

Meta-Analysis of Factors Associated with Job Satisfaction in Health Workers

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ABSTRACT

Background: Job satisfaction is a perception that is reflected in attitude and focused on behavior towards a job, and is a form of human interaction with the work environment. High job satisfaction is a sign that an agency has done good management. The more satisfied the health workers in an institution, the more maximum their level of performance and productivity so that the goals of the institution can be achieved. The study aims to analyze the factors that affect job satisfaction in health workers based on the results of previous similar studies.

Subjects and Method: It was a systematic review and meta-analysis study with the PICO as follows: P = health workers, I = high salary, the availability of supervision C = low salary, no supervision O = job satisfaction. The data collection was conducted through the databases, namely: Google Scholar and PubMed. The inclusion criteria used were full English papers with Cross Sectional designs in 2012-2022. The keywords used were "job satisfaction" AND "Associated factors" AND "Health Worker". The articles were analyzed using the Review Manager 5.3 application.

Results: The meta-analysis was conducted on 8 primary studies from several countries such as Ethiopia, China, and Nepal. The results of the study showed that there was an effect of high salary on job satisfaction. Based on the analysis, high-paid health workers were 1.88 times more likely to be satisfied than low-paid health workers and it was statistically significant (aOR = 1.88; CI 95% = 1.08 to 3.2; p = 0.020). Furthermore, a meta-analysis was conducted on 7 primary studies from northern and eastern parts of Ethiopia. The results of the study showed that there was an effect of supervision on job satisfaction. Healthcare workers who received supervision were 2.93 times more likely to be satisfied than those who were unsupervised and it was statistically significant (aOR = 2.93; CI 95% = 1.51 to 5.66; p = 0.003).

Conclusion: The provision of high salaries and supervision increases the job satisfaction of health workers.

Keywords: job satisfaction, related factors, health workers.

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BACKGROUND

Health Human Resources are individuals who work actively in health institutions by

having formal education, and aim at carrying out medical treatments and health interventions in the community. It is also important

for an institution to pay attention to factors that affect the productivity and performance of health workers, one of which is job satisfaction. Job satisfaction is the perception of health workers that is reflected in attitudes and focused on behavior towards a job, and is a form of human interaction with their work environment, high job satisfaction is a sign that an agency has implemented good management (Pranata et al. 2017). According to Edy 2016, job satisfaction is the attitude of health workers towards work which is related to work situations, cooperation, rewards, and matters concerning physical and psychological factors. In a job a person has a desire to achieve satisfaction. Every private and government health institution will strive and be oriented towards the long-term goal of the development of the institution which is marked by the increasing income, in line with the increasing welfare of its health workers. The more satisfied the needs of health workers in an institution, the more maximum their level of performance and productivity therefore the goals of the institution are increasingly achieved.

Based on the results of a study conducted by Workineh et al (2020), In Ethiopia, the overall job satisfaction rate of health workers is 46%, with job-related factors such as nature of work, interpersonal relationships (managerial factors such as participation in decision-making, and supportive supervision), incentives, and opportunities for development are significantly associated with job satisfaction of health workers.

According to a study conducted in Nepal by Khanal (2020), overall, 22.5% are dissatisfied with their jobs. Another study conducted by Mengistu (2015), states 34.9% of respondents are satisfied, while 65.1% are dissatisfied with their jobs. It is revealed that variables such as leadership style, salary, work environment, training opportunities, supervision, and participation in decision

making have a significant influence on job satisfaction levels. A study conducted in Pakistan by Kumar et al (2013), reveals that 59% of the respondents states that they are dissatisfied with their jobs.

A study conducted by Rahmania dan Widawati (2018), obtains a result that an average of 52.4%, which proves that nurses' job satisfaction still has not reached the standard determined by RSD Idaman Kota Banjarbaru, which is 90%. Low job satisfaction of health workers can reduce the quality of work, so that work results also decrease. Job satisfaction of health workers is one of the factors that affect work productivity. Dissatisfaction with a job will have an impact on decreasing work motivation, decreasing loyalty, and resulting in high levels of health worker turnover, absenteeism of health workers, and other negative actions (Mangkunegara, 2010)

Health workers who have a high level of job satisfaction will tend to be more committed and contribute and have high dedication to their agencies. Job satisfaction is a positive attitude towards work in a person. Basically, job satisfaction is an individual thing, where each individual has a different level of satisfaction according to their respective satisfaction standards.

Therefore, high job satisfaction of health workers can affect the level of patient satisfaction with the health service process. In addition, job satisfaction will also help improve the quality of health services for the community. High job satisfaction will increase the ability of health institutions to retain their workforce. If health workers experience a lot of job dissatisfaction, it will have an impact on poor services in health institutions (Yami et al. 2011). Therefore, the study aims to determine the factors that affect job satisfaction in health workers. Researchers used systematic review and meta-

analysis approaches, to clearly identify factors that affect job satisfaction in health workers.

SUBJECTS AND METHOD

1. Study Design

This study was conducted by using systematic review and meta-analysis with secondary data from previous studies results. Data collection was obtained from 2 databases, namely: Google Scholar and PubMed. The analysis of this study was conducted using RevMan 5.3 software. The keywords used were "job satisfaction" AND "Associated factors" AND "Health Worker".

2. Steps of Meta-Analysis

Meta-analysis analysis was carried out through 5 steps as follows:

- 1) Formulate research questions in PICO (Population, Intervention, Comparison, Outcome).
- 2) Search for articles from various databases including Google Scholar, Pubmed, and Science Direct.
- 3) Conduct screening and critical appraisal of primary studies using the Critical Appraisal Checklist for Cross-sectional Studies from the Center for Evidence Management
- 4) Perform data extraction and enter the effect size of each primary study into the RevMan 5.3 application
- 5) Interpret the results of the research analysis and draw conclusions

3. Inclusion Criteria

The inclusion criteria used were Full-text, Cross Sectional study design, the measure of association used was adjusted Odds Ratio (aOR), the subject of the study was health workers, the outcome was job satisfaction.

4. Exclusion Criteria

The exclusion criteria used were non-English article, secondary study articles.

5. Operational Definition

Job satisfaction: emotional state whether it is pleasant or not for health workers to perceive their work in assessing satisfaction using questionnaire instruments.

Salary: a form of payment or a right given by an institution to health workers.

Supervision: An activity carried out by superiors to see whether the work of health workers is appropriate or not.

6. Research Instruments

The instrument used in this study was the Critical Appraisal Checklist Center for Evidence Based Management (CEBMA).

7. Data Analysis

The collected articles were then processed using Review Manager (RevMan 5.3). The data processing was conducted by calculating aOR. Forest plots and funnel plots were used to determine the measure of association and heterogeneity of data.

RESULTS

The search for articles in this study through several databases, namely Google Scholar, Pubmed and can be seen using the PRISMA FLOW chart shown in Figure 1.

The initial search process obtained 4453 articles, then duplicated articles were deleted as many as 358 articles, then the remaining articles were 4095 articles and re-filtered because they did not meet the criteria of 3898 articles. Articles deemed eligible are 197. Then there were 180 articles issued so that the remaining articles and included in the meta-analysis amounted to 17 articles.

The description of the research location can be seen in figure 2 that the research articles that will be included in the meta-analysis come from 2 continents consisting of the Asian continent with Nepal and China and the African continent with Ethiopia.

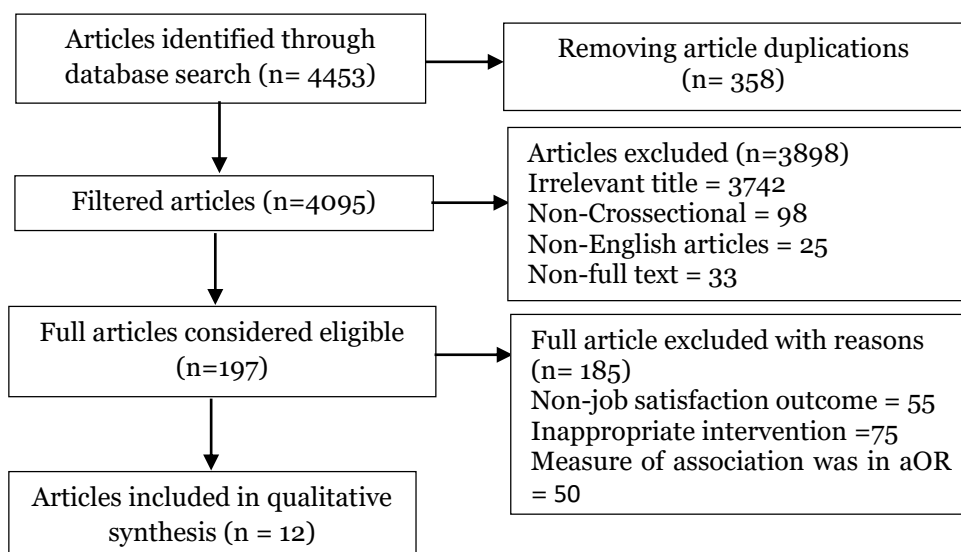


Figure 1. Prisma flow diagram



Figure 2. Map of the distribution of research influencing factors Job satisfaction of health workers

Table 1. Quality assessment of cross-sectional studies

Study Primer	Criteria												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Ayalew, et al. (2019)	2	2	2	2	2	2	2	2	2	2	2	2	24
Workineh, et al. (2020)	2	2	1	2	2	2	2	2	2	2	2	2	23
Gedif, et al. (2018)	2	2	2	2	2	2	2	2	2	2	2	2	24
Khanal, et al. (2020)	2	2	2	2	2	2	2	1	2	2	2	2	23
Bekru, et al. (2017)	2	2	1	2	2	2	2	2	2	2	2	2	23
Ayele et al. (2020)	2	2	2	2	2	2	2	2	2	2	2	2	24
Fang et al (2015)	2	2	2	2	2	2	2	2	2	2	2	2	24
Geta et al (2021)	2	2	2	2	2	2	2	2	2	2	2	2	24
Zhou et al (2018)	2	2	2	2	2	2	2	2	1	2	2	2	23
Teka AA (2016)	2	2	2	2	2	2	2	2	2	2	2	2	24
Manyazewal et al (2017)	2	2	2	2	2	2	2	2	2	2	2	2	24
Kare et al (2021)	2	2	2	2	2	2	2	2	2	2	2	2	24

Description: 2=yes,1=uncertain,0=no

Descriptions of Question criteria

1. Does the study address the focused question/problem clearly?
2. Is the study method (study design) appropriate to answer the research question?
3. Is the subject selection method clearly written?
4. Did the sampling method lead to bias (selection)?
5. Was the study sample representative of the designated population?
6. Was the sample size based on pre-study considerations?
7. Was a satisfactory response achieved?
8. Were the research instruments valid and reliable?
9. Was statistical significance assessed?
10. Was a confidence interval given for the main result?
11. Are there any confounding factors that have not been taken into account?
12. Are the results applicable to your research?

Table 2. PICO table summary of cross-sectional articles on the effect of salary on job satisfaction of health workers with sample size (n = 45,701)

Author (Year)	Sample	P	I	C	O
Ayele et al. (2020)	232	Pharmacists	Salary 2500-5000 Ethiopian Birr	Salary < 2500 Ethiopian Birr	Job Satisfaction
Bekru et al. (2017)	234	Midwives	Satisfying Salary	Dissatisfying salary	Job Satisfaction
Gedif et al. (2018)	383	Professional health workers	Salary < 6179 Ethiopian Birr	Salary > 6179 Ethiopian Birr	Job Satisfaction
Kare et al. (2021)	341	Health workers	Salary < 5700 Ethiopian Birr	Salary > 5700 Ethiopian Birr	Job Satisfaction
Khanal et al. (2020)	151	Health workers	Satisfying Salary	Dissatisfying Salary	Job Satisfaction
Manyazawel et al. (2017)	410	Health workers	Good Salary	Poor Salary	Job Satisfaction
Teka et al. (2016)	305	Health workers	Good Salary	Poor Salary	Job Satisfaction
Zhou et al. (2018)	43.645	Health workers	Salary 10.000-20.000 Renminbi	Salary < 5000 Renminbi	Job Satisfaction

Table 3 Data of adjusted odds ratio (aOR) and confidence interval 95 % (CI 95%) of the effect of salary on health workers' satisfaction

Author (Year)	aOR	Lower Limit	Upper Limit
Ayale et al. (2020)	1.60	0.50	5.12
Bekru et al. (2017)	0.10	0.10	1.00
Gedif et al. (2018)	2.75	1.27	5.95
Kare et al. (2021)	4.18	2.19	7.98
Khanal et al. (2020)	3.08	1.01	9.39
Manyazawel et al. (2017)	2.18	0.86	5.53
Teka et al. (2016)	0.01	0.001	1.15
Zhou et al. (2018)	1.45	1.30	1.62

Table 1 shows the quality assessment of primary articles from cross-sectional studies

conducted using the Center of Evidence Based Management for cross sectional

(CEBM) critical assessment checklist. Based on the answers from the articles' quality assessment, a total score ranging between 23 and 24 was obtained.

Table 2 presents details of the obtained articles on the effect of salary on job

satisfaction of health workers with a total of 8 primary articles with a *cross-sectional* study design from various countries and diverse samples to be included in the meta-analysis.

a) The Effect of Salary on Job Satisfaction in Health Workers

1) Forest Plots

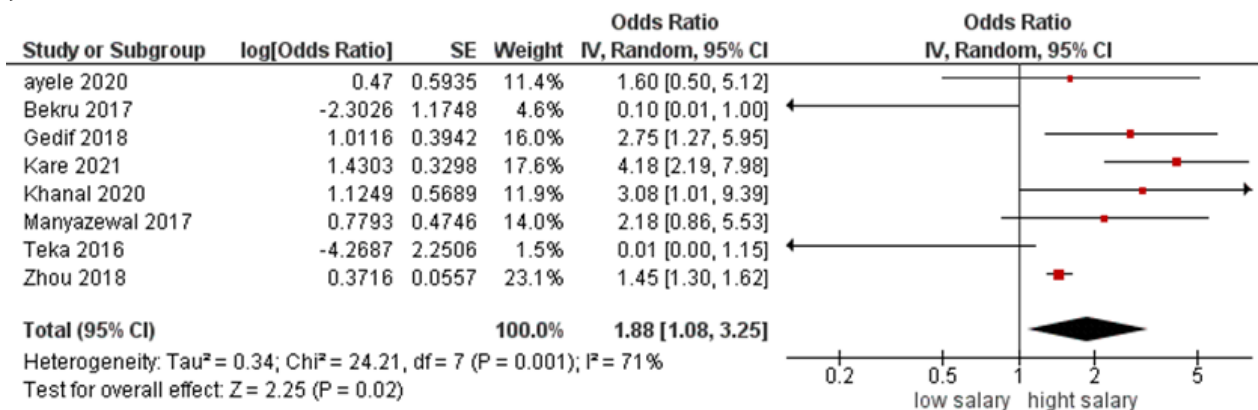


Figure 3. Forest plots of the effect of salary on Job satisfaction in health workers

Figure 3 shows that there was an effect of high salary on job satisfaction in health workers, and the effect was statistically significant. High-paid health workers were 1.88 times more likely to be satisfied than low-paid and it was statistically significant (aOR=

1.88; CI 95% = 1.08-3.25; p = 0.020). The forest plot showed heterogeneity of effect estimates across heterogeneous studies (I² = 71%; p = 0.001), thus the calculation of the average effect estimation was conducted using the Random Effect Model approach.

2) Funnel Plots

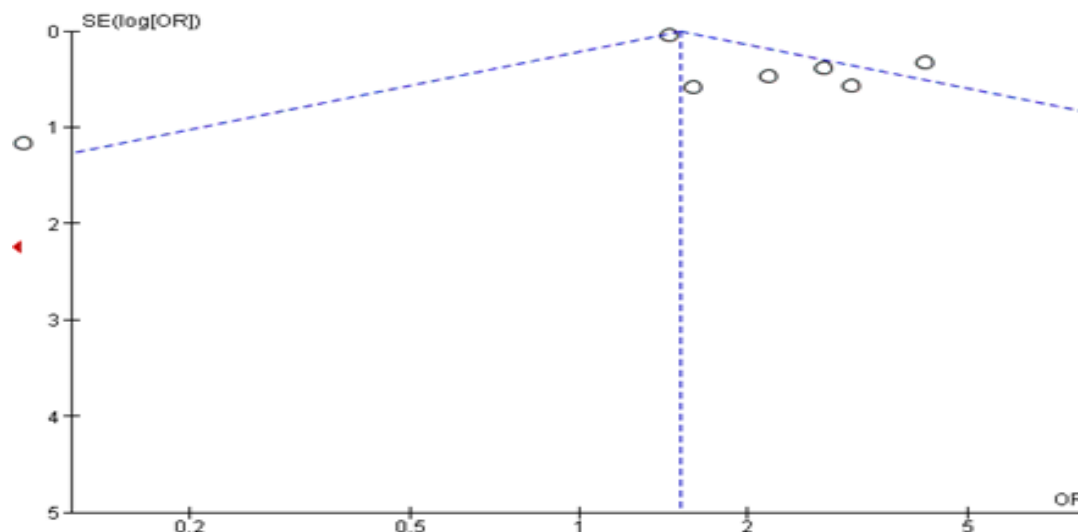


Figure 4. Funnel plots of the effect of salary on job satisfaction in health workers

The funnel plots in Figure 4 shows an asymmetrical distribution of effect estimates that are more on the right side of the average estimates vertical line. So, there was a publication bias. Since the greater distribution to

the right of the vertical line is the same as the location of the diamond shape in the forest plot, the bias of the study tended to overestimate the actual effect.

Table 4 PICO table summary of cross-sectional articles on the effect of salary on job satisfaction of health workers with sample size (n = 2563)

Author (Year)	Sample	P	I	C	O
Ayalew et al. (2019)	424	Nurses	With supervision	Without supervision	Job Satisfaction
Ayele et al. (2020)	232	Pharmacists	With supervision	Without supervision	Job Satisfaction
Bekru et al. (2017)	234	Midwives	Fair supervision	Unfair supervision	Job Satisfaction
Gedif et al. (2018)	383	Professional Health Workers	With supervision	Without supervision	Job Satisfaction
Geta et al. (2021)	520	Health Workers	With supervision	Without supervision	Job Satisfaction
Kare et al. (2021)	341	Health Workers	With supervision	Without supervision	Job Satisfaction
Workineh et al. (2020)	429	Health Workers	With supervision	Without supervision	Job Satisfaction

Table 5 Data of adjusted odds ratio (aOR) and confidence interval 95 % (CI 95%) of the effect of supervision on health workers' satisfaction

Author (Year)	aOR	Lower Limit	Upper Limit
Ayalew (2019)	1.19	0.83	1.71
Ayele (2020)	0.90	0.50	1.62
Bekru (2017)	4.33	1.53	12.26
Gedif (2018)	2.05	1.27	3.31
Geta (2021)	2.42	1.30	4.50
Kare (2021)	7.40	3.80	14.41
Workineh (2020)	25.00	7.14	87.54

Table 4 presents details of the obtained articles on the effect of supervision on job satisfaction in health workers obtained with a total of 7 primary articles with a cross-sectional study design to be included in the meta-analysis.

Table 5 presents data on Adjusted Odds Ratio (aOR) and Confidence Interval 95% (CI 95%) of the effect of supervision on job satisfaction in health workers.

Figure 5 shows that there was an effect of supervision on job satisfaction in health

workers, and the effect was statistically significant. Health workers who were given supervision were 2.93 times more likely to be satisfied than those who were not given supervision (aOR= 2.93; CI 95% = 1.51-5.66; p=0.003). The forest plots show heterogeneity of effect estimates across heterogeneous studies ($I^2 = 87\%$; $p < 0.001$), thus the calculation of the average effect estimates was conducted with a random effect model approach.

b) The Effect of Supervision on Job Satisfaction in Health Workers

1) Forest Plots

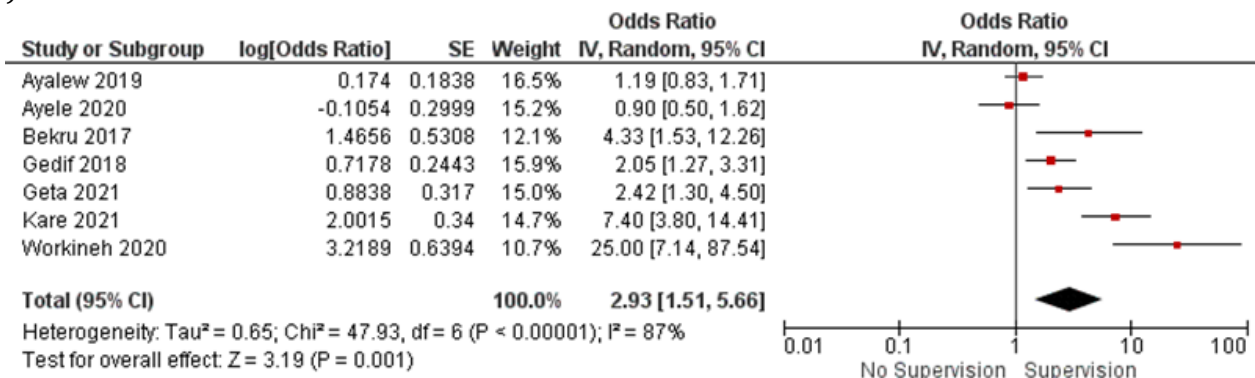


Figure 5. Forest plots of the effect of supervision on Job satisfaction in health workers

2) Funnel Plots

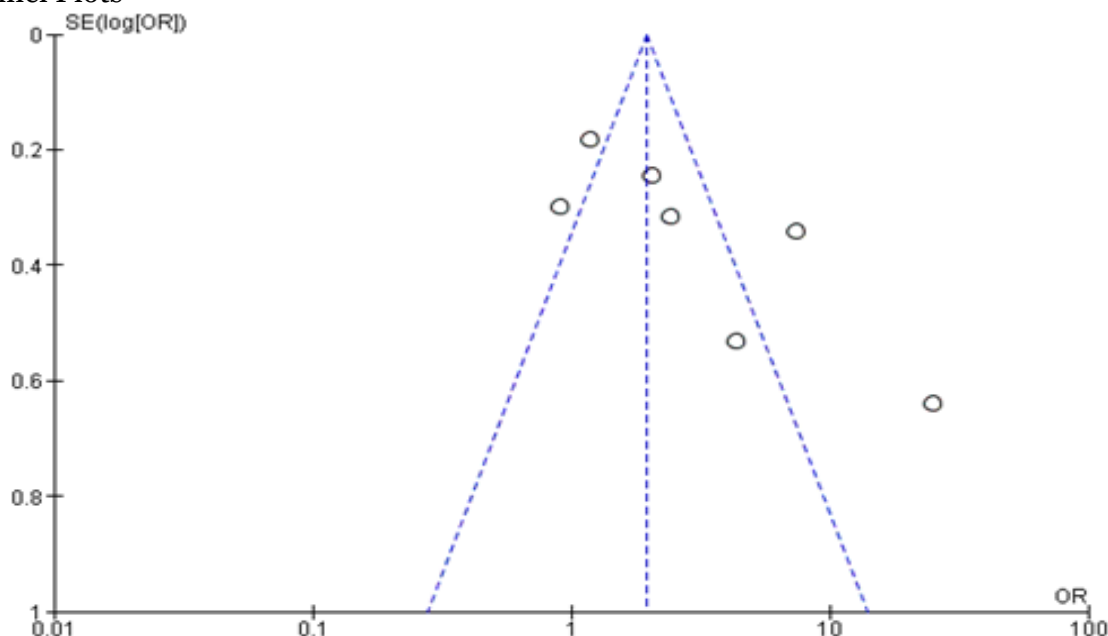


Figure 6. Funnel plots of the effect of supervision on Job satisfaction in health workers

The funnel plot in figure 6. shows an asymmetrical distribution of effect estimates, which is more on the right side of the average estimates vertical line. So, there was a publication bias. Since the greater distribution to the right of the vertical line is the same as the location of the diamond shape in the forest plot, the bias of the study tends to over-estimate.

DISCUSSION

The Effect of Salary on Job Satisfaction in Health Workers

A total of 8 articles with an observational study, cross-sectional study design, were included in the meta-analysis of the effect of salary on job satisfaction in health workers. The analysis showed that high-paid health workers were 1.88 times more likely to be satisfied than low-paid health workers and it

was statistically significant (aOR = 1.88; CI 95%=1.08-3.2; p=0.020). The heterogeneity of the effect estimates across studies was heterogeneous ($I^2 = 71\%$; $p = 0.001$), so that the calculation of the average effect estimates was carried out using the Random Effect Model approach.

Geleto et al. (2015) states only 36.5% of respondents are satisfied with their salary. This finding is in line with the finding of the Pascal Study where salary gets the lowest satisfaction score among other satisfaction factors. Another study conducted by Gedif et al (2018), with 383 respondents states that health workers who have a monthly salary above 6179 ETB are 2.75 times more likely to be satisfied compared to health workers who have a salary income less than or equal to 6179 ETB (aOR = 2.75; CI 95% = 1.27–5.96 ; $p = 0.050$). Health workers are very sensitive to salary issues because it has an impact on living standards. Thus, the satisfaction levels of low salary are a common problem among all studies on health workers' satisfaction. High salaries will encourage health workers to work better, full of motivation and responsibility so that the services provided can run smoothly. But on the contrary, services will be different if health workers who work do not have job satisfaction, then they will not have the desire to work optimally and be apathetic to their duties, service to patients is declining, stress at work, and lack of motivation which results in poor performance.

The Effect of Supervision on Job Satisfaction in Health Workers

The results of this analysis showed that health workers who were given supervision were 2.93 times more likely to be satisfied compared to those who did not obtain supervision and. This study is in accordance with Gedif et al. (2018) who states that respondents who obtain enough supervision has a satisfaction of 2.05 times compared to those

who do not get supervision (aOR = 2.05; CI 95% =1.28–3.32; $p=0.050$).

Kare and Gujo (2021) also states that there is an effect of supervision on job satisfaction of health workers with the results of the analysis showing that health workers who obtain supervision have the possibility to be satisfied 7.4 times compared to those who do not obtain supervision (aOR = 7.40; CI 95%= 3.84- 14.26; $p=0.001$).

Bekru et al. (2017) states that health workers who obtain supervision are 4.33 times more likely to be satisfied than those who do not get supervision (aOR = 4.33; 95% CI= 1.53–20.22). Health workers who obtain supervision in their institutions are more likely to be satisfied than those who do not obtain adequate supervision support. The findings are in line with studies in three countries in Africa. This can be explained by the fact that adequate and effective supervision can motivate leadership staff towards satisfaction with health workers. A supportive supervision makes workers are keen on their work environment and, increases their efficiency, improves job satisfaction.

AUTHOR CONTRIBUTION

Fara Rizky was the main researcher who selected topics, searched and collected articles, analyzed data and wrote manuscripts. Bhisma Murti and Didik Tamtomo helped analyze the data and review the study documents.

CONFLICT OF INTEREST

There was no conflict of interest in the study.

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