



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Differences in elderly stress levels before Covid-19 vaccination:
History of exposure to Covid-19 reduces stress before vaccination

Kristian Budi Setiawan, Isna Hikmawati, Dita Pratiwi Kusuma
Wardani, Juanita Juanita



PII: S1576-9887(22)00190-X

DOI: <https://doi.org/10.1016/j.vacun.2022.10.005>

Reference: VACUN 267

To appear in:

Received date: 29 July 2022

Accepted date: 22 October 2022

Please cite this article as: K.B. Setiawan, I. Hikmawati, D.P.K. Wardani, et al., Differences in elderly stress levels before Covid-19 vaccination: History of exposure to Covid-19 reduces stress before vaccination, (2022), <https://doi.org/10.1016/j.vacun.2022.10.005>

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Differences in Elderly Stress Levels Before Covid-19 Vaccination: History of Exposure to Covid-19 Reduces Stress Before Vaccination

Kristian Budi Setiawan¹, Isna Hikmawati², Dita Pratiwi Kusuma Wardani³, Juanita Juanita⁴

¹Nursing, Universitas Muhammadiyah Purwokerto

²Epidemiology, Universitas Muhammadiyah Purwokerto

³Medical Laboratory Engineering, Universitas Muhammadiyah Purwokerto.

⁴Civil Engineering, Universitas Muhammadiyah Purwokerto.

Corresponding author : isnahikmawati@ump.ac.id

Acknowledgments

In this writing, all authors gave the following contributions: Conceptualization, Writing and Original Draft Preparation Performed the experiments: Kristian Budi Setiawan. Conceived and designed the research, Methodology, Writing and Original Draft Preparation and Analyzed and interpreted the data: Isna Hikmawati. Formal Analysis, Resources : Dita Pratiwi. Review and Editing: Juanita Juanita. All authors have read and agreed on the published version of the manuscript. Writing this paper is part of a research activity entitled: Vaccination as a Covid-19 Control Effort Towards Herd Immunity (Retrospective Cohort Epidemiology Study of Program Implementation) "This this manuscript is the outcome of the research funded by Universitas Muhammadiyah Purwokerto through the competitive research grant in 2021 that managed by Center of Research, Development, and Community Services with contract number : No: A.II-III/576-S.Pj/LPPM/XII/2021.

Authors' contributions

The author made substantial contributions to the conception and design of the study. The author took responsibility for data analysis, interpretation and discussion of results. The author read and approved the final manuscript.

Funding

Not applicable.

Availability of data and materials

All data are available from the author.

Competing interests

The author declares no competing interest

ABSTRACT**Background:**

The Covid-19 pandemic requires the government to take various prevention and countermeasures, one of which is the Covid-19 Vaccination program, however, the program experiences a high dropout at various doses and causes *immunization stress related response* (ISRR), especially in the elderly. The research aims to determine differences in the stress levels of the elderly before the covid-19 vaccination

Methods: Descriptive study with the elderly population who will take vaccinations at the Bojong Purbalingga Health Center. Sampling used random sampling, the inclusion criteria were 45-79 years old, with a total sample of 90 respondents. Research instruments developed by research, relating to vaccination containing cognitive responses (such as difficulty concentrating), physiological responses (such as shortness of breath, dry lips) feelings of fear, anxiety, trust in vaccination. Data were analyzed descriptively with percentages and proportions.

Results: The results showed that the most moderate stress levels were middle age (22.2 %), women 33.3% had higher stress levels than men (10%), the highest vaccination coverage was 26.7% at a distance of 1-2 KM. The level of stress is in the moderate category 33.3% in the elderly who have never been exposed to Covid-19 and 10% in the elderly who have been exposed. Non-family health workers, 36.7% higher than families of health workers (6.7%).

Conclusion: Stress levels before vaccination are higher in the elderly who have never been exposed to Covid-19, compared to those who have been exposed to Covid-19. The need for family assistance to prepare for vaccination in the elderly.

Keywords: Stress Level, Elderly, Vaccination, Covid-19

1. **Diferencias en los niveles de estrés de los ancianos antes de la vacunación contra el covid-19: el historial de exposición al covid-19 reduce el estrés antes de la vacunación**

2.

3. RESUMEN

4. **Antecedentes:** La pandemia de Covid-19 requiere que el gobierno tome varias medidas de prevención y contramedidas, una de las cuales es el programa de vacunación de Covid-19, sin embargo, el programa experimenta una alta deserción en varias dosis y provoca una respuesta relacionada con el estrés de la inmunización, especialmente en el anciano. Die Forschung zielt darauf ab, Unterschiede im Stresslevel älterer Menschen vor der Covid-19-Impfung festzustellen

5. **Métodos:** Estudio descriptivo con la población adulta mayor que se vacunará en el Centro de Salud de Bojong Purbalingga. El muestreo utilizó un muestreo aleatorio, los criterios de inclusión fueron de 45 a 79 años, con una muestra total de 90 encuestados. Instrumentos de investigación desarrollados por la investigación, relacionados con la vacunación que contienen respuestas cognitivas (como dificultad para concentrarse), respuestas fisiológicas (como dificultad para respirar, labios secos) sentimientos de miedo, ansiedad, confianza en la vacunación. Los datos fueron analizados descriptivamente con porcentajes y proporciones.

6. **Resultados:** Los resultados mostraron que los niveles de estrés más moderados fueron la mediana edad (22,2 %), las mujeres 33,3 % presentaron niveles de estrés más altos que los hombres (10 %), la mayor cobertura de vacunación fue 26,7 % a una distancia de 1-2 KM. El nivel de estrés está en la categoría moderado 33,3% en ancianos que nunca han estado expuestos al Covid-19 y 10% en ancianos que han estado expuestos. Trabajadores de la salud no familiares, 36,7% superior a los familiares de los trabajadores de la salud (6,7%).

7. **Conclusión:** Los niveles de estrés antes de la vacunación son mayores en los adultos mayores que nunca han estado expuestos a Covid-19, en comparación con aquellos que han estado expuestos a Covid-19. La necesidad de asistencia familiar para preparar la vacunación en los ancianos.

8. **Palabras clave:** Nivel de Estrés, Adulto Mayor, Vacunación, Covid-19

9. **Introduction**

The coronavirus (Covid-19) epidemic first occurred in China at the end of 2019, developed into a pandemic and almost the entire world reported cases in each of their respective countries.(1) The Covid-19 outbreak was initially possible due to exposure to the same and common sources, including mobilization abroad, mobilization to areas with a high incidence of Covid-19, the second cause due to massive person-to-person transmission. Transmission can occur due to

touch, crowds in activities, etc, it is estimated that there are two types of causes of outbreaks (common source and propagated source) involved.(2) Various efforts were made by the government to suppress the development of Covid-19, one of which was through the vaccination program. However, this program has many obstacles as evidenced by the dropout between dose 1 (30.45%) and dose 2 (16.69%).(3) Data on vaccination coverage in Indonesia from dose 1 is 204,600,057 (87.19%), dose 2 is :171,211.122 (72.96%), dose 3 is: 63,629,385 (27.11%), dose 4 is : 622,180 (42.36%). Based on this data, it shows that there is vaccination coverage for each dose. The same thing happened in the elderly group on vaccination Dose 1: 18,408,494 (85.41%), dose 2: 14,891,890 (69.09% and dose 3: 6,731,099 (31.23%) (4). The low vaccination coverage is a problem in itself, because we all understand that there are great benefits from vaccination to prevent symptoms of COVID-19 and further protection in the event of more severe cases of COVID-19. The results of previous studies concluded that several factors affect public acceptance of vaccination, including the many types of new vaccines and doubts about the reliability of the manufacturers, therefore it is necessary to provide easy vaccination service facilities and official recommendations from the government. (5) COVID-19 vaccination has become a social norm and the importance of official information and intensive communication about vaccinations from the government so that people do not hesitate to join the vaccination program. (6) Data on vaccination coverage in Central Java for the elderly from dose 1 was 3,037,727 (82.51%), Dose 2 was : 2,519,478 (68.44%), dose 3 was :1,102,060 (29.94%). (7) The dropout, one of which is from the elderly group, especially in the elderly who are comorbid and Covid-19 survivors, some cases are delayed. In addition to comorbid factors and a history of exposure to covid-19, the elderly are vulnerable so they are at risk of being affected by *immunization stress related response (ISRR)*. The incidence of anxiety and stress in the elderly ahead of the vaccine, also occurs in several other countries such as the UK and Turkey and it is one of the factors hindering vaccine acceptance.(8) Vaccine anxiety and hesitation are related to negative perceptions and distrust and various conspiracies or negative support from various parties.(9). In this study we answered two questions:

1. What are the characteristics of the elderly who participate in the covid-19 vaccination program
2. How are the stress levels of the elderly different before the covid-19 vaccination

10. Material & Methods

11.

Observational research with the elderly study population who will be vaccinating against Covid-19 in the working area of the Bojonegara Public Health Center, Central Java. Sampling using random sampling, inclusion criteria age 45-79, with a total sample of 90 respondents. The project team obtained written informed consent from respondents. The research instrument used a questionnaire with questions about the distance to the vaccination location, history of being exposed to Covid-19, transportation to the vaccination site, the presence of family as health workers and stress level. The stress level questionnaire was adopted from various disorders containing cognitive responses (such as difficulty concentrating), physiological responses (such as shortness of breath, dry lips, excessive sweating), feelings of fear, anxiety, trust in vaccination. The instrument has been validated with a validation value between 0.50 -0.92. Data were analyzed descriptively with percentages.

12.

Results

Based on the Covid-19 vaccination data in Figure.1, data from January to June 2021 results in fluctuations in vaccination coverage, this is due to the early stages of vaccination activities during the pandemic, so there are not many vaccines available, and priority is still on health workers and public servant. Table.1 shows that most of them are 45-55 years old (47.8%), 23,3% of respondents had been exposed to Covid-19, 18,9% came from families of health workers. 64.4%, transportation to the vaccination site is by motorbike with a distance of 61,1% 1-2 KM. The stress level before vaccination was mostly in the mild category (51,1%). Tabel.2, the majority of female respondents were 56.7% with a moderate level of stress in this group of 33.3%. The mileage is 61.1% with a distance of 1-2 km and the moderate stress level in this group is 26.7%. In the variable History of exposure to Covid-19, 76.7% had never been exposed and the

percentage of moderate stress in this group was 33.3%. The next variable is the presence of family members who work as health workers 81.1% do not have family health workers and the level of moderate stress in this group is 36.7%.

Journal Pre-proof

13.

14.

15.

16. Discussion

17.

Figure 1. shows that the Bojong Health Center has implemented a 6-month vaccination program with 2973 doses of 1, this is in line with the government's program for the success of vaccination coverage. Various strategies have been implemented by the Indonesian government to overcome the impact of the pandemic, both through economic recovery strategies and increasing the capacity of the health system. One of them is through the provision of vaccines and the implementation of Covid-19 vaccination. The provision of this vaccine is a form of support and commitment for the implementation of Covid-19 vaccination to the target of 208 million Indonesians in order to achieve community immunity and overcome the pandemic. Data from the Ministry of Health shows that as of December 31, 2021, Indonesia has received 429.2 million doses of eight vaccine brands, consisting of CoronaVac, Covid Bio, Astra Zeneca, Sinopharm, Moderna, Pfizer, Janssen and Novavax and vaccination coverage has reached 79.4 % for the first dose and 54.68% for the second dose. This has exceeded the World Health Organization target of 40% of the population being fully vaccinated by the end of 2021. For this effort, Indonesia is currently listed as the fourth largest country in the world based on the number of people who have been vaccinated in the world.(10) Various regulations to support the implementation of vaccinations have been issued, including presidential regulation number 99 of 2020 article 1 paragraph 1 concerning Vaccine Procurement and Vaccination Implementation in the Context of Combating the 2019 Corona Virus Disease Pandemic (Covid-19).(11) Under normal conditions the use of vaccines usually takes at least 10-15 years, starting from pre-clinical to clinical phases 1, 2 and 3 and finally efficacy trials. These phases are carried out sequentially, this is what makes vaccination expensive, while the development of Covid-19 vaccination is not as it should be, because several phases are carried out simultaneously with very large costs. Within months more than 30 vaccines had entered the clinical development stage. The impact of the rapid development of vaccines is causing confusion in the public perception and concern about the safety and efficacy of these vaccines. However, the widespread use of safe and effective anti-Covid-19 vaccines is one hope for a return to "normal" life.(12) Age characteristics are mostly middle age (45-55 years). This is a new finding, meaning that many younger people experience stress from vaccination. Stress is influenced by various factors, one of which is age. In the process of human development, the older a person is, the possibility of experiencing stress due to a decrease in various functions.(13) In addition, the elderly are one of the populations at risk for Covid-19 infection, many deaths occur in patients over 60 years with comorbidities such as heart disease, diabetes, and other factors such as dyspnea, neutrophilia, decreased lymphocytes, increased ultra-TnI and D-D. dimer. Early diagnosis and supportive care are essential for elderly patients. (14)

The results showed that the stress level in women was higher than men. Men and women are very different in responding to stress. Women will easily experience stress because women are more sensitive to a response. Women's brains have a negative response to conflict and stress, in women conflict triggers negative hormones causing stress, anxiety, and fear. (15) The same thing was concluded from the results of the study that gender differences were associated with side effects of vaccination and the percentage was more reported by women. Most of the reported AE (Adverse Events) occur within 1 week after the first dose.(16) The affordability of vaccination is very good, with the highest percentage being 1-2 KM from health facilities that serve vaccinations, it is aimed at the number of respondents with the closest distance, it will accelerate the vaccination program to create herd immunity. In accordance with PERMENKES No. 10 of 2021, the central government distributes vaccines to local governments which are then forwarded to health care facilities.(17) Various ease of vaccination, but not everyone is willing to be vaccinated shows the understanding of the public who are still doubtful about the effectiveness of vaccines in preventing the corona virus, this is as the results of research which concludes that there are doubts and vaccine rejection of several types of vaccines.(18) The same results were concluded from the UK National Health Service's study, showing 18.4% refused vaccination and 10% doubted the effectiveness of Covid-19

vaccination. (19) The importance of building communication with the community by providing correct information about the Covid-19 vaccine, can reduce doubts and people's refusal to be vaccinated.(6)

Based on the analysis of the difference in proportions, it was found that respondents with a history of being exposed to Covid-19 or not having a history of being exposed to Covid-19 had the same stress when they were about to be vaccinated. This is due to the bad stigma of the covid vaccine circulating in the community. Fear, anxiety, and the abundance of information through social media, not all of which can be trusted, have created a negative stigma for people associated with Covid-19, both Covid-19 patients, Covid-19 suspects, history of Covid-19 patients, and others. Health workers who treat Covid-19 patients.(20) This is supported by the side effects of the vaccine, while the side effects felt when the vaccine was administered were nausea, cramps and even frequent drowsiness. The seriousness felt when the vaccine was known to not exist, only some informants said that if there were side effects, and there were concerns that if the vaccine had been vaccinated, it was possible that they could still get the Covid-19 virus. (21) This is due to the transmission model of the Covid-19 virus, so even after being vaccinated, having contact with a person infected with SARS-CoV-2 substantially increases the likelihood of a positive test result for SARS-CoV-2.(22) Even though it has been vaccinated, it is hoped that the community will continue to maintain the process because the spread of this virus is so massive, especially in people with comorbidities. The results of the study show that diabetes and hypertension are the main comorbidities that pose a risk of death in Covid-19 patients.(23) Another study concluded that people who were not vaccinated or only partially vaccinated were more at risk of transmitting the SARS-CoV-2 virus compared to people who were fully vaccinated.(24)

The results of the study show that the incidence of stress experienced by the elderly in families who have members as health workers, although the percentage is lower than those who do not have family members of health workers, this is as the results of previous studies which concluded that anxiety is not only felt by the community, but also experienced all health workers such as doctors, nurses, midwives and other health professionals. The psychological response experienced by health workers to this infectious disease pandemic is increasing due to feelings of anxiety about their own health and the spread to their families.(25) In addition, there are still health professions that reject valuations, in the country of Lebanon, 18% of Health workers refuse vaccination.(5) To reduce the stress response it is necessary to assess the feasibility of the vaccine. This is because the vaccines used are relatively new and to ensure patient safety is maintained. Assessment of a person's health condition through screening medical history with anamnesis/interviews can screen for conditions that are not eligible for vaccines, for example someone who has comorbid hypertension or uncontrolled diabetes mellitus is not allowed to receive vaccines for patient safety (26) Limitations in this study, some of the respondents were exposed to Covid-19 and had families of health workers, so that it more or less affected readiness in Covid-19 vaccination activities. Further research needs to be carried out interventions in relaxation techniques ahead of vaccination, especially in advanced vaccination doses, so that the incidence of stress in the elderly can be minimized.

Conclusions

The results showed that the level of stress in the moderate category was at most in middle age by 22.2%, women 33.3% had higher stress levels than men (10%), vaccination coverage was at moderate stress levels, the highest was 26.7%. at a distance of 1-2 km. The stress level was 33.3% higher in the elderly who had never been exposed to Covid-19, compared to those who had a history of being exposed to Covid-19 (10%). Non-family health workers, 36.7% higher than families of health workers (6.7%). There is a difference in the proportion of stress levels in the elderly on the variables of age, gender, distance from the vaccine site, history of exposure to Covid-19 and family of health workers. The need for family assistance to prepare for vaccination in the elderly, besides that Health Officers are expected to provide clear information before vaccination activities, especially for the elderly to reduce stress levels.

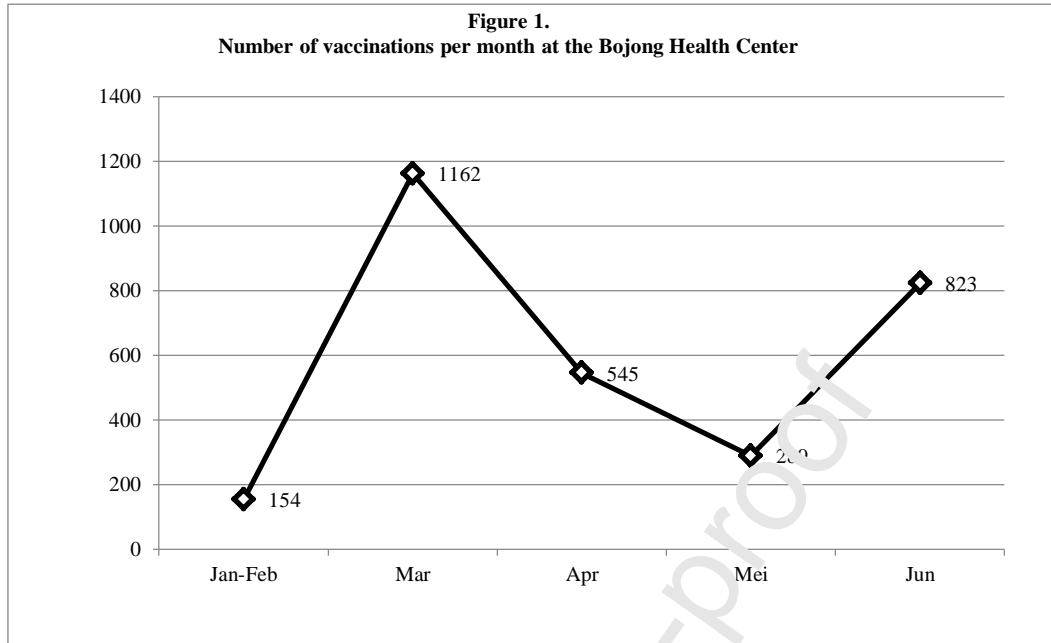
References

1. Chaolin Huang, Yeming Wang, Xingwang Li, Lili Ren, Jianping Zhao, Yi Hu, Li Zhang, Guohui Fan, Jiuyang Xu, Xiaoying Gu, Zhenshun Cheng, Ting Yu, Jiaan Xia, Yuan Wei, Wenjuan Wu, Xuelei Xie, Wen Yin, Hui Li, Min Liu, Yan Xiao, Hong Gao, Li Guo, Jungang Xie BC. Clinical Features of Patients Infected With 2019 Novel Coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497–506.

2. Hikmawati I, Setiyabudi R. Epidemiology of COVID-19 in Indonesia : common source and propagated source as a cause for outbreaks. *J Infect Dev Ctries*. 2020;15(5):646–52.
3. Mathieu E, Ritchie H, Ortiz-Ospina E, Roser M, Hasell J, Appel C, et al. A global database of COVID-19 vaccinations. *Nat Hum Behav*. 2021;5(7):947–53.
4. SatgasCovid-19. Vaksinasi Covid-19. Kemenkes, RI. 2022.
5. Youssef D, Abou-Abbas L, Berry A, Youssef J, Hassan H. Determinants of acceptance of Coronavirus disease-2019 (COVID-19) vaccine among Lebanese health care workers using health belief model. *PLoS One*. 2022;17(2):1–17.
6. Akaninyene Otu, Egbe Osifo-Dawodu PA, Emmanuel Agogo BE. Addressing COVID-19 vaccine hesitancy: is official communication the key? *Lancet*. 2021;2(1):22–5.
7. SatgasCovid-19. Vaksinasi Covid-19-Propinsi. Kemenkes RI. 2022.
8. Alali, G.D.; Uysal MS. COVID-19 vaccine hesitancy is associated with beliefs on the origin of the novel coronavirus in the UK and Turkey. *Psychol Med*. 2020;50(1–3).
9. Freeman, D.; Loe, B.S.; Chadwick, A.; Vaccari, C.; Waite, F.; Rosebrock, L.; Jenner, L.; Petit, A.; Lewandowsky, S.; Vanderslott S. COVID-19 vaccine hesitancy in the UK: The Oxford coronavirus explanations, attitudes, and narratives survey (Oceans) II. *Psychol Med*. 2020;50:1–15.
10. Setditjen. Dukungan Penyediaan Vaksin bagi Keberhasilan Pelaksanaan Vaksinasi COVID-19. *farmalkes.kemkes*. 2021.
11. President of the Republic of Indonesia. Peraturan Presiden No. 99 Tahun 2020 tentang Pengadaan Vaksin dan Pelaksanaan Vaksinasi dalam Rangka Penanggulangan Pandemi Corona Virus Disease 2019. *Pres Reg*. 2020;2019(039471):1–13.
12. Moradi F, Enjezab B, Ghadiri-anari A. Vaccines against COVID-19. *Anaesth Crit Care Pain Med*. 2020;39(1):703–5.
13. Kaunang VD, Buanasari A, Kallo W. Gambaran Tingkat Stres Pada Lansia. *J Keperawatan*. 2019;7(2).
14. Saputra YE, Prahasanti K, Lestuya AA, Irawati DN. Gambaran Faktor Risiko Lanjut Usia Terhadap Kematian Pasien COVID-19. *J Pandu Husada*. 2021;2(2):114.
15. Trabucco Aurilio, M.; Mermini, F.S.; Gazzillo, S.; Massini, L.; Bolcato, M.; Feola, A.; Ferrari, C.; Coppeta L. Intention to be vaccinated for COVID-19 among Italian nurses during the pandemic. *Vaccines*. 2021;9(500).
16. Xiong X, Yuan J, Li M, Jiang B, Lu ZK. Age and Gender Disparities in Adverse Events Following COVID-19 Vaccination: Real-World Evidence Based on Big Data for Risk Management. *Front Med*. 2021;8(7):1–5.
17. Kemenkes RI. PMK No 10 Tahun 2021 Tentang Pelaksanaan Vaksinasi dalam Rangka Penanggulangan Pandemi Corona Virus Disease 2019 (COVID-19). *Permenkes RI*. 2021;2019:33.
18. Chan NN, Ong KW, Siau CS, Lee KW, Peh SC, Yacob S, et al. The lived experiences of a COVID-19 immunization programme: vaccine hesitancy and vaccine refusal. *BMC Public Health*. 2022;22(1):1–13.
19. Daniel Freeman , Bao Sheng Loe, Ly-Mee Yu, Jason Freeman, Andrew Chadwick, Cristian Vaccari, Milensu Shanyinde, Victoria Harris, Felicity Waite , Laina Rosebrock, Ariane Petit, Samantha Vanderslott, Stephan Lewandowsky, Michael Larkin, Stefania Innocenti, SL. Effects of different types of written vaccination information on COVID-19 vaccine hesitancy in the UK (OCEANS-III): a single-blind, parallel-group, randomised controlled trial. *Lancet Public Heal*. 2021;6(6).

20. Novita S, Elon Y. Stigma Masyarakat terhadap Penderita Covid-19 Community Stigma for Covid-19 Sufferers. *J Kesehat.* 2021;12:25–33.
21. Tiana E. Gambaran Persepsi Masyarakat Terhadap Vaksin Covid-19. *Borneo Student Res.* 2021;3(1):526–31.
22. Thompson HA, Mousa A, Dighe A, Fu H, Arnedo-Pena A, Barrett P, et al. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Setting-specific Transmission Rates: A Systematic Review and Meta-analysis. *Clin Infect Dis.* 2021;73(3):E754–64.
23. Hikmawati I, Setiyabudi R. Hipertensi Dan Diabetes Militus Sebagai Penyakit Penyerta Utama Covid-19 Di Indonesia Hypertension and Diabetes Mellitus As Covid-19 Comorbidities in Indonesia. *Pros Semin Nas Lppm Ump.* 2020;8(1):95–100.
24. Kang M, Xin H, Yuan J, Ali ST, Liang Z, Zhang J, et al. Transmission dynamics and epidemiological characteristics of Delta variant infections in China. *EuroSurveil.* 2022;10(27):815.
25. Fadli F, Safruddin S, Ahmad AS, Sumbara S, Baharuddin R. Faktor yang Mempengaruhi Kecemasan pada Tenaga Kesehatan Dalam Upaya Pencegahan Covid-19. *J Pendidik Keperawatan Indones.* 2020;6(1):57–65.
26. Widjaja, Yoanita, Alexander Santoso, Enny Irawaty ZA dan E. Meningkatkan Patient Safety Pada Kegiatan Vaksinasi Covid-19. *J Bak 1 Masy Indones.* 2021;4(3):540–7.

Journal Pre-proof

FIGURE AND TABLE :**a. Vaccination Achievements January-June 2021**

b. Characteristics of Respondents

Table 1. Characteristics of Elderly Participants With Dose 1 Vaccination

Age		
45-55(Middle Age)	43	47.8%
56-66(Elderly)	36	40%
67-79(Young Old)	11	12,2%
Gender		
Famale	39	43,3%
Male	51	56.7%
Education Level		
Elementary school	45	50%
Middle school	20	22.2%
High school	25	27.8%
Distance Traveled		
1-2 Km	55	61.1%
3-4 Km	25	27.8%
5-6 Km	8	8.9%
>6 Km	2	2.2%
History of Covid-19		
No	69	76.7%
Yes	21	23.3%
Family of Health Workers		
No	73	31.1%
Yes	17	13.9%
Transportation		
Walk	4	4.4%
Bicycle	2	2.2%
Motorcycle	58	64.4%
Car	15	16.7%
Public Transport	11	12.2%
Stress Level		
Light	46	51.1%
Medium	39	43.3%
Strong	5	5.6%

c. Proportion of elderly stress before vaccination with various factors

Table.2 Proportion of Elderly Stress Before Vaccination

Age	Light	Medium	Strong	Total
45-55(Middle Age)	19 21.1%	20 22.2%	4 4,4%	43 47,8%
56-66(Elderly)	19 21,1%	16 17,8%	1 1,1%	36 40,0%
67-79(Young Old)	8 8,9%	3 3,3%	0 0%	11 12,2%
Gender				
Male	28 31,1%	9 10%	2 2,2%	39 43,3%

Female	18	20%	30	33,3%	3	3,3%	51	56,7%
Distance Traveled								
1-2 Km	29	32,2%	24	26,7%	2	2,2%	55	61,1%
3-4 Km	11	12,2%	11	12,2%	3	3,3%	25	27,8%
5-6 Km	5	5,6%	3	3,3%	0	0%	8	8,9%
>6 Km	1	1,1%	1	1,1%	0	0%	2	2,2%
History of Covid-19								
Yes	11	12,2%	9	10%	1	1,1%	21	23,3%
No	35	38,9%	30	33,3%	4	4,4%	69	76,7%
Family of Health Workers								
Yes	11	12,2%	6	6,7%	0	0%	17	18,9%
No	35	38,9%	33	36,7%	5	5,6%	73	81,1%

Journal Pre-proof

Declaration of interests

Manuscript title:

Differences in Elderly Stress Levels Before Covid-19 Vaccination: History of Exposure to Covid-19 Reduces Stress Before Vaccination

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Purwokerto, Oct 6, 2022

On behalf of all authors



Dr. Isna Hikmawati, S.KM.,M.Kes(Epid)

Corresponding author

Email: isnahikmawati@ump.ac.id

Afiliation : Universitas Muhammadiyah Purwokerto