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Meta-Analysis
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The Relationship between Social Capital and Burnout in Energy Health Professionals: A Meta-Analysis

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ABSTRACT

Background: Social capital is referred to as public resources and capital that can be accessed through social relationships and social involvement of the community to work together to achieve common goals in various groups and organizations. Burnout Syndrome experienced by health workers is a situation when health workers show behavior such as giving unpleasant responses to patients, delaying work, getting easily angry when colleagues or patients ask simple questions, complaining of feeling tired and dizzy quickly and worse, not caring about work and surrounding conditions. This research aims to estimate the relationship between social capital and burnout in professional health workers.
Subjects and Method: This research is a systematic review and meta-analysis research using the PRISMA diagram. Article searches were carried out based on the PICO Model eligibility criteria. P= Health workers; I= Social capital; C= Low social capital; O= Fatigue. The articles used come from 3 databases, namely: PubMed, Google Scholar, and ScienceDirect. With keywords including "social capital" AND "burnout" AND "health workers" AND "cross section study". Filtered articles that met the requirements were analyzed using the RevMan 5.3 application.
Results: A total of 11 case-control observational research articles as a source for meta-analysis of the relationship between social capital and burnout in professional health workers. This research shows that health workers with low social capital have a risk of experiencing burnout 1.86 times compared to health workers with high social capital, and the results are statistically significant (aOR= 1.86; 95% CI= 1.09 to 3.17; p< 0.02). Heterogeneity of research data shows I2= 89% so that the data distribution is declared heterogeneous (random effect model).
Conclusion: Meta-analysis of 11 cross-sectional studies concluded that social capital increases burnout in health workers.

Keywords: Social capital, burnout, health workers.

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BACKGROUND

Health workers are required to be the main actors needed by their patients, who can be sympathetic, always attentive, focused and warm to patients. Excessive workload physically and mentally, namely having to do a lot of work which is a source of stress at work. The impact of excessive workload will be burnout (Rahayu et al., 2021)

Burnout Syndrome experienced by health workers is a situation when health workers show behavior such as giving unpleasant responses to patients, delaying work, getting easily angry when colleagues or patients ask simple questions, complaining of feeling tired and dizzy quickly and worse, not caring about work and surrounding conditions (Kowalski et al., 2010)

The most visible impact of burnout is decreased performance and service quality. Burnout and stress sufferers both experience problems, especially at work, but their responses are different. Prolonged stress can potentially lead to burnout, while the burnout conditions experienced by workers are not necessarily caused by stress. Burnout in nurses is associated with lower patient safety (Syamsiah & Saputri, 2023).

Burnout also has an economic cost because in addition to reducing the quality of patient care at home, fluctuating requires ongoing instruction from new employees. Consequently, fatigue prevention is an important part of hospital cost and risk management and requires knowledge of the determinants of fatigue. Several factors, such as self-efficacy and sense of meaningfulness, have been identified as being associated with an individual's risk for developing burnout (Sidiq, 2019).

Social capital is referred to as public resources and capital that can be accessed through social relationships and social involvement of the community to work together to achieve common goals in various groups and organizations. Social capital can be considered a protective factor against emotional exhaustion in health workers. Social capital and burnout relate to the amount and quality of shared values and mutual trust within the organization (Rupita, 2022).

Social capital itself is measured on the basis of three main elements, namely trust, social norms and reciprocity, as well as social structure and networks. Trust is the essence of social capital and is an indication of a society's potential readiness to cooperate with one another. Trust in other people is a key factor in forming various types of participation (Fena Ulfa Aulia, 2021).

Apart from that, other more recent research was conducted, namely exploring the determinants of burnout (fatigue) such as demographics, socio-economics, and individual social capital. Studies on these interactions can have a positive impact in the form of revealing the potential relationship between social capital and burnout in health workers so that prevention program guidelines can be designed that are more targeted in providing better clinical care practices (Issalillah et al., 2021).

Based on the background above and several similar previous research findings regarding the relationship between social capital and burnout in professional health workers. So researchers are interested in conducting research using a systematic review and meta-analysis which can summarize several results of primary studies or previous research with a systematic search to combine the results and get more precise estimates to draw new conclusions. This research aims to estimate the relationship between social capital and burnout in professional health workers.

SUBJECTS AND METHOD

1. Study Design

This research is a systematic review and meta-analysis research using the PRISMA diagram. Article searches were carried out based on the PICO Model eligibility criteria. P= Health workers; I= Social capital; C= Low social capital; O= Fatigue. The articles used come from 3 databases, namely: PubMed, Google Scholar, and ScienceDirect. With keywords including "social capital" AND "burnout" AND "health workers" AND "cross section study".

2. Five Steps of Meta-Analysis

Meta analysis was carried out in the following 5 steps:

1) Formulate PICO format research questions (Population, Intervention, Comparison, and Outcome).
2) Search for primary study articles from various electronic and non-electronic databases such as PubMed, Science Direct, Google Scholar, and Scopus.
3) Carrying out screening determines inclusion and exclusion criteria and carries out critical assessments.
4) Extract primary study results data and synthesize effect estimates using the Revman application.
5) Interpret the results and draw conclusions.

3. Inclusion Criteria

Full paper article with cross-sectional study, research subjects are manufacturing industry workers, the relationship measure used is the adjusted Odds Ratio (aOR), the research outcome is burnout.

4. Exclusion Criteria

Statistical results are reported in the form of bivariate analysis, articles published in languages other than English.

5. Operational Definition of Variable

Social capital: Resources, actual or virtual, that accumulate in an individual or group because they have a long-lasting network of reciprocal relationships of acquaintance and recognition that are more or less institutionalized. Social capital is a work network that is dynamic and not natural. Consciously or unconsciously, social capital can produce social relationships directly or indirectly in the short and long term (Kusuma et al., 2013).

Health Worker: Someone who has knowledge and skills in the health sector and someone who dedicates themselves to the health sector. Health workers are the most important component in efforts to improve health status by being at the forefront of the health sector (Rhamdani & Wartono, 2019).

Burnout: A syndrome that develops gradually as a result of dissatisfaction with one's job, where burnout progresses to physical exhaustion and emotional exhaustion which ultimately results in apathy. From various expert opinions, it can be concluded that burnout is a syndrome that develops gradually due to stressors in the workplace which ultimately results in emotional exhaustion, depersonalization, and a reduced sense of personal achievement (Kowalski et al., 2010).

6. Instrument

Quality assessment in this study used a critical appraisal checklist from the Cross Sectional Study Checklist published by CEBM.

7. Data Analysis

The articles in this research were collected according to the PRISMA flow diagram and analyzed using the Review Manager 5.3 application. The analysis was carried out by calculating the effect size and heterogeneity consistency value (I2) of the selected research results.

RESULTS

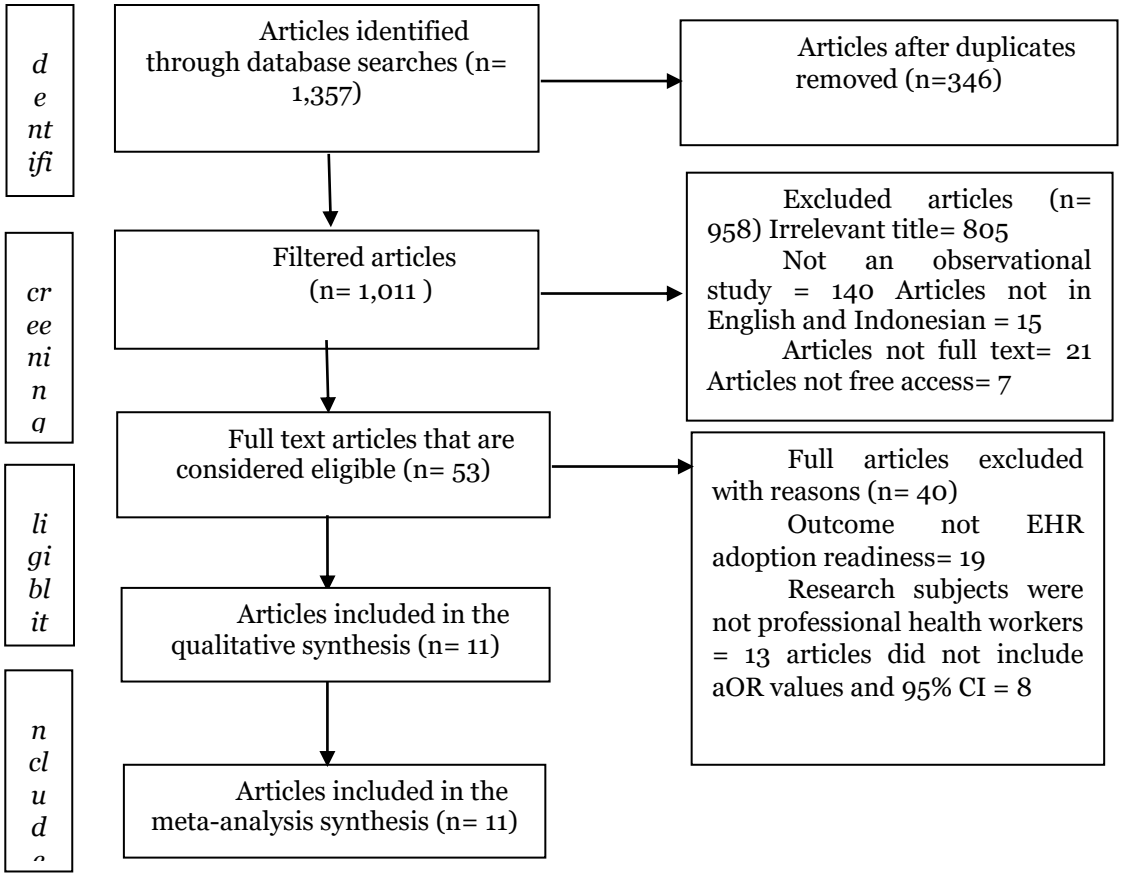

Figure 4.1 PRISMA flow chart diagram

Figure 4.2 Map of Research Area

Table 4. 1 Results of quality assessment of case-control studies on the relationship between social capital and burnout in health workers

Author (Year)	Total
Anastasiadis (2018)	14
Bogaert (2009)	14
Bogaert (2013)	14
Bogaert (2014)	14
Chamberlain (2016)	14
Driller (2010)	14
Farahbod (2014)	14
Janssens (2018)	14
Kowalski (2009)	14
Murayama (2020)	14
Read (2015)	14

Description of question criteria:

1. Formulation of questions with PICO:
Are the population, intervention, comparison and outcome in the primary study the same as the population in the PICO meta-analysis?
2. Methods for selecting research subjects:
- Descriptive cross-sectional study (prevalence): Was the sample randomly selected?
- Analytical cross-sectional studies: Was the sample selected randomly or purposively?

3. Methods for measuring comparison (intervention) and outcome variables (outcome):
- Are the exposure/intervention and outcome variables measured with the same instruments (measuring tools) in all primary studies?
- If the variable is measured on a categorical scale, are the cutoffs or categories used the same between primary studies?

4. Design-related bias
- What is the Response Rate?
- Is non-response related to outcome?

5. Methods for controlling confusion
- Is there any ambiguity in the results/ conclusions of the primary study?
- Have primary study researchers used appropriate methods to control the influence of confounding?

6. Statistical analysis methods
- In cross-sectional studies, is a multivariate analysis carried out?
- Multivariate analysis includes multiple linear regression analysis, multiple logistic regression analysis, Cox regression analysis.
- Whether the primary study reports effect sizes or associations resulting from multivariate analysis (e.g., adjusted OR, adjusted regression coefficient).

7. Conflict of interest: Is there a conflict of interest with the research sponsor?

Description of answer score:

1. If the answer to one question is "Yes", then give a score of "2" to that question.
2. If there is one item for which the answer is "No", then give a score of "1" to that question.
3. If the answer to one question is "No", then give a score of "0" to that question.

After assessing the quality of the research, 11 articles were obtained with a cross-sectional study design which will be used as a source for meta-analysis of the relationship between social capital and burnout in professional health workers. The articles were then extracted and summarized according to the research PICO.

Table 4. 2 Description of primary social capital studies included in the meta-analysis

Author (Year)	Country	Sample	Population	Intervention	Comparison	Outcome
Anastasiadis (2018)	Cyprus	104	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Read (2015)	Canada	190	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Chamberlain (2016)	Canada	1,224	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Bogaert (2009)	Belgium	546	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Bogaert (2014)	Belgium	709	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Kowalski (2009)	German	1,325	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Bogaert (2013)	Dutch	1,108	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Driller (2011)	German	2,644	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Janssens (2018)	Belgium	473	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Murayama (2020)	Japan	1,171	Health workers	Low social capital	High social capital	Fatigue (Burnout)
Farahbod (2014)	Iran	214	Health workers	Low social capital	High social capital	Fatigue (Burnout)

Based on Table 4.2, a description of primary research on the influence of noise on noise induced hearing loss, a meta-analysis of 11 articles with varying research locations, namely from Cyprus, Canada, Germany, Japan, Iran, the Netherlands, Belgium with a total sample of 10,044.

Similarities were found in these studies, namely cross-sectional research design, research subjects namely health workers, interventions provided with low social capital and high social capital. In this study there were also differences in the number of samples, the smallest was 104, and the largest was 2,644.

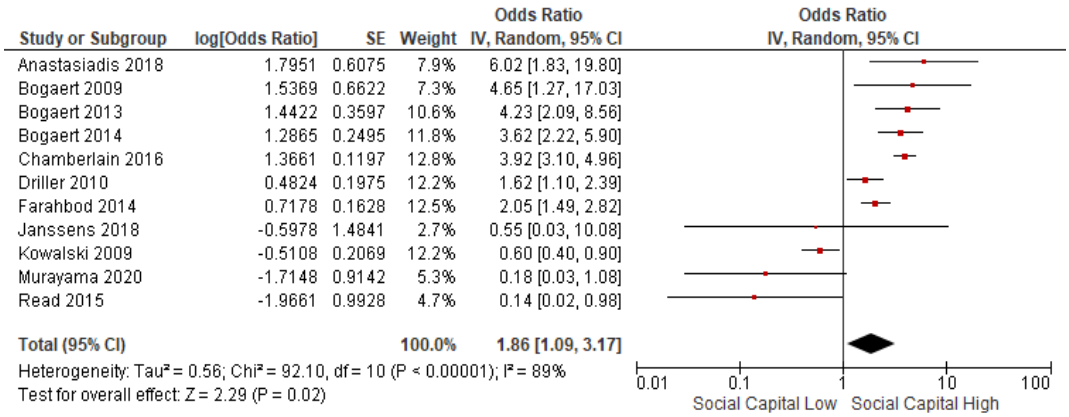

Figure 4. 3 Forest plot of the relationship between social capital and burnout in health workers

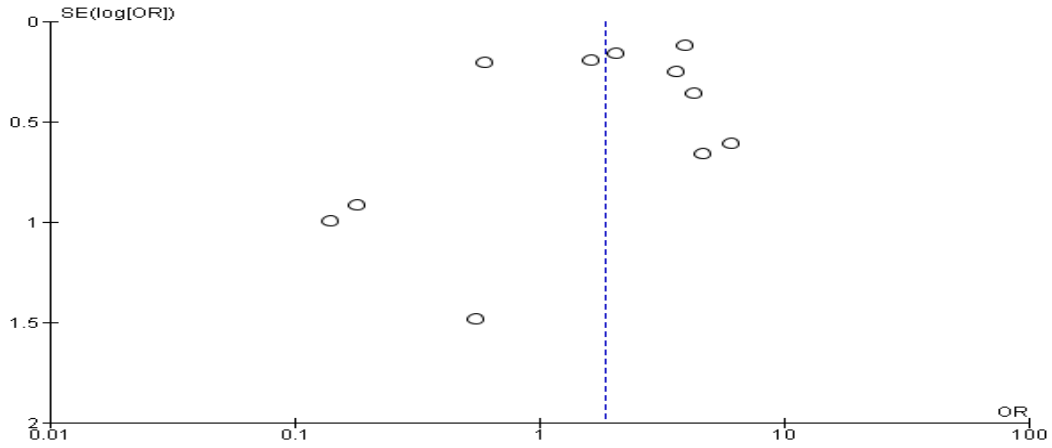

Figure 4. 4 Funnel plot of the relationship between social capital and burnout in health workers

Fores plot Figure 4.3 shows that those with low social capital have a risk of experiencing burnout 1.86 times compared to health workers with high social capital, and the results are statistically significant (aOR= 1.86 ; 95% CI= 1.09 to 3.17 ; p< 0.02) , and the results are statistically significant.

The funnel plot in Figure 4.4 shows the unequal distribution of effect estimates between studies to the right and left of the vertical line of average estimates. The image above shows the existence of publication bias (overestimate). The plot on the left has 5 plots with a standard error between 0 and 1.5, the plot on the right has 6 plots with a standard error between 0 and 0.7.

DISCUSSION

A total of 11 case-control observational research articles as a source for meta-analysis of the relationship between social capital and burnout in professional health workers. This research shows that health workers with low social capital have a risk of experiencing burnout 1.86 times compared to health workers with high social

capital, and the results are statistically significant (aOR= 1.86; 95% CI= 1.09 to 3.17; p< 0.02). Heterogeneity of research data shows I2= 89% so that the data distribution is declared heterogeneous (random effect model).

Social capital is assumed to be an alternative form of relationship. Theoretically, there is a debate about social capital which boils down to social relations. The debate concerns the conceptualization of social capital as concrete capital where individuals or groups are able to provide benefits to social relations including values, social networks and beliefs for social benefits and obtaining economic benefits (Read & Laschinger, 2015).

Burnout results from a variety of stresses, including situations in which work demands cannot be met due to a lack of resources such as social support from coworkers and superiors, job control, participation in decision making, skill utilization, and reinforcement such as rewards. Job burnout is related to specific job demands, including overload, workload variation, role conflict, and role ambiguity. Workers who experience high levels of stress and resulting burnout have poor coping responses and lack job satisfaction, which often erodes commitment to the organization and leads to higher turnover. Lack of coworker and supervisor support contributes to the resulting burnout (Murayama et al., 2020).

Several studies focusing on the health care sector have shown that health care professionals are faced with a variety of severe work stressors, such as time pressure, low social support at work, high workload, uncertainty about patient care, and a tendency to emotional responses due to exposure to suffering and dying patients. Health workers who experience a low social model have work fatigue of 94.5%. Furthermore, of the health workers who experienced a high social model, there were 18.5% who experienced work burnout. The results of this study showed that there was a significant relationship between workload and the incidence of burnout (OR= 0.13; 95% CI= 0.14 to 0.68; p= 0.004) (Putra et al., 2022).

AUTHORS CONTRIBUTION

Rita Benya Adriani as a researcher who chooses topics, searches for and collects research data. Dwi Sulistyowati, Happy Indri Hapsari and Nadya Puspita Adriana analyzed data and reviewed research documents.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

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