes	17 (3.74)	438 (96.26)	90 (19.78)	365 (80.22)	247 (54.29)	208 (45.71)
No	20 (5.54)	341 (94.46)	67 (18.56)	294 (81.44)	172 (47.65)	189 (52.35)

*other includes retiree and daily labour. **significant at p<0.05.

3.4. Practice measure toward COVID-19

The respondents were assessed using 16 questions presented in Table 5. Agreement by More than half of the respondents iswere considered sufficient to have a positive impact on community health and was reported on 10 of the 16 questions. This shows an acceptance of the preventive guidelines mainly covering of mouth and nose when sneezing and also washing of hands regularly with running water. Furthermore, good practices have been reported by more than 70% of respondents when asked about the use of hand sanitiser, nose mask, use of private vehicle, not touching the eyes, nose, and mouth with dirty hands. Meanwhile, a low percentage (< 70%) was reported for practice-related to nutritional maintenance, shaking of hands and avoidance of crowds.

Table 5. Participant practice response related COVID-19 (N = 816).

Statements	Always	Sometimes	Never
	N (%)	N (%)	N (%)
- I cover my mouth and nose when I cough or sneeze	727 (89.1)	84 (10.3)	5 (0.6)
- I wash my hands with soap from running water many times a day	694 (85.0)	121 (14.8)	1 (0.1)
- I always monitor my temperature when I don't feel well	352 (43.1)	340 (41.7)	124 (15.2)
- I maintain my nutritional balance by eating lots of vitamins and fruit	557 (68.3)	257 (31.5)	2 (0.2)
- I exercise regularly	220 (27.0)	546 (66.9)	50 (6.1)
- I carry hand sanitiser with me	603 (73.9)	179 (21.9)	34 (4.2)
- I use a hand sanitiser	578 (70.8)	224 (27.5)	14 (1.7)
- I wear a mask when I go out of the house	713 (87.4)	103 (12.6)	0
- I travel using a private vehicle	723 (88.6)	83 (10.2)	10 (1.2)
- I keep a safe distance from other people, at least 1.5 meters	465 (57.0)	346 (42.4)	5 (0.6)
- I choose to stay at home during this pandemic	417 (51.1)	384 (47.1)	15 (1.8)
- I avoid touching my eyes, nose, and mouth when my hands are dirty	647 (79.3)	168 (20.6)	1 (0.1)
- I tried to avoid the crowd	556 (68.1)	256 (31.4)	4 (0.5)
- I avoid shaking hands	557 (68.3)	252 (30.9)	7 (0.9)
- I always update information related to COVID-19	437 (53.6)	362 (44.4)	17 (2.1)
- I visited a health facility when I felt unwell during the COVID pandemic	274 (33.6)	282 (34.6)	260 (31.9)

*other includes retiree and daily labour.

Insufficient practice measures of less than 60% occurred in several questions, like monitoring body temperature when feeling unwell (43%), consistent exercise (27%), maintaining a 1.5-meter distance from others (57%), and always staying home (51%). Meanwhile, with regards to information, only 53% always remain updated, when feeling unwell during the pandemic, 33.6% reportedly visited the health facilities, about 34% saidreported sometimes, and 31.9% reported never.

Table 6 shows the differences between socio-demographic categories and total practice scorecategory. Gender, age group, marital status, education, occupation, and health insurance ownership significantly differ in associated with practice total score with regardsmeasure of the respondent. Being female was associated with 0.41 times higher odds to have good knowledge about COVID-19. Females recorded a better mean rank compared than males during this study;

individuals above 50 years scored higher than other age groups. Single respondents had higher scores than married or divorced persons. Also, graduates from diploma schools had a higher mean rank than those with other levels of education. Government workers scored better than those of other sectors, and those with health insurance scored better than those man (P< 0.05). A respondent who without health insurance.

Table 6. Socio-demographic characteristic and significantly associated with 1.68 times higher odds of good practice score (N = 816). of COVID-19 than people with health insurance (P< 0.05).

Characteristic	Practice Score Mean (SD)	Mean Rank	P-value
Gender			
Male	27.39 (4.10)	363.72	0.001**
Female	28.05 (3.77)	425.03	
Age group			
18-29	27.39 (4.10)	388.09	0.015**
30-49	28.15 (3.80)	433.37	
>50	28.48 (3.67)	452.73	
Marital status			
Single	27.33 (4.17)	386.71	0.011**
Divorced	27.00 (2.86)	342.35	
Married	28.18 (3.75)	434.05	
Education			
Senior high school	27.19 (4.22)	378.11	0.000**
Diploma	29.23 (3.94)	505.68	
Bachelor	27.51 (3.94)	393.47	
Magister	28.50 (3.28)	450.36	
Doctoral	28.91 (2.54)	474.73	
Occupation			
Unemployed	27.33 (4.05)	383.58	0.000**
Student	28.15 (3.85)	434.98	
Government sector	28.90 (3.56)	479.07	
Private sector	27.35 (3.72)	380.90	
Self-employed	26.55 (5.04)	355.44	
Other (Retiree)*	26.50 (7.77)	375.00	
Monthly Salary Range (million IDR)			
None	27.34 (4.01)	382.95	0.055

< 1	27.19 (4.01)	402.64	
1-3	28.13 (3.97)	433.11	
3-5	28.23 (3.84)	440.23	
> 5	27.95 (3.46)	418.11	
Health insurance ownership			
Yes	28.25 (3.56)	434.62	0.000**
No	27.08 (4.38)	375.58	

*other includes retiree and daily labour. **significant at p<0.05.

3.5. Information needs and information-seeking behaviour

The information-seeking behaviour of the respondents is presented in Figure 3. During the pandemic, more than 78% of the respondents reported seeking information on how to prevent the virus, and about 65% researched on COVID-19 transmission in Indonesia, cause, treatment and symptoms.

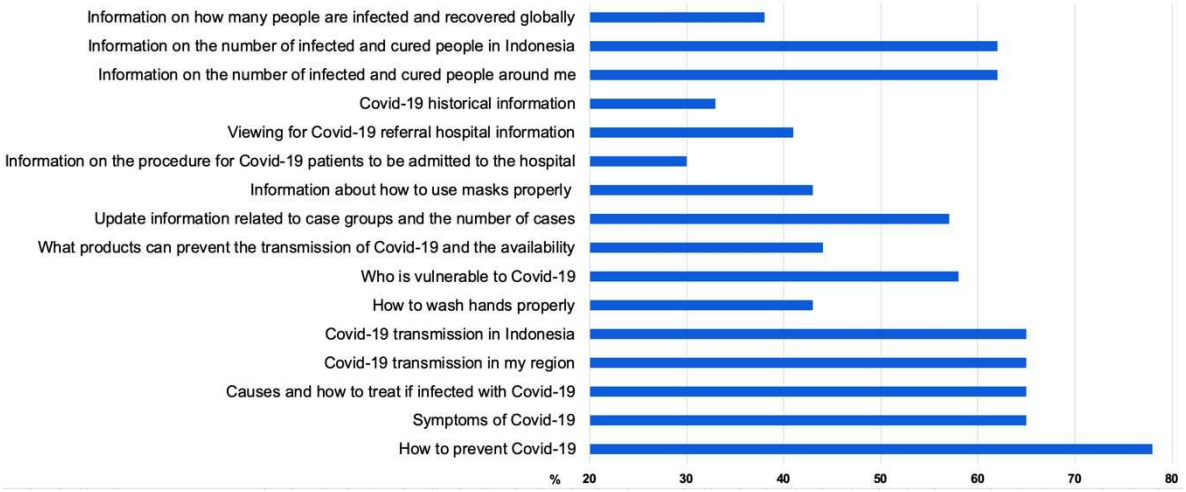


Figure 3. The type of information sought during the COVID-19 pandemic (N=816).

(Supplementary Fig. 1). Meanwhile, with regards to information type, the majority (65%) of respondents choose table or number, and almost half selected map as the favourite information visualisation. The respondents reported social media, both Facebook and Instagram, as the first favourite information source followed by television (Figure 43).

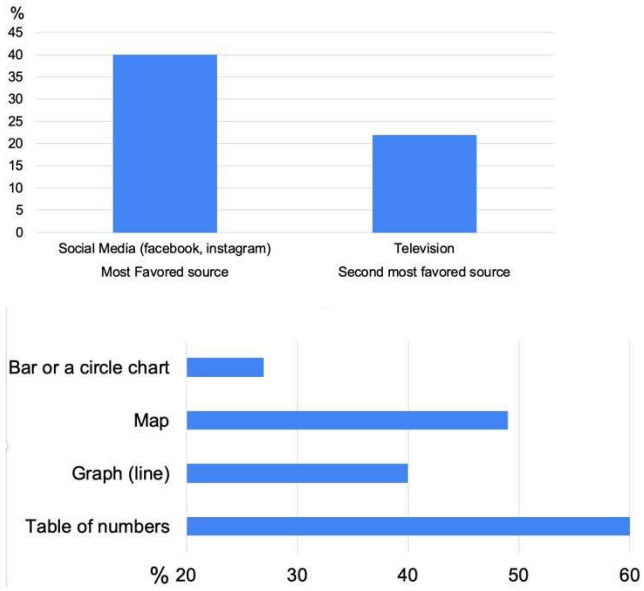


Figure 4. The favourite information source (left) and type visualisation (right) about COVID-19 (N=816).

4. Discussion

COVID-19 is an extremely aggressive virus due to the ease in the mode of transmission. The primary prevention measures are conducted through behavioural modification on individual hygiene and limiting physical contact among people. In addition Besides, since this disease is new, providing adequate information about the virus, especially preventive measures, it is essential to avoid misinformation in society that could result in incorrect precautionary action. This study helps fill a knowledge gap about COVID-19 Knowledge, Attitude, and Practice (KAP) in Indonesia, which may detect potential barriers to change in social behaviour and found that with some notable weaknesses, COVID-19 KAP is adequate.[26] This study specified public knowledge, attitude, and practice about the virus as adequate, with notable weakness in some parts.

The response to this research was generated mostly from females (73%). This may be related to men's tendency to be more apathetic to a survey than women. – mainly in this pandemic situation, and the same happened in the COVID-19 KAP study in Saudi Arabia which woman mostly responded the survey.[27] This is, however, consistent with previous research, proving women to participate more in surveys than men. In addition, the findings showed better mean COVID-19 knowledge score in females compared to males. This result is, consistent with studies in Iran and Malaysia ,. However, the result contrasts with studies in Saudi Arabia and Bangladesh, where males had a better mean knowledge score about COVID-19 than females ,. The difference in results is possibly influenced by social norm setting in particular places. Women may have a greater incentive to gain COVID-19 knowledge because they tend to be the primary caregivers of family members with COVID-19 ,. Women may also seek greater knowledge of COVID-19 to overcome the greater sensitivity to danger and attendant stress reported in women than men . Therefore, this group is always looking for information and knowledge about COVID-19 to overcome anxiety. Knowledge is assumed to help someone have a better perspective on a particular problem and equally how to solve it as well as improves the people practical measures . Although the difference

~~in KAP is significant between men and women, the mean average difference is itself not that great; so there may not be a practical difference in outcomes between genders. The overall high scores across demographics indicate the success of the government's COVID-19 public education campaigns.~~[28,29]

Knowledge, attitude and practice are interrelated each other. People who have good knowledge expected would be translated into good practice and preventive measure. In this research showing the discrepancy between knowledge that does not translate into good attitude and preventive measure – respondent who has good knowledge did not have a proper attitude as well as a preventive measure related to COVID-19. The different result was showed by research in Iran and Bangladesh that the translated of knowledge into attitude and practice seems performed well.[30,31]

This research revealed that persons over age 50 displayed higher knowledge than other age groups. This finding is consistent with research in Malaysia, where people in this group displayed better knowledge about COVID-19.[17] According to the World Health Organization (WHO), older society is at the highest risk to contract this virus, and more than 95% of the related death is attributed to this group.[32] In addition, multiple health conditions, especially chronic disease, biological age, and decreased immunity, are predicted to significantly increase the elderly's susceptibility to infection with this virus.[33] The massive campaign by various parties/organisations about COVID-19, including information on vulnerable groups, therefore encouraged older people to know more about this disease. This high level of knowledge among older people is coherent with the ~~difference in~~ practice scores across all age groups. Therefore, individuals above 50 years have the ~~highest score of~~higher odds to have a good practice ~~because due to the vulnerability of aged citizens~~measure.

Education is process learning and gaining knowledge. In our study, people who graduated from higher education more knowledgeable regarding COVID-19. Those with higher education – such as healthcare workers – may have a greater need to work during the pandemic, preventing them from fully adhering to preventive measures like staying at home. However, the lower risk by their younger age may offset this risk.[34] Age and occupation appear to influence public perception of Indonesia's ability to defeat COVID-19 and how well the Indonesian government has handled COVID-19. Although respondents felt Indonesia would be able to control COVID-19, they did not, in general, believe that the Indonesian government had handled the situation well. This is in contrast to reports from Malaysia, where there was higher public support of government action.[17]~~. This~~ It may be because other countries imposed total lockdown, while Indonesia employed policies to protect economic growth and cultural characteristics while also addressing COVID-19,[11,35,36] which may have been perceived as a lack of direction from the government, and in turn, been blamed for infections and mortality rate.

In this research, respondents reported ~~total~~their compliance with many precautionary measures, including, putting on masks, the use of hand sanitiser, proper handwashing practices, physical distancing and avoidance of crowd. However, respondents only sometimes practice regular exercise or visits to the health facilities for assistance. Engaging in physical activities was not routine before COVID-19, and was made more challenging by the pandemic~~, during which~~ because sports facilities and fitness centres were closed. A previous study proved relatively low walk time practice by Indonesians compared to residents in other countries ~~– the poor practice of visiting health facilities when having health complaints.~~[37] Poor practice in visiting health facilities seems to

be related to the health authority's recommendation that people are not encouraged to visit health facilities except in an emergency during COVID-19 pandemic.[38,39] Fortunately, this behaviour may be beneficial during COVID-19, as health facilities may be transmission hubs.

The socio-demographic versus practice score test shows gender and health insurance ownership as the significant determinant for respondent good practice towards COVID-19. Female have a better possibility to have good knowledge score than men. This result is, consistent with studies in Iran.[30] Women may have a greater practice to gain COVID-19 knowledge because they tend to be the primary caregivers of family members with COVID-19.[40,41] Women may also seek a greater understanding of COVID-19 to overcome the greater sensitivity to danger and attendant stress reported in women than men.[42]~~The socio-demographic versus practice score test shows people more than 50 significantly have a higher practice means, married individuals score higher than persons single or divorced, as discussed previously in the knowledge section. This may be because married persons are~~ Therefore, this group is always looking for information and knowledge about COVID-19 to overcome anxiety. This may be because the female is more concerned with surrounding individuals, in turn, leading families to adhere to health protocols when outside the home strictly. This addresses the WHO acknowledgement that COVID-19 prevention is dependent on collective solidarity, and humans are required to protect one another.[14]~~. Also, education contributes to the quality of a person's COVID-19 prevention measures in this research, a diploma graduate at all levels has the best precautionary means compared to other school groups~~[32]. Those with higher education – such as healthcare workers – may have a greater need to work during the pandemic, preventing them from fully adhering to preventive measures like staying at home. ~~However, the lower risk by their younger age may offset this risk . Government workers may have better COVID-19 prevention practices because they receive regular updates. Further, as agents for the promotion of government policies, they are expected to serve as excellent role models for society. People who have health insurance displayed a better awareness that those who are not. Health insurance beneficiaries offered good precautionary measures in the current pandemic situation. Being seek is not about capable of paying the cost, but it's also lost time and productivity.~~

People who do not have health insurance displayed a better preventive measure than those who have health insurance. Living without health insurance may develop an awareness of the respondent because they do not want to be sick then fall into a situation not productive and should pay some money for the medication. A previous study revealed people own private health insurance tend to have lower risk from developing a chronic disease because they receive a regular source of care.[43] The ownership of health insurance indeed changes on the people preventive care but little change the people health behaviour.[44] Health insurance offered adequate protection in the current pandemic COVID-19 situation due to uncertainty situation both the disease and economical. So, for people who do not protect with insurance, do their best to apply the preventive measure to avoid the disease.

The most frequently searched information was the process of COVID-19 prevention. This is understandable because the disease is relatively new. Accordingly, everyone is unfamiliar with proper prevention measures. The results indicate people's concerns and fears about the infection by updating information related to COVID-19 precautions. Respondents preferred social media (i.e., Facebook and Instagram), followed by television news as information sources. They ~~preferred~~chose information presented with maps or in tables containing numbers.

The flow of information is swift in the current digital 4.0 era, but there is a risk of misleading information, including health issues.[45] However, fast and accurate innovation on the public's data requires an opportunity to educate the people about health, including COVID-19 to improve the societies' preventive behaviour.[46] Therefore, the authorities' role in providing valid, useful, and efficient information is necessary to balance challenges and opportunities as well as to counter misinformation spread in cyberspace, including social media and television. The development and update of information with attractive visualisations are of necessity.

This study has three limitations, and the result interpretations are conducted with care. The first is related to the sample that ran online ~~through purposive and snowball sampling.~~. However, there have been attempts to control bias sampling by establishing inclusion criteria in terms of age and respondent country ~~of~~ living. The second is related to data where this research acquired information from the participant's self-reporting. This means the answers are impossible to control, especially on practical questions where ideal observations of the respondents are created. The last limitation is about the respondent's favourite information source; even though they mentioned social media and television as the favourite information source, we did not assess the exact information that comes from which is related to the information credibility. Besides the limitations, this research strength is from the methodology perspective that used a rapid survey to collect the KAP data. This approach may allow the researcher to develop disease preventive measures in this current pandemic situation quickly.

5. Conclusions

In conclusion, Knowledge, Attitude, Practice, data needs, and information-seeking behaviour about COVID-19 is essential to the formulation of appropriate interventions to ~~successfully~~ control this disease successfully. This study helps fill gaps in COVID-19 KAP in Indonesia and describes information Indonesians desire, how they prefer information presented, and their ~~preferred~~selected sources of information. The knowledge, attitude, and prevention measures towards COVID-19 were affected by ~~gender,~~ age, ~~marital status,~~ education, work scope, gender and health insurance ownership. This research suggests that health authorities improve the process of messaging and updating the information related to this disease through proper media and target the appropriate population group to increase society's preventive measures. To date, the Indonesia government has primarily relied on television and social media on delivering COVID-19 information updates. It must be continued but needs to be expanded by adjusting the content of the information provided to reach influential groups. Information on preventing COVID-19 must be continuously carried and updated, considering that COVID-19 is still a new disease, and various regulations and research are still developing.

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ORIGINAL ARTICLE

Knowledge, attitudes, practices and information needs during the COVID-19 pandemic in Indonesia

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Abstract

Introduction: In the absence of vaccines and specific drugs; prevention effort, has been attributed as the primary control mechanism of COVID-19. Knowledge, attitude, and practice are used to determine the current situation and also formulate appropriate control interventions as well as risk communication. This study, therefore, aims to assess knowledge, attitude, and practice about COVID-19 in Indonesian society.

Methods: A cross-sectional study was conducted through an online survey in the third week of August 2020. Purposive and random sampling was used to select the respondents. People with a minimum age of 18 years and residing in Indonesia were allowed to participate in this study. The survey was conducted with an online questionnaire using several platforms such as WhatsApp, Instagram and Facebook by distributing the link and continuous chain messages on that platform. Data were analysed using descriptive, chi-square and logistic regression test.

Results: A total of 816 respondents were included in this study. In general, public knowledge about COVID-19 was sufficient, but some areas were still low. Most people had a positive attitude about the COVID-19, but they provided a negative response to government policies. Most of the community has taken preventive measures for COVID-19. However, some behaviours received a low percentage. Information about how to prevent COVID-19 was the most wanted information during this pandemic. Social media was a favourite source of information, with the most popular type of visualisation was a table containing numbers. Age and education were significantly

associated with knowledge. Some attitudes were affected by age and occupation scope. Gender and health insurance ownership significantly associated with preventive measures.

Conclusion: This research highlights the importance of providing valid, effective, efficient, and continuous information to the public through appropriate channels to increase understanding about COVID-19 precautions.

Keywords: COVID-19; KAP; information needs; information-seeking behaviour

1. Introduction

The occurrence of the coronavirus disease (COVID-19) in Wuhan, China emerged as a rude shock to the entire globe.[1] This incident was accompanied by rapid transmission and spread all around the world. A total of 215 countries were reported to have been affected by COVID-19 by August 22, 2020, with over 23 million human infections, 807,618 deaths, and more than 15 million recoveries.[2,3] With no vaccine to date, the pandemic continues to claim ever more victims.

The first two cases in Indonesia were confirmed in March 2020[4] and rapidly spread throughout the 34 provinces in this country. About 151,000 sufferers and a mortality rate above 6,000 were recorded as of August 22, 2020.[5,6] The government, therefore, has exerted numerous efforts towards the COVID-19 pandemic response, including a national budgeting policy, the documentation as a health emergency, along with large-scale social restrictions.[7] A massive health campaign was created to educate the society about these regulations, including the preventive measures, and also to encourage compliance with the national precautionary guidelines by all parties.[8]

The Indonesian government imposed social distancing rules and implemented comprehensive social restrictions in the 18 selected provinces such as Jakarta and Makasar[9] rather than a lockdown to alleviate the economic deterioration resulting from the COVID-19 pandemic.[10,11] These regulations were intended to terminate the spread of COVID-19 by reducing contact amongst individuals. To reinforce these directives, the government limited all public activities and shut all school down, restricted religious gatherings and public events, as well as facilities,[10,12] including public transportation to avoid the generation of new cases theoretically triggered by crowds. The government closed traditional workplaces but encouraged the continuation of productive activities.[13] The effectiveness of these interventions is not known. The government of Indonesia has changed its level of intervention to focus prevention of COVID-19 transmission through individual prevention efforts, promulgated by the president of Indonesia's invitation of citizens to enter a new era of living with coronavirus on May 16, 2020.[3]

Considering the transmission COVID-19 is possible from person to person, the World Health Organization (WHO) stipulated the disease prohibition as a collective responsibility. Also, for universal protection, some practices were to be implemented including frequent washing of hands, coughing and sneezing in the elbow, inhibiting public meetings, evading congested spaces, maintaining distances with sick people, as well as cleaning and sanitising objects and surfaces.[14,15] These behaviours are required by the government of Indonesia to help prevent viral transmission.[13,16] The participation of every individual was required to accomplish the COVID-19

control program initiated by the government adequately.[8] A previous study revealed that societal conformity between the proposed regulations, along with a readiness to tackle the disease was influenced by the possession of knowledge, attitudes, and practices (KAP).[17] KAP is a useful tool to assist on plan development, implementation, advocacy, communication and social mobilisation on the health program.[18] In this case, KAP is essential for health authorities on adjusting COVID-19 prevention measures in the community.

COVID-19 is considered as a newly emerging disease.[19–21] Recently, the US Food and Drug approved Remdesivir as a substance for COVID-19 treatment in the hospital setting.[22] This good news does not mean that awareness about transmission of the disease is unnecessary anymore. A study revealed the importance of non-pharmaceutical interventions (NPIs) on reducing the reproduction number of COVID-19 virus,[23] but may limited data in Indonesia about it. Understanding KAP is essential to identify and overcome false rumours about a disease that may negatively influence community prevention behaviour, including NPI.[24] To rapidly understand COVID-19 KAP as well as the information needs and seeking behaviours in Indonesia, we surveyed several of the most popular platforms: WhatsApp, Facebook, and Instagram.[25] This research contributed to strengthening risk communication effort by related authorities on providing COVID-19 information needed and to which group the advocation should be targeted.

2. Materials and Methods

2.1. Study design

A cross-sectional study was used to assess KAP as well as the information needs during the COVID-19 pandemic in Indonesia. Subjects were recruited by an online survey between 13 - 20 August 2020. Respondents were invited through random sampling. Eligibility requirements were age 18 years or older and residence in Indonesia. Interested respondents returned signed consent forms by pressing the button “agree to participate” and were fulfilling the questionnaire.

2.2. Study instruments

The questionnaire consisted of thirty-six items categorised into five sections including 1) socio-demographic data of respondents (name -optional-, sex, age, marital status, education, occupation, city of residence, salary estimation, health insurance ownership, and phone number), 2) COVID-19 knowledge that presented in “Yes/No“ question - including (general symptoms, transmission modes, and preventive measures), 3) related attitudes using five Likert scales (how the virus was to be overcome and people perception about Indonesia’s situation), 4) practices that posted in “Yes/No“ question (protective activities: face mask and hand sanitiser use, hand washing, exercise routines, advancements in the food supply, maintaining social distance and where to seek more information), 5) Information needs (the type of material desired, source of this information, and the favourite data visualisation preferred). These KAP questions were adapted in part from previous research,[17] then we added queries related to respondents’ information needs. The poll was executed in Bahasa Indonesia and translated into English during manuscript writing. To help improve question validity, questions were kept short and simple, pre-tested via expert review, and further pre-tested in a similar respondent group - similar to the anticipated respondent.

2.3. Data collection procedure

A Google form link was circulated by networks and colleagues through numerous WhatsApp private messages, groups and other social media platforms (Facebook and Instagram) during the research period. To maintain the participant validity, we limited each account to only one response based on their email. At the end of the survey, the link was closed, and the data downloaded for data completeness. If there was any vague answer, we clarified the response with the participant via WhatsApp or telephone. Responses from persons under 18 years of age, residing outside Indonesia, or unwilling to sign a consent form were not included in analysis.

2.4. Statistical analysis

The evaluation was performed by employing the Statistical Package for Social Sciences (SPSS) version 24.0 (IBM, Armonk, NY, USA). The socio-demographic data and informational needs of the respondents were analysed descriptively. On knowledge, questions were scored with one and zero for the correct and wrong answers, respectively. Also, points of one and zero were allocated to signify agreement and disagreement, respectively, for the attitude category. Finally, the practice questions were graded from zero to two, with the highest value representing the best practice. A total score was calculated for each correct, positive and good answer for K, A and P – respectively. The maximum total scores for knowledge, attitude, and practice were 14, 3, and 34, respectively.

Logistic regression test was applied to see the association between knowledge and practice category and socio-demographic respondent. Knowledge and practice were divided into 2 groups poor and good – less than the mean score as poor attitude and practice and vice versa. Significance was determined at 5% level (*P*-value ≤ 0.05). The attitude was analysed using chi-square test and last the information needs and information-seeking behaviour was presented descriptively.

2.5. Ethical considerations

The study was approved by the Ethical Review Board of Ahmad Dahlan University, Yogyakarta, Indonesia (ethical approval code: 012008029).

3. Results

3.1. Socio-demographic characteristics

This study received a total of 858 responses during the online survey, 42 of them were excluded because aged less than 18 years (37), not able to participate (2), and living overseas (3). Therefore, only 816 responses were considered eligible in this study. Figure 1 shows the respondents, spread across 31 out of 34 provinces in Indonesia.

The socio-demographic of respondents are presented in Table 1. Respondent comprised mainly of females (73%), between 18-29 years of age (56.9%). Furthermore, more than half of the participants were single or had never been married (51.6%). Also, 41.8% of the participants were

graduates with bachelor's degrees, 40.1% were unemployed. Regarding salary, more than 40% of respondents reported they were not paid because they were not working anymore. Over half of the participants (55.8%) reported having health insurance.

3.2. Knowledge about COVID-19

The information in Table 2 shows over 70% of respondents correctly answered questions related to COVID-19 general symptoms, transmission modes, and prevention measures. In contrast, only 51.3% correctly answered about the common cold symptoms consisting of nasal congestion, runny nose, and sneezing, are less common in people infected with COVID-19 virus. And only 40% correctly answered the COVID-19 virus spreads through the air.

Furthermore, among the respondent's socio-demographic features, only age groups and education had a significant association with knowledge of COVID-19. Having age more than 50 years was associated with 0.59 – fold higher odds of good knowledge towards COVID-19 compare to people aged 18-29 years ($P< 0.05$). Respondent graduated from higher education associated with 1.98 – fold higher odds to have good knowledge about COVID-19 than people hold senior high school education ($P< 0.05$). This information is shown in Table 3.

3.3. Attitude regarding COVID-19

Most respondents (95.5%) agreed that COVID-19 might be controlled. Most (80.8%) also believed Indonesia might to win against this virus. However, only 48.7% of respondents agreed that the Indonesian government handled COVID-19 well. Answers to how well the government handled COVID-19 were positively associated with age groups (Figure 2 and Table 4).

3.4. Practice measure toward COVID-19

The respondents were assessed using 16 questions presented in Table 5. More than half of the respondents were considered sufficient to have a positive impact on community health and was reported on 10 of the 16 questions. This shows an acceptance of the preventive guidelines mainly covering of mouth and nose when sneezing and also washing of hands regularly with running water. Furthermore, good practices have been reported by more than 70% of respondents when asked about the use of hand sanitiser, nose mask, use of private vehicle, not touching the eyes, nose, and mouth with dirty hands. Meanwhile, a low percentage (< 70%) was reported for practice-related to nutritional maintenance, shaking of hands and avoidance of crowds.

Insufficient practice measures of less than 60% occurred in several questions, like monitoring body temperature when feeling unwell (43%), consistent exercise (27%), maintaining a 1.5-meter distance from others (57%), and always staying home (51%). Meanwhile, with regards to information, only 53% always remain updated, when feeling unwell during the pandemic, 33.6% reportedly visited the health facilities, about 34% reported sometimes, and 31.9% reported never.

Table 6 shows the differences between socio-demographic categories and practice category. Gender and health insurance ownership significantly associated with practice measure of the respondent. Being female was associated with 0.41 times higher odds to have good knowledge about COVID-19 compared than man ($P< 0.05$). A respondent who without health insurance

significantly associated with 1.68 times higher odds of good practice of COVID-19 than people with health insurance ($P < 0.05$).

3.5. Information needs and information-seeking behaviour

During the pandemic, more than 78% of the respondents reported seeking information on how to prevent the virus, and about 65% researched on COVID-19 transmission in Indonesia, cause, treatment and symptoms (Supplementary Fig. 1). Meanwhile, with regards to information type, the majority (65%) of respondents choose table or number, and almost half selected map as the favourite information visualisation. The respondents reported social media, both Facebook and Instagram, as the first favourite information source followed by television (Figure 3).

4. Discussion

COVID-19 is an extremely aggressive virus due to the ease in the mode of transmission. The primary prevention measures are conducted through behavioural modification on individual hygiene and limiting physical contact among people. Besides, since this disease is new, providing adequate information about the virus, especially preventive measures, it is essential to avoid misinformation in society that could result in incorrect precautionary action. This study helps fill a knowledge gap about COVID-19 Knowledge, Attitude, and Practice (KAP) in Indonesia, which may detect potential barriers to change in social behaviour.[26] This study specified public knowledge, attitude, and practice about the virus as adequate, with notable weakness in some parts.

The response to this research was generated mostly from females (73%). This may be related to men's tendency to be more apathetic to a survey than women – mainly in this pandemic situation, and the same happened in the COVID-19 KAP study in Saudi Arabia which woman mostly responded the survey.[27] This is, however, consistent with previous research, proving women to participate more in surveys than men.[28,29]

Knowledge, attitude and practice are interrelated each other. People who have good knowledge expected would be translated into good practice and preventive measure. In this research showing the discrepancy between knowledge that does not translate into good attitude and preventive measure – respondent who has good knowledge did not have a proper attitude as well as a preventive measure related to COVID-19. The different result was showed by research in Iran and Bangladesh that the translated of knowledge into attitude and practice seems performed well.[30,31]

This research revealed that persons over age 50 displayed higher knowledge than other age groups. This finding is consistent with research in Malaysia, where people in this group displayed better knowledge about COVID-19.[17] According to the World Health Organization (WHO), older society is at the highest risk to contract this virus, and more than 95% of the related death is attributed to this group.[32] In addition, multiple health conditions, especially chronic disease, biological age, and decreased immunity, are predicted to significantly increase the elderly's susceptibility to infection with this virus.[33] The massive campaign by various parties/organisations about COVID-19, including information on vulnerable groups, therefore encouraged older people to know more about this disease. This high level of knowledge among older people is coherent with

the practice scores across all age groups. Therefore, individuals above 50 years have the higher odds to have a good practice measure.

Education is process learning and gaining knowledge. In our study, people who graduated from higher education more knowledgeable regarding COVID-19. Those with higher education – such as healthcare workers – may have a greater need to work during the pandemic, preventing them from fully adhering to preventive measures like staying at home. However, the lower risk by their younger age may offset this risk.[34] Age and occupation appear to influence public perception of Indonesia's ability to defeat COVID-19 and how well the Indonesian government has handled COVID-19. Although respondents felt Indonesia would be able to control COVID-19, they did not, in general, believe that the Indonesian government had handled the situation well. This is in contrast to reports from Malaysia, where there was higher public support of government action.[17] It may be because other countries imposed total lockdown, while Indonesia employed policies to protect economic growth and cultural characteristics while also addressing COVID-19,[11,35,36] which may have been perceived as a lack of direction from the government, and in turn, been blamed for infections and mortality rate.

In this research, respondents reported their compliance with many precautionary measures, including, putting on masks, the use of hand sanitiser, proper handwashing practices, physical distancing and avoidance of crowd. However, respondents only sometimes practice regular exercise or visits to the health facilities for assistance. Engaging in physical activities was not routine before COVID-19, and was made more challenging by the pandemic because sports facilities and fitness centres were closed. A previous study proved relatively low walk time practice by Indonesians compared to residents in other countries.[37] Poor practice in visiting health facilities seems to be related to the health authority's recommendation that people are not encouraged to visit health facilities except in an emergency during COVID-19 pandemic.[38,39] Fortunately, this behaviour may be beneficial during COVID-19, as health facilities may be transmission hubs.

The socio-demographic versus practice score test shows gender and health insurance ownership as the significant determinant for respondent good practice towards COVID-19. Female have a better possibility to have good knowledge score than men. This result is, consistent with studies in Iran.[30] Women may have a greater practice to gain COVID-19 knowledge because they tend to be the primary caregivers of family members with COVID-19.[40,41] Women may also seek a greater understanding of COVID-19 to overcome the greater sensitivity to danger and attendant stress reported in women than men.[42] Therefore, this group is always looking for information and knowledge about COVID-19 to overcome anxiety. This may be because the female is more concerned with surrounding individuals, in turn, leading families to adhere to health protocols when outside the home strictly. This addresses the WHO acknowledgement that COVID-19 prevention is dependent on collective solidarity, and humans are required to protect one another.[14,32]

People who do not have health insurance displayed a better preventive measure than those who have health insurance. Living without health insurance may develop an awareness of the respondent because they do not want to be sickick then fall into a situation not productive and should pay some money for the medication. A previous study revealed people own private health insurance tend to have lower risk from developing a chronic disease because they receive a regular source of care.[43] The ownership of health insurance indeed changes on the people preventive care but little change the people health behaviour.[44] Health insurance offered adequate protection in the current pandemic COVID-19 situation due to uncertainty situation both the disease and economical.

So, for people who do not protect with insurance, do their best to apply the preventive measure to avoid the disease.

The most frequently searched information was the process of COVID-19 prevention. This is understandable because the disease is relatively new. Accordingly, everyone is unfamiliar with proper prevention measures. The results indicate people's concerns and fears about the infection by updating information related to COVID-19 precautions. Respondents preferred social media (i.e., Facebook and Instagram), followed by television news as information sources. They chose information presented with maps or in tables containing numbers.

The flow of information is swift in the current digital 4.0 era, but there is a risk of misleading information, including health issues.[45] However, fast and accurate innovation on the public's data requires an opportunity to educate the people about health, including COVID-19 to improve the societies' preventive behaviour.[46] Therefore, the authorities' role in providing valid, useful, and efficient information is necessary to balance challenges and opportunities as well as to counter misinformation spread in cyberspace, including social media and television. The development and update of information with attractive visualisations are of necessity.

This study has three limitations, and the result interpretations are conducted with care. The first is related to the sample that ran online. However, there have been attempts to control bias sampling by establishing inclusion criteria in terms of age and respondent country living. The second is related to data where this research acquired information from the participant's self-reporting. This means the answers are impossible to control, especially on practical questions where ideal observations of the respondents are created. The last limitation is about the respondent's favourite information source; even though they mentioned social media and television as the favourite information source, we did not assess the exact information that comes from which is related to the information credibility. Besides the limitations, this research strength is from the methodology perspective that used a rapid survey to collect the KAP data. This approach may allow the researcher to develop disease preventive measures in this current pandemic situation quickly.

5. Conclusions

In conclusion, Knowledge, Attitude, Practice, data needs, and information-seeking behaviour about COVID-19 is essential to the formulation of appropriate interventions to control this disease successfully. This study helps fill gaps in COVID-19 KAP in Indonesia and describes information Indonesians desire, how they prefer information presented, and their selected sources of information. The knowledge, attitude, and prevention measures towards COVID-19 were affected by age, education, work scope, gender and health insurance ownership. This research suggests that health authorities improve the process of messaging and updating the information related to this disease through proper media and target the appropriate population group to increase society's preventive measures. To date, the Indonesia government has primarily relied on television and social media on delivering COVID-19 information updates. It must be continued but needs to be expanded by adjusting the content of the information provided to reach influential groups. Information on preventing COVID-19 must be continuously carried and updated, considering that COVID-19 is still a new disease, and various regulations and research are still developing.

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A summary of views your paper has received will be sent to all authors of this paper on a regular basis.

I would like to take this opportunity to personally thank you for your contribution to Risk Management and Healthcare Policy. It was a pleasure working with you and I hope we can do so again in the near future.

Yours sincerely

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