

# The paradox on declining job satisfaction trend with the intention to remain employed in the nursing profession in the Ethiopian nursing workforce. Systematic review and meta-analysis

Chanyalew Worku kassahun (✉ [chanyalewworku@gmail.com](mailto:chanyalewworku@gmail.com))

University of Gondar

Amare Wondim Ewunitie

University of Gondar

---

## Research article

**Keywords:** Job satisfaction, Intention to remain employed, Nurses, Ethiopia

**Posted Date:** January 24th, 2020

**DOI:** <https://doi.org/10.21203/rs.2.21533/v1>

**License:** © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

---

# Abstract

**Background:** High attrition rates, low job satisfaction and motivation are great concern that pose major challenges for nurses in Ethiopia where it has unfavorable influences on the nursing system and the quality of nursing care. But, different authors reported inconsistent findings about the proportion of job satisfaction and intention to remain employed. In addition; the trends and national pooled estimate of proportion of job satisfaction and intention to remain employed in nursing profession is no assessed. Therefore; the aim of this systemic review and meta-analysis is to show the trends, and estimate the national pooled proportion of job satisfaction and intention to remain employed in nursing profession in Ethiopia.

**Methods:** Major databases; PubMed, Medline and African Journals Online were included in the review. Grey literatures like Web of Science, Google scholar and repository online library in universities in Ethiopian were searched. Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument was used for critical appraisal. The meta-analysis was conducted using STATA-11. Descriptive information of studies was presented in narrative form and quantitative results were presented in forest plots. The Cochran Q test and I<sup>2</sup> test statistics were used to survey heterogeneity among studies. The pooled estimate prevalence with 95% confidence intervals were computed.

**Results:** A total seven and five studies were included to estimate job satisfaction and intention to be employed respectively. The proportion of job satisfaction is declining from 2014 (59.6%) to 2019 (48%) while the proportion of intention to remain employed in nursing profession is increasing from 2014 (39%) to 2017 (86.7%). The overall national pooled proportion of job satisfaction among nurses was 54.96 % (95% CI: 48.83%, 61%) while the intention to remain employed in nursing profession was 54.94 % (95% CI: 36.44%, 73.45%).

**Conclusions:** There is declining of job satisfaction and increasing of intention to remain employed trends across publication years. But, the national pooled proportion of job satisfaction and intention to remain employed are low. Interventions aiming to increases the job satisfaction and intention to remain employed is important. **Keywords:** Job satisfaction, Intention to remain employed, Nurses, Ethiopia.

## Introduction

Nurses, who provide direct health care are the largest health care cadre in the health care system [1–3]. But, the global shortage of nurse and its negative impact on health care is reaching a critical level and many nurses continue to voluntarily leave their workplaces and profession before the normal age of retirement [4, 5].

Their job satisfaction and retention to remain employed determines the quality of the care they provided. Job satisfaction is referred as all the feelings that an individual has about his/her job or the positive feeling individuals have about their jobs, their career and for whom they work [2, 6–10]. Job satisfaction is not just the money or the fringe benefits, but the feelings employees receive from the work itself [11, 12]. Intention to remain employed is a nurse's perceived likelihood of staying within the organization and profession. Nurses who intend to remain employed in their current organizations are more likely to actually remain employed in those organizations [4, 13]. But, retaining professionals remains persistent challenge and big question faced in any organization [14, 15].

Job satisfaction is one of the most important factors that affect patient safety, productivity and performance, quality of care, retention and turnover, commitment to the organization and the profession [16]. Job satisfaction can improve the interest of the staff and is beneficial to the success and progress of the organization. It can lead to lower turnover and high quality service [17–20]. Evidences indicates that turnover intention is related to job satisfaction [21].

Throughout the literature, job satisfaction was the most consistent predictor of nurse intention to remain employed and has even been reported as explaining most of the variance in job satisfaction. Nurses who reported overall dissatisfaction with their jobs had a 65% higher probability of intending to leave than satisfied nurses. There is direct positive relationships have been found between job satisfaction and nurse intention to remain employed [4].

Nurses' job satisfaction and leaving their jobs and the profession is an issue of international concern. It is the most studied variable in organizational behavior research, and also a central variable in both research and theory of organizational phenomena [8, 22–24]. Turnover of nurses in health care institutions is a major problem worldwide especially in developing countries, particularly in Africa. Turnover is associated with variety of negative outcomes such as increased costs owing to hiring and training new nurses, decreased patient care, empty beds, and increased workload for those who remain on the job [21, 25]. High attrition rates, low job satisfaction and motivation are great concern and pose major challenges for nurses in Ethiopia. There is a high turnover among the nursing professional staffs [26]. This high turnover rate among nurses may have unfavorable influences on the nursing system and on the improvement of the quality of nurses trained by extensive clinical experiences [27].

The link between job satisfaction and turnover intentions has also been well-documented. Job satisfaction is the foremost indicator of the likelihood that an employee will remain in his/her position [28]. The increasing turnover of nurses is highly attributed to poor job satisfaction [29].

High levels of job satisfaction results in higher commitment and lower turnover intention. It negatively impact on turnover intention [24]. Although job satisfaction has been found to be a rather consistent predictor of turnover intentions, the related strength of the satisfaction-intention to leave relationship varies according to each setting [15].

In a study finding in Canadian provinces found that job satisfaction influences intentions to remain employed [13]. Low retention rates of health care professionals, including qualified nurses, are detrimental to the delivery of health care systems and population health [22].

But, different authors reported inconsistent findings about the proportion of job satisfaction and intention to remain employed in nursing profession in Ethiopia. The proportion of job satisfaction in individual studies ranged from 43% – 68% (2,6,9,16,29–31) while proportion of intention to remain employed in nursing profession ranged from 39%-87% [3, 25, 26, 32, 33]. In addition; the trends and national pooled estimate of proportion of job satisfaction and intention to remain employed in nursing profession in Ethiopia is no assessed. Therefore; the aim of this systemic review and meta-analysis is to show the trends, and estimate the national pooled proportion of job satisfaction and intention to remain employed in nursing profession in Ethiopia.

## Methods

### Study design and search strategy

A systemic review and meta-analysis was conducted using published and unpublished research on the proportion of job satisfaction and intension to remain employed in nursing profession among nurses in Ethiopia. All relevant published studies in the following major databases; PubMed, Medline and African Journals Online were included in the review. Grey literatures like Web of Science, Google scholar and repository online library in universities in Ethiopian were searched. In addition, a manual search of the reference lists of included articles was performed. All published and unpublished articles up to December 19, 2019 were included in the review. The reference lists of identified studies were also reviewed to retrieve additional articles. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline was followed during the systematic review [34].

## Study selection and eligibility criteria

The following criteria were used to determine the eligibility of studies. The following studies were included: (1) quantitative studies that were conducted on the proportion of job satisfaction and intention to remain employed in nursing profession in Ethiopia; (2) studies that were conducted only on nurses; (3) There was no any restriction in publication status and study settings; (4) Journal articles, master's thesis and dissertations; and (5) Only studies written in English language. Retrieved articles were assessed for inclusion using their title, abstract and then a full-text before inclusion in the final review. Studies with the methodological problems and review articles were excluded from the review.

## Assessment of Methodological Quality

Two independent reviewers (CW and AW) assessed each paper for methodological validity prior to inclusion in the review using nine point standardized critical appraisal checklist adapted from the Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MASARI) [34]. The checklist for prevalence studies was used in this review. Any disagreement which arose between the reviewers was resolved through discussion. Studies with quality assessment score of 50% and above were included in the final review.

## Data collection/ extraction

The data extraction was done by the two researchers using a data extraction tool. This tool included information on the title, author, and year of publication, study design, sample size, cases, study participants, study area and studies outcome.

## Heterogeneity and Publication bias assessment

The heterogeneity of studies was checked using Q test and  $I^2$  test statistics.  $I^2$  test statistics results of >75% were declared as high heterogeneity. For the test results which indicated the presence of heterogeneity, random effects model was used for analysis. To assess the publication bias, an inverted funnel plot was used. The distribution symmetry of studies and a p-value < 0.05 were used to declare publication bias. Accordingly; there was no publication bias in the studies.

## Statistical methods and analysis

Line graph was used to display the trends of job satisfaction and intention to remain employed in nursing profession. The meta-analysis was conducted using STATA-11 software. Forest plots were used to present the combined estimate with 95% confidence intervals (CI). For studies which did not present a standard error (SE), it was calculated using the formula;  $SE = \sqrt{p \times (1-p)/n}$  in Microsoft excel. The calculated standard error and proportion of each study was then entered into STATA-11 to calculate the overall proportion of job satisfaction and intention to remain employed in using profession and its 95% CI. Since studies were heterogynous for both job satisfaction and intension to remain employed in nursing profession random effect model was used. Sub-group analysis was performed.

## Operational definition of the outcomes

Job satisfaction: The pooled estimate was taken from the individual studies which were conducted on job satisfaction among nurses.

Intention to remain employed in nursing profession: The pooled estimate was taken from individual studies which were conducted on intention to stay and turnover intention in nursing profession. Intention to remain employed were calculated by subtracted the proportion of turnover intention in nursing profession from 100%.

## Results

### Study selection

In this systematic review and meta-analysis 3,993 records were searched. From this, 802 duplicate records were removed and 3,165 records were excluded after screening by title and abstract. A total of 26 full-text articles were screened for eligibility. From these, 12 of them fulfilled the eligibility or quality criteria and included in the final analysis (Fig. 1).

### Characteristics of included studies to estimate the pooled job satisfaction among nurses

The included articles were published from 2014 to December 19, 2019 in different regions of the country and were cross-sectional in design [2, 6, 9, 16, 28–31]. A total of 2,002 participants were included in this review. Of these, 1,121 cases were identified. Study conducted at Bahir Dar city administrative, North West Ethiopia took the maximum sample size (424) [9], and minimum sampled size (98) was recorded in a study in East Arsi Oromia Regional state [31]. (Table 1).

Table 1

Characteristic of the included studies to estimate the pooled proportion of job satisfaction among nurses in the Ethiopian nursing workforces.

ID	Authors	Publication year	Study design	Study setting	Sample size total	cases of job satisfaction	Proportion of job satisfaction	Study quality
1	Kitaba M. et al(6)	2014	Cross sectional	Harari Region & Diredawa	255	152	59.6	Moderate
2	Semachew A. et al(2)	2017	Cross sectional	Jimma zone public hospitals	417	216	51.8	High
3	Ayalew F. et al(30)	2017	Cross sectional	Public health facilities of Ethiopia	316	213	67.4	High
4	Abadiga M. et al(29)	2018	Cross sectional	Jimma University Specialized Hospital	226	98	43.4	Moderate
5	Ayalew E. & Workineh Y.(9)	2019	Cross sectional	Bahir Dar city	424	258	60.8	High
6	G/Medhin G,& Berhe H.(16)	2019	Cross sectional	Tigray, public hospitals	266	137	51.5	Moderate
7	Belay A. et al (31)	2019	cross sectional	East Arsi	98	47	48.0	Moderate

Characteristics of included studies on intention to remain employed in nursing profession

The included articles were published from 2014 to December 19, 2017 in different regions of the country and were cross-sectional in design [3, 25, 26, 32, 33]. A total of 1,751 participants were included in this review. Of these, 916 cases were identified. Study conducted at Jimma Zone Public Hospitals, Oromia region took the minimum sample size (249) [32], and maximum sampled size (424) was recorded in a study in public health facilities of Ethiopia [33] (Table 2).

Table 2

Characteristic of the included studies to estimate the pooled intention to be employed in nursing profession among nurses in the Ethiopian nursing workforces.

ID	First Author	Publication year	Study design	Study setting	Sample size total	Intension to stay cases	Proportion of intension to stay	Study quality
1.	Engeda EH et al(3)	2014	Cross sectional	Amhara Regional State Referral Hospitals	389	155	39.8	High
2.	Ayalew F et al(33)	2015	Cross sectional	Public health facilities of Ethiopia	424	211	49.8	High
3.	Getie GA et al(25)	2015	Cross sectional	East Gojjam, Amhara Region	372	151	40.6	Low
4.	Gizaw AB et al(32)	2016	Cross sectional	Jimma Zone Public Hospitals	249	216	86.7	Moderate
5.	Gesesew HA et al (26)	2017	Cross sectional	Jimma University Teaching Hospital	317	183	57.7	Moderate

Trends of job satisfaction and intention to remain employed in nursing profession among Ethiopian nursing workforces

As it is indicated in (Fig. 2) the proportion of job satisfaction is a little beat declining from 2014 (59.6%) to 2019 (48%) while the proportion of intention to remain employed in nursing profession is increasing from 2014 ( 39%) to 2017 (86.7%) (Fig. 3).

Pooled proportion of job satisfaction and intention to remain employed among nurses

Regarding job satisfaction, the  $I^2$  test result showed that the studies were heterogynous ( $I^2 = 87.2\%$ ,  $P \leq 0.001$ ), which is indicative of using random effects model. The overall proportion of job satisfaction among nurses was 54.96% (95% CI: 48.83%, 61%) (Fig. 4). The  $I^2$  test result of studies for intention to remain employed in nursing profession showed that the studies were heterogynous ( $I^2 = 98.7\%$ ,  $P \leq 0.001$ ), which is indicative of using random effects model. The overall proportion of intention to remain employed in nursing profession was 54.94% (95% CI: 36.44%, 73.45%). (Fig. 5)

Subgroup analysis by publication year and study quality

In the sub-group analysis of job satisfaction studies by publication year and study quality, higher heterogeneity was observed among studies conducted from 2014–2017 ( $I^2 = 89.7\%$ ,  $P \leq 0.001$ ) (Fig. 6) and studies with high quality ( $I^2 = 95.5\%$ ,  $P \leq 0.001$ ) (Fig. 7). Sub- group analysis of articles for intension to remain employed in nursing profession by publication year indicated higher heterogeneity was observed among studies conducted from 2016–2017 ( $I^2 = 98.5\%$ ,  $P \leq 0.001$ ). (Fig. 8)

## Assessing publication biases

As it is indicated in Fig. 9 and Fig. 10 articles in the inverted funnel are distributed almost symmetrically. This indicated as there is no publication bias visually.

## Fill and trim analysis

In the fill and trimming analysis there were no trimming performed on the articles included in both job satisfaction and intention to remain employed. (Fig. 11 and Fig. 12)

## Discussion

As far as is known, there is no previous systematic reviews/ meta-analyses that has examined the national trends and estimate of job-satisfaction and intention to remain employed among nurses in Ethiopia. This systematic review and meta-analysis identified studies conducted in different regions of the country. In this study, the trends in proportion of job satisfaction is declining while the intention to remain employed is increasing. The overall pooled national proportion of job satisfaction among nurses was 54.96% (95% CI: 48.83%, 61%) while the intention to remain employed in nursing profession was 54.94% (95% CI: 36.44%, 73.45%).

The current study found that there the trends in the proportion of job satisfaction is declining while the intention to remain employed is increasing across publication years. This finding supports in a study conducted among nurses in German in which job stickiness of German nurses increased from 83 to 91%, while their job satisfaction underwent a steady and gradual decline, dropping by 7.5% (28). This result confirms the study conducted on the relationship between job satisfaction and turnover in which job satisfactions have an inverse relationships on the employee's turnover intension [15, 20]. It also supports a study findings in which high level of job satisfaction is correlated with the intention of negative turnover [8, 14, 21, 24, 35, 36], and intention to leave the profession is higher among the nurses with low job satisfaction [23, 27]. The finding also supports the systematic review on the relationship between the nursing shortage and job satisfaction, stress and burnout levels among nurses in oncology/hematology settings in which dissatisfaction and others factors led to a rise in the number of oncology nurses leaving the specialty[37]. It is plausible that when employees viewed their jobs as interesting, they are likely to experience a positive emotional state, which in turn, lead them to feel committed to their jobs and organization [15].

In this systematic review and meta-analysis the overall pooled national proportion of job satisfaction among nurses was above the standard mean (54.96%). This finding is comparable with a systematic review in which job satisfaction among critical care nurses was 56% [38].

This study showed that the pooled proportion of intention to be employed among nurses was 54.94% in Ethiopia. This findings is supported by an integrative review of job satisfaction and career intentions of registered nurses in primary health care in which half nurses had intended to leave their career [39].

The findings of this systematic review and meta-analysis is interpreted with the following limitations: The measurement of intention to remained employed in nursing professional might be overlapped with other aspects of intention to remain like the current working area, organization, and rural areas that might under/overestimated in the individual studies.

## Implication for nursing practice

The minister of health and stakeholders understanding on the declining of job satisfaction and intention to remain employed among nurses is good. Because, working on this critical area may bring and improve quality of nursing care, which may also result in keeping experienced nurses, reduced errors made by inexperienced new hired nurses, and increased productivity of health care settings.

Implication for future nursing research

Future research need to examine the relationship between the nursing job satisfaction and intention to be employed in nursing profession.

## Conclusion

There is a beat declining of job satisfaction and increasing of intention to remain employed trends across publication years. But, the national pooled proportion of job satisfaction and intention to remain employed are low and have almost similar figures. Understanding the level of nurse's job satisfaction and intent to stay in nursing profession proactively helps to prevent potential problems related to these issues. Therefore; interventions aiming to enhance job satisfaction and intension to remain employed is important. Future researcher is needed to explore the relationship among nurse's job satisfaction and intention to remain employed prospectively in Ethiopia.

## Abbreviations

**CI:** Confidence Intervals, **ES:** effect size, **JBI-MAStARI:** Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument, **PRISMA:** Preferred Reporting Items for Systematic Reviews and Meta-Analyses, **SE:** Standard Error.

## Declarations

### Ethics approval and consent to participate

Not applicable.

### Consent for publication

Not applicable because primary data was not used.

### Availability of data and materials

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

### Competing interests

We, authors declared that we have no any financial and non- financial conflict of interests

### Funding

Not applicable.

### Authors' contributions

CW conceived, design the review and performed the literature search and performed the analysis. CW and AW assessed methodological validity of data. AW contributed to the writing and editing of the manuscript. CW and AW read and approve the final manuscript.

## Acknowledgements

We would like to acknowledge the authors of primary studies and data bases.

## References

1. Sisinyana H, Khunou MD-M. Level of job satisfaction amongst nurses in the North-West Province , South Africa : Post occupational specific dispensation. *Curationis*. 2011;39(1):1–10.
2. Semachew A, Belachew T, Tesfaye T, Adinew YM. Predictors of job satisfaction among nurses working in Ethiopian public hospitals , 2014: institution-based cross-sectional study. *Hum Resour Health*. 2017;15(31):1–8.
3. Engeda EH, Birhanu AM, Alene KA. Intent to stay in the nursing profession and associated factors among nurses working in Amhara Regional State Referral Hospitals , Ethiopia. *BMC Nurs*. 2014;13(24):1–8.
4. Tourangeau AE, Cranley LA. Nurse intention to remain employed: Understanding and strengthening determinants. *J Adv Nurs*. 2006;55(4):497–509.
5. AbuAlRub R, El-Jardali F, Jamal D, Abu Al-Rub N. Exploring the relationship between work environment, job satisfaction, and intent to stay of Jordanian nurses in underserved areas. *Appl Nurs Res*. 2016;31:19–23.
6. Mulu Kitaba, TesfayeGobena, Yadeta Dessie SF. Job Satisfaction and Its Determinants Among Nurses in Harari Region and Diredawa Administration , Eastern Ethiopia. *J Cult Soc Dev ISSN*. 2017;31:32–9.
7. Tadese T, Mohamed A, Mengistie A. Assessment of factors influencing job satisfaction among health care providers, federal police referral hospital, Addis Ababa, Ethiopia. *Ethiop J Heal Dev*. 2015;29(2):119–26.
8. Å HL, While AE, Barriball KL. Job satisfaction among nurses: a literature review. *Int Journals Nurs Stud*. 2004;42:211–27.
9. Ayalew E, Workineh Y. Job satisfaction and associated factors among nurses in Bahir Dar city administrative ,. *BMC Res Notes [Internet]*. 2019;12(319):1–5. Available from: <https://doi.org/10.1186/s13104-019-4363-4>
10. Kadar A, Masum M, Azad AK, Hoque KE, Beh L, Wanke P, et al. Job satisfaction and intention to quit: an empirical analysis of nurses in Turkey. *PeerJ*. 2016;
11. Asegid A, Belachew T, Yimam E. Factors Influencing Job Satisfaction and Anticipated Turnover among Nurses in Sidama Zone Public Health Facilities , South Ethiopia. *Nurs Res Pract*. 2014;2014.
12. Lorber M. Job satisfaction of nurses and identifying factors of job satisfaction in Slovenian Hospitals. *CMJ*. 2012;263–70.
13. Tourangeau AE, Cummings G, Cranley LA, Ferron EM, Harvey S. Determinants of hospital nurse intention to remain employed: Broadening our understanding. *J Adv Nurs*. 2010;66(1):22–32.
14. Ramalho Luz CMD, Luiz de Paula S, de Oliveira LMB. Organizational commitment, job satisfaction and their possible influences on intent to turnover. *Rev Gestão*. 2018;25(1):84–101.
15. Mahdi F, Roslan M, Nor M, Sakat AA, Sulaiman A, Naim A, et al. The Relationship Between Job Satisfaction and Turnover Intention. *Am J Appl Sci [Internet]*. 2012;9(9):1518–26. Available from: [thescipub.com/PDF/ajassp.2012.1518.1526.pdf](https://thescipub.com/PDF/ajassp.2012.1518.1526.pdf)
16. Berhe GG and H. Job Satisfaction of Nurses and Associated Factors in Public Hospitals in Tigray Region , Northern Ethiopia. *Greener J Med Sci*. 2014;4(1).

17. Lu Y, Hu X, Huang X, Zhuang X, Guo P, Feng L, et al. Job satisfaction and associated factors among healthcare staff: a cross-sectional study in Guangdong Province, China. *BMJ*. 2016;6:1–9.
18. Chebet SL. Factors Affecting Job Satisfaction of Registered Nurses in Kitale and Mbagathi District Hospitals. 2007.
19. Abdullah M, Maqbali A. Factors that influence nurses' job satisfaction: a literature review. *Art Sci*. 2015;22(2).
20. O'Connor J. The impact of job satisfaction on the turnover intent of executive level central office administrators in Texas public school districts: A quantitative study of work related constructs. *Educ Sci*. 2018;8(2).
21. Meeusen VCH, Van Dam K, Brown-Mahoney C, Van Zundert AAJ, Knape HTA. Understanding nurse anesthetists' intention to leave their job: How burnout and job satisfaction mediate the impact of personality and workplace characteristics. *Health Care Manage Rev*. 2011;36(2):155–63.
22. Halter M, Boiko O, Pelone F, Beighton C, Harris R, Gale J, et al. The determinants and consequences of adult nursing staff turnover: a systematic review of systematic reviews. *BMC Health Serv Res*. 2017;17(824):1–20.
23. Sabanciogullari S, Dogan S. Relationship between job satisfaction, professional identity and intention to leave the profession among nurses in Turkey. *J Nurs Manag*. 2020;23:1076–85.
24. Yücel I. Examining the Relationships among Job Satisfaction, Organizational Commitment, and Turnover Intention: An Empirical Study. *Int J Bus Manag*. 2012;7(20).
25. Girma Alem Getie, Erdaw Tachbele Betre HAH. Assessment of Factors Affecting Turnover Intention Among Nurses Working at Governmental Health Care Institutions. *Am J Nurs Sci*. 2015;4(3):107–12.
26. Gesesew HA, Tebeje B, Alemseged F, Beyene W. Health Workforce Acquisition, Retention and Turnover in Southwest Ethiopian Health Institutions. *Ethiop J Heal Sci*. 2016;26(4).
27. Kudo Y, Satoh T, Hosoi K, Miki T, Watanabe M, Kido S, et al. Association between intention to stay on the job and job satisfaction among Japanese nurses in small and medium-sized private hospitals. *J Occup Health*. 2006;48(6):504–13.
28. Alameddine M, Bauer JM, Richter M, Sousa-Poza A. The paradox of falling job satisfaction with rising job stickiness in the German nursing workforce between 1990 and 2013. *Hum Resour Health*. 2017;15(1):1–11.
29. Abadiga M, Nemera G, Hailu E, Mosisa G. Relationship between nurses' perception of ethical climates and job satisfaction in Jimma University Specialized Hospital, Oromia region, south west Ethiopia. *BMC Nurs*. 2019;18(39):1–10.
30. Ayalew F, Kibwana S, Shawula S, Misganaw E, Abosse Z, Roosmalen J Van, et al. Understanding job satisfaction and motivation among nurses in public health facilities of Ethiopia: a cross-sectional study. *BMC Nurs*. 2019;18(46):1–13.
31. Belay A, Abdo A, Tesfaye T, Birhanu D. Palliative Medicine & Care: Open Access Job Satisfaction and Associated Factors among Nurses Working In the Operation Theater at Government Hospitals of Eastern Ethiopia, 2017. *Palliat Med Care*. 2018;2374–8362.
32. Admasu Belay Gizaw, Tefera Belachew Lema WWD and GNG. Intention to Stay in Nursing Profession and Its Predictors among Nurses. *J Nurs Care*. 2018;7(1):1–8.
33. Firew Ayalew, Adrienne Kols, Young-Mi Kim, Anne Schuster, Mark R. Emerson, J. van Roosmalen, Jelle Stekelenburg, Damtew Woldemariam HG. Factors Affecting Turnover Intention among Nurses in Ethiopia. *Heal Hum Resour*. 2015;16(2):62–74.
34. Moher D, Liberati A, Tetzlaff J AD. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med*. 2009;6(7):1–2.

35. Alsaraireh F, Griffin MTQ, Ziehm SR, Fitzpatrick JJ. Job satisfaction and turnover intention among Jordanian nurses in psychiatric units. *Int journals Ment Heal Nurs*. 2014;23:460–7.
36. Bonenberger M, Aikins M, Akweongo P, Wyss K. The effects of health worker motivation and job satisfaction on turnover intention in Ghana: a cross-sectional study. *Hum Resour Health*. 2014;12(43):1–12.
37. Gi S, Rn T, Nursing B, Ang E, Ccnc RN, Certedu ONC, et al. Systematic review on the relationship between the nursing shortage and job satisfaction , stress and burnout levels among nurses in oncology / haematology settings. *Int J evidence-based Heal care*. 2012;10:126–41.
38. Dilig-ruiz AA, Macdonald I, Demery M, Vandyk A, Graham ID, Squires JE. Job Satisfaction among Critical Care Nurses: A Systematic Review. *Int J Nurs Stud* [Internet]. 2018; Available from: <https://doi.org/10.1016/j.ijnurstu.2018.08.014>
39. Halcomb E, Smyth E, McInnes S. Job satisfaction and career intentions of registered nurses in primary health care: an integrative review. *BMC Fam Pract*. 2018;19(1).

## Figures

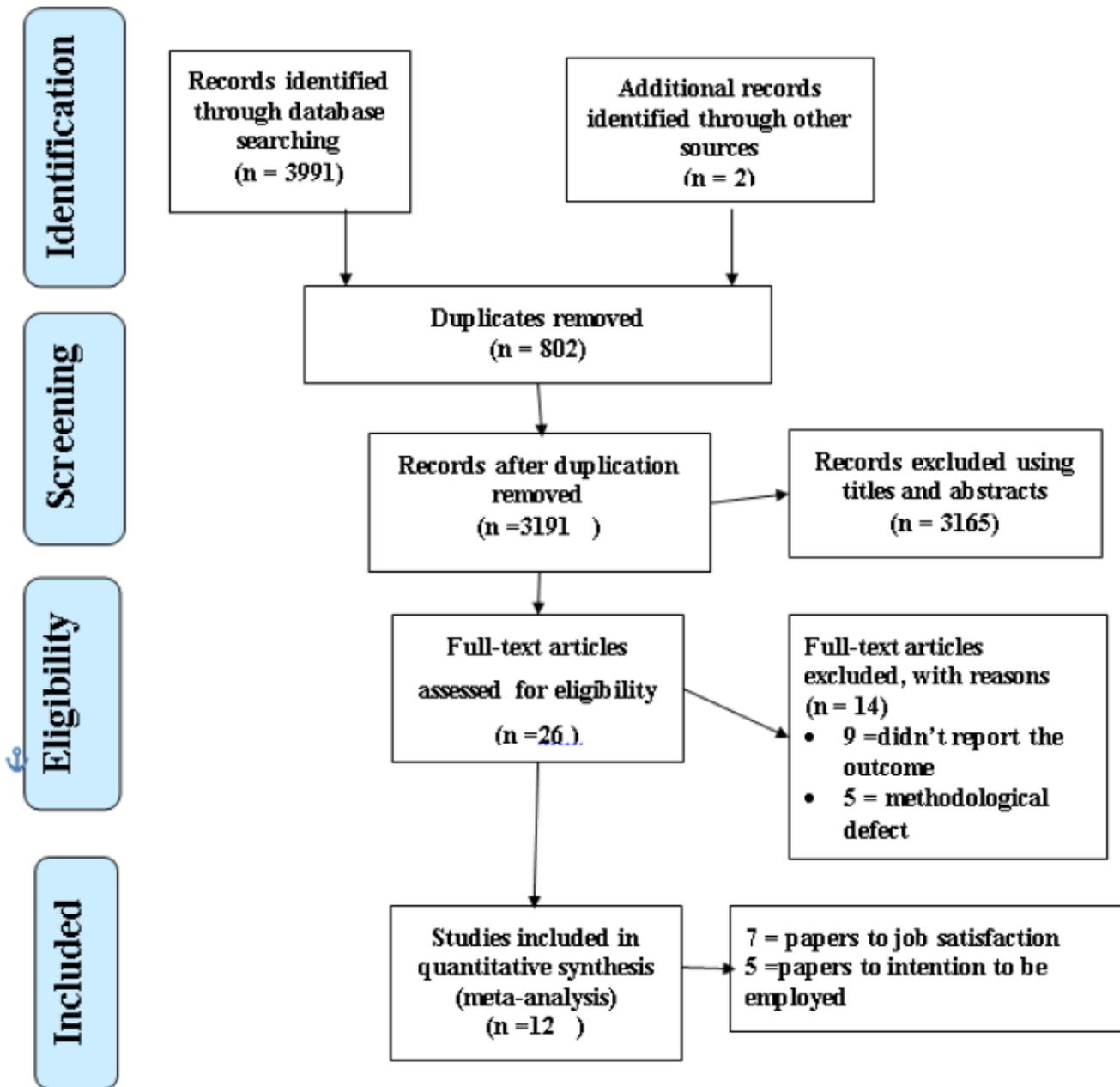
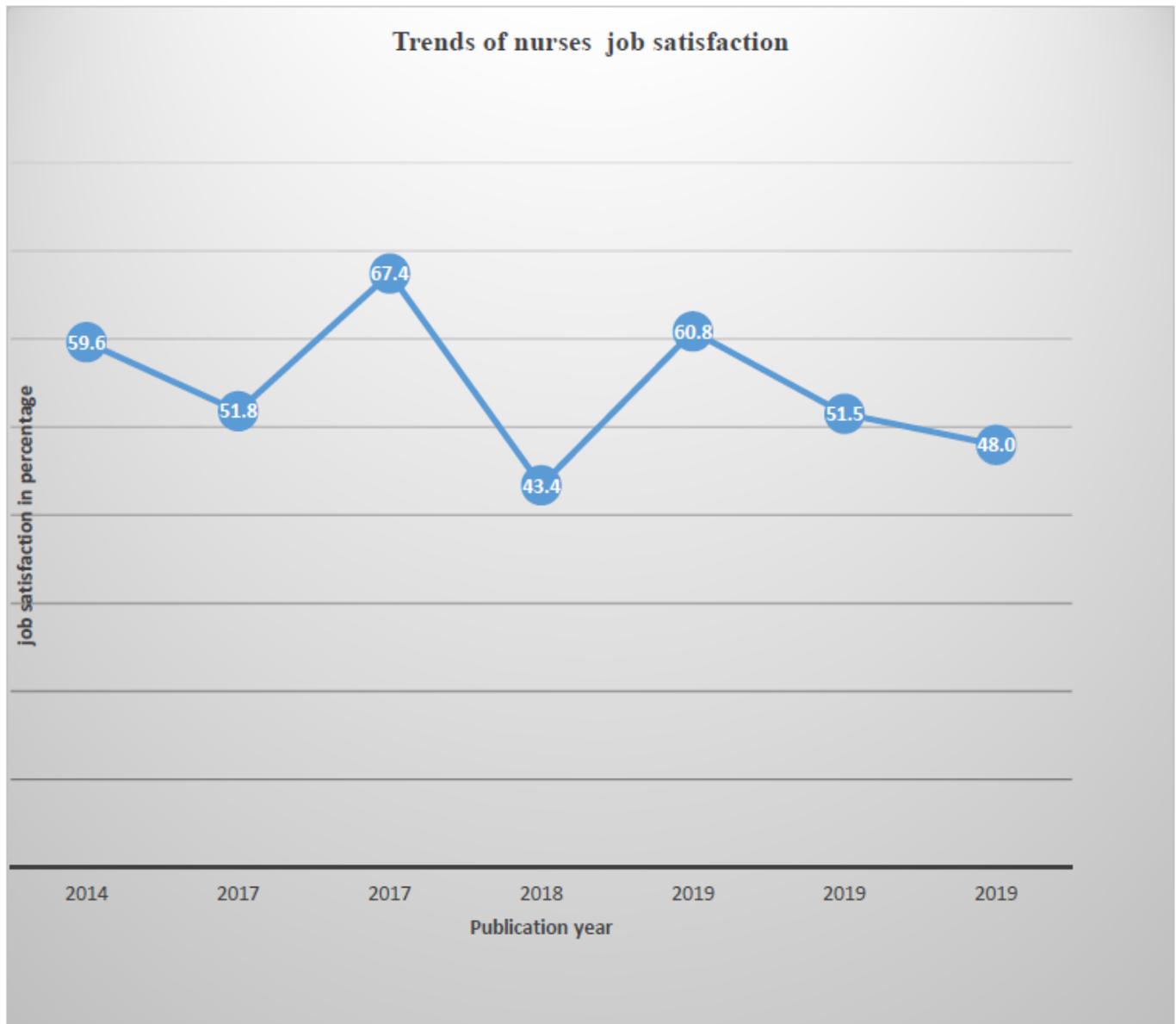


Figure 1

PRISMA flow diagram of the studies included in the systematic review and meta-analysis to estimate the pooled proportion of job satisfaction and intention to remain employed among nursing in Ethiopian nursing workforces.



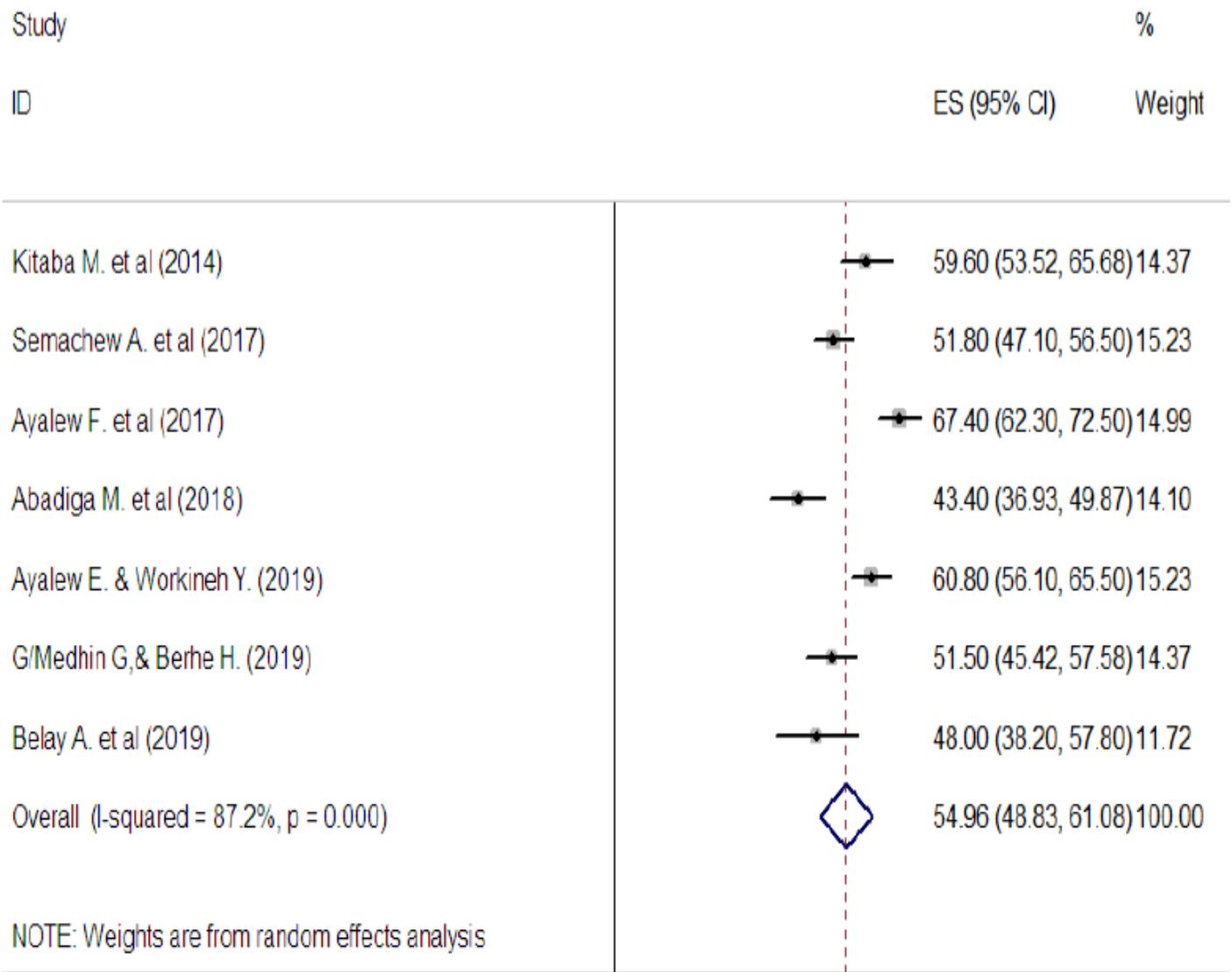
**Figure 2**

Line graph displaying proportion trends of job satisfaction in the nursing profession among nurses in Ethiopian nursing work force.



**Figure 3**

Line graph displaying proportion trends of job satisfaction in the nursing profession among nurses in Ethiopian nursing work force.



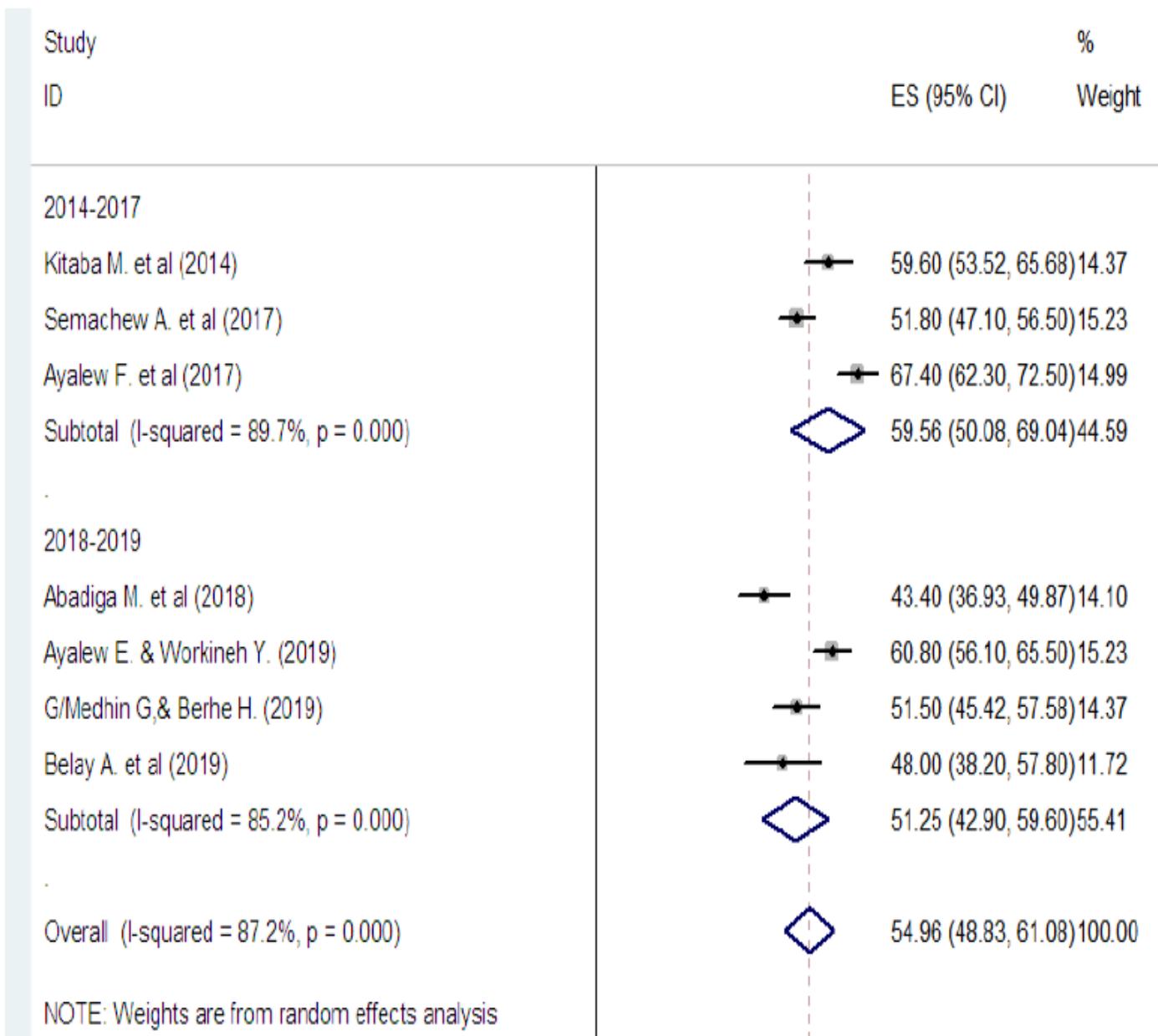
**Figure 4**

Forest plot displaying proportion of job satisfaction in the nursing profession among nurses in Ethiopian nursing work force.



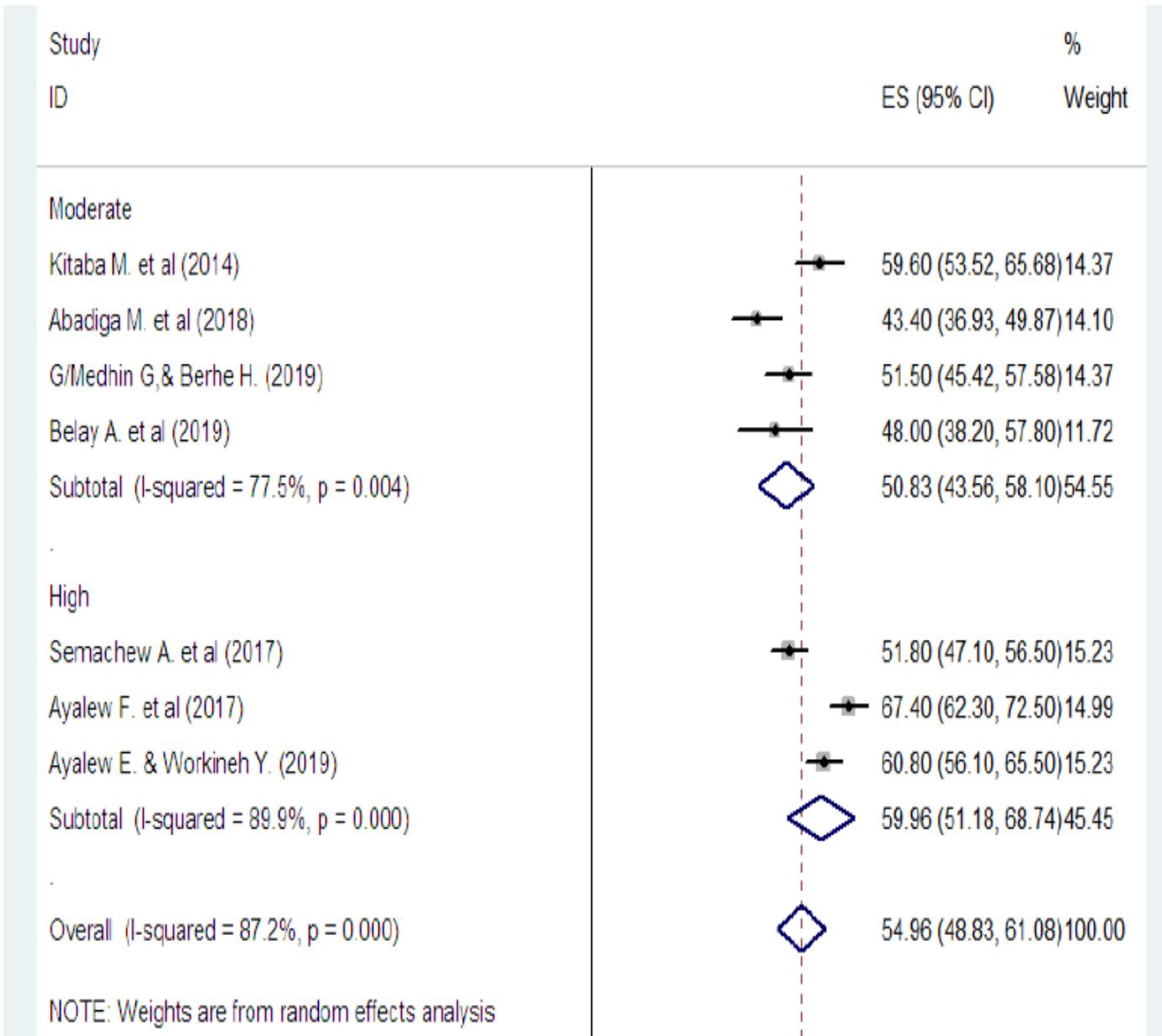
**Figure 5**

Forest plot displaying proportion of intention remain employed in the nursing profession among nurses in Ethiopian nursing work force.



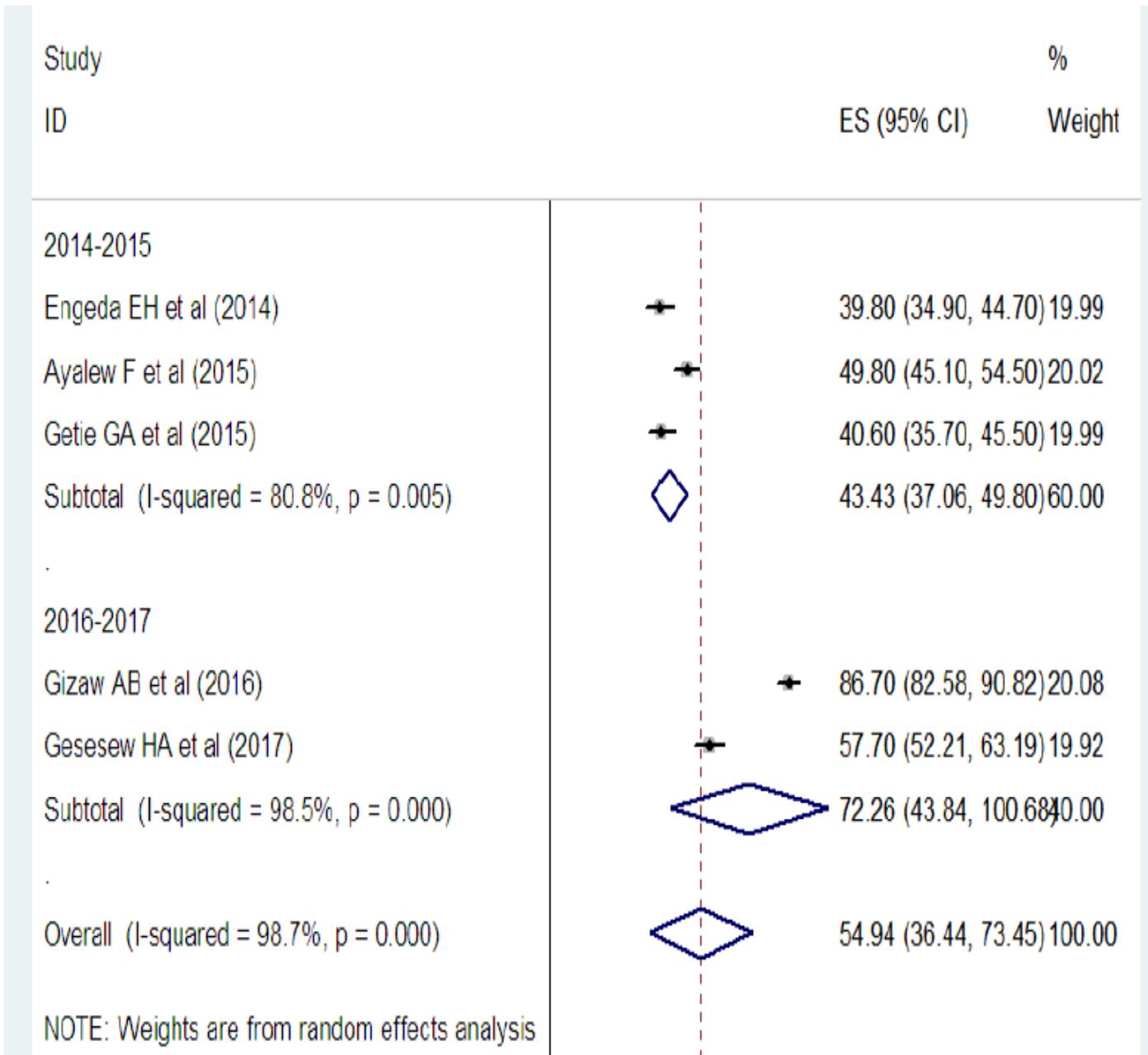
**Figure 6**

Sub-group analysis of job satisfaction studies by publication year among nurses in Ethiopian nursing work force.



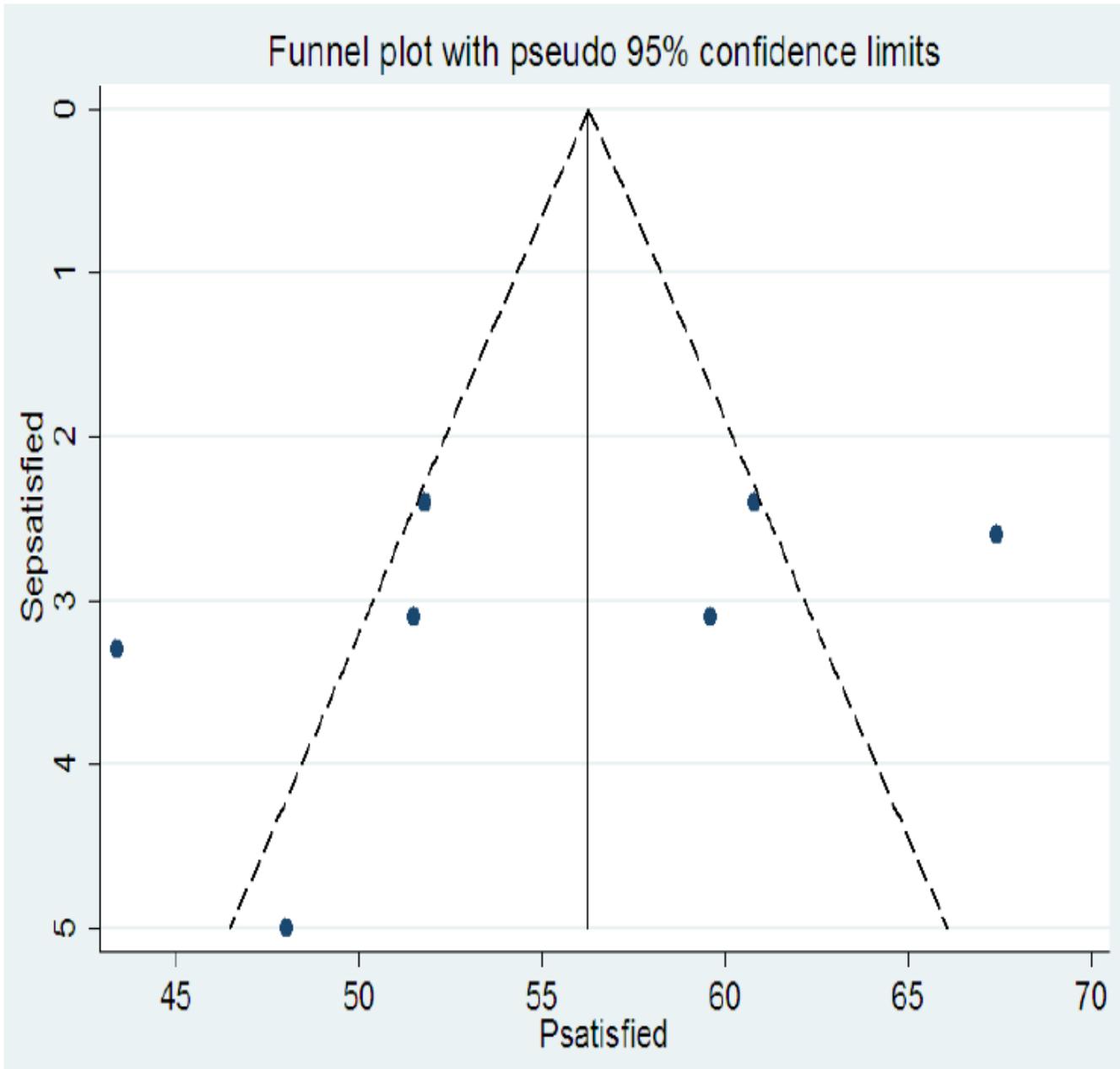
**Figure 7**

Sub-group analysis of job satisfaction studies by publication year among nurses in Ethiopian nursing work force.



**Figure 8**

Sub-group analysis of job satisfaction studies by publication year among nurses in Ethiopian nursing work force.



**Figure 9**

Funnel plot displaying presences of publication bias among job satisfaction studies among nurses in Ethiopian nursing work force.

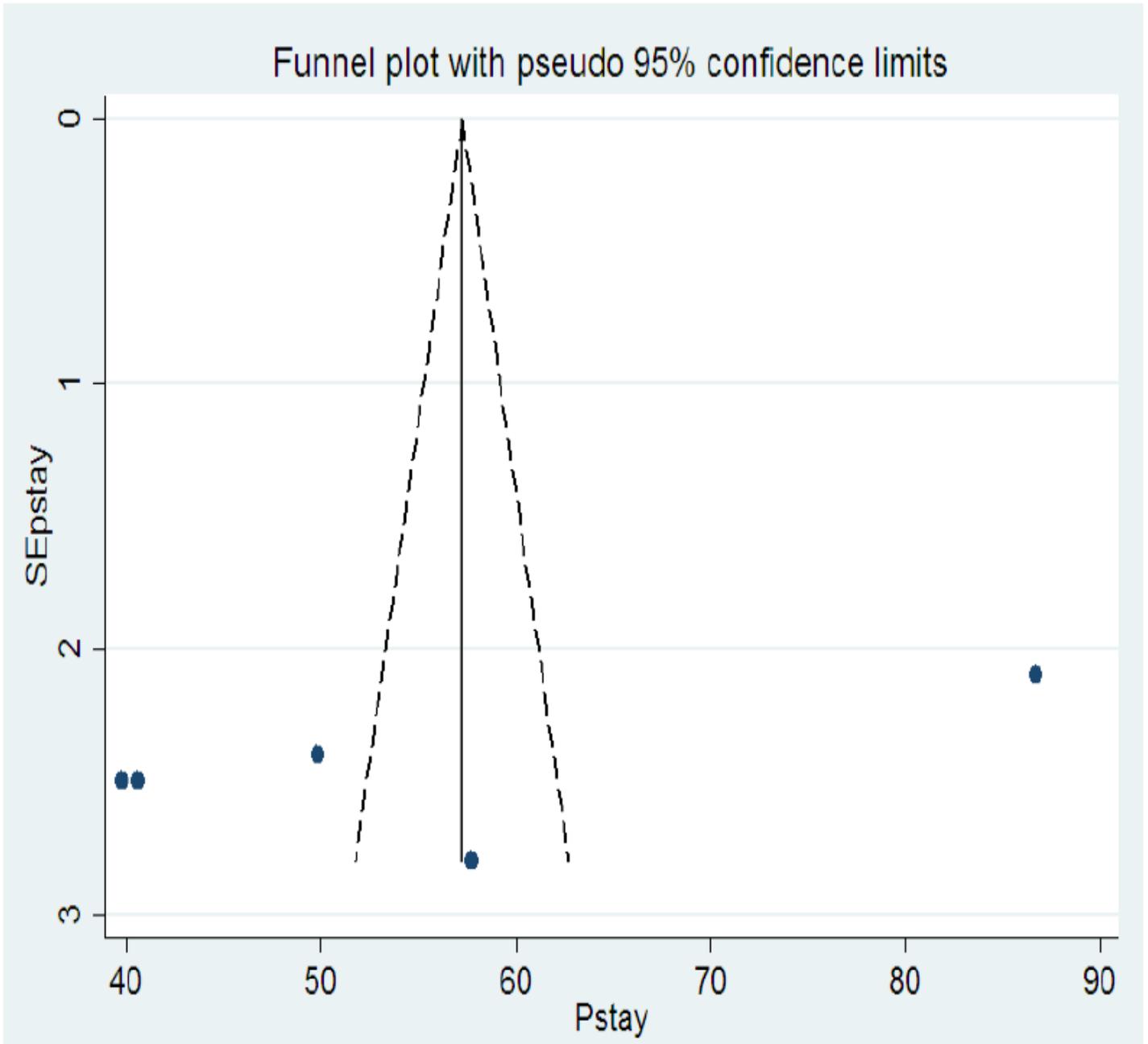
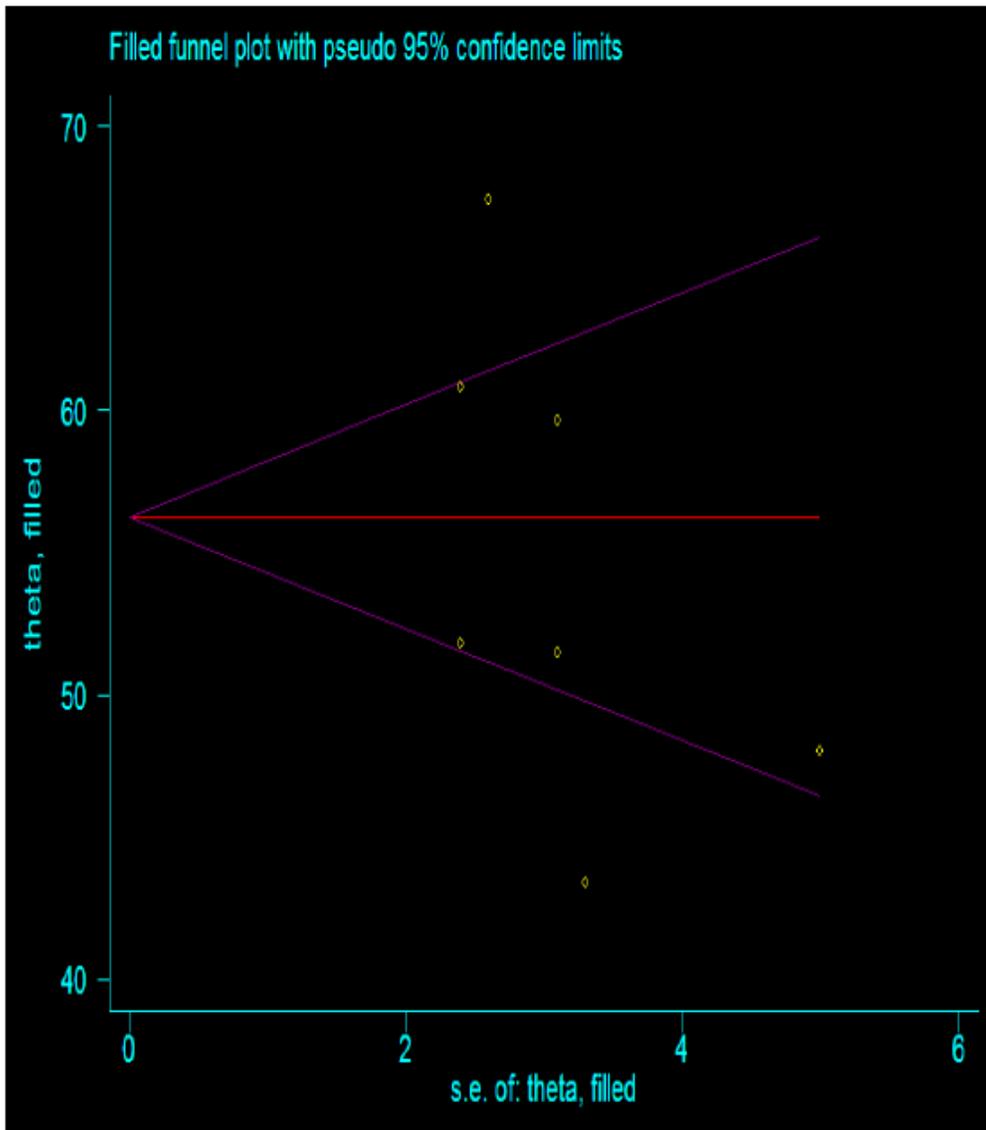


Figure 10

Funnel plot displaying presences of publication bias among intention to remain employed studies among nurses in Ethiopian nursing work force.



**Figure 11**

Funnel plot displaying filling and trimming among job satisfaction studies among nurses in Ethiopian nursing work force.

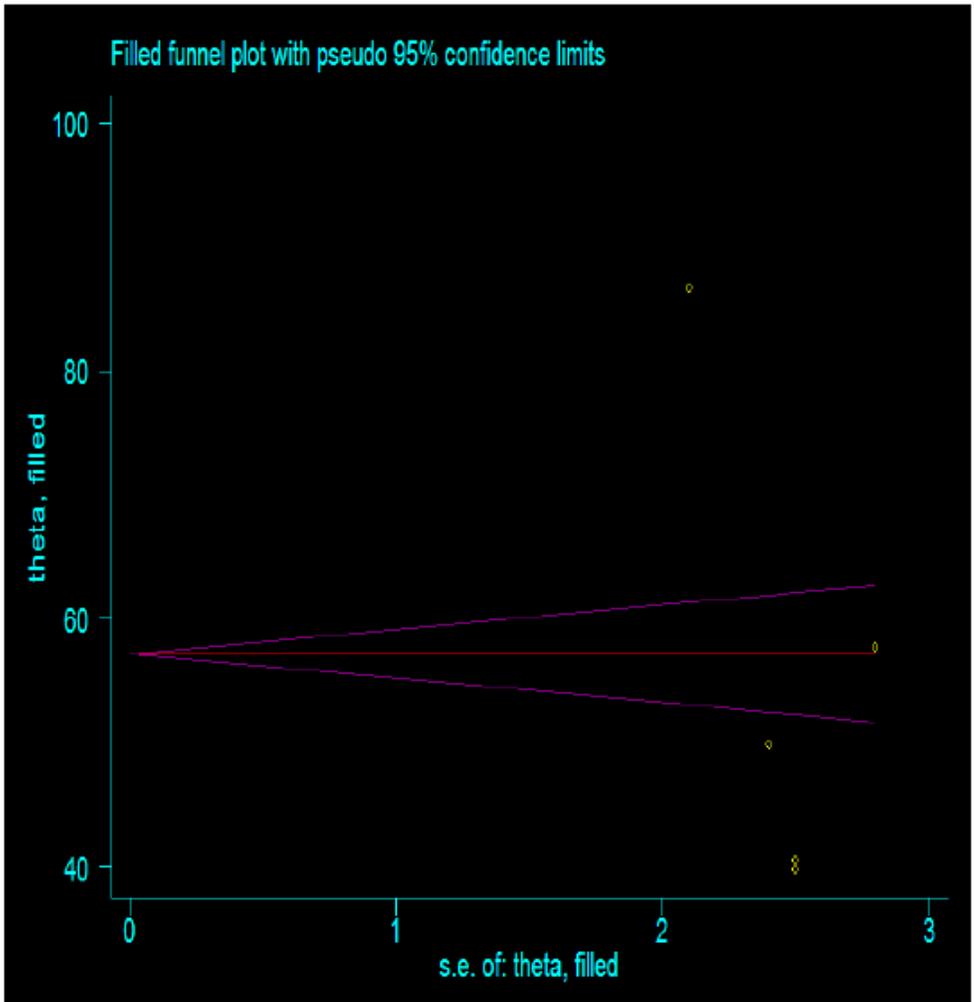


Figure 12

Funnel plot displaying filling and trimming among intention to remain employed studies in Ethiopian nursing work force.