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THE INFLUENCE OF HEALTH WORKERS MOTIVATION AND SATISFACTION ON INTENTION TO STAY IN PUBLIC HOSPITALS IN AWI ZONE, AMHARA REGION, ETHIOPIA: A

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BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF HEALTH SYSTEM MANAGEMENT AND

HEALTH ECONOMICS

THE INFLUENCE OF HEALTH WORKERS' MOTIVATION AND

JOB SATISFACTION ON INTENTION TO STAY IN PUBLIC

HOSPITALS IN AWI ZONE, AMHARA REGION, ETHIOPIA: A

CROSS-SECTIONAL STUDY

BY: ASCHALEW MESFIN (MD)

**A THESIS PAPER SUBMITTED TO THE DEPARTMENT OF HEALTH
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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTERS IN HEALTH SYSTEMS AND PROJECT MANAGEMENT**

DATE JUNE, 2021

BAHIR DAR, ETHIOPIA

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Abstract

Background: Intention to stay is defined as employees' intention to stay in the existing employment relation with their current employer on long-term basis. The health workforce is the backbone of health care systems. Hospitals are facing difficulties to providing a consistent level of quality health care in a fast-changing health environment due to the shortage of experienced health workers which is a critical global issue. A number of health workers were quitting their hospital to continue career in another profession in clinical and non-clinical fields. Factors that cause these problems were not investigated in Ethiopia yet. The study aims to assesses the effects of motivation and job satisfaction on intention stay and how motivation and satisfaction can be improved by hospital health managers in order to increase retention of health workers in Awi Zone PHs from February 15,2021 to March 30, 2021.

Methods: Institution based cross-sectional study was conducted on 242 Health workers. Pre-tested structured self-administered questionnaires were used to collect data. Data were entered and cleaned by using Epi-data version 3.1 then exported to IBM SPSS version 26 windows statistical software for analysis. Summary tables and, figures were used for describing data. The association between independent and dependent variables was assessed by using bivariable and multivariable logistic regression model. Factors that had statistically significant association with the dependent variable ($P < 0.05$) were identified as significant in the multivariable logistic regression analysis.

Results: Overall, 41.7% of the respondents reported to have intention to stay. The effects of health workers' motivation and job satisfaction were significantly associated with intention to stay. The significant associated with intention stay included having bachelor degree (AOR [95% CI] 5.46 [1.71, 17.48]), working in the current health facilities (AOR [95% CI] 3.48 [1.21, 10.10]), overall job satisfaction (AOR [95% CI] 2.04 [1.08, 3.88]), work itself (AOR [95% CI] 3.74[1.50, 9.30]) and organizational policy (AOR [95% CI] 2.18[1.04,4.56]).

Conclusion: Our findings indicate that effective human resource management practices at public hospital level influence health worker motivation and job satisfaction, thereby increase the likelihood for intention to stay. Therefore, it is worth strengthening human resource management skills at zonal level and supporting zonal health managers to implement retention strategies.

LIST OF ACRONYMS AND ABBREVIATIONS

AIDS:	Acquire Immune Deficiency Syndrome
AOR:	Adjusted Odds Ratio
ETB:	Ethiopian Birr
HWs:	Health Workers
ITS:	Intention to Stay
JS:	Job Satisfaction
PEPFAR:	President's Emergency Plan for AIDS Relief
PHs:	Public Hospitals
SDG:	Sustainable Development Goal
SPSS:	Statistic Package for the Social Science
WHO:	World Health Organization

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1. Introduction

1.1. Background

Motivation can lead to better performance and high levels of satisfaction among workers, a better understanding of health worker motivation is essential to design effective health care delivery systems. However, despite the importance of understanding health worker motivation, relatively little empirical evidence is available on this issue from low- and middle-income countries(1).

Motivation is one of the most important factors affecting worker behavior and can be described as something that energizes individuals to take action and which is concerned with the choices the individual makes as part of his or her goal-oriented behavior (2). Health workers motivation is influenced by working conditions or hygiene factors (3, 4), including facility infrastructure and availability of resources; organizational support including supervision, training opportunities and professional promotion; and organizational structures and processes. Other contextual factors, including the characteristics of the population being served (e.g., Client expectations), also influence worker motivation.

Working conditions and pay have considered as important factors in the retention of professionals in their positions, in maintaining their motivation, satisfaction and in incentivizing improvements in terms of their productivity and performance. It has been observed that a satisfied worker feels greater engagement with their work (5).

Research conducted in Kenya showed that work environment, inadequate access to electricity, equipment, transport, housing, and the physical state of the health facility are the most critical causes of health workers to leave their work from public health facilities. Availability of adequate training, job security, salary, supervisor support, and manageable workload identified as critical satisfaction factors. And provision of family health insurance, salary, and terminal benefit intention to stay were rated as important compensatory factors not to leave their work (6) .

Ethiopian Medical Journal showed that most health workers mentioned that, salary, access to higher education, opportunities for promotion, facility management, incentives and recognition are determinant factors for a decision to stay or leave (7).

1.2.Statement of the problem

The health workforce is the backbone of health -care systems (8). Sufficient, well trained, competent and motivated primary health -care workers in rural and underserved areas are particularly important to provide quality primary health -care services and enhance equity as these services become accessible to more people(9, 10).

Research conducted in nurses working in PHs in Addis Ababa, showed that intention to stay is very low (22.5%) and main reason is found their low monthly income and workload (11). On the other hand, study done in Amhara Region(North Showa Zone) showed that health workers intention to stay was 38.7 % (12).

Now days, human resources are one of the major pillars of the health care system. As a result, effective recruiting and retaining the health workers has a vital contribution to mortality and morbidity reduction(13, 14). Evidence shows that retaining health workers at public institution becomes a great challenge worldwide, especially in developing countries (10). In the world, from 57 countries with critical shortage of HW, 36 are in Africa; especially in Sub-Saharan Africa (SSA)(15). In Ethiopia health workers' intention to stay is very low; ~22.5%, ~ 32.2%, ~40.6% and ~38% in Addis Ababa, North Gondar, East Gojam and North Shoa Zones respectively (11, 12, 16, 17). Making health workers to population ratio 0.84/1000 while World Health Organization(WHO) recommended standard is 2.5/1000 (8). This makes attaining health -related Sustainable Development Goals (SDG) difficult in Ethiopia, especially in remote and rural areas(18).

The major associated factors for health workers low level of intention to stay are low salary, poor working environment, poor career structure, housing problem, lack of recognition and educational access(6) . Without proper handling of health workers, provision of quality health care becomes impossible (19, 20). In developing countries, Health workers motivation and job satisfaction have direct relationship with intention to stay (21, 22).

In Ethiopia the health workers job satisfaction and motivation level is very low ~ 35% and ~50 % respectively and also health professionals' motivation reflects the interaction between health professionals and their work environment (23). However, many countries across the world experience

challenges in recruiting and retaining health care workers where they are most needed, that is, in rural and underserved areas(24).

Studies suggested that intention to stay is the positive aspect and what makes employees be willing and work in the organization comparing to the intention to leave(25).

In the work context, motivation can be defined as “an individual’s degree of willingness to exert and maintain an effort towards attaining organizational goals” (26). Motivation is a psychological process and a transactional process that results from the interactions between individuals and their work environment. It is a complex concept and is determined by factors at various levels (26, 27).

Human resource management have the potential to influence motivation and job satisfaction, which in turn will make health workers more likely to remain at their current position. Health managers can also positively influence health worker motivation and job satisfaction by giving emphasis on listening and acting on staff problems(28).

Many studies have been done on job satisfaction and motivation separately in different parts of Amhara Regional State; but their association on health workers intention to stay is not done yet. So, the main purpose of this study is to show the association of motivation and job satisfaction with health workers intention to stay. The study will be also used as source of information for researchers and academicians. So, attention should be given to improve health workers’ motivation and job satisfaction and then to increase their intention to stay at PHs. In the long run after the study, we will have satisfied, motivated and stable health workers that will serve for our needy community if there will be intervention on identified gaps.

1.3. Significance of the study

The aim of this paper is to assess the influence of health workers' motivations and job satisfaction on intention to stay and come up with possible suggestions and important conclusions.

The result of this study will allow the Policy makers and concerned bodies to plan necessary retaining mechanisms of health workers based on the study. Thus, the study will have great importance for the community to get improved quality of health services; for health workers to be motivated, satisfied and stable; for health managers, zonal health department and regional health bureau to design intervention mechanisms to retain experienced health workers. Ultimately, the research as a whole and the finding as well as the methodology can be utilized as a reference for researchers who interested in channeling their research on motivational issues spatially in the given health facilities.

2. Literature review

2.1.Intention to stay

Intention to stay is defined as employees' intention to stay in the existing employment relation with their current employer on long-term basis (29). intention to stay refers to employees' willingness to remain in the organization, and they are aware of their decision after a careful consideration(30).

Similarly, intention to stay is mirrors employee's level of tenure of employment relationship with present employer(31).

Some individuals want to stay in the organization due to their normative commitment, referring to an employee's desire to stay with the organization based on a sense of duty, loyalty or more obligation(32). health workers staying within their current organizations also demonstrate their interests and needs to be fulfilled by the employers.

2.2.Motivation factors

According to a study done in West Amhara PHs revealed that health care worker's motivation reflects the interaction between health professionals and their work environment(23).

Motivation can be defined as a person's degree of willingness or individual's levels of readiness toward achieving an individual goal that is consistent with that of the organization and the reasons underlying behavior which can be either intrinsic or extrinsic(33, 34). Intrinsic motivation is related to doing something inherent for fun or enjoyment, but extrinsic motivation is related to doing something for economic outcome (35).

Health workers of the health sector have specific features either internal to themselves or extrinsic to the work or are facing challenges that cannot be ignored. At this time, motivation can play an integral role in many of the compelling challenges of health care by providing direction and purpose(23).

Motivation is a prerequisite for better organizational performance. Motivation may describe as the processes that account for an individual's intensity, direction, and persistence of effort toward attaining a goal. Motivation can be viewed in different theories but for this study, the two-factor theory of Herzberg's Motivation Theory model is applied (36).

2.2.1. Hygiene (extrinsic) factors

According to the setting of theory, extrinsic factors are less to contribute to employees 'motivation need. Extrinsic factors are also well known as job context factors; are extrinsic satisfactions granted by other people for employees. Hygiene/external factors include organizational policy and leadership, quality of supervision, working conditions, pay, interpersonal relationship with colleagues(37, 38). According to Herzberg and Mausner's motivator-hygiene theory has dominated the study of the nature of job satisfaction and constituted one of the theoretical bases for the development of the evaluation of job satisfaction These theory considered on intrinsic motivation factors related with the work that is done gave satisfaction and that extrinsic factors, which they called "hygiene factors", resulted in dissatisfaction(39). Hygiene factors are essential to ensuring that the work environment does not develop into a disgruntling situation(40).

Extrinsic motivational factors are tangible and visible to others, and they are being distributed by an external party, such as pay, benefits, promotions, action taken to save the culprit from punishment (such as transferring) etc. Such factors are useful to draw people in, for recruitment, and to keep them within, the organization. Extrinsic factors are contingent, and may change with the level performance. They are used often to inspire employees to achieve higher levels of goals.

2.2.2. Stimulator (intrinsic) factor

Intrinsic motives are generated internally, as brain directed or cognitive factors. Therefore, they are not tangible, yet have an effective impact on motivation. They include feelings of responsibility, achievement, accomplishment etc. Intrinsic motivations lead to performing meaningful work(41). Intrinsic factors are the actually factors that contribute to employees' level of job satisfactions. It has widely been known as job content factors which aim to provide employees meaningful works that able to intrinsically satisfy themselves by their works outcomes, responsibilities delegated experience learned, and achievements harvested. Stimulator factors including opportunities for growth, recognition, responsibility, and achievement (38, 42).

In Ethiopia, the concern that low health worker motivation may undermine the success of health sector reforms that the government has introduced over the past decade as well as disease-focused health programs. Previous researchers have found that health workers in Ethiopia tend to be

unsatisfied with many aspects of their job, especially their salary, their training opportunities, and their chances of promotion. However, there have not been any previous studies in Ethiopia that explore the determinants and consequences of health worker motivation nor changes over time(1, 43). Researches showed that working conditions and pay have considered as important factors in the retention of professionals in their positions(44).

2.3.Job satisfaction

Job satisfaction is the fulcrum of worker motivation in most service organizations. A satisfied worker has the desire to work hard since inner joy and happiness is the motivating factor for the work(28, 45, 46).

Job satisfaction is one of the most important factors in improving the productivity and quality of health services provided to clients and retaining workforce in the health sector. Health worker satisfaction is highly affected by financial incentives and working environment which is similar with findings of global experience and thus reminds that health managers at different levels should work hard for improving result oriented financial incentives and quality of the working environment(14).

But level of job satisfaction and relation with intention to leave differs from country to country in Africa depending on the health manager's attention given for health workers and availability of alternative employment in the country. job satisfaction is directly related to intention to leave (22). A study Conducted in Gahanna stated that motivation and job satisfaction have identified as key factors for health worker to remain or leave their work in low- and middle-income countries (28).

Truly speaking, job satisfaction demonstrates the number of satisfied individuals with their jobs and as well as an attitude the that individuals have about their jobs. It results from their perception of their jobs (47, 48). Health service delivery affected by a number of factors, which includes human resources for health service delivery system and health infrastructures.

Employee's job satisfaction has an important role in helping an organization to achieve intention to stay organizational goals(49). According to a study conducted in Ethiopia showed that job satisfaction of employees affects the quality of services and organizational commitment and it is a contributing factor to shortages of health care providers(46).

3. Conceptual framework

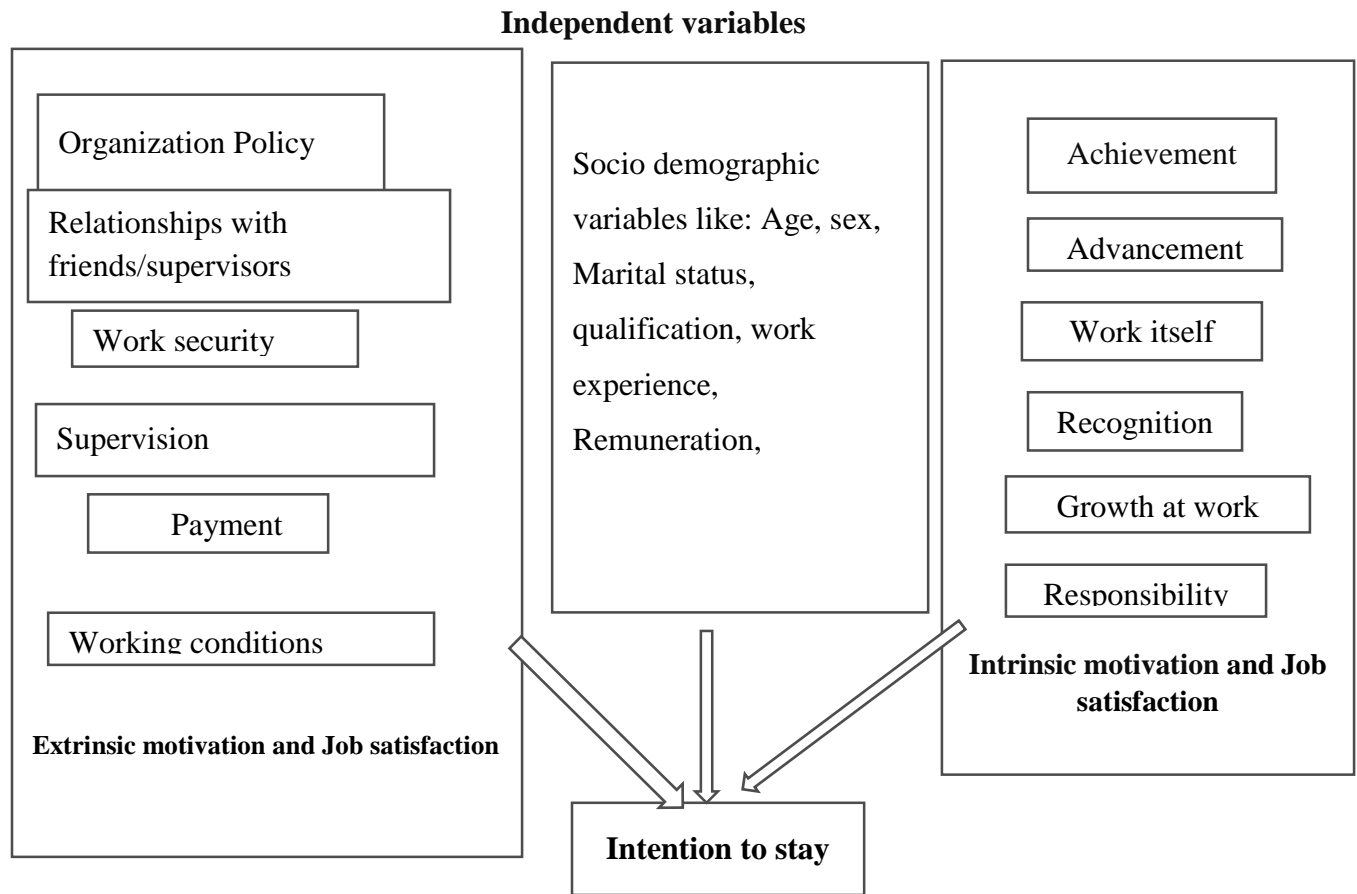


Figure 1: Conceptual framework for the influence of Health workers' motivation and job satisfaction on intention to stay in Awi Zone hospitals, 2021

4. Objective

4.1. General objective

To Assess the influence of health workers' motivation and Job satisfaction on intention to stay at PHs in Awi zone from February 15,2021 to March 30, 2021.

4.2. Specific objective

- To determine the magnitude of Health workers' intention to stay at PHs under study
- To assess the influence of Health workers' motivational factors on intention to stay at PHs under study
- To assess the influence of health worker's job satisfaction on intention to stay at PHs under study
- To identify factors that influence intention to stay among HW in PHs of Awi hospitals.

5. Methods and material

5.1. Study setting

The study was conducted in Awi Administrative zone which is one of the zones of Amhara national regional state, Northwest Ethiopia. There were around health workers in the selected zone, 560 were on active duty during the data collection period. Awi zone has one general and four primary public hospitals. Awi Zone: is an autonomous administrative unit within Amhara Regional State which is found in the range of 1,800m - 3,100m altitude and with estimated total population of 1,302,613 million and more than 90% of the people reside in rural areas. Agriculture is the main source of livelihood for the community. It is divided into ten rural districts and two town administrations. A total of ~ 1828 Health workers and 726 administrative and supportive staffs are found distributed in ~47 public health centers and 5 PHs in the study zone.

5.2. Study design and period

Institution based cross-sectional study design was conducted among health workers working in Awi zone hospitals from February 15, 2021 to March 30, 2021.

5.3. Sources population

The source population were all Health workers who were working in Awi zone public hospitals, Amhara Region, Ethiopia.

5.4. Study population

The study population was Health workers who were currently engaged in work in public hospitals in Awi zone during the data collection time.

5.5. Inclusion and exclusion criteria

5.5.1. Inclusion criteria

All health care workers who were working in the hospitals during study period.

5.5.2. Exclusion criteria:

Health workers who were ill, on maternity leave, annual leave, study leave administrative and supportive staffs were excluded from the study.

5.6. Study variables

5.6.1. Dependent variables

Intention to stay (Yes/No)

5.6.2. Independent variables

The independent variable includes: socio-demographic characteristics (age, sex, marital status, religion, salary, educational status, ethnicity, profession), factors related to job satisfaction and related to intrinsic and extrinsic motivation factors (achievement, advancement, work itself, recognition, growth at work, responsibility, organization policy, relation with friends, work security, relation with supervision, payment, working condition and supervision).

5.7. Operational definition

Health workers: Means any person who has qualification of certificate and above in health -related fields.

Job satisfaction: By summing up the response of 20 Minnesota short form satisfaction questions those who were satisfied above the cut point were categorized as satisfied and those who were satisfied less than cut point were categorized as dissatisfied(50).

Intention to Stay: health workers are said to be intended to stay, if their answer is yes for the question “do you want to continue working in this hospital”

Motivation: health workers are said to be motivated, for each domain factors, the sum score of each variable under domains value of mean was taken as a cut point value to determine whether a health worker motivated with their institution or not. As a result, health workers who scored a value of below the mean were considered as demotivated and those who scored above the mean were considered as motivated(50, 51).

5.8. Sample size determination

The sample size was determined by using single population proportion formula considering an assumption of magnitude of 38% intention to stay (12), 5% margin of error, 95% confidence level, and 10% nonresponse rate.

$$N = \frac{(Z_{\alpha/2})^2 P(1-P)}{d^2}$$

N: estimated sample size.

Z=1.96(from normal distribution table for CI of 95%)

P: proportion of intention to stay of Health workers ‘

D: margin of error (0.05).

N = population size

However, the total Health workers found in the study area was 582, which is less than 10,000.

Hence, correction formula was used(52).

$$nf = no / (1 + (no - 1)/N)$$

Where n (f)=final sample size

no=initial sample size

N = total population

Since the total number of Health workers in the study area was 582, which is less than 10,000, we used correction formula(53).

$$N_f = \frac{362}{1 + \frac{(362-1)}{582}} \rightarrow N_f = 223$$

As a result, the final sample size was 246 by adding 10% non-response rate Then, the sample was proportionally allocated to each hospital based on the number of health workers who are working in these hospitals (table1).

Table 1: proportional allocation of samples in Awi Zone PHs, Amhara Region, Ethiopia, 2021

S/n	List of Public Hospitals	Total No of Health workers	Proportional allocation for each hospital
1	Injibara General Hospital	130	55
2	Dangila Primary Hospital	124	52
3	Jawi Primary Hospital	110	46
4	Gimjabet Primary Hospital	106	45
5	Chagini primary Hospital	112	47
	Total	582	246

5.9.Sampling techniques

Finally, simple random sampling technique was used to select participants by using their payroll as sampling frame from Health workers working in PHs in Awi zone.

5.10. Data collection instruments

A structured self-administered questionnaire was used to collect data from participants. The tool has three parts: Part I: Questions assessing the socio-demographic characteristics of the study participants with 10 questions on health workers' socio-demographic characteristics.

Part II: questions addressing the job satisfaction and motivation questionnaires. This information was gathered using a structured questionnaire adapted from revisited questionnaire(54, 55).

The questionnaire contained sections on job satisfaction, motivation and intention to stay on the job.

We will use the job satisfaction and motivation sections to understand the levels and associated factors of job satisfaction and motivation. The motivational scales were measured by using a 5-point Likert scales (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). Minor changes were made to the questionnaire after the pilot test. For the measurement of job satisfaction, the Minnesota short form Satisfaction Questionnaire was used (5- point Likert scale items ranging from 1, very dissatisfied, to 5, very satisfied).

Part III: Questions addressing the intention to stay. This information was gathered using a structured questionnaire adapted from the revised questionnaires(56). The instrument was composed of 7 items with 5- Likert-scales, ranging from 1, Strong disagree to 5, Strongly agree.

5.11. Data collection procedure

Data were collected by four health professionals, who took training on how to use the instruments and techniques of consent requisition. To adhere to confidentiality, the names in the questionnaires were replaced by codes, and the participants were informed about these so that they had a record of their own codes to facilitate tracking of the completeness of their respective questionnaires. The supervisors and the principal investigator were responsible for checking on the completeness of the data on site. Incomplete questionnaires were put in offices arranged for this purpose so that participants could complete their own questionnaires. All participants were acknowledged for their time and assistance.

5.12. Data quality control

The questionnaire was initially prepared in English and translated to Amharic. The questionnaire was back translated to English to see the consistency. The instrument was pretested on 13 (5% of sample) health workers in Addis Alem hospital. After pre-test, certain words and sentences were rearranged. Both data collectors and supervisors were given for two-day training. Completeness of data was checked in every day of activity and the necessary feedback was offered to data collectors in the next morning. Besides this, the principal investigator and an experienced data clerk entered and cleaned the data before the commencement of the analysis.

5.13. Data processing and analysis

The data was edited (coded and categorized) entered into Epi-Data version 3.1 for cleaning and to check completeness and missing values and then export to SPSS version 26 windows statistical software for analysis. Descriptive statistics like percentage mean and standard deviation was used to present socio-demographic, intrinsic and extrinsic motivational factors of the study participants. Bivariable logistic regression was used to assess the crude association between independent variables with intent to stay. Variables having P-value ≤ 0.2 in the bivariable logistic regression were considered candidate for the multivariable logistic regression. The Hosmer- Lemeshow goodness of fit statistic was used to assess the fitness of the model. Odds ratios (OR) with their 95% confidence intervals was calculated to measure the strength of association. All statistical analyses with P value ≤ 0.05 was considered significant in predicting the outcome variable. Then, the result was summarized and presented by tables, charts and graphs.

5.14. Ethical consideration

Ethical clearance was obtained from Institutional Review Board (IRB) of Bahir Dar University with Protocol number-**00273/2020**. Official letter was written to the Awi Zonal health departments and each study hospitals. Before the interview, each respondent was informed of the aim of the study, the possible benefit from the study and confidentiality. Informed verbal consent was obtained individually, and any respondent was assured that they have a full right to refuse to participate whether in the beginning or in the middle of the interview without any negative connotation on their future service.

6. Results

6.1. Socio-Demographic Characteristics of the Respondents:

A total of 242 participants were involved in the study with a response rate of 98%. The mean age of the respondents was 29.52 years (SD= \pm 5.57 years). Majority of the respondents, 172 (71.1%) were male. A majority, 163 (67.4%) were in the age group less than 30 years. The results suggest that 237(97.9%) of health care workers are in their most productive and energetic age of 20-49 years. More than half, 151(62.4%) were Amhara ethnicity and 141 (58.3%) were married. Majority of participants have level of education above diploma 171(70.7) and majority, 145 (59.9%) respondents have working experience of 3 and less years at current hospital. A little less than half 107(44.2%) participants were nurse (Table 2).

Table 2: *Socio-demographic characteristics of Health workers in Awi Zone Public Hospitals; North West Ethiopia, May 2021.(N=242)*

Variable		Number (242)	Percent
Sex	Male	172	71.1
	Female	70	28.9
Age in year	≤29 year	145	59.9
	30-39 year	78	32.2
	≥ 40 year	19	7.9
Tribe (Gosa)	Amhara	151	62.4
	Agew	82	33.9
	Others©	9	3.7
Net salary	≤4446	49	20.2
	4447-6179	102	42.2
	6180-8379	75	31.0
	≥8380	16	6.6
Remuneration	Have no remuneration (0)	51	21.1
	400-1500	37	15.3
	1000-2000	53	21.9
	>2001	101	41.7
Marital status	Married	141	58.3
	Single	96	39.7
	Divorced / widowed	5	2.0
Level of education	Diploma	69	28.7
	Medical doctor	47	19.6
	Bachelor degree	81	33.8
	Master's Degree (specialty)	43	17.9
Working experience in current hospital	≤ 1	56	23.1
	> 1 and ≤ 3	89	36.8
	> 3 and ≤ 5	67	27.7
	>5	30	12.4
Types of hospital	Primary	182	75.2
	General	60	24.8
Your profession	Physician	36	14.9
	Health officer	13	5.4
	Nurse	107	44.2
	Laboratory	24	9.9
	Pharmacy	15	6.2
	Midwives	32	13.2
	Others*	15	6.2

Key - © -Oromo, Sidama, Gurage , Kimat, Tigray,

* - Physiotherapist, dentistry, ophthalmic, Environmental, and X-ray

6.2. Health workers' motivation and Job satisfaction on intention to stay

Out of 242 participants, 107 (44.2%) were disagree on achievement and from this 107, 43(42.6%) had intention to stay at current institution while 135 (55.8%) participants were agreed with their achievement had intention to stay was 58(57.6%). By the level of advancement given to on their work, similar proportions of Health workers were disagreed had intent to stay in their home institution was 47(39.5%) while 123 (50.8%) of respondents were agreed with their advancement had intention to stay was 54(53.5%). Generally, 118(48.8%) of study participants were motivated with the overall motivational factors and had intention to stay was 55(54.5%), while 124(51.2%) of respondents were demotivated with their overall motivational factor and had had intention to stay was 46(45.5%). on the other hand, 117(48.3%) of respondents were satisfied with their overall job satisfaction had had intention to stay was 60(59.4%) while 125(51.7%) of the study participants were dissatisfied with their overall job satisfaction had intention to stay was 41(40.6%) (table 3)

Table 3 : Health workers' motivation and Job satisfaction on intention to stay in Awi Zone Public Hospitals; North West Ethiopia, May 2021.

Motivation and job satisfaction			intention to stay	
	Level of agreement	N (%)	Yes	No
			N (%)	N (%)
Achievement	Agree	135(55.8)	58(43.0)	77(57.0)
	Disagree	107 (44.2)	43(40.2)	64(59.8)
Advancement	Agree	123(50.8)	54(43.9)	69(56.1)
	Disagree	119 (49.2)	47(39.5)	72(60.5)
Work tself	Agree	107 (44.2)	63(58.9)	44(41.1)
	Disagree	135(55.8)	38(28.1)	97(71.9)
Recognition	Agree	90(37.2)	47(52.2)	43(47.8)
	Disagree	152 (62.8)	54(35.5)	98(64.5)
Growth at work	Agree	103(42.6)	45(43.7)	58(56.3)
	Disagree	139(57.4)	56(41.2)	83(59.7)
Responsibility	Agree	60(24.8)	23(38.3)	37(61.7)
	Disagree	182(75.2)	78(42.9)	104(57.1)
Organization policy	Agree	103(42.6)	45(43.7)	58(56.3)
	Disagree	139(57.4)	56(40.3)	83(59.7)
Relation with friends	Agree	168(69.4)	70(41.7)	98(58.3)
	Disagree	74(30.6)	31(41.9)	43(58.1)
Work security	Agree	113(46.7)	51(45.1)	62(54.9)
	Disagree	129(53.3)	50(38.8)	79(61.2)
Relation with supervision	Agree	81(33.5)	36(44.4)	45(55.6)
	Disagree	161(66.5)	65(40.4)	96(59.6)
Payment	Agree	122(50.4)	44(43.6)	78(55.3)
	Disagree	120(49.6)	57(56.4)	63(44.7)
Working condition	Agree	100(41.3)	54(53.5)	46(46.0)
	Disagree	142(58.7)	47(33.0)	95(66.3)
Supervision	Agree	110(45.5)	53(49.2)	57(51.8)
	Disagree	132(54.5)	48(36.4)	84(63.6)
Overall motivation	Motivated	118(48.8)	55(46.6)	63(53.4)
	Demotivated	124(51.2)	46(37.1)	78(62.9)
Overall Job satisfaction	Satisfied	117(48.3)	60(51.3)	57(48.7)
	Dissatisfied	125(51.7)	41(32.8)	84(67.2)

6.3.Factors associated with intention to stay

In the bivariable logistic regression analysis; age, level of education, working experience in the current hospital, work itself, recognition, organization policy, working condition and general job satisfaction showed statistical significance (p -value ≤ 0.2). However, in the multivariable analysis; age, level of education, working in the current health facility, work itself, organization policy and general job satisfaction were yielded as significantly associated factors of intention to stay in the PHs. Health workers with age of 40 years and above were more likely intended to stay in the Public hospitals than health workers aged less than 29 years (AOR [95% CI] 4.82[1.31,17.76]). Being Bachelor degree in their level of education (AOR [95% CI] 5.18[1.61, 16.65]) were considerably increased the odds of intention to stay with compared to those being Master (specialty). And also, Health workers with work experience of 5 years and above were more likely intended to stay at PHs when compared to Health workers with working experience of one and less years, (AOR [95% CI] 3.34[1.07,10.43]). Health workers who scored as agreed on work itself were more likely to report they intended to stay in their public hospital than Health workers who scored as disagreed (AOR [95% CI] 3.00[1.25,7.19]). Furthermore, Health workers who scored as agreed on organizational policy were more likely to report they intended to stay in their public hospital than health workers who scored as disagreed (AOR [95% CI] 2.28 [1.10,4.74]). With respect to Overall job satisfaction, Health workers who scored as satisfied were more likely to report they intended to stay in their public hospital than Health workers who scored not satisfied (AOR [95% CI] 1.90[1.01,3.57]). (Table 4).

Table 4: Bivariable and multivariable analysis of influence of health workers' motivation and job satisfaction on intention to stay in Awi Zone Public Hospitals; North West Ethiopia, May 2021

Variables	Category	Intention to stay		Bivariable analysis COR (95% CI)	Multivariable analysis AOR (95%CI)
		Yes, N(%)	No, N (%)		
Age	≤ 29 year	53(36.6)	92(63.4)	1.00	1.00
	30-39 year	33(42.3)	45(57.7)	1.27(0.73,2.23)	1.05(0.53,2.07)
	≥ 40 year	15(78.9)	4(21.1)	6.51(2.05,20.63) **	4.82(1.31,17.76) *
Level of education	Diploma	42(45.2)	51(54.8)	2.61(0.96, 7.12)	3.57(1.14, 11.19)
	MD	14(31.8)	30(68.2)	1.48(0.48,4.51)	1.59(0.45, 5.65)
	BSc (Bachelor degree)	39(48.8)	41(51.2)	3.01(1.09, 8.33) *	5.18(1.61, 16.65) **
	Master (specialty)	6(24.0)	19(76.0)	1.00	1.00
Working experience in current hospital	≤ 1	17(30.4)	39(69.6)	1.00	1.00
	> 1 and ≤ 3	39(43.8)	50(56.2)	1.79(0.88, 3.63)	2.05(0.87,4.81)
	> 3 and ≤ 5	28(41.8)	39(58.2)	1.65(0.78, 3.48)	1.56(0.62, 3.91)
	>5	17(56.7)	13(43.3)	3.00 (1.19,7.53) *	3.34(1.07,10.43) *
Work itself	Agree	63(58.9)	44(41.1)	3.66(2.14, 6.26) **	3.00(1.25,7.19)) *
	Disagree	38(28.1)	97(71.9)	1.00	
Recognition At work	Agree	47(52.2)	43(47.8)	1.98(1.17, 3.37) **	0.83(0.41, 1.68)
	Disagree	54(35.5)	98(64.5)	1.00	
Organization policy	Agree	48(62.3)	29(37.7)	3.49 (1.99,6.15) **	2.28 (1.10,4.74) *
	Disagree	53(32.1)	112(67.9)	1.00	
Working condition	Agree	54(54.0)	46(46.0)	2.37(1.40, 4.02) **	0.95(0.42,2.18)
	Disagree	47(33.1)	95(66.9)	1.00	
Overall Job satisfaction	Satisfied	60(59.4)	57(40.4)	2.16 (1.28, 3.63) **	1.90(1.01,3.57) *
	Not satisfied	41(40.6)	84(59.6)	1.00	

*Significant at $P < 0.05$; **Significant at $P < 0.01$; CI: confidence interval

7. Discussion

Health workers intention to stay were predicted with job satisfaction subscales and motivational factors. The mean age of the respondent was 29.52 ± 5.57 years, which implies that the population of health workers working in Awi zone are young. This finding is slightly higher with studies done in Jimma Zone (27 ± 5.23 years) and North Wollo Zone (26.88 ± 3.162 years), Ethiopia, (57, 58). The possible explanation might be the difference in the study area and period. The two studies were including health centers and hospitals as well as both studies were done in 2014 and 2016 respectively.

In this study, the level of intention to stay among health workers was 41.7% with 95% CI (35.5 - 48.8). This finding was in line with studies done in Amhara regional state referral hospitals (39.8%) (59), Bahir Dar public health institutions (35.6%) (60), East Gojjam zone (40.6%) (17), North Shoa zone (38.7%) (12), University of Gondar referral Hospital (47.5%) (61), Sidama zone (50%) (62) and south Africa (41.4%) (22). However, it is lower than the studies conducted in Japan (57.8%) (63), Hawassa referral hospital (83.7%) (64), and Jimma zone, Ethiopia (63.3%) (65). The slight difference may be attributed to difference in the study area, period and sociodemographic characteristics among countries. The difference may be raised from that the previous studies done in hospitals and health centers as well as numerous changes and/or updates have taken into place due to study period difference. On the other hand, these studies investigated only on single discipline of health professionals (nurses). On the other hand, this finding was higher than studies done in Addis Ababa (22.5%) (11), North Gondar (32.2%) (16) Tanzania (18.8%), Malawi (26.5%) (22), and Switzerland (16.7%) (66). This variation might be due to differences in study population. In the previous studies the only study participants were nurses and nurses might have high work load and this may enforce them not to intend to stay at their working organization as compared to other Health workers.

From Socio-demographic characteristic variables level of education, age and working experience in the current health facility were found to have significant association with health workers' intention to stay in this study.

Our findings indicated that older health workers (aged 40 and above) were 6.5 times more likely to stay at their current institution than younger health workers (29 and less years); findings consistent

with previous research conducted in North Gondar primary hospital (16) reported that health workers aged 20-29 years were intended to leave their current working organization as compared to Health workers aged greater than 40 years Amhara regional state referral hospitals (67), South Africa(68) and Iraq(69). One possible explanation for this finding might be that older employees have a greater desire for stability or a higher continuance commitment compared to younger Health workers due to their family roles. On the other hand, young health workers might not stablish families yet and that may make them to move anywhere in anticipation of getting better life style. Additionally, young health professionals are more exposed to repetitive tasks, participating less in decision making, lacking knowledge of their work, being paid less, and having fewer close friends in the workplace. These factors, they argued, could contribute to greater dissatisfaction with the organization among the youngest age groups. Similarly, Studies revealed that increase in age decreases the intention to leave which is consistent with the finding suggested that when age increases, the desire to stay increases(22).

The result shows that being bachelor degree were three times more likely to show intention to stay as compared to those with diploma, Medical doctors and master (specialty). This result is consistent with the finding from Amhara regional state referral hospitals, Western Amhara Region(67), Kenya and Vietnam (6, 70). Therefore, they may experience greater autonomy and higher job satisfaction compared to the diploma(71). This might be due to the fact that health professionals with higher educational qualification (medical doctor and/or second-degree holders) had better job opportunity as compared to those with less educational qualification since advancement in quality of education increases job opportunity(72).

In addition, the results showed that years of working experience at current PH has a significant association with intent to stay. This is consistent studies done in Ghana (28), Tanzania, Malawi, South Africa(22) and Jimma Zone Public Hospital (73). The possible explanation for this finding might be that greater than five years working experience in the current health facilities have a greater desire for stability or a higher continuance commitment compared to those with less than one-year experience. Another possible explanation might be years of experience bring them a sense of work security in their current facility and Strong relationships with colleagues and patients are built over years that are more difficult to establish when one is less experienced.

Additionally, less than one year working in the current health facilities are also more exposed to challenge working hours and tasks, participating less in decision making, lacking knowledge of their work and having fewer close friends in the workplace. These factors, they argued, could contribute to greater dissatisfaction with the organization among less than one year working in the current health facilities. However This finding is contradicted with the study done in Bahir Dar reported that, health workers with working experience 11 and above years were more intention to leave compared with health professionals who have working experience less than 5 years (71). The difference might be due to different opportunity for NGO mentorship which needs more experienced personnel in the area but in our case, the difference might be due to poor working environment. On the other hand, intention to leave was higher in those with working experience less than or equal to two years(74).

Regards to determinants of intention to stay, this study has found out that the factors significantly associated were work itself, organization policy and overall job satisfaction. In our study, work itself in this study had a statistically significant positive relationship with intention to stay in their hospital. This stud in line with the finding from Melbourne Australia (75, 76). Health workers that are agreed with their work itself will be more intend to stay than those who are disagreed with their work itself. The Health workers who assume a helping role to the patient is likely to see the profession as more rewarding. Negative or positive attitude of the Health workers towards work itself influence intention to stay or not, therefore, attitude of the Health workers towards their work should not be overlooked. Furthermore, intrinsic work values such as “the work itself” and patient care issues were identified in a study as factors that are related to intention to stay(77).

In addition, this study has found that Health workers who agreed with their organizational policy were more likely to be intended to stay with their hospital as compared to their disagreed counterparts. This finding is in line with a study conducted in Primary Hospitals of North Gondar Zone, public Calabar, Cross River State Nigeria (16, 78).

Overall job satisfaction was the last but not the least factor of health workers intention to stay. job satisfaction is the degree of positiveness with which the Health workers view their work. In this case, overall job satisfaction positively promoted the intention to stay of Health workers. This is in agreement with the studies carried out in Ghana, Uganda (28, 79).

8. Limitation of the Study

The study was designed as a cross sectional study of the effect of Health workers motivation and job satisfaction on intention to stay, and thus provides only health workers perspective at one point in time. so causal relationship between motivation, job satisfaction and intention to stay cannot be further investigated with a cross-sectional design. The data might also be affected by moderacy bias as well as social desirability bias, because extreme answers to questions were regularly avoided and some results indicated that respondents might have had a tendency to answer questions in a way that would be viewed favorably by the interviewer.

In addition, our decision to not follow up effects of Health workers who had been absent from their workplaces during data collection might have introduced selection bias, because those could have been not affected by motivation and job satisfaction.

9. Conclusion.

This study has demonstrated the link between motivation, job satisfaction and intention to stay in Awi zone public hospitals. The findings of this study indicate that socio –demographic factors (health workers age, level of education, working experience in the current hospital), motivational factors (work itself, organization policy) and general job satisfaction were found significantly associated with intention to stay. However, overall motivational factors were not significantly associated with intention to stay. So, our findings indicate that adequate and well-structured human resource management may have the potential to influence motivation and job satisfaction, which in turn will make health workers more likely to remain at their current position.

10.Recommendation

Natural characteristics of health workers and increased prevalence of chronic illnesses from time to time and community needs of quality health care needs better health workers' intention to stay in their institution. Therefore, health care managers, supervisors, and Health care policymakers with Ministry of Health need to develop and implement strategies that aim to improve health workers' retention mechanisms at current organization; Such as use evidence-based performance

evaluation mechanism for their work itself achievement and advancement and make efforts to develop organizational policy that have a sense of ownership in the health workers.

To increase motivation and job satisfaction of health workers, zonal and hospital managers should give emphasis on an enabling environment for example through listening to and acting on staff problems and priorities or fostering team building. They may also engage in assisting the career planning and paths of their subordinates. In-service training that is focused on the expressed needs of health workers should be conducted. A supportive supervision system should also be developed that includes experienced and dedicated health workers as supervisors. As such measures are promising in terms of improving motivation and job satisfaction, it is, therefore, worth strengthening human resource manager skills at zonal level and supporting zonal health and hospital managers to implement retention strategies.

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12.ANNEXES

ANNEX I: information sheet for study participant

Investigator: Aschalew Mesfin (MD)

Advisor: Desta Debalkie (MPH, Ass. Professor)

Gebeyehu Tsega ((MPH, Ass. Professor)

Name of the organization: Bahir Dar university

Title of the study

ASSESSMENTS OF INFLUENCING FACTORS OF HEALTH WORKERS MOTIVATION AND JOB SATISFACTION ON INTENTION TO STAY AT PHs OF AWI ZONE, AMHARA REGION, ETHIOPIA,2021.

Hello my name is _____

Purpose of the study

The objective of the study is to assess the effect influencing factors of health worker's motivation and job satisfaction on intention to stay.

Procedures to be carried on the study subject

You have expected to respond the relevant socio-demographic, motivational, job satisfaction and intention to stay information to encircle the prepared questionnaires.

Risk and discomfort

There is no direct risk or discomfort on you except losing your time during answering the prepared questionnaire.

Benefits of the study

There would be no direct financial benefit for you in participating in this study. However, it is important to policy makers, health manager and patient outcome, stakeholders and significant others to take actions on motivational and job satisfaction factors on intention to stay.

Confidentiality

Only use the results of the study and related information for the purpose of this study. Not use name on the sample questionnaire and/or any report that might results from the study. We will use codes specific to the study and only principal investigator can access it. All information obtained will be kept private.

Voluntary participation:

participation is only by willingness. You have the right to withdraw at any time from the research at any time without in any way if you fill discomfort. You have a chance to participate in the study or decide on to participate and /or If you decide to withdraw from the study, the sample and data collected from you discarded. I would also like to inform you that this study will be approved by Bahir Dar university research ethical board.

The address of the investigator: Aschalew Mesfin (MD)

Email: draschalew@gmail.com

Mobile: 0928445743

Bahir Dar university, Bahir Dar, Ethiopia

ANNEX II: consent form for the study participates

Name: _____

I have read the information sheet to me: I have understood that it involves about the effect of health worker's motivation and job satisfaction on intention to stay in our hospital and also, I have understood about the purpose of the study, procedures to be carried out, benefits of the study and confidentiality of the information.

Therefore, I consent voluntarily to participation as a participant in this research and understand that I have the right to withdraw at any time from the research at any time without in any way if you fill discomfort. I have given my consent freely to participate in the study.

I _____ hereby given my consent for giving of the requested information for study.

Participant signature _____ date _____

Investigator's signature _____ date _____

ANNEX III: Questionnaire

Bahir Dar university college of medicine and health science school of public health department of health system management and health economics.

Questionnaires: to assess effect of health workers motivation and job satisfaction on INTENTION TO STAY at public hospitals of Awi zone, Amhara region, Ethiopia.

PART I socio demographic questionnaire.

Instructions: if you are voluntary to participate in the study, please answer the following questions about yourself.

101. Age -----

102. Sex: Male Female

103. Ethnicity: Amhara Oromo Tigray If others specify _____

104. Net salary (ETB)

≤ 4,446 4,447-6,179 6,180-8,379 >8,380

105. Remuneration: No(0) 700-1500 1501-2,000 >2001

106. Marital status: Single Married Divorced/widowed

107. Qualification (level of education):

Diploma Degree/MD/ MPH/ Specialist

108. For how long do have worked in this hospital?

≤ 1 1 and ≤ 3 3 and ≤ 5 >5

109. Type Hospital you are working now: Primary hospital General Referral

110. What is your profession?

Nurse all type Laboratory all type MD Pharmacy all type

If others specify-----

PART II: Minnesota Satisfaction Questionnaire (MSQ):

This section of the questionnaire asks for your opinion about whether you satisfied or not at this facility with the intrinsic and extrinsic factors.

If you feel that your job gives you more than you expected, check the box under —Very Sat. (Very Satisfied),

— If you feel that your job gives you what you expected, check the box under, —Sat. (Satisfied),

— If you cannot make up your mind whether or not the job gives you what you expected, check the box Under —N (Neither Satisfied nor Dissatisfied),

— If you feel that your job gives you less than you expected, check the box under, Dissatisfied (D)

— If you feel that your job gives you much less than you expected, check the box under, VD. (Very Dissatisfied). Please circle the one number for each question that comes closest to reflecting your opinion about it. 1=very dissatisfied (VD),2=dissatisfied (DIS), 3=neutral(NI), 4= satisfied (Sa) and 5=very satisfied (VS).

Sn	Question	Possible answer				
		VD	DIS	NI	SA	VS
201.	Being able to keep busy all the time.	1	2	3	4	5
202.	The chance to work alone on the job.	1	2	3	4	5
203.	The chance to do alternative from to time.	1	2	3	4	5
204.	The chance to be —somebody —in the community.	1	2	3	4	5
205.	The way my boss handles his / her workers.	1	2	3	4	5
206.	The competence of my supervisor in making decision.	1	2	3	4	5
207.	Being able to do things that don 't goes against my conscious	1	2	3	4	5
208.	The way my job provides for steady employment.	1	2	3	4	5
209.	The chance to be responsible for the work of others	1	2	3	4	5
210.	The chance to tell people what to do.	1	2	3	4	5
211.	The chance to do something that makes use of my abilities.	1	2	3	4	5
212.	The way company policies are put into practice.	1	2	3	4	5
213.	My pay and the amount of work I do.	1	2	3	4	5
214.	The chances for advancement on this job.	1	2	3	4	5
215.	The freedom to use my own judgment.	1	2	3	4	5
216.	The chance to try my own methods of doing the job	1	2	3	4	5
217.	The working conditions.	1	2	3	4	5
218.	The way my co-workers get each other.	1	2	3	4	5
219.	The praise I get for doing a good job.	1	2	3	4	5
220.	The feeling of accomplishment I get from the job.	1	2	3	4	5

PART III: Measure of hygiene and motivational factors.

This section of the questionnaire asks for your opinion about whether you agreed or not at this facility. Please circle the one number for each question that comes closest to reflecting your opinion about it.(strongly agree (SA) =5, agree (A) =4, neither agree nor disagree (N) =3, disagree (D) =2, strongly disagree (SD) =1)

Motivator	Questions	Possible answer				
		SD	D	N	A	SA
301. Achievement	301.1. I am proud to work in this health institution because it recognizes my achievements.	1	2	3	4	5
	301.2. I feel satisfied with my job because it gives me feeling of accomplishment.	1	2	3	4	5
	301.3. I feel I have contributed towards my health institution in a positive manner.	1	2	3	5	5
302. Advancement	302.1. I will choose career advancement rather than monetary incentives.	1	2	3	4	6
	302.2. My job allows me to learn new skills for career advancement.	1	2	3	5	5
303. Work intention to stayelf	303.1. My work is thrilling and I have a lot of variety in tasks that I do.	1	2	3	4	5
	303.2. I am empowered enough to do my job.	1	2	3	4	5
	303.3. My job is challenging and exciting.	1	2	3	5	5
304. Recognition	304.1. I feel appreciated when i achieve or complete a task.	1	2	3	4	5
	304.2. My manager always thanks me for a job well done.	1	2	3	4	5
	304.3. I receive adequate recognition for doing my job well.	1	2	3	5	5
305. Growth	305.1. I am proud to work in my health institution because I feel I have grown as a person	1	2	3	4	5
	305.2. My job allows me to grow and develop as a person.	1	2	3	4	5
	305.3. My job allows me to improve my experience, skills and performance.	1	2	3	5	5
306. Responsibility	306.1. Allowed to work without supervision	1	2	3	4	5
	306.2. Responsible (for his/her own efforts)	1	2	3	4	5
	306.3. Given responsibility for the work of others	1	2	3	4	5
	306.4. Lack of responsibility	1	2	3	4	5
	306.5. Given new responsibilities—no formal advancement	1	2	3	5	5
Hygienic factors						
307. Organization Policy	307.1. The attitude of the administration is very accommodative in my health institution.	1	2	3	4	5
	307.2. I am proud to work for this health institution because the health institution policy is favourable for	1	2	3	4	5
	307.3. I completely understand the mission of my health institution.	1	2	3	4	5
	308.1. It is easy to get along with my colleagues.	1	2	3	4	5

308. Relationship with friends	308.2. My colleagues are helpful and friendly.	1	2	3	4	5
	308.3. Colleagues are important to me.	1	2	3	4	5
309. Work security	309.1. I believe safe working at my workplace.	1	2	3	4	5
	309.2. I believe my job is secure.	1	2	3	4	5
	309.3. My workplace is located in an area where I feel comfortable.	1	2	3	4	5
310. Relationship With supervisor	310.1. I feel my performance has improved because of the support from my supervisor.	1	2	3	4	5
	310.2. I feel satisfied at work because of my relationship with my supervisor.	1	2	3	4	5
	310.3. My supervisors are strong and trustworthy leaders	1	2	3	4	5
311. Payment	311.1. I am encouraged to work harder because of my Salary.	1	2	3	4	5
	311.2. I believe my salary is fair.	1	2	3		5
312. Working Conditions	312.1. I feel satisfied because of the comfort I am provided at work.	1	2	3	4	5
	312.2. I am proud to work for my health institution because of the pleasant working conditions.	1	2	3	4	5
313. Supervision	313.1. My supervisor applies personal policies and practices fairly to me	1	2	3	4	5
	313.2. My supervisor is available when I need support	1	2	3	4	5
	313.3. I have a work plan developed with my supervisor	1	2	3	4	5
	313.4. The head of this health facility is competent	1	2	3	4	5

PARTIV. INTENTION TO STAY? For each of the options below choose the most appropriate option: 1 = Strongly disagree; 2 = Disagree; 3 = Can't say; 4 = Agree; 5 = Strongly agree

Statements	Response				
Would you prefer to continue working this hospital or would you prefer to leave					
401.1. I would prefer very much to continue working	5	4	3	2	
401.2. Would not care either way	5	4	3	2	1
401.3. I would not prefer to work here	5	4	3	2	1
How long would you like to stay in this hospital					
401.4. I would like to stay in the hospital for one year	5	4	3	2	1
401.5. I would like to stay in the hospital for two year	5	4	3	2	1
401.6. I would like to stay in the hospital for more than two year	5	4	3	2	1
401.7. I would like to leave as soon as possible	5	4	3	2	1

ANNEX IV: Declaration Form

Declaration

I, the under signed declare that this is my original work has never been presented in this or any other university and that all the resources and materials used for the research have been fully acknowledge.

Principal investigator

Name: Aschalew Mesfin (MD)

Signature: -----Date: 7/13/2021

Advisors:

1. Name: Desta Debalkie (MPH, Ass. Prof)

Signature -----Date -----

2. Gebeyehu Tsega MPH, Ass. Prof)

Signature ----- Date -----