Work Engagement of Healthcare Workers during the COVID-19 Pandemic

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Abstract

During the COVID-19 Pandemic, the health care system is facing quite serious challenges. The high of work intensity, exposure, and the mental burden can affect the work engagement of healthcare workers. Due to the pandemic, studies reported that healthcare workers experienced deepened tension that caused several mental health problems resulting low work engagement. The purpose of this study was to identify the factors that affected the work engagement of healthcare workers during the COVID-19 Pandemic. This research was a scoping review study conducted in December 2022. The keywords used in this study were "work engagement," "healthcare worker," "healthcare," and "COVID-19" in the PubMed, Science Direct, and ProQuest databases. The criteria used were original articles written in English and published during 2020-2022. Outcome mapping based on PRISMA-ScR. A number of 19 articles were classified into job resources, personal resources, job demands, and demographic factors. Most of the articles were published in 2022 (52%), conducted in China (32%), had a cross-sectional research design (79%), and stated that healthcare workers are tied to work during the COVID-19 Pandemic (37%). The most common factors affecting workforce engagement found in the selected articles were job resources and job demands (47%). Healthcare workers' engagement level during the COVID-19 Pandemic was classified as moderate and high. The factors affecting healthcare workers' work engagement during the COVID-19 Pandemic were job resources, personal resources, job demands, and demographic factors. How to keep healthcare workers engaged in extreme situations like the COVID-19 Pandemic should be investigated in future research.

INTRODUCTION

During the COVID-19 Pandemic, the health care system is facing quite serious challenges. In dealing with the COVID-19 problem, health workers experience a fairly high risk of exposure to the COVID-19 pandemic. Healthcare workers demanded quick decisions and actions with limited resources (Willis et al., 2021). Not only that, healthcare workers are also at risk of experiencing direct physical and mental exhaustion during their work. The study used a systematic review method, which stated that the prevalence of COVID-19 among healthcare workers tested with PCR was 11% (Dzinamarira et al., 2021). Healthcare workers experience mental health problems, even sleep disturbances during the COVID-19 Pandemic (Shaukat N, Mansoor A and Razzak J, 2020). High work intensity, high risk of exposure to COVID-19 infection, and mental disorders can affect healthcare worker engagement (Miawati, Tukiran and Anggorodi, 2021).

Work engagement is mentioned as motivation and a positive thinking towards work, it is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002; Szilvassy and Širok, 2022) Vigor is a person's high energy and

mental ability to make adjustments when facing conditions that are not as expected at work. Dedication is associated with strong attachment, a sense of importance, and enthusiasm for work. Absorption is a condition where someone is in total concentration on work. To achieve company success, work engagement has an important role (Shuck and Herd, 2012). Employees bound to their organization will put more effort into their company, have fewer illnesses, have a high level of productivity, and also high commitment to the organization (Schaufeli et al., 2002). Work engagement is considered one of the most potent tools in measuring organizational achievement against vision, mission, and core values (Diab and Nagar, 2019).

Work engagement has attracted attention from various fields, especially in health services. Several previous studies have examined the healthcare workers engagement. Likewise, studies revealed that work engagement could improve the health service quality and the work performance of healthcare workers (Bakertzis and Myloni, 2021; Hyesun, 2021). When individuals engaged cognitively, healthcare workers will be in a good mood regarding work. Recent studies have shown that high enthusiasm and dedication are associated with reduced medical errors due to the willingness and ability of healthcare workers to comply with patient safety protocols (Loerbroks et al., 2022).

Facts on the ground showed that healthcare workers had a low engagement with their work. An earlier study in 2019 showed that the majority of nurses (60%) belong to a low level of work engagement (Diab and Nagar, 2019). Another study with doctor participants also showed the same result (55.8%) (Aminuddin, Pasinringi and Saleh, 2021). Low engagement of healthcare workers not only risks increasing organizational productivity but also poses significant risks to patient outcomes and quality of patient care (Diab and Nagar, 2019).

Healthcare worker engagement in providing health care has become increasingly important over time (David Bailey and Cardin, 2018). Healthcare worker engagement is very influential for healthcare workers and health service agencies in providing health services. So, it is necessary to know the factors that influence the work engagement of health workers, especially during a pandemic (Szilvassy and Širok, 2022). Previous study found that due to the nature of pandemic, high intensity work, high risk of exposure to COVID-19, and compromised mental health condition caused an alteration in health worker engagement (Shaukat N, Mansoor A and Razzak J, 2020). Thus, this research aimed to identify the factors that affect the work engagement of healthcare workers during the COVID-19 Pandemic.

METHOD

This study is a scoping review proposed by JBI (Joanna Briggs Institute) (Peters et al., 2020). A scoping review aims to categorize the literature on a topic, including identifying concepts and theories, as well as finding gaps in the literature (Peters et al., 2020). This research was conducted in December 2022. The keywords used were "work engagement," "healthcare worker," "healthcare," and "COVID-19" were linked using the Booleans "OR" and "AND." The databases used in this research are PubMed, Science Direct, and ProQuest. The inclusion criteria were an original article written in English, published during 2020-2022, and articles discussing factors affecting the work engagement of healthcare workers during the COVID-19 pandemic.

Scoping review research protocol was developed referes to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Peters et al., 2020). Articles from 3 databases were filtered based on predetermined inclusion criteria. The first step was filter the title and abstract of the article, then the full text of each article was checked for suitability. Information including author's name, year of publication, country of origin, and also study characteristics (setting, study design, significant findings, and results) was retrieved. Next, articles that met the requirements were synthesized using a narrative approach and descriptive analysis.

The factors are classified based on the Job Demands-Resources (JD-R) Model proposed Bakker and Demerouti. JD-R Model shows that two factors influence work involvement namely job demands and work resources (Bakker and Demerouti, 2007). Job demands consist of three aspects (physical, psychological, social, or organizational) that require business support or physical or psychological abilities. Examples were high work pressure, an unpleasant physical environment, and emotional burden that can come from interactions with colleagues. Job resources has the function of achieving work goals, reducing physical and psychological work demands, and stimulating growth, learning, and self-development, such as social support from colleagues and supervisors, performance feedback, skill variety, and autonomy, initiating the motivational process that leads to better work engagement and

performance. However, as the theory developed, Bakker and Demerouti (2008) added personal resources as one of the factors that can affect work engagement (Bakker and Demerouti, 2008). Personal resources are positive self-evaluations related to resilience and refer to an individual's ability to control and have a positive impact on their environment. Thus, the researcher classified the factors that affect work engagement into three major themes (job resources, personal resources, and job demands).

RESULT AND DISCUSSION

A total of 1,274 articles from 3 databases were screened in this study, with 197 articles from Science Direct, 36 articles from PubMed, and 1,041 articles from ProQuest. After 263 duplicate articles were removed, 934 articles were excluded

in phase one screening because, first, the title and abstract of the article did not match the research objectives; second, the article was not original; and third, the article was not published in English. In phase two screening, 58 articles were excluded because they did not match with criteria; first, the article participants were not healthcare workers, and second, the article results did not match the objectives of this study. 19 articles were obtained as the final result, matching the predetermined inclusion criteria (Fig.1). In the 19 articles analyzed, each explains the factors that affect the healthcare workers engagement during the COVID-19 Pandemic, which can be seen in Table 1 as follows.

Selected studies stated that healthcare workers were generally tied to work during pandemic of COVID-19. Since the first wave of COVID-19,
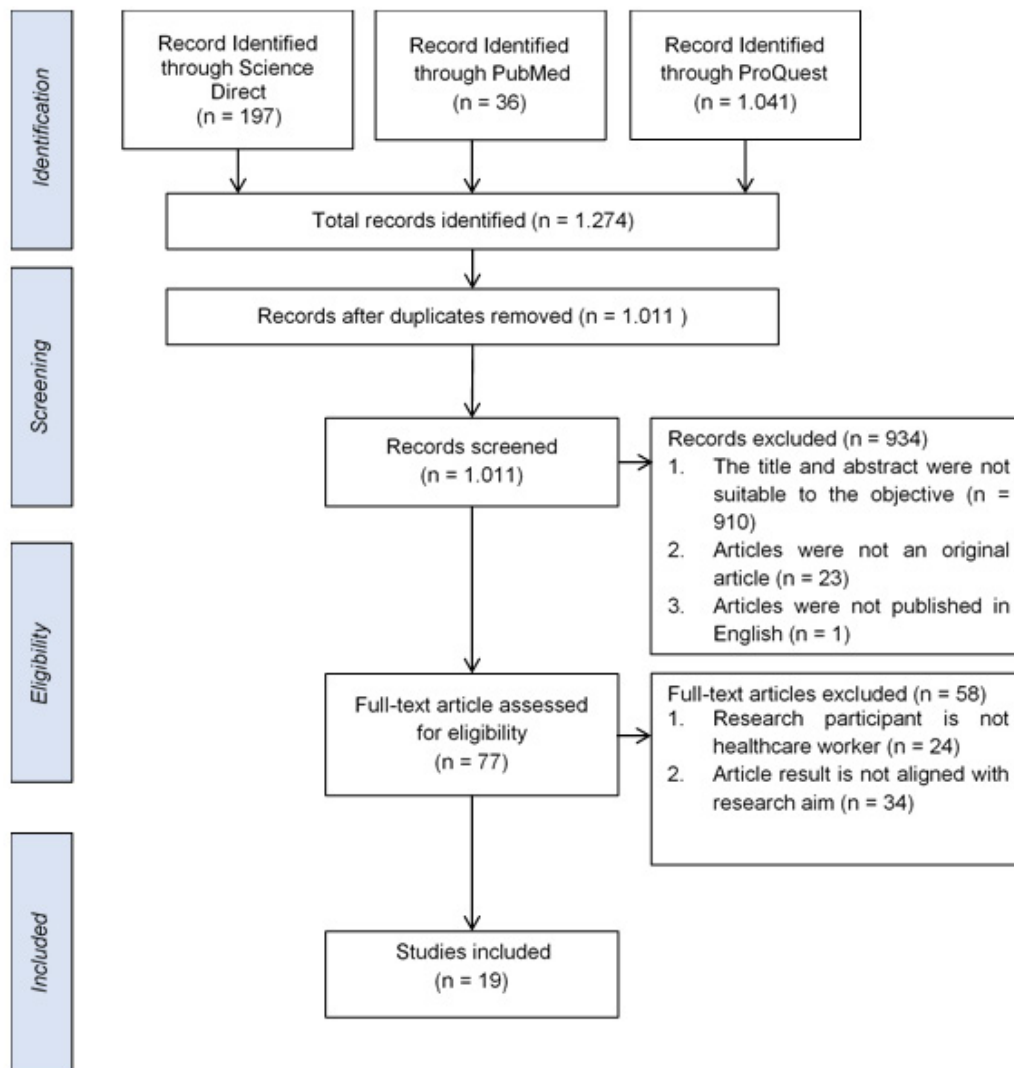

Figure 1. PRISMA-ScR Work Engagement of Healthcare Workers during the
COVID-19 Pandemic

Table 1. The Summary of Scoping Review

No	Author, Year	Country	Participant	Study Method	Result	
					Engagement Level of Health Worker	The Affecting Factor
1	Contreras, Abid, Govers, & Saman Elahi, 2021	Colombia	253 nurses from private hospital in Colombia	Cross-sectional study design	Not stated	**Job Resources:** Professional development and peer support (p<0.01) were signifantly and positively related to work engagement.
2	M. Zhang et al., 2021	China	1.040 nurses	Descriptive study with cross-sectional study design	The level of work engagement of Chinese frontline nurses was moderate.	**Job Demands:** Work engagement was negatively correlated with stress and workload (p<0.05). **Demographic Factors:** Factors affecting employment engagement were sociodemographic characteristics (marital status, belonging to rescue staff, and workplace).
3	N. Zhang, Xu, Li, & Xu, 2022	China	595 nurses	Cross-sectional study design	Not stated	**Job Demands:** Role overload has a negative correlation with work engagement (p < 0.001).
4	Cuartero-Castañer, Hidalgo-Andrade, & Cañas-Lerma, 2021	Republic of Ecuador	117 health worker in Quito (Ecuador)	Quantitative method with cross-sectional study design	The results showed that healthcare workers were engaged. 1. Vigor dimension with high category 2. The dedication dimension was high 3. The absorption dimension was high	**Personal Resources:** A positive correlation is shown between compassion satisfaction with vigor, dedication, and absorption. **Job Demands:** Compassion fatigue and burnout was negatively correlated with vigor, dedication, and absorption. **Job Resources:** Those with higher levels of vigor, absorption, and dedication are those who have received additional training in the past five years and who participate find they are paid commensurately.

No	Author, Year	Country	Participant	Study Method	Result	
					Engagement Level of Health Worker	The Affecting Factor
5	Allande-Cussó et al., 2021	Spain	192 nurses	Descriptive study with cross-sectional study design	Around 80% of the 192 nurses had moderate and high levels of work engagement, and the most common was high.	**Demographics factors:** Significant differences were found between levels of job engagement and gender, type of unit, and level of education (p<0.01)
6	H. Zhang, Zhao, Zou, Liu, & Gan, 2021	China	104 doctors	Observational study design	Not stated	**Job Resources:** Autonomy and work engagement were significantly associated (p<0.001). **Personal Resources:** Optimism was indirectly related to work engagement through autonomy.
7	Sanchez-Gomez, Sadovyy, & Breso, 2021	Spain	1.549 healthcare workers	Descriptive study with cross-sectional study design	Not stated	**Personal Resources:** Emotional intelligence and all aspects of work engagement were significantly associated.
8	Gómez-Salgado et al., 2021	Spain	1.459 healthcare workers	Descriptive study with cross-sectional study design	Work engagement was considered high.	**Job Demands:** Psychological stress was significantly associated with work engagement.
9	Wu et al., 2021	China	1.337 nurses	Cross-sectional study design	Not stated	**Job Demands:** Mental burden can be positively related to work engagement. Nurses with high workload and low self-esteem feel more engaged in their work.
10	Midje, Torp, & Øvergård, 2022	Norway	128 nursing staff - registered nurses and licensed and unlicensed nursing assistants	Cross-sectional study design	Not stated	**Job Resources:** Work engagement has a positive correlation with job resources. **Job Demands:** Work engagement has a negative correlation with job demands.

No	Author, Year	Country	Participant	Study Method	Result	
					Engagement Level of Health Worker	The Affecting Factor
11	Ngobeni & Dhanpat, 2022	South Africa	220 nurses work in three private hospital in Gauteng, South Africa	Quantitative method with cross-sectional study design	The average score for work engagement was 4.13. Nurses are often committed to their work.	**Job Resources:** Employees who successfully negotiate assignments, careers, and the flexibility tied to their jobs (p≤0.01)
12	Bernburg et al., 2022	German	171 German outpatient nurses	Quantitative method with cross-sectional study design	Most of the participants' work engagement marked by high enthusiasm, dedication, and moderate absorption. Thus, the overall level of work engagement can be described as highly likely.	**Job Demands:** Perceived stress and outpatient nurses' work engagement had a very weak negative correlation (p=0.002).
13	Liebenberg, Scholtz, & De Beer, 2022	South Africa	33 nurses on seven occasions (33 nurses × 7 occasions = 231; n = 231)	Quantitative method	Not stated	**Job Resources:** Daily work engagement was strongly correlated with the satisfaction of daily needs, autonomy, and competence.
14	Li, Mohamed, Mahomed, & Khan, 2022	China	448 healthcare workers	Cross-sectional study design	Not stated	**Job Resources:** A positive correlation was found between perceived organizational support and employee interest with employee engagement.
15	Chikobvu & Harunavamwe, 2022	South Africa	252 nurses of general hospital at the Mangaung Metropolitan district	Quantitative method with cross-sectional study design	Not stated	**Personal Resources:** Emotional intelligence has positive effect on work engagement through resilience but not statistically significant (p=0.157).

No	Author, Year	Country	Participant	Study Method	Result	
					Engagement Level of Health Worker	The Affecting Factor
16	Xu et al., 2022	China	849 in four public tertiary class A hospitals	Cross-sectional study design	Not stated	**Job Resources:** Satisfaction about basic needs has positive correlation with work engagement (p<0.01). **Job Demand**: Job satisfaction was positively correlated with work engagement (p<0.01) **Personal Resources**: Work motivation was positively correlated with work engagement (p<0.01).
17	Mukhlis, Al-Hawary, Linh, Hani, & Adnan, 2022	Malaysia	2384 muslim nurses in Malaysia	Descriptive study	Not stated	**Demographic Factors:** Religious capital significantly positively affected nurse engagement (p=0.83)
18	Rodwell, Gulyas, & Johnson, 2022	Australia	177 nurses and midwives	Cross-sectional study design	Not stated	**Personal Resources:** Psychological contract was positively related to attachment. Psychological contract breach has a negative relationship with attachment.
19	Courson et al., 2022	United State	107 nurses	Descriptive study with cross-sectional study design	The average engagement was at a moderate level of work engagement.	**Job Resources**: Knowledge related to COVID-19 and perception that the hospital provides adequate education had correlation with the engagement score (p<0.05). **Demographic Factors:** Age and unit type were correlated with engagement scores (p<0.0001). **Job Demands:** Caring for patients with COVID-19 negatively correlated with engagement scores (p<0.05).

healthcare worker engagement has been rated moderate and high (Allande-Cussó et al., 2021) This was due to the high workload, especially in extreme circumstances that differed from before (Giménez-Espert, Prado-Gascó and Soto-Rubio, 2020). Moreover, caused by the increased concern regarding the patient's well-being (Bernburg et al., 2022). However, healthcare workers will be more committed to work, increase self-realization, and be more involved in work because they are passionate about healing patients (Allande-Cussó et al., 2021). The level of work engagement which tends to be hight also reflected social responsibility related to caring for the population during outbreak (Allande-Cussó et al., 2021). Selected studies in China stated that healthcare workers receive much support from the government and the state (M. Zhang et al., 2021). Even so, variations in the level of employee engagement can vary depending on healthcare workers' behavior and level of commitment (H. Zhang et al., 2021).

There were many studies regarding the factors that affect the healthcare workers engagement during the COVID-19 Pandemic (n = 19). Factors found were classified based on JD-R model, which includes job resources, personal resources, and job demands. Several studies also show other variables outside the model, namely the demographic factors of healthcare workers.

Job resources were stated to be positively correlated and play an essential role in work engagement (Midje, Torp and Øvergård, 2022). Variables found include opportunities for growth (Contreras et al., 2021; Ngobeni and Dhanpat, 2022), organizational support (Zhang et al., 2022), peer support (Contreras et al., 2021; Li et al., 2022), additional training (Cuartero-Castañer, Hidalgo-Andrade and Cañas-Lerma, 2021), basic needs (H. Zhang et al., 2021; Liebenberg, Scholtz and De Beer, 2022; Ngobeni and Dhanpat, 2022; Xu et al., 2022), and salary (Cuartero-Castañer, Hidalgo-Andrade and Cañas-Lerma, 2021). The most frequently encountered variable in the selected studies was basic needs. Basic needs consist of the need for autonomy, competence, and also the need for relatedness. The higher the level of satisfaction with basic needs, the higher the level of work engagement of healthcare workers (Xu et al., 2022). It was negatively related to fatigue and the desire to resign (Trépanier et al., 2014). The need for autonomy was highlighted the most in the selected studies. Job autonomy related to the degrees of freedom and independence in work as well as the individual's discretion in planning work and determining procedures (van Dorssen-

Boog et al., 2020). Leadership has an important role in the workplace by building and establishing autonomy (H. Zhang et al., 2021). In addition, self-leadership must also be considered in establishing work autonomy. If healthcare workers can lead themselves, they can take better advantage of job autonomy. However, many types of work, one of which is healthcare workers, are not facilitated with full autonomy because many procedures and instructions must be followed (van Dorssen-Boog et al., 2020).

One of job resource related to the conditions was knowledge about COVID-19 (Courson et al., 2022). The fact that healthcare workers were at greater risk of exposure makes education related to COVID-19 one of the requirements that must be considered (Tabari et al., 2021). Selected studies stated that the type of education that has the most excellent and significant level of work engagement was in-service education. The effectiveness of training and education was confirmed by Tabari et al., (2021), it stated that it could increase participants' knowledge and skills, increasing the effectiveness in preventing COVID-19 (Tabari et al., 2021). In addition, by receiving education related to COVID-19, healthcare workers have less fear of exposed to COVID-19 (De los Santos and Labrague, 2021).

The following factor was personal resources. The variables found consisted of job satisfaction (Xu et al., 2022), optimism (H. Zhang et al., 2021), emotional intelligence (Sanchez-Gomez, Sadovyy and Breso, 2021; Chikobvu and Harunavamwe, 2022), motivation (Xu et al., 2022), psychological contract, and psychological contract breach (Rodwell, Gulyas and Johnson, 2022). The most commonly found variable was emotional intelligence. Previous research has suggested that healthcare workers with higher levels of emotional intelligence also have higher engagement scores (Pérez-Fuentes et al., 2018). Healthcare workers who lack emotional intelligence will be less able to cope with their job demands and will be more prone to burnout and reduced engagement, which will ultimately affect their well-being in the workplace (Nel, Jonker and Rabie, 2013). Healthcare workers with high levels of emotional intelligence can use their emotional abilities to recognize pandemic-related responses to cope with discomfort experienced during the COVID-19 Pandemic (Sanchez-Gomez, Sadovyy and Breso, 2021). In addition, a high level of emotional intelligence also showed that healthcare workers concentrated more on work and were more energetic, enthusiastic, proud, and liked to be challenged (Chikobvu and Harunavamwe,

2022).

Job demands had a negative correlation with work engagement (Midje, Torp and Øvergård, 2022). Variables found included mental load (Gómez-Salgado et al., 2021; M. Zhang et al., 2021; Wu et al., 2021; Bernburg et al., 2022), workload (H. Zhang et al., 2021; Wu et al., 2021; Zhang et al., 2022), and fatigue (Cuartero-Castañer, Hidalgo-Andrade and Cañas-Lerma, 2021). The variable that appeared the most in the selected studies was the mental burden. The mental burden experienced by healthcare workers can be caused by threats to individual health rights (Gómez-Salgado et al., 2021), caused by an increased risk of infection without adequate protective measures (M. Zhang et al., 2021). Besides that, healthcare workers were also afraid of passing the virus on to their families (Dubey et al., 2020). High workload during outbreak could also cause increased psychological stress for healthcare workers (Gómez-Salgado et al., 2021).

Another finding was that direct care for COVID-19 patients is negatively correlated with work engagement scores. This can be supported by the fact that healthcare workers treating CO-VID-19 patients had lower job satisfaction levels than others (Savitsky, Radomislensky and Hendel, 2021). Wu et al., (2021) showed that direct contact with COVID-19 patients makes healthcare workers have a higher mental worload than others. Even so, the challenges and dangers faced by healthcare workers made healthcare workers highly motivated (Savitsky, Radomislensky and Hendel, 2021).

Demographic factors were stated to affect work engagement potentially (M. Zhang et al., 2021). Some of the variables found in selected studies were related to demographic factors, namely age (Courson et al., 2022), gender (Allande-Cussó et al., 2021), an education level (Allande-Cussó et al., 2021), place of work including the type of unit (Allande-Cussó et al., 2021; M. Zhang et al., 2021; Courson et al., 2022), belonging to rescue staff (M. Zhang et al., 2021), religious capital (Mukhlis et al., 2022), and marital status (M. Zhang et al., 2021). The variable that appears the most regarding demographic factors in the selected studies was the place of work, including the unit type. Work climate was a determining factor in the level of work engagement. There were notable differences between each unit of healthcare workers perfoming their jobs (Allande-Cussó et al., 2021). Healthcare workers who work with patients with mild pneumonia who were infected with COVID-19 were collectively more attached to work than healthcare workers who work in isolation rooms (M. Zhang et al., 2021). This was because the recovery rate was higher, thus displaying lower job frustration, leading to higher job involvement. Even so, other selected studies did not classify the level of engagement of healthcare workers in each unit.

Health services are encouraged to maintain the level of engagement of healthcare workers. From the scoping review studies that have been carried out, the researchers recommend that first, health services should consider providing training related to self-leadership to increase the work autonomy of healthcare workers. Second, health services should provide psychological intervention and assistance to healthcare workers to reduce the negative impact of psychological stress experienced during a pandemic. Intervention or assistance can be carried out online or face-to-face. Third, health services must ensure the safety of healthcare workers by providing personal protective equipment (PPE) while on duty to reduce the risk of being infected with COVID-19.

CONCLUSION

This study provides insight into the factors affecting healthcare worker engagement during the COVID-19 pandemic. As a result, the level of healthcare workers' engagement during outbreak was at moderate and high levels. Research shows that four factors affected healthcare worker engagement during the COVID-19 pandemic including job resources, personal resources, job demands, and demographic factors. The most common factors identified in the selected articles were job resources and job demands. How to keep healthcare workers engaged in extreme situations like the COVID-19 Pandemic should be investigated in future research.

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