Related Factors of Anxiety Level in Covid-19 Patient during Self Quarantine

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Abstract

Coronavirus disease-19 was a pandemic in the world. One of the efforts to reduce the spread of Covid-19 cases was to self-quarantine. Self-quarantine impacted emotional mental disorders in the form of anxiety. This study aimed to identify factors related to the anxiety of Covid-19 patients who were undergoing self-quarantine. METHODS: This study used a descriptive research design with a cross-sectional study. The population was all confirmed COVID-19 patients who underwent self-quarantine in Wonogiri Regional Emergency as many as 70 respondents. Samples used clustered randomized sampling with 40 respondents. The instrument used a sociodemographic questionnaire, and anxiety was measured using Hamilton Rating Scale-Anxiety. Data were analyzed using multiple linear regression. RESULTS: The results showed that the mean age was 33.58 ± 11.08 years. Most participants were women 52.5%, 87.5% of the respondents had high education background, 37.5% were medical workers, 37.5% were private workers, and 95% of the participants had received information about covid-19. The mean of the time they were self-quarantined was 8.1 ± 4.77 days. 55% of the participants had no anxiety, 15% had mild anxiety, 10% had moderate anxiety, and 20% had severe anxiety. Factors that affect the level of anxiety are age (p-value = 0.047), occupation (p-value = 0.031), education (p-value = 0.035) and length of self-quarantine (0.023). CONCLUSION: The conclusion said that age, occupation, education, and length of self-quarantine have a strong relationship and have a significant effect on anxiety. Social support is needed to reduce the anxiety of COVID-19 patients during self-quarantine.

Introduction

Coronavirus disease-19 (Covid-19) is a disease caused by the betacorona type coronavirus. It is named by the World Health Organization (WHO) SARS-CoV-2 and the name of the disease Coronavirus Disease 2019 (COVID-19). This coronavirus was a pathogen in respiratory diseases. The virus transmission is between humans, so it is fast (PDPI et al., 2020). Symptoms of COVID-19 were symptoms of acute respiratory distress such as fever, cough, and shortness of breath. The average incubation period was 5-6 days, with the incubation period up to 14 days. In severe cases of COVID-19, it could cause pneumonia, acute respiratory syndrome, kidney failure, and even death. Countermeasures and prevention were urgently needed because COVID-19 has an impact on several aspects, namely political, economic, social, cultural, defense, and security aspects, as well as the welfare of the people in Indonesia (Kemenkes RI, 2020). Fear of the Covid-19 pandemic caused cognitive distress, negative emotions, aggressiveness, and reduced sleep quality or numbness (Cao et al., 2020). One of the management efforts for patients with confirmed Covid-19 was self-quarantined with monitoring, especially for patients without symptoms and mild symptoms. Self-quarantine at home/quarantine facilities for a maximum of ten days from the onset of symptoms plus three days free of symptoms of fever and respiratory problems. If symptoms were more than 10 days, then quarantine was continued...
until symptoms disappear plus 3 symptom-free days. Quarantine could be done independently 93.8% at home or in public facilities prepared by the government (PDPI et al., 2020). The management of self-quarantine for COVID-19 patients who were asymptomatic and had mild symptoms made some people feel restless and anxious. It would raise the risk of other mental health disorders during the Covid-19 pandemic in the community. Anxiety, lack of social contact, and fewer opportunities to deal with stress were major concerns (Fegert et al., 2020). The related factors of anxiety needed to be explored further to overcome anxiety so that it did not have an impact on other health problems if anxiety was not overcome.

Based on data from the World Health Organization (WHO), as of September 10, 2021, the number of confirmed COVID-19 patients was 223,022,538 people, and the number of patients who died from Covid-19 was 4,602,882 people (World Health Organization, 2021). In Indonesia, as of September 10, 2021, the number of confirmed COVID-19 patients was 4,158,731 (+5,367) cases, the number of patients who died from Covid-19 was 128,431 (3.3%), the number of patients recovered was 3,901,766 (93.8%), and the number of active cases was 118,534 (2.9%) (Kemenkes RI, 2020).

In Central Java Province, as of September 11, 2021, the number of confirmed patients was 6,102 cases, the number of patients recovered was 439,042 cases, and the number of patients who died was 31,596 (Tengah, 2021). The number of Covid-19 cases in Wonogiri Regency as of September 10, 2021 namely 142 confirmed cases (48 hospitalized and 94 self-quarantine), 10,199 confirmed recovered cases, and 1,353 confirmed deaths (Wonogiri, 2021).

From some literature mentioned, the number of anxiety diagnoses increased during and after the Covid-19 pandemic. Anxiety diagnosis is often presented with symptoms of poor sleep and depression (Nicolini, 2020). Anxiety was a disguised feeling of fear accompanied by feelings of uncertainty, insecurity, helplessness, and isolation. The Covid-19 pandemic caused emotional and mental disorders that have a physical and psychological impact on every individual, especially individuals who have to isolate themselves due to Covid-19. Individuals who have to live in particular quarantine homes partially experienced mental and emotional disorders. Signs of emotional and mental disorders symptoms are experienced in the form of somatic complaints, namely anxiety, tension, and neglected daily activities (Ozamiz-Etxebarria et al., 2020). Health concerns and anxiety associated with an epidemic or pandemic could have a significant psychological impact (e.g., stress, intrusive negative thoughts, avoidance) and might be associated with ineffective or unfavorable preventive behavior.

A person’s anxiety response to an epidemic/pandemic could vary from one person to another (Ahmad & Murad, 2020). Anxiety during the COVID-19 pandemic could be caused by several factors. Namely, predisposing factors include the COVID 19 pandemic, spending >9 hours at home, excessive online information seeking, more common in women, economic status, having a baby, married status, student status, learning environment, and internet network. Factors that could prevent or reduce anxiety in this literature are reinforcing factors were emotion regulation, resilience, supportive intervention, religious coping, family support, limiting exposure to information media and physical activity or sports (Brooks et al., 2020).

Self-quarantine was one of the efforts to reduce the spread of Covid-19, but self-quarantine caused mental and emotional problems in the form of anxiety. The factors that caused anxiety during self-quarantine in COVID-19 patients need to be explored more deeply to develop possible preventive measures and therapeutic interventions. It was what underlies the authors to examine the factors related to the anxiety of Covid-19 patients who were self-quarantining.

**Method**

The study took place in the Wonogiri District Health Office Work Area. It is in the southern part of Central Java in Indonesia. During this study piloted, the number of
Covid-19 cases in Wonogiri Regency as of December 2020, namely 108 confirmed cases (38 hospitalized and 70 self-quarantine). A cross-sectional study took place in Wonogiri from December 2020 – May 2021 to assess the anxiety level of the covid-19 patient during self-quarantine. The population was all confirmed COVID-19 patients who underwent self-quarantine as of December 2020, as many as 70 people (Wonogiri, 2021). The primary criterion for the inclusion of participants in the study was people with covid-19 who self quarantined without comorbid. The sampling technique used was Cluster Random Sampling. Samples were taken from 2 sub-districts with the highest number of cases, as many as Wonogiri and Selogiri sub-districts with 40 respondents.

Research data were collected using the Hamilton Rating Scale-Anxiety, Indonesian Version of HRS-A. The validation is through an international field trial (Maier et al, 1988) and an Indonesian field trial (Ramdan, 2019). Various instruments for measuring Anxiety have been developed and described, but very few studies used the HRS-A instrument to assess anxiety levels. HRS-A questionnaire included 14 symptoms containing: [1] Anxious mood: Worries, anticipation of the worst, fearful anticipation, irritability; [2] Tension: Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax; [3] Fears: Of dark, of strangers, of being left alone, of animals, of traffic, of crowds; [4] Insomnia: Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors; [5] Intellectual: Difficulty in concentration, poor memory; [6] Depressed mood: Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing; [7] Somatic (muscular): Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone; [8] Somatic (sensory): Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation; [9] Cardiovascular symptoms: Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat; [10] Respiratory symptoms: Pressure or constriction in chest, choking feelings, sighing, dyspnea; [11] Gastrointestinal symptoms: Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation; [12] Genitourinary symptoms: Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence; [13] Autonomic symptoms: Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair; [14] Behavior: Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc (Ramdan, 2019). Each symptom was assigned a score of 0–4 (0: no symptoms; 1: mild symptoms; 2: moderate symptoms; 3: severe symptoms; 4: very severe symptoms). The scores of the 14 symptoms are added up, and the total score obtained was used to determine a person’s anxiety degree. The anxiety degree was classified as follows: <6: no anxiety; 7-14: mild anxiety; 15-27: moderate; 28-41: severe anxiety; >41: severe. The questionnaire was in the form of a Google Form distributed via WhatsApp. Therefore, the researcher was with the respondents when they filled out the questionnaire. Sociodemographic data measurement use a questionnaire containing age, gender, education, occupation, exposure to information, and length of self-quarantine. The researcher also provided clarifications where necessary.

The subjects were invited to participate in the study while being self-quarantined. All the subjects were informed about the purpose of the study. After obtaining the informed consent, they filled out the questionnaire. The data collection took time from January to March 2021, when they were self-quarantined. Definition of operational Anxiety Level: an emotional response without a specific object that is subjectively experienced and communicated interpersonally is defined as normal, if the score is less than 6, mild anxiety if it is from 7 to 14, moderate anxiety if it is from 15 to 27 and severe anxiety if the score more than 27. After explaining the research objectives, we obtained informed consent from each participant. Ethical permission to carry out this study was granted by the Department of Research and Community Engagement,
the School of Nursing, Giri Satria Husada Wonogiri. The confidentiality of the data was ensured for all participants. The data were organized and coded in Excel spreadsheets and exported to the Statistical Package for the Social Sciences (SPSS) version 20.0 program. The descriptive statistics, the absolute and relative frequency, mean, standard deviation, coefficient of variation, and minimum and maximum values were used. Quantitative data are presented as means ± standard deviations (SD), while qualitative data are presented in frequencies and proportions (Guillén-Astete et al., 2020). Linear regression was used to evaluate factors that correlate with anxiety levels of Covid-19 patients during self-quarantined. The statistical significance threshold was set at a p-value less than 0.05.

Result And Discussion
Table 1. Socio-demographic variables of respondents and level of anxiety during self-quarantine

| Variable                        | n    | %     |
|---------------------------------|------|-------|
| Age (Years)                     | 33.58± 11.08 |
| Gender                          |      |       |
| Male                            | 19   | 47.5  |
| Female                          | 21   | 52.5  |
| Education                       |      |       |
| Low                             | 5    | 12.5  |
| High                            | 35   | 87.5  |
| Occupation                      |      |       |
| Unemployment                    | 6    | 15.0  |
| Medical Worker                  | 15   | 37.5  |
| Occupation                      |      |       |
| Government Employee             | 1    | 2.5   |
| Private Employee                | 15   | 37.5  |
| House wife                      | 3    | 7.5   |
| Information exposed             |      |       |
| have not received information   | 2    | 5.0   |
| received information            | 38   | 95.0  |
| Length of Self-Quarantine (Days)| 8.1 ± 4.77 |
| Anxiety Level                   |      |       |
| Normal                          | 22   | 55.0  |
| Mild                            | 6    | 15.0  |
| Moderate                        | 4    | 10.0  |
| Severe                          | 8    | 20.0  |

Note: M = mean; SD = Stanard Deviation

Table 1. describes the sociodemographic data of the participants. The mean age was 33.58 ± 11.08 years of the 40 participants: 52.5% were females, and 47.5% were males. Regarding educational background, 12.5% of the respondents had low education, and 87.5% had high education. In occupation status, 37.5% were medical worker, 37.5% were private worker, 15% were unemployed, 7.5% were housewife, and 2.5% was a government employee. 95% of the participants had received information about Covid-19, and 5% had not received information about Covid-19. The mean of the time they were self-quarantined was 8.1 ± 4.77 days. 55% of the participants had no anxiety, 15% had mild anxiety, 10% moderate, and 20% had severe anxiety. The mean age of the respondents was 33.58 ± 11.08 years. In their study, Kapasia et al. said that anxiety occurred in respondents aged 18-35 years. 70% of respondents faced various problems related to anxiety, and depression, due to poor internet connectivity and an unfavorable learning environment at home (Kapasia et al., 2020). The risk factors for the development of anxiety included initial or peak phase of the outbreak, female sex, younger age, marriage, social isolation, unemployment, and student status, financial hardship, low educational level, insufficient knowledge of COVID-19, epidemiological or clinical risk of disease and some lifestyle and personality variables (Santabárbara et al., 2021).
In terms of gender, the most respondents were female, as many as 21 (52.5%) respondents. It was in line with Galindo-Vázquez et al. research which explains that single women, who have no children, have co-morbidities, and have a history of mental health care have a higher risk of symptoms of anxiety and depression (Galindo-Vázquez et al., 2020). Older women and professionals experience higher symptoms of stress, anxiety, depression, and insomnia among healthcare workers during the Covid-19 pandemic (Dosil Santamaría et al., 2021). In infected people, females have higher anxiety symptoms than males (Pashazadeh Kan et al., 2021). In line, our study revealed that females are more likely to be affected by anxiety than males (OR = 0.81, CI = 0.37-1.74) (Kan et al., 2021). Female was the risk factor for anxiety because female are more openly and firmly in their emotions (Fu et al., 2020). Female anxiety level is higher than male due to differences in brain chemistry and hormone levels. Females with anxiety had higher testosterone and estradiol composition (Fu et al., 2020).

In terms of education, most respondents had high education as many as 35 (87.5%). It was in line with Wang et al. study, which explains that respondents with high education level has anxiety level higher than those who had low education (Wang et al., 2020). Most of the respondents’ occupations were medical personnel, as many as 15 (37.5%), and private employees as many as 15 (37.5%) respondents. Most health workers experience anxiety due to the lack of personal protective equipment and family safe during the Covid-19 pandemic. Health workers had experienced mild anxiety in as many as 52 respondents (65.0%), 11 respondents (13.8%) had moderate anxiety, two respondents (2.5%) had experienced severe anxiety and 15 respondents (18.8%) who do not experience anxiety (Fadli et al., 2020). Frontline health care workers engaged the direct diagnosis, treatment, and care of patients with COVID-19 were associated with a higher risk of symptoms of anxiety (OR, 1.57; 95% CI, 1.22-2.02; P < .001) (Lai et al., 2020). Some study has identified a high prevalence of moderate depression, anxiety, and PTSD among healthcare workers during the COVID-19 pandemic (Li et al., 2021).

Most of the respondents have received information related to Covid-19, as many as 38 (95%). Predisposing factors that caused anxiety during the COVID-19 pandemic were spending >9 hours at home, excessive online information search, more common in women, economy, having babies, marital status, student status, learning environment, and internet network. Watching/reading COVID-19 news for ≥ 2 h/day were associated with a high prevalence of severe to very severe depression, anxiety, and stress (Lasheras et al., 2020). Knowledge about COVID-19 transmission, treatment, prognosis, and prevention can stabilize the anxiety level of medical students during the pandemic. Ensuring that the general population receives enough timely and transparent information during health emergencies is critical for healthy psychological self-adaptation (Lasheras et al., 2020).

The mean of the time they were self-quarantined was 8.1 ± 4.77 days. Most of the studies reviewed reported negative psychological effects of quarantine during confirmed COVID-19, namely symptoms of post-traumatic stress, confusion, and anger. Stressors include longer quarantine duration, fear of infection, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma (Brooks et al., 2020). feelings of loneliness and lack of social support were among the strongest correlates with anxiety during the pandemic (Arafa et al., 2021; Horesh et al., 2020).
Table 2. Distribution of the scores among anxiety level of covid-19 patient during self-quarantine, according to HRS-A*

| Domain             | No. Items | Mean     | SD        | Variance   | Min | Max |
|--------------------|-----------|----------|-----------|------------|-----|-----|
| Anxious mood       | 1         | 1.58     | 1.279     | 1.635      | 0   | 4   |
| Tension            | 1         | 1.50     | 1.320     | 1.744      | 0   | 4   |
| Fears              | 1         | 1.28     | 0.933     | 0.871      | 0   | 3   |
| Insomnia           | 1         | 1.33     | 1.095     | 1.199      | 0   | 4   |
| Intellectual       | 1         | 0.85     | 0.864     | 0.746      | 0   | 3   |
| Depressed mood     | 1         | 1.53     | 1.339     | 1.794      | 0   | 4   |
| Somatic (muscular) | 1         | 1.00     | 1.109     | 1.231      | 0   | 4   |
| Somatic (sensory)  | 1         | 0.80     | 0.723     | 0.523      | 0   | 3   |
| Cardiovascular symptoms | 1 | 0.58     | 0.747     | 0.558      | 0   | 2   |
| Respiratory symptoms | 1    | 1.20     | 1.436     | 2.062      | 0   | 4   |
| Gastrointestinal symptoms | 1 | 0.75     | 1.056     | 1.115      | 0   | 3   |
| Genitourinary symptoms | 1 | 0.48     | 0.640     | 0.410      | 0   | 2   |
| Autonomic symptoms | 1         | 1.15     | 1.167     | 1.362      | 0   | 3   |
| Behavior           | 1         | 0.88     | 1.090     | 1.189      | 0   | 4   |

*HRS-A : Hamilton Rating Scale-Anxiety

The distribution of the parameters related to the HRS-A domains is presented in table 2. The symptoms of anxiety level were revealed in all 14 symptoms investigated. Regarding the gross mean scores observed, the highest ones were assigned to the anxious mood symptoms (1.58). It evaluates the perception of the respondents regarding worries, the anticipation of the worst, fearful anticipation, irritability, and depressed mood symptoms (1.53) evaluating the perception of the respondents regarding loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing. Tension symptom (1.50) was related to feelings of tension, fatigability, startle response, moved to tears easily, trembling, restlessness feelings, and inability to relax. Insomnia symptoms (1.33), evaluate the perception regarding the difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, and night terrors. The lowest means were assigned to the genitourinary symptoms (0.48), evaluating the frequency of micturition, the urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence, and the scores of cardiovascular symptoms (0.58). It assesses the perception of the respondents regarding tachycardia, palpitations, pain in the chest, throbbing of vessels, fainting feelings, and missing beat.

The highest ones were assigned to the anxious mood symptoms (1.58), which evaluates the respondents’ perception regarding worries, the anticipation of the worst, fearful anticipation, and irritability. Worrying about infection of oneself or loved ones was common in the respondents and correlated strongly with anxiety (Lei et al., 2020). The degree of worry about epidemiological infection significantly influenced psychological status, specifically anxiety (Liu X et al., 2020).

Table 3. Linear regression of factors Correlating Anxiety level of Covid-19 patient during self-quarantine (n = 40).

| Variables                  | Anxiety Level | B     | Beta  | t   | p-value | 95 % CI          |
|----------------------------|---------------|-------|-------|-----|---------|------------------|
| Age                        |               | 0.296 | 0.280 | 2.071 | 0.047*  | 0.005 – 0.587    |
| Gender                     |               | -0.601 | -0.026 | -0.193 | 0.848   | -6.954 – 5.752   |
| Occupation                 |               | 2.054 | 0.334 | 2.256 | 0.031*  | 0.199 – 3.908    |
| Education                  |               | -4.849 | -0.310 | -2.198 | 0.035*  | -9.343 – -0.356  |
| Information Exposed        |               | 3.655 | 0.069 | 0.472 | 0.640   | -12.124 – 19.433 |
| Length of self quarantine   |               | -0.771 | -0.314 | -2.384 | 0.023*  | -1.429 – -0.112  |

Note:*p<0.05; CI = Confidence Interval
A regression model was used to examine factors related to anxiety level during self-quarantine. The results are presented in Table 3 - the factors that associated with anxiety level were age (B = 0.296, β = 0.280, t = 2.071, p value = 0.047), occupation (B = 2.054, β = 0.334, t = 2.256, p value = 0.031), education (B = -4.849, β = -0.310, t = -2.198, p value = 0.035), and length of self-quarantine (B = -0.771, β = -0.314, t = -2.384, p value = 0.023).

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**Conclusion**

Self-quarantine in patients who are confirmed positive for Covid-19 can cause another mental health problem, namely anxiety. The factors that directly affect the anxiety level of patients undergoing independent quarantine are work, education, and the length of self-isolation. Factors that indirectly affect are age, gender, and exposure to information. The above factors together can significantly affect the anxiety level of Covid-19 patients undergoing self-quarantine. Furthermore, during self-quarantine, monitoring and providing information about what to do during self-quarantine and support from families and communities around COVID-19 patients needs to be increased to reduce the anxiety of Covid-19 patients who are undergoing independent isolation.

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