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Factors That Influence the Resilience of Healthcare Personnel during a Pandemic: A Systematic Literature Review

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Abstract: Evidence from epidemics suggests that healthcare workers are at risk of short- and long-term mental health problems. The World Health Organization (WHO) has warned about the potential negative impact of the COVID-19 crisis on the mental well-being of health and social care professionals. Symptoms of common mental health problems include depression, anxiety, stress, and other cognitive and social problems; this can impact functioning at work. Health workers' mental health and mental resilience can be supported during the pandemic through workplace interventions, interventions to support basic daily needs, psychological support interventions, or a combination of any of these. This article aims to identify the factors that influence the resilience of health workers during pandemics. This research is a systematic review research. We identified 17 key factors that influence health worker resilience during the pandemic, as reported in this study. We searched for articles listed in Scopus. We conducted all searches starting from 2020 and restricted the language to English. Based on the literature review, we derived useful hypotheses for future research from our synthesis. The novelty of this research is in its identification of various determinants of resilience from an individual, organizational, and systemic perspective.

Keywords: resilience, health workers, pandemic.

疫情期间影响医护人员复原力的因素：系统文献综述

摘要：流行病的证据表明，医护人员面临短期和长期心理健康问题的风险。世界卫生组织(WHO)已警告新冠肺炎危机可能对卫生和社会护理专业人员的心理健康产生负面影响。常见心理健康问题的症状包括抑郁、焦虑、压力和其他认知和社会问题；这会影响到工作中的运作。在大流行期间，可以通过工作场所干预、支持基本日常需求的干预、心理支持干预或其中任何一种的组合来支持医护人员的心理健康和心理韧性。本文旨在确定影响大流行期间医护人员韧性的因素。本研究是一项系统综述研究。我们确定了影响大流行期间医护人员韧性的17个关键因素，如本研究所述。我们搜索了斯高帕斯中列出的文章。我们从2020年开始进行所有搜索，并将语言限制为英语。基于文献综述，我们从综合中得出了对未来研究有用的假设。这项研究的创新之处在于从个人、组织和系统的角度识别了影响复原力的各种决定因素。

关键词：恢复力、卫生工作者、流行病。

1. Introduction

In late 2019, a new virus was identified in the human respiratory tract in Wuhan, China. It was later called Coronavirus Disease 2019 (COVID-19) and caused significant global changes. The COVID-19 outbreak rapidly developed into a major health problem in various parts of the world. On March 11, 2020, the World Health Organization (WHO) declared this outbreak a pandemic. Based on data released by the WHO on March 25, 2022, the number of confirmed COVID-19 sufferers in 229 countries reached 476,374,234, and 6,108,976 people died. Meanwhile, in Indonesia, 5,995,876 people were confirmed to be positive, 5,702,163 were declared to be cured, and 154,570 people died. This large number of victims is, of course, accompanied by the impact on society caused by this dangerous virus, which has a significant negative effect on humans.

COVID-19 is a non-natural disaster that can impact individual mental health and psychosocial conditions. Problems that start from the health aspect expand and affect various aspects of human life. The COVID-19 pandemic represents a significant public health challenge of international concern, placing extraordinary demands on healthcare systems globally [1]. Massive control efforts have been carried out in various countries with the support of international organizations, but the world still has to struggle to manage the impact of the pandemic and all its consequences. More than any previous crisis that has occurred globally, the COVID-19 pandemic has affected global resilience, testing the resilience of the healthcare system for all elements of society in particular [2].

The hospital is one of the main health service facilities in handling Covid-19, which has a big challenge to maintain the quality of its services. Human resources, particularly health workers, are essential to the quality of hospital services and are a crucial component of hospital operations. Health workers are among the people who feel the impact of COVID-19.

Global research has revealed a significant psychological impact on frontline healthcare workers. The impacts on health workers include the risk of transmission, inadequate protection, longer working hours, lack of experience in controlling and managing disease, negative stigma, negative feedback from patients, and lack of social support from the surrounding environment. This impact affects the function of healthcare workers [3]. These factors can also increase the emergence of psychological problems in health workers, such as fear, anxiety, depression, extreme stress or frustration, stress, and insomnia,

which ultimately affect work efficiency [4].

Healthcare providers, particularly those in frontline positions, are at increased risk of contracting infections due to the nature of their work. They often face extreme pressure, high levels of stress, long hours, and excessive workloads, which can be compounded by inadequate training and insufficient personal protective equipment. These circumstances can lead to a disparity between the needs of healthcare providers and their patients, and it is possible that they may not receive the recognition and support they deserve [30].

Health workers can continue working at the forefront that upholds professionalism or prioritizes the safety of their personal and family health [5]; therefore, resilience is needed to survive the COVID-19 pandemic. Increased workload and the negative impact of the COVID-19 pandemic can cause psychological problems for nurses; resilience is critical in dealing with such difficult situations [31]. In the context of a pandemic, resilience emerges as an interaction between individual abilities and social functioning. Family psychological well-being affects an individual's ability to recover from psychosocial stress [6]. The significance of resilience in the psychological health of healthcare professionals cannot be overstated, especially in light of the ongoing COVID-19 pandemic, the duration of which is uncertain.

Research into the resilience of health professionals is of significant importance for the development of strategies to manage stress and prevent burnout. This will contribute to organizational resilience [7]. This study aims to identify the determinants that affect the resilience of health workers during a pandemic using systematic literature review.

2. Theoretical Review

Research on the concept of resilience over the last few decades has gained substantial momentum and become a multidisciplinary research field that includes theoretical and conceptual studies [8]. The concept of resilience has been adopted and developed over the last 40 years in social science [9].

Several studies have examined the influence of genetic, biological, psychological, family, community, social, and environmental factors on resilience [10]. Dweck [11] stated that people with a growth mindset are considered more resilient, more willing to try the new, and more likely to develop their abilities. In the same vein, empirical studies have shown that resilience has a negative relationship with stress-related anxiety [12] and emotional exhaustion [32]. Even if previous studies did not identify socio-contextual and demographic predictors of resilience, it is known that

these variables can have a cumulative effect [13].

Guo and Anderson [14] conducted a qualitative exploratory study and identified public relations practitioners' workplace difficulties such as marginalization, misunderstanding, and managing cultural shifts during organizational change. The results of this study found four paths to resilience: letting go and moving forward, surviving and rising, taking risks and getting back up, and finally fighting and rising. The differences among the four pathways appear to be related to individual attributes, perceived workplace environment, and patterns of understanding.

2.1. Definition of Resilience

Resilience originates from the Latin word "resilire," which translates as "spring back" or "rise again." According to the English Oxford Dictionary, resilience refers to the capacity for rapid recovery from adversity and is also characterized by toughness or the ability to restore oneself to the original state [15]. Resilience is a process that encompasses multiple individual factors, such as social or environmental factors. It pertains to an individual's capacity to endure and cope with adversity, specifically by navigating the emotional challenges that arise when confronted with problems or trying circumstances that are fraught with stress and impediments [4].

According to Connor and Davidson [16], resilience refers to the ability of individuals to withstand pressure and stress and overcome anxiety and depression. Charney defined resilience as a way of adapting when certain conditions or events cause stress, involving behaviors, thoughts or actions that can be learned by anyone. Resilience enables healthcare workers to better manage stress, reduce the risk of burnout, and maintain their well-being during challenging times of the pandemic [17].

2.2. Resilience Aspects

According to Reivich and Shatte [33], resilience is composed of seven abilities:

- 1) *Emotion regulation*: the individual's ability to remain calm even when under pressure;
- 2) *Self-control ability (impulse control)*: The ability to control oneself is related to the control of desires or impulses. An individual who is able to regulate their intrinsic drives is more likely to exhibit emotional stability and resilience in their actions;
- 3) *Optimism*: An individual with an optimistic outlook is likely to demonstrate a sense of hope for the future, an ability to regulate their life goals, and a conviction that circumstances can improve;
- 4) *Ability to analyze problems (causal analysis)*: individual expertise in identifying the causes of the problems encountered. A person with good resilience can adapt cognitively and explore the causes of their problems;
- 5) *Empathy*: capacity to interpret cues from others

to anticipate their thoughts and emotions;

6) *Confidence (self-efficacy)*: A person's belief that he/she can deal with problems based on experience and belief in his/her own ability to succeed;

7) *Reaching out*: ability to enhance positive aspects of one's life, such as courage in the face of threatening fear.

2.3. Factors Affecting Resilience

Resilience can be influenced by internal and external factors [18].

2.3.1. Internal Factors

a. Spirituality

Spirituality is the effort of a person who experiences connectedness with the meaning of life.

b. Self-efficacy

An individual's self-confidence can help them face challenges and achieve positive outcomes. People with high self-efficacy minimize the fear of failure, can solve problems, and increase their aspirations and ability to think analytically.

c. Optimism

Optimism is the belief that good outcomes are achievable and that positive outcomes are possible even in difficult circumstances. Individuals who maintain this belief can achieve good results and maintain a positive outlook, which can help them deal with difficult situations.

d. Self-esteem

Self-esteem is an individual's self-evaluation of quality or self-esteem as a human being [34]. Based on research by Lete et al. [34], there is a positive correlation between self-esteem and resilience. Individuals with low self-esteem tend to feel less valuable and do not dare to build social relationships with their environment.

2.3.2. External Factors

a. Social support

Social support is a form of security, appreciation, and care given by individuals to others. Social support is a form of psychological assistance provided by others in dealing with difficult situations or conditions. This support can take the form of assistance from friends, colleagues, neighbors, and other individuals. Several factors contribute to resilience, including social support, self-confidence, work-life balance, self-care, a sense of humor, optimism, and realism [15].

2.4. Resilience Resources

Grotberg [35] revealed three sources of resilience in individuals: I have, I am, and I can. These three aspects are interrelated and determine individuals' resilience in the future.

I have: source of resilience related to the high level of social support received from people in one's environment, such as family members and others.

Individuals should have good family and community relations.

I am: resilience emanating from oneself, for example, affection, behavior, and beliefs within a person. According to Grotberg [35], the source "I am" has several aspects:

1. A sense of being loved and exhibiting attractive behavior
2. Loving, empathetic, and altruistic behavior
3. Appreciating and being proud of oneself
4. Having the right to make one's own decisions and accepting responsibility
5. Hope, belief, and confidence

I can: Resilience stems from an individual's social and interpersonal competencies. In this context, the individual is able to express thoughts and emotions positively and possess skills in communication. The ability to solve problems and understand what is required to solve them is also essential.

2.5. Resilience Functions

According to Reichich [36], resilience has the following functions:

Overcoming – capacity to address challenges, by evaluating the current circumstances, shifting one's perspective toward a more positive direction, and attempting to improve self-control.

Striving through – confidence in one's ability to successfully adapt to the environment and overcome obstacles.

Bouncing back – individual efforts to do something to overcome problems and believe that one can manage life and return to a normal state before, recovering from trauma or difficult events, quickly.

Reaching out – an individual's ability to take advantage of positive events and gain more significant knowledge (experience).

3. Methods

3.1. Literature Search Strategy

This study is a systematic review conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method. PRISMA is a systematic approach that involves following specific research protocols. Systematic reviews involve the systematic evaluation, classification, and categorization of existing evidence-based research.

3.2. Research Procedure (Systematic Review)

The procedures in this study are as follows:

Background and purpose arrangement: The initial step in conducting a systematic review is to establish the background and objectives. This study aimed to identify the determinants that affect the resilience of

health workers during the COVID-19 pandemic.

Research questions: In this study, the research question is, what are the determinant factors affecting the resilience of health workers during the COVID-19 pandemic?

Searching for relevant literature: In this study, the researchers conducted a search on the reputable international journal portal Scopus. The search focused on the theme chosen by the researchers, which revolves around the factors influencing the resilience of healthcare workers amidst the COVID-19 pandemic. The researchers utilized the keywords "healthcare worker resilience" and "determine factors in healthcare worker resilience" to search for journal data.

Screening: The study examined the factors that influence the resilience of healthcare workers during the COVID-19 pandemic. The literature on this topic was screened based on the following criteria:

- a. Journals published within the last 3 years (2020-2022);
- b. The language used in the selected journals is English;
- c. Final journal publication status.

Quality assessment: The aim of the quality assessment in this study was to scrutinize the publisher of the journal and evaluate the caliber of the quartile in which it is categorized. This study used journals published in Scopus with Quartiles 1–3.

Data extraction: Data extraction can be executed if all data that satisfy the criteria have been categorized for all existing data. Following the screening process, the outcomes of this data extraction can be examined in the quantity that continues to meet the requirements for further analysis. This procedure involves extracting data from individual studies to obtain crucial findings.

Data synthesis: synthesizing the results using meta-analysis or narrative techniques (meta-synthesis). Narrative synthesis is employed to integrate the extracted data into a coherent whole. At this juncture, the aggregation of salient data derived from the research article is undertaken to facilitate the formulation of further conclusions that will address the objectives.

3.3. Data Collection Method

3.3.1. Data Source

Articles were sourced from prestigious, globally recognized journals indexed in Scopus. A literature search was conducted to identify relevant research articles on the subject of this study, employing the keywords "healthcare worker resilience" and "determine factors in healthcare worker resilience." A depiction of the literature search strategy is presented in Fig. 1.

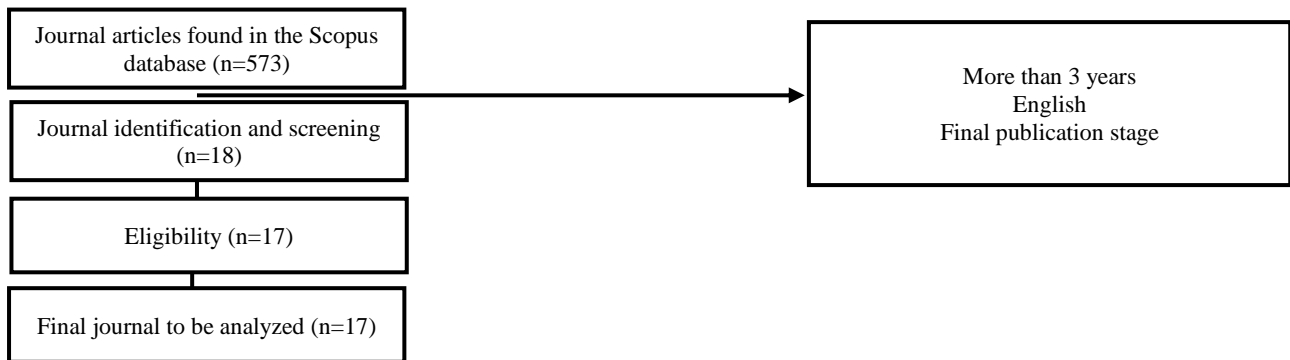


Fig. 1 Literature search strategy based on PRISMA (The authors)

4. Results and Discussion

Based on a review of 17 types of literature, it was found that the resilience of health workers is the result of interactions between variables at the intrapersonal, interpersonal, organizational, community, and state policy levels. The intrapersonal level includes age, gender, years of service, and spirituality. The interpersonal level includes fear of transmitting COVID-19 to the family, family characteristics, and self-confidence. The organizational level includes counseling facilities, staff leadership support, PPE availability, service restrictions, COVID-19 clinical governance, PPI governance, and incentives. The community level is connected to the professionalism of healthcare providers and a shared sense of fate with colleagues who experience similar circumstances. The state policy level relates to health worker mentoring, the provision of PPE and disinfectants, tax subsidies, and restrictions on media coverage. The determinant factors supporting resilience at various levels can be seen in Fig. 2.

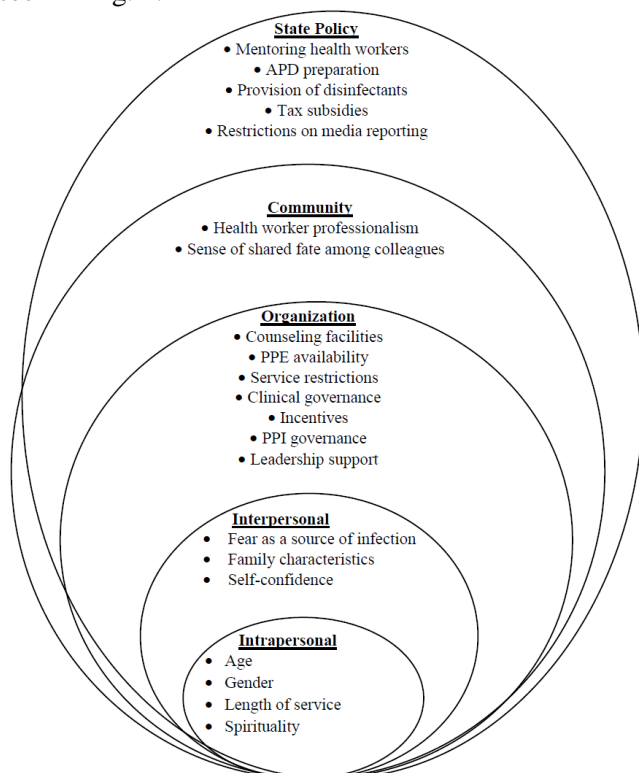


Fig. 2 Determinant factors at different resilience levels (The authors)

4.1. Intrapersonal Level

Individual resilience was originally considered to be a person's character. Fletcher and Sarkar [19] defined resilience as a mental and behavioral process that promotes personal resources and protects individuals from the negative effects of adverse events. At the intrapersonal level, Oliphant [20] agreed that nurse resilience is influenced by gender and years of service. Nurses with more than five years of experience tend to be more resilient than nurses with less than five years of experience.

Meanwhile, Alhaija [21] stated that nurses with a working period exceeding eight years have higher resilience than those with a working period less than eight years. In addition, in terms of gender, female nurses are more resilient than male nurses. At an average age of 40 years, nurses with the highest level of resilience are found. According to Soojung's [22] findings, nurses with an average of 10 years of experience and an average age of 38 years exhibit the highest degree of resilience. Olashore [23] added that spirituality is an important factor that affects individual resilience. Pollock [24] is contradictory in stating that gender, age, and educational background do not significantly affect the resilience of health workers at the intrapersonal level.

4.2. Interpersonal Level

According to Oliphant [20], nurses' capacity to manage their fear of spreading COVID-19 to their surroundings has a significant impact on enhancing individual resilience at the interpersonal level. Similarly, Ji Won [25] asserts that interpersonal connections and family traits are crucial in boosting the resilience of healthcare employees. Soojung [22] also agreed that nurses who feel afraid of bringing the Covid-19 virus to their homes actually have an extra level of vigilance, thereby helping them increase their confidence in being able to survive in the midst of a difficult health crisis situation.

4.3. Organizational Level

According to Oliphant [20], the resilience of nurses at the organizational level is impacted by the level of

support provided by the hospital. The role of leaders is extremely important in facilitating counseling for health workers during a pandemic, which is expected to help nurses reduce stress or burnout. In addition, organizational leaders are needed to provide personal protective equipment for nurses and implement an adequate infection control and prevention system. According to Bastian [37], it is crucial to implement policies that restrict face-to-face COVID-19 services to minimize transmission risks. One such policy is the telemedicine consultation program, which has been widely adopted in countries affected by the pandemic. Additionally, hospitals must establish comprehensive clinical governance for managing COVID-19 cases. This is not only essential for ensuring quality and patient safety but also for alleviating anxiety and providing a sense of security for healthcare workers dealing with COVID-19. Pollock [24] emphasized the significance of offering incentives to healthcare professionals as a key element in fostering resilience, which is as vital as institutional support. This approach has the potential to mitigate the monetary challenges encountered by healthcare workers.

4.4. Community Level

According to Olashore [23], fellow healthcare workers who are similarly exposed to COVID-19 play a supportive role in fostering resilience. The collective experience of treating patients with the virus is perceived as a shared destiny, motivating healthcare professionals to reinforce one another and preserve their professionalism.

4.5. State Policy Level

Konlan's [26] research in Ghana shows that the role of the state is very important in supporting the resilience of health workers. The Ministry of Health of the Republic of Ghana holds a mentoring program for hospital frontline health workers who treat patients with COVID-19, especially those on night duty. This approach has been proven to be effective in helping to increase the resilience of health workers. Meanwhile, Bastani [27] concluded that the government's presence in supporting the resilience of health workers who handle Covid-19 patients is absolutely necessary, for example, in terms of providing PPE and disinfectants to health workers. In addition, macroeconomic policies are also needed, for example, tax subsidies during a pandemic. Restrictions on reporting in the mass media on the issue of COVID-19 also reduced anxiety among health workers, thereby increasing resilience.

5. Conclusion

Health worker resilience is the result of interactions between variables at the intrapersonal, interpersonal, organizational, community, and state policy levels. The intrapersonal level includes age, gender, years of service, and spirituality. The interpersonal level

includes fear of transmitting COVID-19 to the family, family characteristics, and self-confidence. The organizational level includes counseling facilities, staff leadership support, the availability of PPE, service restrictions, the clinical governance of Covid-19, PPI governance, and the provision of incentives. The community level is related to the professionalism of health workers and the feeling of being in the same boat as colleagues who have experienced similar fates. The state policy level is related to assisting health workers, providing PPE and disinfectants, tax subsidies, and limiting media coverage.

During the COVID-19 pandemic, healthcare professionals faced significant challenges in performing their duties. To continue working on the front line, it is essential for healthcare workers to prioritize their own health and safety and that of their families, while maintaining professionalism [5]. To survive the pandemic, resilience is a critical factor that must be cultivated. The notion of resilience, in the context of a pandemic, is contingent upon the confluence of individual capabilities and social functioning. According to Sarafino [28], social support is a form of comfort, care, appreciation, or assistance that one person provides to another. This concept aligns with Taylor's assertion that social support is meaningful when received from individuals who are close to the person, such as parents, partners, children, or other family members. Moreover, social support from coworkers is also crucial. Kim [29] suggests that individuals who receive medium and high levels of social support from colleagues or superiors (leaders) are more likely to survive and avoid burnout.

The practical implications of this study are relevant to healthcare managers, policymakers, and organizations in the development and implementation of policies and practices that foster the resilience of healthcare personnel. Future studies ought to concentrate on the creation, execution, and assessment of particular interventions intended to improve the resilience of healthcare providers. This may include psychosocial support programs, coping strategy training, and improved working conditions.

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