

# RISK FACTORS FOR PSYCHOLOGICAL IMPACT AND SOCIAL STIGMA AMONG PEOPLE FACING COVID-19: A SYSTEMATIC REVIEW

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## ABSTRACT

Coronavirus Disease 2019 (COVID-19) is a world health crisis contributing to impact people's fears, anxiety and psychological problems. This review study aimed to identify factors with psychological impact and social stigma among people. A systematic review searched five electronic databases (Scopus, PubMed, Science Direct, CINAHL and ProQuest) for previous studies using a cross-sectional or quasi-experimental design published between March and April 2020. The Centre for Review and Dissemination and the Joanna Briggs Institute Guideline used for assess quality and Prisma checklist for guided this review. Title, abstract, full-text and methodology were assessed for the eligibility of the studies. Data tabulation and narrative analysis of study findings was performed. We found eleven studies which met inclusion criteria in the review. Included studies were divided into two broad thematic areas regarding COVID-19: factors related to psychology (n=7) and social stigma (n=3) and 1 study of both. The factors contributed in

psychology and social stigma studies are mostly quasi-experiment and cross-sectional. The average number of participants were more than one thousand overall for every study and discussed psychological impact and social stigma related factors. Factors contributing to psychological impact were age, gender, education background, economic, support system, health condition and source information., whilst factors contributing to social stigma were environmental, history of accompanying chronic diseases, discrimination, self-isolation and people's perceptions of the affected area.

**Keywords:** COVID-19, Psychological factors, Social stigma

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## INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a world health crisis disease due to its rapid spread [1]. The high risk of transmission and the rapid progression of the disease has meant increasing mortality rates [2]. The unknown nature of COVID-19 has contributed to impact people's fears, anxiety and psychological problems [3]. Previous research in China shows that the psychological impact of fear of COVID-19 is more dangerous than the disease [4]. The population in China shows 53.8% have severe psychological effects, 28.8% show symptoms of severe anxiety, 16.5% symptoms of severe depression and 8.1% levels of severe stress [5].

The pandemic of COVID-19 as an international health emergency shows a growing number of cases every day [6]. The latest report from Johns Hopkins University on April 17, 2020, shows the positive cases of COVID-19 in the world reached 2,157,108 cases, with the first ranking being the United States (670,353 cases), followed by Spain (184,948 cases) and Italy (168,941 cases). In Indonesia, there were 5,516 positive cases, 496 deaths and 548 people recovered. Increasing the number of cases in Indonesia has led the National Disaster Management Agency (BNPB) to establish COVID-19 as a national disaster crisis. The Indonesian Government has made regulations for social distancing, which is expected to reduce the spread of the virus to other people. However, many have left the red zone and consequently spread the virus to other regions in Indonesia [7].

Psychological effects are such as anxiety, fear and stress causing mass paranoia, causing people to hoard surgical masks, hand sanitizers and buy some food in preparation for lockdown. People's reaction to COVID-19 has been excessive protection of themselves and their families [8]. They have increased frequency of washing hands repeatedly, continuously cleaning the house and the environment and suspecting anyone who coughs or sneezes [9]. Psychologists also confirm this condition can cause obsessive compulsive symptoms and develop to mental

disorders [10]. Some countries are concerned about the psychological effect of COVID-19. Indonesia has confirmed many people who reject surveillance by operating department practitioners (ODP), positive patients and other COVID-19 patients because they think it will be safe to prevent transmission. This negative social stigma also triggers psychological distress to the ODP and the surrounding community [7].

Many factors influence psychological distress and social stigma in a community; the result of previous study in China showed these include gender, working experience in years, history of psychological disorders, concomitant chronic disease and having family members as confirmed or suspected cases [11]. A study conducted in Korea also stated educational level, marital status, and race have correlation with psychological disorders and stigma in COVID-19. Currently, most of the research focuses on the epidemiology and characteristics of infected patients [12,13], the characterization of the virus gene [14,15], and challenges for global health governance [16]. However, there are still limited research articles examining the psychological effect on COVID-19 on the general population in Indonesia. This review study aimed to identify factors associated with psychological impact and social stigma among people.

## METHODS

A systematic review was conducted as a comprehensive and synthesis of relevant studies about risk factors causative to psychological impact and social stigma among people having COVID-19. The Centre for Review and Dissemination and the Joanna Briggs Institute Guideline guided the assessment of study quality. The evaluation of the systematic review was performed using the PRISMA checklist of items to include while reporting and analyzing a systematic review [17].

### Search strategy

Scopus, PubMed, Science Direct, CINAHL and ProQuest were electronic databases used to search relevant studies, and databases search was conducted March - April 2020 in order to identify relevant studies. The PICOS question (P = population, I = intervention, C = comparators, O = outcomes, S = study type) format was used for formulating the research question (Table 1). The boundaries of the review question were clearly defined through development of inclusion and exclusion criteria using the PICOS format. Studies were included for review if they and met the following inclusion criteria: (1) All types of study whether experimental and non-experimental research conducted in COVID-19 pandemic; (2) Intervention consisted of psychological and social stigma component; (2) Outcomes related to risk factor in psychological and social stigma.

Strategies of search for each database were enhanced after trying and consultation with a specialist in systematic review strategies. The literature search was performed with four groups of keywords based on Medical Subject Heading (MeSH) and combined with Boolean operators AND, OR and NOT. The search strategy was established as: ("risk factors" OR factor OR causa\*) AND (psycho\* OR mental OR "mental health" OR "mental disorder" OR psychological phenomena OR psychological stress) AND (Stigma OR social stigma) AND (COVID OR "COVID-19" OR "coronavirus"). The search results were limited to cross-sectional, intervention, and peer-reviewed studies published in either Indonesian or English language during the years 2016-2020. The time limit was set because researchers needed the most recent studies in the development of theoretical models in nursing and health.

### Study selection

Two hundred and fifty-nine publications were found from the database searches (Figure 1), publications duplicated (n = 51) were removed from the results, leaving a total of 208 records. Researchers assessed and screened the title (n = 208), abstract (n = 52) and full text (n = 11) of each publication irrelevant of inclusion criteria (Table 1). We found eleven full-text articles were eligible to conduct systematic review. During the literature screening process, researchers defined common reasons for exclusion criteria, including irrelevant study type, no complete explanation of the factors that influence psychological disturbance or stigma and grey literature.

### Assessment of study quality and risk of bias

The JBI Critical Appraisal for Cross-Sectional and Quasi-Experimental Studies was used to analyze the quality of methodology in each study (n = 11). The checklist for studies suitable had various assessment criteria. Criterion assessment was given a score of 'yes', 'no', 'unclear' or 'not

applicable', and every criterion with score 'yes' was given one point and, following this, each study score was calculated. Critical appraisal to assess the eligible studies was performed by researchers. If the score of the study was at least 50% during critical appraisal, which was the predetermined cut-off point agreed by both researchers, studies were included into the review. Researchers excluded low quality studies in order to avoid compromising the validity of the results and recommendations of the review [17]. In the last screening, eighteen studies reached a score higher than 50% and were ready to do data synthesis. Unfortunately, due to the risk of bias assessment, six studies were excluded.

### Data extraction and analysis

The relevant data the review question were extracted, including: author, country, year, setting, theoretical framework, research aim, conceptualization of cultural competence, educational content, study design, sample size, sampling method, description of participants, reliability and validity, measurement instruments, analysis and statistical techniques, outcomes related to cultural competence, and the results analysis. A narrative approach with primary goal to aggregate evidence on the effectiveness of the interventions and develop a coherent textual narrative on commonalities and differences between studies, was used to synthesize the data in this systematic review.

## RESULTS

### Study Characteristics

Eleven articles met the inclusion criteria (Figure 1). Included studies fall into two broad thematic areas regarding the COVID-19 infectious disease: factors related to psychology (seven studies) and social stigma (three studies) and one study both of them. The factors contributed in psychology and social stigma studies are mostly quasi-experimental and cross-sectional. The median number of participants is more than one thousand; overall, every study discussed about psychology impact and social stigma-related factors. The highest study quality was for the factor of contributed psychology studies and lowest for the studies of social stigma. The studies appropriate with this systematic review were average conducted in China with eight studies [18–20], and the others were two studies were conducted in South Korea [21,22] and one study in England [23]. Specifically for this new COVID-19 scenario, the psychological factor is a most important condition to concern, because psychological impact is more dangerous than the disease [11]. Seven studies about factors contributing to psychological condition among people were age, gender, education background, economic, support system, health condition and source information. For factors contributing in social stigma, three studies found community perception, experience, knowledge, educational background and stressor from environment.

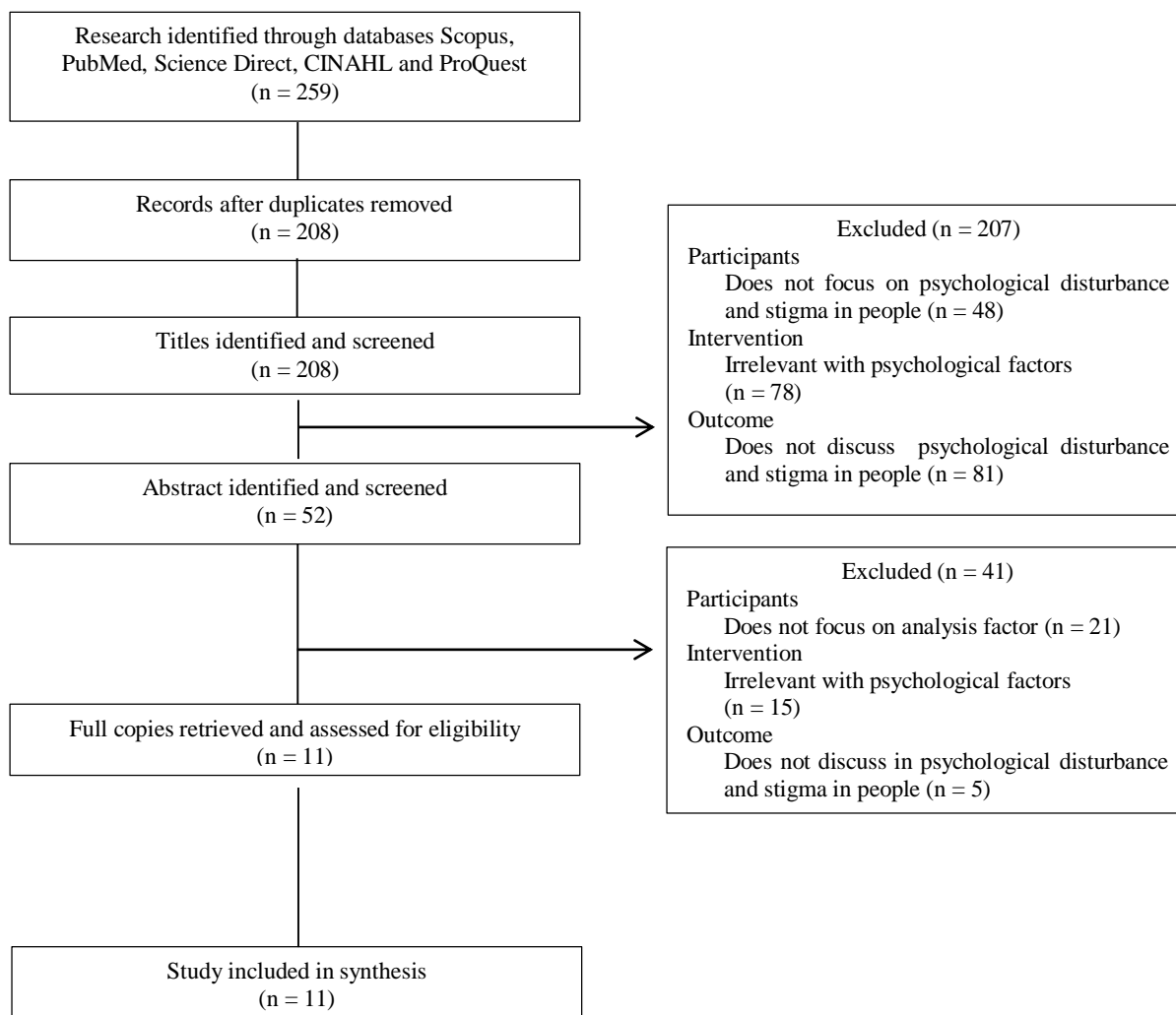


Figure 1. Flow chart of literature search adopted from PRISMA 2009 Flow Diagram

Tables 1. The Characteristics of Articles during Study Selection

Resource Language	Year	Database	N	Type of Study/ Article		
				Review	Original Research	
					Cross sectional	Experiment
English	2020	Scopus	103	25	68	10
		PubMed	36	9	20	7
		Science Direct	73	21	43	9
		CINAHL	32	8	20	4
		Proquest	15	4	8	3

**Table 2. The PICOS Format of this study**

Criteria	Inclusion	Exclusion
Population	Studies comprised affected communities with COVID-19	Communities not affected with COVID-19
Intervention	Psychological intervention and stigma	Non-psychological intervention and stigma
Comparators	No comparator	
Outcomes	Factors analysis to psychological disturbance and social stigma during COVID-19	Not described factor analysis of psychological disturbance and social stigma during COVID-19
Study Design and publication type	Quasi-experimental studies, randomized control and trial, systematic review, qualitative research and cross-sectional studies	No exclusion
Publication years	Post-2015	Pre-2015
Language	English, Indonesian	Language other than English and Indonesian

**Risk factor in psychological impact**

**Age**

Age was a significantly associated depression symptom in Chinese population. Similarly, age was associated with depressive condition; participants of 35 years and older were not associated with higher risk for depressive symptoms than those under 35[21]. Younger participants (<35 years) were more easily to develop depressive and anxiety symptoms during the COVID-19 pandemic than older participants (≥ 35 years) [24]. In contrast to study about psychology, the prevalence of depressive symptoms was reported to be 23.6% in the population and mental health problems were common problems in older Chinese adults (i.e., ≥55 years) [24].

**Gender**

Male gender was significantly associated with higher scores in the depression and anxiety scale; this was in line with females showing higher mental health consultation rates than males. Getting consultation more often in females makes them more ready to face disease [22]. In addition, based on previous study results, severe anxiety among women is higher than men. Our findings further indicate that women reported more severe symptoms of depression, anxiety, and distress [19].

**Education level**

Educational level reported a significant positive association with the regular mental health consultation check-up [18]. Low educational level respondents sometimes received mental health consultation for depressive symptoms, but more often compared to respondents in the high educational level in college [22]. Uneducated status people were significantly associated with higher depression and anxiety symptoms [20].

**Symptom and Health Condition**

Linear regression showed that chills, myalgia, dizziness, cough, coryza, and sore throat were significantly associated with higher depression and anxiety scale, while breathing difficulty was also associated with the anxiety and depression scale [27]. Clinic consultations and hospitalizations were significantly associated with higher anxiety subscale score. Poor or very poor self-rated health status was significantly associated with a greater psychological impact of the outbreak [17].

**Information about COVID-19**

The information on the increase in the number of recovered individuals was significantly associated with a low stress subscale score. Additional information on the availability and effectiveness of medicines/vaccines, the number of infections and locations, and the routes of transmission were significantly associated with lower scores in the DASS anxiety subscale [28]. High levels of concern about other family members getting COVID-19 were significantly associated with higher psychological impact. Similarly, high levels of concern about a child younger than 16 years getting COVID-19 were significantly associated with higher anxiety impact [24,25].

**Economic**

Improving mental health services and treatment strategies can lead to gains in both the economic sector and physical health since the economic costs associated with mental disorders is high. In addition to a concrete fear of virus transmission, poor prognosis and death, the COVID-19 pandemic has implications for other spheres: closings of schools, family organization, companies and public places, isolation, changes in work routines, leading to feelings of helplessness and abandonment. Moreover, it can heighten insecurity due to the economic and social repercussions of this large-scale tragedy [26].

**Exposure Duration**

Frontline workers have higher psychological impact than second-line workers, but severe distress among workers in Wuhan was high. Compared with those working in tertiary hospitals, participants working in secondary hospitals were more likely to report severe symptoms of depression, anxiety and insomnia. Frontline nurses treating patients with COVID-19 are likely exposed to the highest risk of infection because of their close, frequent contact with patients and working longer hours than usual. Moreover, 71.5% of all nurses had junior titles, indicating that most had fewer years of work experience [22]

**Support**

Problems in psychological impact of patient were the breakdown of social support structures and the social stigma of patients. As people are trying to avoid transmission of the virus, social support structures are breaking apart; places like schools, churches, mosques, markets and workplaces have been shut down, which eliminates the benefits of social support and may cause feelings of isolation and vulnerability [19,23]. Therefore, information released by the media is crucial to verify the validity of a public system. Mental health authorities and communities should consistently make efforts to eliminate stigma and enhance social support systems of the disease. Building a targeted mental healthcare strategy for different population domains, including the quarantined and medical staff, would also be beneficial [21]

### Risk factor in social stigma

Social stigma in COVID-19 resulted not only from individuals as a survivor or relationship to a survivor but also one's nationality to individual [25,29]. Those people having infection disease in fast transmission and getting sick, resulted in discriminatory attitudes toward them. The causative factors were particularly influenced by media portrayals. Feelings of abandonment and isolation often result from experiences of stigma and discrimination [22]. Survivors reported feeling abandoned when they were ostracized by their community, turned away from healthcare services and distanced from healthcare workers due to the use of personal protective equipment [17]. Quarantine procedure can lead to some individual feelings of isolation. Despite most patients understanding the need for quarantine measures, being quarantined evoked feelings of abandonment that sometimes lasted beyond discharge [20]. These quarantine measures also affected those who were not exposed to the virus, such as new mothers who had to be separated from their infant. Immigrants were particularly worried about how quarantine measures would affect their community and result in further isolation [27]. General educational background and knowledge become as important role during stigma incident. Some of community with higher educational background get more experience to transfer knowledge from every people that they met. In contrast with people that have lower educational background, they have higher risk to give negative stigma to person who get infection or their family. In addition, public health information also being important factor causative stigma, because lack of information make them afraid and think if every one that they meet have high risk to transmission the disease. Information can reduce stigma and also be usefull to prevent fast transmission, because true infromation can increase person's knowledge and they will share to others person.

### DISCUSSION

Psychological problems and negative stigma due to COVID-19 infections are increasing every day, making people more afraid and worried about human-to-human transmission [19]. Factors that influence the psychological impact and stigma of society consist of several things, including internal and external factors. Factors affecting psychological effects are age, gender, education background, economic, support systems, health conditions and source information. All of these factors will influence one another and cause disruption to the psychological state of the community. Meanwhile, the negative stigma that exists in the community is influenced by environmental factors, history of accompanying chronic diseases, discrimination, self-isolation and people's perceptions of the red zone [20,24]. Age, which is one of the internal factors in an individual, has an important role in causing depression. Based on several articles that have been reviewed,, the age most prone to experiencing the incidence of depression are those under 35 years, especially teenagers and early adulthood [11,21]. Individuals under the age of 35 do not have much experience and are not married, so the risk of fear of contracting COVID-19 increases; the causative factor is a high risk of death. Conversely, more than 55 years of age shows low symptoms of depression because most of the elderly are resigned and waiting for death, according to those who need to be prepared for a peaceful death. The elderly will prepare spiritually for God to prepare when they should leave the world [22,25].

After tracing from several studies that have been done, women show a lower depression response than men; men

feel more useless when they are unable to provide welfare for their families. Men will experience a decrease in self-esteem if the role of head of the family does not go well. Physical distancing conditions make men have to work from home and make income decreases [22]. Regarding education level, the higher the level of education, the faster acceptance and adaptation of self to the COVID-19 issue. The level of knowledge also allows them to choose the right and wrong information, so that anxiety and fear can be minimized [17,20].

Symptoms and health conditions that arise, either due to COVID-19 infection or the common cold symptoms, create psychosomatic symptoms, thus increasing stress in the body [21]. Most people will be afraid if they find signs and symptoms similar to COVID-19, even though it is not ,but only fatigue, flu or weather factors. Such conditions make them want to have an examination and have thoughts about the adverse effects that will be experienced. This will trigger the emergence of fear in the individual, so education is very important. The importance of support from various parties also determines a sense of calm in individuals [26]. The importance of motivation for fellow friends, family or community is to unite the community to be able to fight COVID-19 and work together to stop transmission. Pandemics that have infected all countries in the world need a response and the participation of the whole community in preventing and overcoming high positive numbers [27].

The negative social stigma that arises in society is largely due to rejection due to fear of contracting COVID-19. Many people refuse to recover patients who return to their territory, reject the patient's family, reject health workers and all individuals who fall into the positive, suspicious and surveillance categories [11,23]. This happens because there are many issues circulating that are not true and there is no filtering of information received by the public, making them even more panicked. The importance of collaboration between all strata of society is the challenge in dealing with negative social stigma [29]. Health education, especially for ordinary people, requires appropriate techniques to be easily accepted [17]. A limitation associated with this review is the potential for publication bias. A search for the gray literature was not conducted and only published, peer-reviewed articles written in English were included. Another limitation is associated with the lack of methodological rigor among the included studies, many of which used an uncontrolled before and after study design, lack of a control group, and failed to report proper randomization techniques. Also, statistical synthesis was hindered due to studies being heterogeneous in outcomes and interventions. Lastly, we identified studies conducted not in all countries, only the three biggest country incidents. Aspects related to the specific context must be taken into consideration during the planning of cultural competence interventions.

### CONCLUSION

Factors contributing to psychological impact were age, gender, education background, economic, support system, health condition and source information, while factors contributing to social stigma were environmental factors, history of accompanying chronic diseases, discrimination, self-isolation and people's perceptions of the affcted community. To decrease global psychological impact and negative social stigma among the COVID-19 pandemic, further research to understand this phenomenon need to be conducted.

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