Role of Resilience to Improving the Performance of Health Workers: A Systematic Review

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ABSTRACT
Resilience in healthcare is an individual's capacity and also a support system that is owned to help healthcare to overcome difficulties, demands, and sources of stress in the workplace. If healthcare can deal with pressure in the work environment and can provide optimal service, it can be said that the workforce has high resilience. To find out how the role of resilience in improving job performance in healthcare. This systematic review is based on Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA). The databases used in this study include Scopus, Science Direct, PubMed, and Pro Quest, limited to publications from 2016 to 2020 and full-text articles. The keywords used are "healthcare" AND "Resilience" AND "job performance" OR "work performance". This systematic review uses 12 articles that fit the inclusion criteria. This systematic review proves the role of resilience in improving the job performance of healthcare. There are eleven out of twelve studies that prove that resilience directly has a positive and significant correlation to the performance. In addition to playing a direct role, resilience also acts as a mediator both in full and in part between other independent variables with performance. Further research can be done in the form of developing resilience-based performance models as an effort to increase the productivity of nurses in Indonesia.

Keywords : Resilience, Performance, Healthcare.

BACKGROUND

Challenges, high workload, fatigue, internal and external stressors often occur in health workers. A health worker must be able to balance various stressors found inside or outside the work environment with the services that must be provided by professional health workers. The problem of work stress is an issue that needs attention because it will have an impact on productivity and performance. When stressors in the work environment occur, a person needs the ability to deal effectively with them, one of which is self-defense called resilience. Previous research revealed that someone who has a good level of resilience will produce a good performance.

Resilience is defined as the process of negotiating, managing, and adapting to significant or traumatic sources of stress where assets and resources within individuals, life, and environment facilitate the ability to adapt and rise to deal with various inconveniences (Windle & Bennett, 2012). Resilience is the ability to overcome and rise from trauma, accompanied by a positive and optimistic attitude towards the future (Turner, 2014). Resilience in health workers is defined as a personal capacity that helps health workers to overcome difficulties and demands in the workplace (Delgado, Upton, Ranse, Furness, & Foster, 2017).

Based on the description above, the purpose of the preparation of this systematic review is to review and systematically evidence the role of resilience to improve the performance of health workers.

METHODS

Systematic reviews are based on Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA). The database used is Scopus, Science Direct, PubMed, Proquest, and Emerald and is limited to publications from 2016 to 2020. The keywords used in the article search are "healthcare" AND "Resilience" AND "job performance" OR "work performance ". The process of searching for articles is conducted from April to May 2020 and the selected article is a research article that uses a cross-sectional method and can answer this systematic review question. Also, only articles written in English are used in this systematic review. After several articles are found, the composer conducts the analysis and synthesis of articles by specified inclusion and exclusion criteria. The inclusion criteria in this systematic review are (1) research that discusses the effect or role of resilience on performance in health workers, (2) original research, and (3) using health workers as research subjects. Exclusion criteria in this systematic review are (1) the results of the study do not explain the role of resilience to performance in health workers and (2) are theses, dissertations, abstracts, or part of the conference.
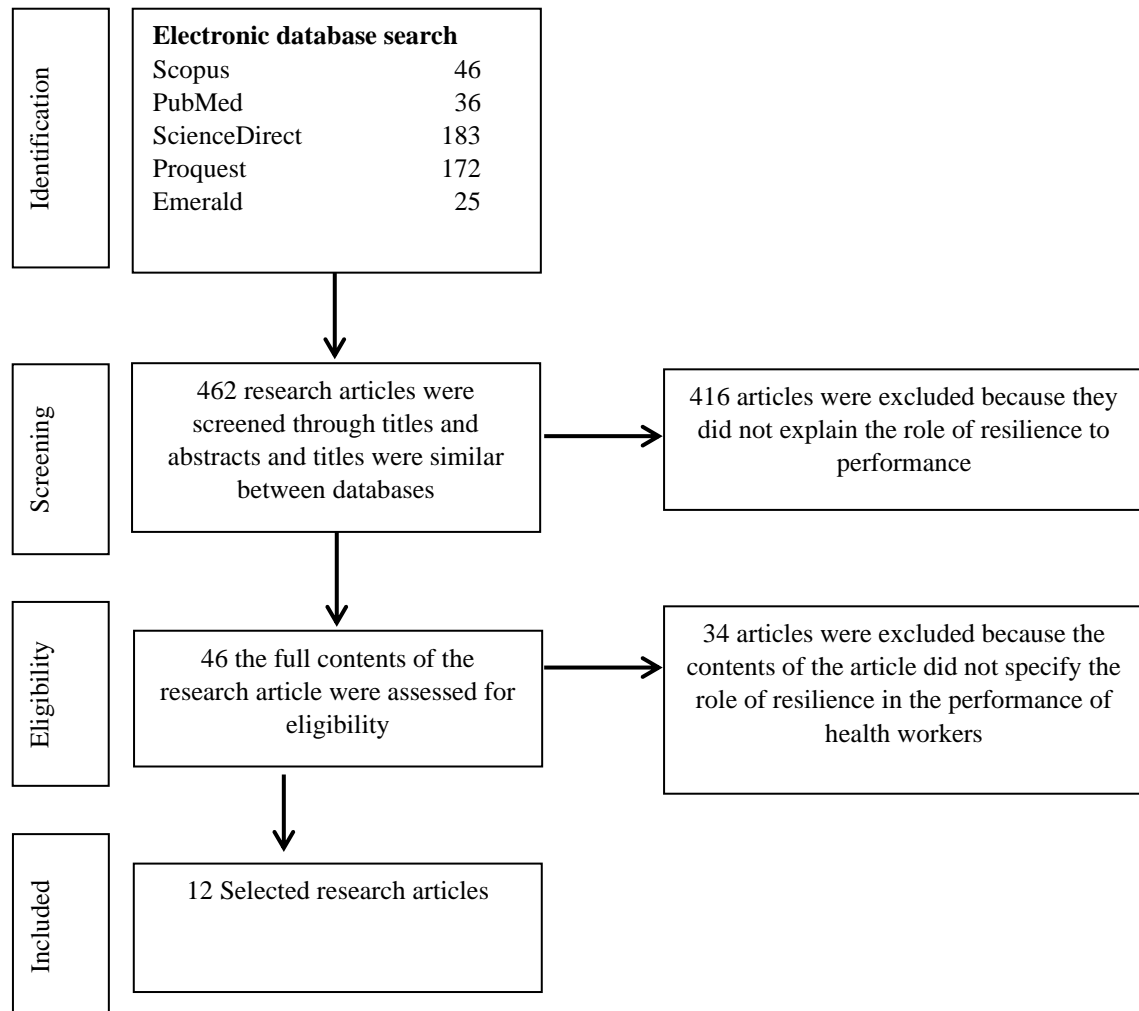
Research data elements were extracted to evaluate the effectiveness of resilience to improve work performance among health workers. Data extraction used consisted of: title, research design, samples, research variables, theoretical framework, research instruments, data analysis, and research results. If there are differences or disagreements have been resolved through discussion with all authors.

RESULTS

An initial literature search resulted in 462 articles: 46 articles from Scopus, 36 articles from PubMed, 183 articles from ScienceDirect, 172 articles from Proquest, and 25 articles from Emerald. The process of reviewing selected articles consists of three stages: title review, abstract review, and review of research content. Forty-six articles were selected for a review of the contents of the study, and 34 of the 46 articles were excluded

because the contents of the article did not specify the role of resilience in performance of health workers. Twelve articles that fit the inclusion and exclusion criteria were retained. The process of extracting and filtering articles is summarized in Figure 1.

Figure 1. Flow diagram and article selection

	Electronic database search	
Identification	Scopus	46
	PubMed	36
	ScienceDirect	183
	Proquest	172
	Emerald	25

Screening — 462 research articles were screened through titles and abstracts and titles were similar between databases → 416 articles were excluded because they did not explain the role of resilience to performance

Eligibility — 46 the full contents of the research article were assessed for eligibility → 34 articles were excluded because the contents of the article did not specify the role of resilience in the performance of health workers

Included — 12 Selected research articles

Research articles are limited from 2016 to 2020. Two articles are published in 2016, two articles are published in 2017, five articles are published in 2018, two articles are published in 2019, and one article is published in 2020. All research articles are quantitative research with a cross-sectional research design. All research uses instrument measurement tools. There are several different measurement tools for measuring resilience. Resilience measurement instruments used include Resilience at Work-Sinhala Scale (RAW-S) developed into the English version (Walpita et al., n.d.), *psychological resilience questionnaire* (Hou et al., 2020)*, Resilience questionnaire that has been developed by* Wagnild and Young (1993) (Nasurdin & Ling, 2018), *The Korean resilience tool (K-CD-RISC)* developed by Conek dan Davidson (Min & Park, 2017; Park & Chung, 2016) *Resilience questionnaire* developed by researchers (Shikhakbari & Ziaaddini, 2018; Sung, 2018), Resilience and performance questionnaires developed by Park dan Choi (Kim, Nam, Kwon, & Ph, 2017), *Resilience Scale tool* (Baek, Lee, Joo, Lee, & Choi, 2010) (Sung, 2018), *Employee resilience* (Wang et al., 2014) (McNeil, Bartram, Cregan,

Ellis, & Cooke, 2019), *The Scale of medical staff resilience* (Liu RH, Zou Y, Wang J & Wang, 2019), and *Resilience scale for adults* Friborg et al.' (2003) (Williams et al., 2016) Eleven studies were conducted in hospitals with nurse participants and there was only one study that used residents as research respondents (Hou et al., 2020). The total population in this study was 3,908 people consisting of 2,762 nurses and 1,146 residents. Research sites were carried out in various countries, namely Sri Lanka, China, Malaysia, Korea, Iran, Australia, and Canada.

This systematic review research study identifies the role of resilience in improving the performance of health workers. Eleven of the twelve studies have shown that resilience is positively and significantly correlated with the performance of health workers. In addition to playing a direct role, resilience also acts as a mediator between independent variables and performance. The variable that is fully mediated by resilience in improving job performance is Nursing Occupational Risk. Whereas the variable mediated partly by resilience in increasing job performance is terminal care stress. The results of this study can be seen in Table 1.

Table 1. Characteristics of research articles

Research Title	Research methods	Results
High resilience leads to better work performance in nurses: Evidence from South Asia	**Design**: Cross sectional **Sample**: 230 nurses in Sri Lanka **Variables**: Resilience, work performance **Theoretical framework**: Not explained **Instrument**: Resilience at Work - Sinhala Scale (RAW-S) developed into the English version 6-Dimension (6-D) Nursing Performance Scale, which has been developed by Schwirian (1978) **Analysis**: Bivariate correlation and linear regression Analysis, ordinary least squares method	The total score of resilience showed a significant and strong positive correlation with all subdomains in nursing performance and also with overall performance (p < 0.05). A high level of resilience at work is associated with better performance for nurses.
The effects of job satisfaction and psychological resilience on job performance among residents of the standardized residency training: a nationwide study in China	**Design**: Cross-sectional **Sample**: 1146 residents from 9 hospitals in China **Variables**: Job satisfaction, psychological resilience, job performance **Theoretical framework**: Not explained **Instrument**: Job satisfaction, psychological resilience, and job performance questionnaire **Analysis**: Bivariate correlation, hierarchical regression analysis, ordinary least squares method	Resilience has the highest prediction accuracy compared to the other three subscales, namely work pressure, doctor-patient conflict, intrinsic job satisfaction. This study shows that intrinsic job satisfaction and psychological resilience have a significant effect on performance.
The Role Of Psychological Capital On Nursing Performance In The Context Of Medical	**Design**: Cross-sectional **Sample**: 639 nurses in Malaysia **Variables**: Psychological capital dimensions (self-efficacy, hope, resilience, and optimism) and nurses' job performance (task performance	Resilience has no relationship with the two dimensions of performance, namely task performance, and

Research Title	Research methods	Results
Tourism In Malaysia	and contextual performance) **Theoretical framework**: Not explained **Instrument**: Self-efficacy Chen et al. (2001) Hope Snyder et al. (1996) Resilience Wagnild and Young (1993) Optimism Scheier and Carver (1985) Williams and Anderson task performance (1991) Contextual performance Bott et al. (2003) **Analysis**: Partial Least Squares (PLS)	contextual performance.
Influence of Emotional Labor, Communication Competence and Resilience on Nursing Performance in University Hospital Nurses	**Design**: Cross-sectional **Sample**: 250 nurses **Variables**: Emotional Labor, Communication Competence, Resilience and Nursing Performance **Theoretical framework**: Not explained **Instrument**: Emotional labor, Morris, Feldman's tools Global Interpersonal Communication Competence Scale (GICC) The Korean resilience tool (K-CD-RISC) developed by Conek and Davidson Nursing Performance developed by Park **Analysis**: Multiple regression	There is a significant relationship between resilience and nursing performance.
The mediator role of social phobia in the association between resiliency and job performance among nurses of Ali Ibn Abi Taleb hospital of Rafsanjan, Iran	**Design**: Cross-sectional **Sample**: 174 nurses **Variables**: Resilience, job performance, and social phobia **Theoretical framework**: Not explained **Instrument**: Three standard questionnaires were resilience, job performance, and social phobia **Analysis**: Partial least squares (PLS), Path analysis	The results showed that resilience had a significant effect on job performance ($p < 0.05$), however, the effect of social phobia on job performance was not significant. Therefore, social phobia does not mediate the relationship between resilience and performance.
Mediating Effects of Empathy and Resilience on the Relationship between Terminal Care Stress and Performance for Nurses in a Tertiary Hospital	**Design**: Cross-sectional **Sample**: 218 nurses **Variables**: Empathy, Resilience, Terminal Care Stress, Performance **Theoretical framework**: Not explained **Instrument**: The Empathy Questionnaire developed by Lee Terminal Care Stress Questionnaire developed by Lee Resilience and performance questionnaires developed by Park and Choi	Through this study, it was found that terminal care stress has a negative correlation with empathy competence, resilience, and terminal care performance. Empathy and resilience have a positive correlation with terminal care performance.

Research Title	Research methods	Results
	Analysis: Descriptive statistics, t-test, ANOVA, Pearson's correlation coefficients, and multiple regression	Empathy fully mediates the relationship between terminal care stress and performance, while resilience mediates part of the relationship between terminal care stress and performance.
Impact of Role Conflict, Self-efficacy, and Resilience on Nursing Task Performance of Emergency Department Nurses	**Design**: Cross-sectional **Sample**: 140 emergency nurses **Variables**: Role conflict, self-efficacy, resilience, nursing task performance **Theoretical framework**: Not explained **Instrument**: Pyeong Jeong-gu's nursing work abilities (Paik, Han, & Lee, 2005) Role conflict of nurses (Kim & Park, 1995) Self-efficacy measurement tool (Sherer et al., 1982) Resilience Scale tool (Baek, Lee, Joo, Lee, & Choi, 2010) Nursing Performance **Analysis**: Stepwise multiple regression	*Nursing Task Performance is positively correlated with role conflict, self-efficacy, and resilience. Self-efficacy, role conflict, clinical experience in the ER.* *Resilience is a significant predictor of nursing performance.*
Caring for aged people: The influence of personal resilience and workplace climate on 'doing good' and 'feeling good'	**Design:** *Cross-sectional* **Sample**: 194 nurses **Variables**: *Resilience, social climate, quality of care* **Theoretical framework:** *The moderated mediation model* **Instrument**: *Workplace-related well-being* (Demerouti & Bakker, 2008) *Quality of care* (Bartram, Casimir, Djurkovic, Leggat, & Stanton, 2012) *Employee resilience* (Wang et al., 2014) *Social climate* (Prieto & Santana, 2012) **Analysis:** *Multiple regression*	High personal endurance positively influences the quality of care. The quality of care is also important as a mediating variable because providing channels through high personal endurance can foster well-being, especially in a supportive climate. The results of this study support the argument that "doing good" leads to "feeling good"
The Influence of Job Stress and Ego-Resilience on Nursing Performance New Nurse In Secondary Hospitals	**Design**: Cross-sectional **Sample**: 198 nurses **Variables**: Job Stress, Ego-Resilience, Nursing Performance **Theoretical framework**: Not explained **Instrument**: Fit the nurse's job stress scale Connor Davidson Resilience Scale (CD-RISC) developed by Connor and Davidson The nursing work performance measurement	This research shows that there is a negative correlation between work stress and nursing performance, where if work stress increases it will make the performance less and vice versa. There is a positive correlation between ego

Research Title	Research methods	Results
	tool developed by Park **Analysis**: Hierarchical regression analysis	resilience and nursing performance.
Mediating Effect of Resilience on Nursing Occupational Risk and Job Performance in Nurses	**Design**: Cross-sectional **Sample**: 406 nurses **Variables**: Nursing Occupational Risk, resilience and job performance **Theoretical framework**: Not explained **Instrument**: Occupational risk assessment questionnaire The Scale of medical staff resilience The job performance questionnaire **Analysis**: not explained	In this study, the results show that there is a positive correlation between clinical nurse resilience with job performance (P <0.05). Resilience mediates the relationship between Nursing Occupational Risk and job performance. The researcher also concluded that by increasing nurses' resilience, they would be able to effectively increase nurse job performance.
Influence of social support and resilience on the nurse job performance	**Design**: Cross-sectional **Sample**: 183 nurses **Variables**: Social support, the resilience of nurses, nurses job performance **Theoretical framework**: Not explained **Instrument**: Social support questioner Resilience of nurses questioner Nurses job performance questioner **Analysis**: Pearson's correlation coefficient and stepwise multiple regression analysis	*Nurse job performance has a significant positive correlation with social support and resilience with the variable that has the biggest effect, namely resilience.*
Resilience and organisational empowerment among long-term care nurses: effects on patient care and absenteeism	**Design**: Cross-sectional **Sample**: 130 nurses **Variables**: Resilience of nurses, organizational empowerment, quality of care, perceptions of resident personhood and absenteeism. **Theoretical framework**: Not explained **Instrument**: Self-reported absenteeism Resilience scale for adults Friborg et al. '(2003) Personhood in dementia questionnaire (PDQ) Hunter et al. '(2013) Modified organizational empowerment scale (OES) Matthews et al. '(2003) Quality of care questionnaire **Analysis**: Regression analysis	Nurses with good resilience are more likely to have a higher quality of care. Resilience does not predict absence. Organizational empowerment cannot predict resilience. Resilience is important in nurses who provide care in the long term (long term care)

DISCUSSION

In conducting this systematic review, twelve articles of this study have been evaluated to find out how the role of resilience to improve performance in health workers. Through this systematic review, we try to show that eleven research articles have a positive role of resilience to improve performance in health workers, and there is only one research article that shows that resilience does not correlate with performance in both task performance and contextual performance (Nasurdin & Ling, 2018). The role of resilience directly can make health workers more easily adapt to all changes, difficulties, and challenges at work and also allows them to recover quickly from previous conditions and bounce back positively by utilizing positive capabilities possessed, to produce better performance continuously. Resilience is the result of the accumulation of various factors and characteristics possessed by individuals where these factors can be a predisposition to "protect" or put the individual "at-risk" that causes an individual to become resilient or maladapted (Garcia-Dia, DiNapoli, Garcia-Ona, Jakubowski, & O'Flaherty, 2013). Many inconvenient events in the work environment will pose a significant threat to the resilience of nursing staff, such as unpredictable workloads, fatigue, lack of resources, bullying at work, and lack of capacity that can affect performance where one of them is service to patients (Cusack et al., 2016). Therefore, it is very important to build and strengthen resilience in the work environment.

Resilience can be used by individuals to solve problems (overcoming), as strength and ability to face and pass problems (Steering through), rise from uncomfortable conditions (bounce back), and to be tough or immune (reaching out resilience) (Reivich & Shatte, 2002). In the work environment, health workers are not free from various problems and severe challenges. By analyzing and changing perspectives and thinking patterns more positively and adaptively and increasing the resources of individuals to control themselves and overcome problems without feeling burdened and negative, using adaptive coping, is a strategy that can be used in dealing with problems. Thus health workers will remain productive, motivated, and happy even though faced with various problems or challenges in the work environment.

In addition to having a direct role in improving the performance of health workers, resilience has a mediating effect between other independent variables and performance. Resilience can act as full or partial mediators. Resilience can have a full mediating effect if the other independent variables have no direct relationship to performance but must be through or mediated by resilience. Nursing Occupational Risk can affect positive outcomes on performance by influencing resilience (Min & Park, 2017), an example of the full mediating effect of resilience on other independent variables. Besides, resilience can also be a partial mediator, that is, if the independent variable can directly affect performance and can also influence through resilience mediation. An example of the mediating effect of some resilience is that terminal care stress has a negative correlation with empathy competence, resilience, and terminal care performance. However, empathy competence and resilience have a positive correlation with terminal care performance. Thus, to improve terminal care stress can affect positively on terminal care performance by influencing resilience and empathy competence (Kim et al., 2017).

CONCLUSION

The results of a systematic review show that resilience has an important role to help improve performance among health workers. Resilience can improve performance directly without intermediating other variables and also acting as a mediator among other variables

to improve the performance of health workers both giving the effect of full and partial mediation. Resilience can be used by individuals to solve problems, strengths and abilities in dealing with and overcoming problems, rising from uncomfortable conditions, and to be resilient or invulnerable, so that health workers will remain productive, produce a good performance, be motivated, and be happy even if confronted with various problems or challenges in the work environment. Thus, resilience can be used as a strategy to help health workers become more resilient in dealing with all problems, challenges, and difficulties in the work environment so that they can produce a good performance and good work productivity.

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