

**Original Research Article**

**Factors associated with retention of health professionals in a district in Ghana**

**Abstract:**

Aims: To assess factors associated with the retention of health professionals in a district in Ghana.

Study design: The study was an analytical cross-sectional study using quantitative methods in the collection of data.

Place and Duration of Study: Komenda-Edina-Eguafo-Abirem District of the Central Region of Ghana in the month of October 2022.

Methodology: A structured self-administered questionnaire was used to obtain data from 282 health professionals who were conveniently selected from various health facilities in the study. The data collected was cleaned and analysed using statistical software STATA version 15. Descriptive statistics were presented in tables and graphs. Chi-square test and multiple logistic regression analysis were used to assess association between dependent and independent variables. Significance of association was set at  $p < 0.05$  at 95% confidence interval.

Results: Overall, 22.0% of the health professionals intended to stay at their current organisation. Logistic regression analysis predicted that age more than 35 years (AOR: 3.4, CI: 1.025 - 11.283,  $P = .046$ ) and female sex (AOR: 0.56, CI: 0.016 - 0.223,  $P = .001$ ) were

significantly associated with retention. Institutional factors like lack of supervision of work (AOR: 0.508, CI: 0.176 – 1.472, P = .021), lack of in-service training (AOR:0.045, CI: 0.010 -0.193, P = .001), inadequate management support (AOR: 0.288, CI: 0.109 – 0.764, P = .012), and poor career progression (AOR: 0.472, CI: 0.019 -1.873, P = .028) significantly reduced the likelihood of staying. Community factors like absence of family (AOR: 0.138, CI: 0.051 – 0.376, P = .001), and absence of alternate jobs (AOR: 0.051, CI: 0.006 – 0.459, P = .008) also negatively predicted retention.

Conclusion: Only a small proportion of health workers in the district intend to stay. Factors related to retention were predominantly organisational like career progression, management support and incentives.

Keywords: health facilities, health workers, Ghana, retention, retention of health workers, push factors, pull factors.

## **Introduction**

The concept of accessibility to healthcare is multidimensional involving financial, socio-cultural and geographic factors - One crucial dimension of accessibility is the geographic distribution of healthcare workers [1,2]. Notably, the measure of inequality in the distribution of the health workforce may depend strongly on the underlying measure of health care needs [3]. Munga and Mæstad [3] explain that in cases of a non-uniform distribution of health care needs across geographical areas, other measures of health care needs than population levels may have to be developed to ensure a more meaningful measurement of distributional inequalities of the health workforce. The World Health Organization (WHO) notes that there is a disparity between the developed and poor countries because developed countries tend to have better distribution of healthcare personnel than the developing and third world countries [4]. The geographical imbalance tends to favour the wealthier and urban areas more than the

remote areas [5,6]. The majority of workers tend to be concentrated in the urban areas leaving the rural areas with poor availability of health services [7].

The poor development of rural areas compared to urban areas may be a contributory factor to this geographical imbalance as rapid rural-urban migration has shifted human resources away from the remote areas to the cities, leading to a few skilled personnel for the vast numbers of people living in the deprived areas who need them [8]. This explains why a study suggests that a systems-based approach to strengthening rural healthcare units is feasible, although complex, particularly in rural settings [9]. Observably, the recruitment and retention of health workers in under-served areas is an international problem affecting both developed and developing countries [10]. Even as the African Region suffers more than 24% of the global burden of disease, it has access to only 3% of health workers and less than 1% of the world's financial resources [11]. The reasons for wanting to leave a health job have been attributed to perceptions of personal safety, feeling patient outcomes were compromised by poor care or perceived failed promises - staying and coping with unsatisfactory conditions was often about being settled into a community, rather than into the post [12].

Ghana is not spared of the low number of healthcare staff and the inequitable distribution of healthcare workers between the rural and urban areas. The health care delivery system in Ghana is categorised into five levels of providers: Tertiary hospitals, regional hospitals, district hospitals, polyclinics and health centres and the health posts [13]. These levels have different human resources needs. Policy interventions by the Government of Ghana through the Ministry of Health include increasing the number of training institutions for health workers, expansion of training centres to include private institutions, provision of incentives, compulsory housemanship for medical doctors, and compulsory service for nurses [14]. This

may relate to the observation that a country's health workforce can be expensive to train and shortages can be difficult to fill quickly, due to the lead-time in recruiting and training new staff [15].

In an effort to bridge the gap between the financial remuneration between the rural areas and urban areas, the Deprived Area Allowance was introduced [16]. Although the deprived area allowance was appreciated, it was also criticised as the definition of the "deprived area" was not clear and the money involved was small and payment too irregular [17]. The number of training institutions for medical professionals has also been increased over the years to produce a substantial amount of health professionals. The Ghana College of Physicians and Surgeons was also instituted for postgraduate training of medical students to help curb the emigration of skilled doctors out of the country [18]. Ghana had a low doctor to population ratio of 1:8481 [19]. Nursing training institutions have also increased over the past decade in an attempt to increase the number of nurses and midwives. It appears that the efforts worked to a large extent and increased the density of nurses, doctors and midwives improving from 1.07 per 1000 population to 2.65 per 1000 population between the year 2005 and 2017 [20].

Despite this achievement, it does not meet international standards and it is suboptimal [21]. In addition, there was a disparity between the number of health professionals in the urban and rural areas as majority of doctors and nurses live in the urban areas [22]. In 2016, the two teaching hospitals (Komfo Anokye Teaching Hospital and Korle Bu Teaching Hospital) employed more than 45% of doctors in the country whilst 15% were present in the district [18]. The different factors impeding health worker retention could be attributed to individual, health system, and community or social factors [23]. Mbemba *et al.* [24] informed that the most important factors influencing recruitment include; rural background and rural origin,

followed by career development while opportunities for professional advancement, professional support networks and financial incentives were factors impacting retention. A study confirmed that participants reported poor living conditions in rural areas (e.g., poor housing facilities and unsafe drinking water); overwhelming workloads with poor safety and insufficient equipment; and a lack of opportunities for career development, and skill enhancement – there were insufficient wages and inadequate opportunities for private practice in rural areas in Bangladesh [25].

Theoretically, health professionals' decision to stay or leave can be attributed to 'push' and 'pull' factors as described in the literature [26]. Push factors are conditions that force people to leave their current location. Lehmann *et al.*, [26] explain that while Push factors exist at the point of stay to act as motivation to leave the area, Pull factors are the opposite of push factors – they attract people to a particular area. In the context of retention of health professionals, these factors can exist at the personal, organisational and community levels. Personal or individual factors are essential because the individual's personal attributes are found to impact on the decision to remain or leave rather than actual factors of the organisation or community in which they work [27]. The structural, social and financial organisation of a health facility are crucial, as these factors provide either a conducive or an unfriendly environment for health workers - A conducive work environment would cause health workers to stay while an unfriendly work environment would likely make them leave [27]. Moreover, as health workers are situated within the community, the community/societal factors are key to understanding health workers' decision to move out or stay. For example, the lack of water and electricity generally can cause people to leave their current community [28]. Thus, an unfavourable community is repulsive to everybody, including health professionals.

The analysis of literature showed that the lack of studying the effects of individual, organisational and community factors on retention of health professionals were some of the gaps in the context of the application of theoretical perspective in the Komenda Edina Eguafo Abirem (KEEA) District. The Komenda Edina Eguafo Abirem (KEEA) District is located in the Central Region, one of the regions with poor health indicators in Ghana - it was among the top three regions to record the highest maternal and neonatal mortalities; and a high teenage birth rate [29]. Available statistics for the Central Region suggested that the KEEA District had high prevalence of adolescent pregnancies, estimated at 17.5% [30]. However, it appears that not enough studies have examined how individual factors, community factors, and health system factors, including human resource policy, and job satisfaction affect retention of health workers in Ghana in general and Central Region in particular. This study would address the gaps in this regard using the KEEA District as a yardstick. The general objective of the study was to assess factors associated with retention of health professionals in the KEEA District of the Central Region. This was achieved by addressing the following specific objectives: to determine the proportion of health professionals likely to continue practicing/staying in the KEEA District; to examine the association between individual (socio-demographic characteristics) factors and retention of health professionals; to assess the association between organisational (health system) factors and retention of health professionals; and to examine the association between community/social factors and retention of health professionals in the KEEA District.

## **Methods**

### *Study Design*

The study was an analytical cross-sectional study using quantitative methods with a structured questionnaire in gathering data from health professionals and using standardised procedures and statistical methods to determine the association between the independent and dependent variables [31].

### *Study area*

The study was conducted in the Komenda-Edina-Eguafo-Abirem (KEEA) District of the Central Region of Ghana. KEEA is one of the administrative districts of the Central Region of Ghana. The KEEA District has a total population of 144,705 and hosts about 6.6% of the Central Region's population [32]. About 60% of the population is rural. The population has more females (51.8%) than males (48.2%) and 29.1% of the residents in the district are migrants [32]. The district covers a total area of 452.5 square kilometres with a population density of 319.8 per sq.km. About 67.6% of the population aged 15 years and above are economically active, but the district does not have substantial large industries. The main economic development activities are fishing, farming and salt winning. About 85% of the working population are engaged in either fishing or crop production [32]. KEEA has five (5) sub-districts, which include Elmina, Ankafu, Kissi, Komenda and Agona. Health care in the district is provided by 41 health facilities: Two (2) hospitals, one (1) polyclinic, three (3) maternity homes, three (3) health centres and thirty-one (31) community-based health planning and services (CHPS) [33].

### *Sample size determination*

The estimated number of health professionals for inclusion in the study was based on Yamane's [34] formula for sample size calculation:

$$n = \frac{N}{1+Ne^2}$$

Where,

n = Sample Size

N = Population size

e = margin of error which is assumed to be 0.05

The study population was the estimated number of health professionals in the public health sector in the KEEA District. N = 815. The required sample size for the study was n = 268. Using an attrition rate of 5%, 282 health professionals were sampled and included in the study.

#### *Sampling procedure*

A multistage sampling method was applied to recruit participants into the study. The quota sampling technique was applied to sample participants from the various health institutions [35]. The first stage of sampling involved dividing grouping the health workers in the district based on the healthcare delivery level (i.e., hospitals, polyclinics, health centres and CHPS). The goal was to have equal representation of each of the health care levels in the study. After this, a proportion of health workers at each healthcare level was conveniently selected. Arguably, quota sampling has an inherent selection bias and the researcher may not know if the population is well presented [36]. Therefore, generalization of the findings should be done with caution. Convenience sampling was employed because of the varied work schedules of health workers which did not favour probability sampling approaches. Thus

data collection instruments were administered to participants who were readily available and met the inclusion criteria for the study. Although it is easier using convenience sampling method, there may be selection bias and the sample may not be representative [37].

#### *Data collection*

Data for the study were collected in October, 2022, employing quantitative methods. The questionnaire was divided into four sections. Section A included questions on the individual (socio-demographic characteristics) factors of participants. Section B included questions on the organisational (current working environment) factors of participants. Statements were presented in which participants were asked to agree or disagree with “yes” or “no” respectively. Section C collected data on the community (current local environment) factors related to the health professionals stay. In section D, participants were asked to choose whether they intended to stay using the ‘yes’ or ‘no’ format. Questionnaires were developed and administered by the researcher and two trained research assistants to collect data from the health professionals. The designed questionnaire took a maximum of 15 minutes to administer.

#### *Quality assurance*

Quality assurance was achieved by ensuring the authenticity of the data and trustworthiness of the analysis [38]. Validity refers to the extent to which a concept is accurately measured in a quantitative study [31]. Reliability is concerned with the exactness of a tool having the same findings if used in the circumstance on repetitive times [39]. To ensure reliability, all research assistants were trained on the designed questionnaire. To ensure content validity, an expert in human resource management in health assessed the questionnaire to ensure that the

content appeared logical and covered the scope of the research. Validity and reliability were also enhanced by inclusion of all healthcare levels in this study.

### *Data analysis*

Quantitative data from answered questionnaires were crosschecked for completeness. Data was checked to identify missing values and entered into a data processing software. STATA version 15, which is a recommended package for analysis of health research was used for data analysis. Both descriptive and inferential analysis were performed. Descriptive analysis involved cross-tabulations and summary of proportion of health professionals' intention to stay and the reasons why they intended to stay or leave. Chi-square analysis was used to determine association between independent and dependent variables. A logistic regression model was used to determine the magnitude of the influence of independent variables (individual, organisational, and community factors) on the outcome variable (retention). Significance was set at  $P = .05$  at 95% confidence interval.

## **Results**

### *Socio-demographic characteristics of respondents*

A total of 282 participants were involved in the study. Majority of the respondents, 120 (42.6%) were aged between 25-29 years with the lowest number 37 (13.1%) in ages 35 and above. Female respondents accounted for 191 (67.7%) and male respondents were 91 (32.3%). Majority of the respondents, 164 (58.2%) were single while 118 (41.8%) were married. A total of 139 (49.3%) had no children and the lowest number 30 (10.6%) had three or more children. Regarding educational qualification, 144 (51.1%) had certificate and the lowest number 4 (1.4%) had earned a masters degree. Majority of the health professionals

were nurses, 178 (63.1%) and the least number 5 (1.8%) were in the medical doctors category. The results are displayed (Table 1).

**Table 1: Socio-demographic characteristics of respondents: N (282)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age</b>		
20-24	42	14.9
25-29	120	42.6
30-34	83	29.4
35 and above	37	13.1
<b>Marital status</b>		
Single	164	58.2
married	118	41.8
<b>Gender</b>		
Male	91	32.3
Female	191	67.7
<b>Number of children</b>		
None	139	49.3
One	62	22.0

Two	51	18.1
Three and More	30	10.6
<b>Educational qualification</b>		
Certificate	144	51.1
Diploma	106	37.6
Degree	28	9.9
Masters	4	1.4
<b>Professional category</b>		
Nurse	178	63.1
Midwife	53	18.8
Community health worker	28	9.9
Doctor	5	1.8
Lab scientist	11	3.9
Physician assistant	7	2.5

*Proportion of health workers who are likely to stay*

The results showed that out of the 282 respondents, minority, 62 (22.0%) wanted to stay at their current institution for more than three years whilst 220 (78%) did not want to stay. The results are shown (Figure 1).

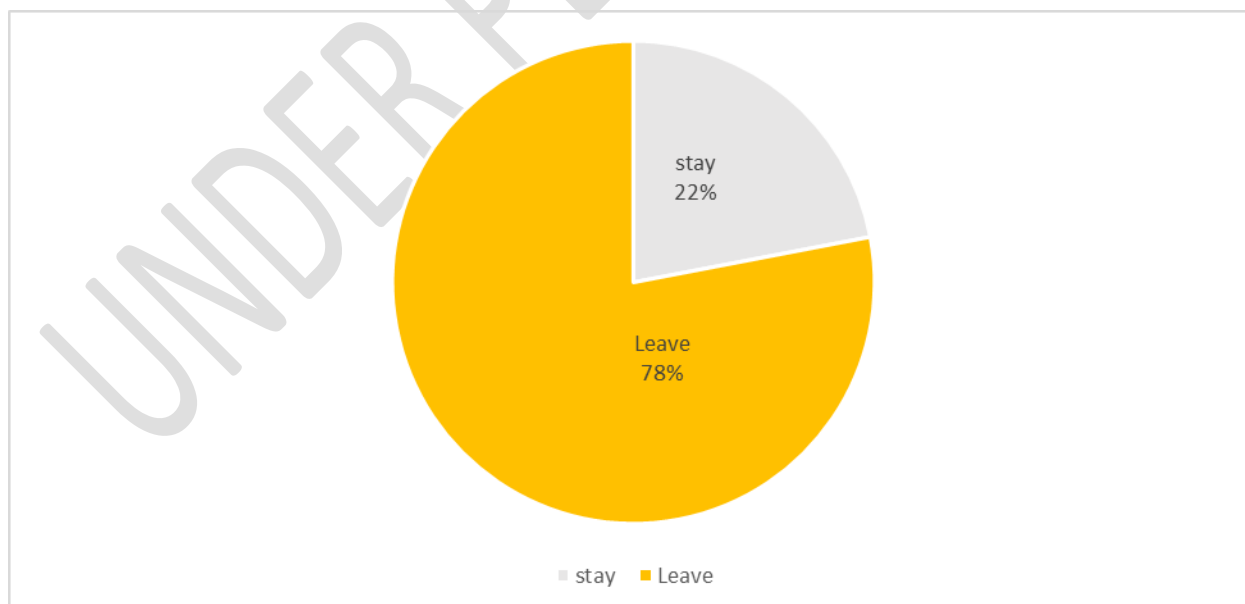


Figure 1: Proportion of health professionals who are likely to stay.

*Association between individual (socio-demographic characteristics) factors and retention of health professionals*

There were significant associations between age ( $\chi^2 = 9.848$ ,  $p=0.002$ ), gender ( $\chi^2 = 27.360$ ,  $P =.001$ ) and number of children health professionals had ( $\chi^2 = 9.192$ ,  $P=.027$ ). However, marital status, educational qualification and professional category were not significantly related to retention of health professionals ( $P>0.05$ ). The results are presented (Table 2).

**Table 2: Association between individual (socio-demographic characteristics) factors and retention of health professionals**

<b>Variable</b>	<b>Leave (%)</b>	<b>Stay (%)</b>	<b><math>\chi^2</math>-value</b>	<b>P-value</b>
<b>Age</b>			9.848	0.002
20-24	34(81.0)	8(19.0)		
25-29	99(82.5)	21(17.5)		
30-34	55(66.3)	28(33.7)		
35 and Above	32(86.5)	5(13.5)		
<b>Gender</b>			27.36	<0.001
Male	88(96.7)	3(3.3)		
Female	132(69.1)	59(30.9)		
<b>Marital status</b>			3.117	0.077
Single	134(81.7)	30(18.3)		
married	86(72.9)	32(27.1)		
<b>Number of children</b>			9.192	0.027

None	117(84.3)	22(15.7)		
One	49(79.0)	13(21.0)		
Two	34(66.7)	17(33.3)		
Three and More	20(66.7)	10(33.3)		
<b>Educational qualification</b>			3.680	0.298
Certificate	109(75.7)	35(24.3)		
Diploma	82(77.4)	24(22.6)		
Degree	25(89.3)	3(10.7)		
Masters	4(100.0)	0(0)		
<b>Professional category</b>			9.397	0.094
Nurse	142(80.3)	35(19.7)		
Midwife	42(79.2)	11(20.8)		
Community health worker	16(57.1)	12(42.9)		
Doctor	5(100)	0(0.00)		
Lab scientist	9(81.8)	2(18.2)		
Physician assistant	5(71.4)	2(28.6)		

#### *Association between organisational factors and retention of health professionals*

Results of the descriptive statistics showed that majority 28 (17.1%) were working in hospitals while the least 6 (26.1%) who were health workers in CHPS wanted to stay. With respect to the number of years spent in current organizations, the highest number 23 (19.3%) who had served between 2-5 years and the least 8 (33.3%) who had served for more than 10 years wanted to stay. Moreover, 58 (35.6%) who had in-service training, 17 (21.0%) with accommodation, 51 (34.2%) who had adequate supervision of work, 7 (28.0%) who were given allowance, 11 (55.0%) who had adequate career progression, 9 (24.3%) who had adequate logistics to work and 43 (48.3%) who had management support wanted to stay. Results of the chi square analysis indicated that there were positive associations between steady career progression ( $\chi^2 = 13.679$ ,  $P = .001$ ), oversight of work or supervision of the work of health workers ( $\chi^2 = 27.606$ ,  $P = .001$ ), provision of in-service training ( $\chi^2 = 41.635$ ,  $p = 0.001$ ) and management support of health workers ( $\chi^2 = 52.557$ ,  $P = .001$ ) and retention of

health professionals. Nonetheless, the type of organisation, number of years spent at current institution, provision of allowance, provision of accommodation, and provision of logistics were not significant ( $P>0.05$ ). The results are shown (Table 3).

**Table 3: Association between organisational factors and retention of health professionals**

<b>Variable</b>	<b>Leave (%)</b>	<b>Stay (%)</b>	<b><math>\chi^2</math>-value</b>	<b>p-value</b>
<b>Type of organization</b>			6.658	0.084
Hospital	136(82.9)	28(17.1)		
Polyclinic	29(65.9)	15(34.1)		
Health centre	38(74.5)	13(25.5)		
CHPS	17(73.9)	6(26.1)		
<b>Number of years at current institution</b>			4.269	0.234
Under 2 years	77(81.1)	18(18.9)		
2-5 years	96(80.8)	23(19.3)		
6-10 years	31(70.4)	13(29.5)		
.> 10 years	16(66.7)	8(33.3)		
<b>Provision of accommodation</b>			0.066	0.797
no	156(77.6)	45(22.4)		
yes	64(79.0)	17(21.)		
<b>Career progression</b>			13.679	<0.001
No	211(80.5)	51(19.5)		
Yes	9(45.)	11(55.0)		
<b>Supervision of work</b>			27.606	<0.001
No	122(91.7)	11(8.3)		
Yes	98(65.8)	51(34.2)		

<b>Given allowance</b>			0.578	0.447
No	202(78.6)	55(21.4)		
Yes	18(72.0)	7(28.0)		
<b>In-service training</b>			41.635	<0.001
No	115(96.6)	4(3.4)		
Yes	105(64.4)	58(35.6)		
<b>Adequate logistics</b>			0.136	0.713
No	192(78.4)	53(21.6)		
Yes	28(75.7)	9(24.3)		
<b>Management Support</b>			52.557	<0.001
No	174(90.2)	19(9.8)		
Yes	46(51.7)	43(48.3)		

*Association between Community factors and retention of health professionals*

Results of the descriptive statistics showed that 60 (22.0%) of the respondents who had electricity supply, 59 (22.2%) who had water supply, 41 (42.7%) whose family was present in the community, and 8 (72.7%) who had job opportunities in the community intended to stay. Results of the chi square analysis showed that the presence of the family of respondents in the community ( $\chi^2 = 36.33, P=.001$ ) and presence of locums and other job opportunities ( $\chi^2 = 17.182, P=.001$ ) were significantly associated with health professionals' decision to leave or stay. The presence of electricity ( $\chi^2 = 0.001, P=.986$ ) and water supply ( $\chi^2 = 0.204, P=.748$ ) were not significant. The results are summarized (Table 4).

**Table 4: Association between community factors and retention of health professionals**

Variable	Leave (%)	Stay (%)	$\chi^2$ -value	p-value
<b>Electricity</b>			0.001	0.986
No	7(77.8.)	2(22.2)		
Yes	213(78.0)	60(22.0)		
<b>Water supply</b>			0.204	0.748
No	13(81.3)	3(18.8)		
Yes	207(77.8)	59(22.2)		
<b>presence of family</b>			36.33	<0.001
No	165(88.7)	21(11.3)		
Yes	55(57.3)	41(42.7)		
<b>Job opportunities in the community</b>			17.182	<0.001

No	217(80.1.)	54(19.9)
Yes	3(27.3)	8(72.7)

*Association between individual (socio-demographic characteristics) factors, organisational factors, community factors and retention of health professionals*

Results of the logistic regression showed that individual (socio-demographic characteristics) factors, which remained significantly associated with retention were gender and age. The association between the number of children the respondents had, the type of profession and current institution health workers worked and intention to stay were significant in the simple logistic regression model but were not statistically significant in the final multiple regression model. The estimates of the individual factors revealed that female health workers were less likely to stay compared to males. Females had 0.44 times decrease in odds of staying as compared to males (AOR=0.56, CI=0.016-0.223,  $P=.001$ ). The odds of staying in the age group 35 years and above were 3.4 times as large compared with the age group 20-24 years while the odds of staying were 2.932 (AOR=2.932, CI=0.721-11.918,  $P=.133$ ) and 3.025 (AOR=3.025, CI=0.938-26.905,  $P=.059$ ) as large in age group 30-34 years and 25-29 years respectively compared to age group 20-24 years. The results are displayed (Table 4).

Regarding institutional factors, retention remained significantly associated with career progression ( $P=.028$ ), provision of in-service training ( $P=.001$ ), supervision of work and having management support ( $P=.001$ ). Health workers were less likely to stay if there was no supervision of work, no in-service training, no steady career progression and when management support is inadequate. Health workers had 49.2% decrease in odds of staying when there was no supervision of work (AOR=0.508, CI=0.176-1.472,  $P=.021$ ), 95.5% decrease in the odds of staying when there was no in-service training (AOR=0.045, CI=0.010-0.193,  $P=.001$ ), 52.8% decrease in odds of staying when there was no career progression (AOR=0.472, CI=0.019-1.873,  $P=.028$ ) and 71.2% decrease in odds of staying

when management support was inadequate (AOR=0.288, CI=0.109-0.764,  $P=.012$ ) as compared to when all these variables were present at the current institution. The type of organization, years spent at current organization, provision of accommodation and financial incentives like allowance were not significantly associated with retention ( $P>0.05$ ). In respect of community factors, health professionals had 86.2% decrease in odds of staying if their families were not present in the community (AOR=0.138, CI=0.051-0.376,  $P=.001$ ) and 94.9% decrease in odds when there were no alternate job opportunities in the community (AOR=0.051, CI=0.006-0.459,  $P=.008$ ). The results are indicated (Tables 5a and 5b).

**Table 5a: Association between individual (socio-demographic characteristics) factors, organisational factors, community factors and retention of health professionals**

VARIABLE	UOR	95%CI	P-value	AOR	95% CI	P-value
<b>Age</b>						
20-24	ref			ref		
25-29	1.506	0.446 - 5.086	0.51	3.025	0.938 - 26.905	0.059
30-34	1.358	0.473 - 3.893	0.57	2.932	0.721 - 11.918	0.133
35 and Above	3.258	1.144 - 9.279	0.027*	3.4	1.025- 11.283	0.046*
<b>Sex</b>						
Male	ref			ref		
Female	0.076	0.023 - 0.251	<0.001*	0.56	0.016- 0.223	<0.001*
<b>Marital status</b>						
Single	ref			ref		
married	0.602	0.341 - 1.061	0.079	1.088	0.441 - 2.685	0.855
<b>Number of children</b>						
None	ref			ref		
One	0.376	0.155 - 0.911	0.03*	0.376	0.100 - 1.407	0.146
Two	0.531	0.200 - 1.406	0.203	0.475	0.139 - 1.625	0.236
Three and more	1	0.384 - 2.603	1	0.989	0.312 - 3.129	0.985
<b>Educational qualification</b>						
Certificate	ref			ref		
Diploma	0.911	0.504 - 1.650	0.759	0.998	0.512 – 1.409	0.604
Degree	0.374	0.106 - 1.313	0.125	1.066	0.102 – 1. 876	0.100

Masters		0.710	0.610 – 1.826	0.807	0.68	0.342 – 2.684	0.76
<b>Professional category</b>							
Nurse		ref			ref		
Midwife		1.070	0.501 – 2.288	0.861	0.567	0.185 – 1.739	0.321
Community health worker		3.064	1.330 – 7.061	0.009*	4.539	0.746–27.623	0.101
Doctor		0.000	-	0.999	0.000	-	0.999
Lab scientist		0.908	0.188 -4.391	0.904	2.399	0.176 - 42.66	0.511
Physician assistant		1.634	0.304 -8.777	0.567	14.297	0.592- 345.10	0.102
<b>Current Institution</b>							
Hospital		ref			ref		
Polyclinic		2.512	1.194- 5.288	0.015*	1.113	0.298 – 4.165	0.873
Health centre		1.662	0.785 – 0.517	0.184	1.441	0.444 – 4.682	0.543
CHPS		1.714	0.621 – 4.734	0.298	3.040	0.333- 27.784	0.325

**Table 5b: Association between individual (socio-demographic characteristics) factors, organisational factors, community factors and retention of health professionals**

VARIABLE	UOR	95%CI	P-value	AOR	95% CI	P-value
<b>Years at Organisation</b>						
Under 2 years	ref			ref		
2-5 years	1.025	0.516 – 2.035	0.944	0.550	0.169 – 1.794	0.322
6-10 years	1.794	0.785 – 4.099	0.166	0.311	0.060 – 1.621	0.166
> 10 years	2.139	0.793 – 5.766	0.133	0.740	0.108 – 5.077	0.759
<b>Accommodation</b>						
Yes	ref			ref		
No	0.981	0.527 – 1.826	0.951	1.117	0.344 – 3.633	0.854
<b>Career progression</b>						
Yes	ref			ref		
No	0.310	0.122 – 0.786	0.014*	0.472	0.019 – 1.873	0.028*
<b>Supervision over work</b>						
Yes	ref			ref		
No	0.276	0.146 – 0.523	<0.001*	0.508	0.017 – 1.472	0.021*
<b>Given allowance</b>						
Yes	ref			ref		
No	0.700	0.278 – 1.761	0.449	1.055	0.172 – 6.466	0.953
<b>In-service training</b>						
Yes	ref			ref		
No	0.101	0.040 – 0.245	<0.001*	0.045	0.010 – 0.193	<0.001*
<b>Adequate logistics</b>						
Yes	ref			ref		
No	1.025	0.443 – 2.372	0.954	5.202	1.140 -23.749	0.133
<b>Management Support</b>						

Yes	ref			ref		
No	0.173	0.095 – 0.317	<0.001*	0.288	0.109 – 0.764	0.012*
<b>Electricity</b>						
Yes	ref			ref		
No	1.014	0.205 – 5.011	0.986	1.741	0.082 – 36.969	0.722
<b>Water supply</b>						
Yes	ref			ref		
No	1.195	0.372 – 3.845	0.765	1.479	0.164 – 30.342	0.727
<b>Presence of family</b>						
Yes	Ref			ref		
No	0.226	0.125 – 0.409	<0.001*	0.138	0.051 – 0.376	<0.001*
<b>Alternate jobs</b>						
Yes	Ref			ref		
No	0.093	0.024 – 0.364	0.001*	0.051	0.006 – 0.459	0.008*

UOR: unadjusted odds ratio. AOR: adjusted odds ratio. CI: confidence interval. ref: reference category. \*:  $p < 0.05$ .

## Discussion

### *Proportion of health workers/professionals willing to be retained*

Retention of health professionals remains a problem and it appears to worsen in developing countries [40]. In this study, only a small proportion (22.0%) of the health professionals had the intention to stay on at their respective health facilities. A higher proportion (78%) had not intention to stay. This finding is closer to another study where 31% intended to stay at their workplace in Ghana [41]. The low proportion was also consistent with other studies in developing nations such as India - 33.6% [42] and Sub-Saharan African countries such as Ethiopia - 32.2% [40]. The findings of a more recent study in Uganda and India showed that a higher proportion (51.4% and 57.6% respectively) of health professionals intended to stay on at their current workplace for the next three years [43,44]. This could be explained by job satisfaction from adequate salary and incentives and improved quality of management of health systems in these contexts.

### *Individual (socio-demographic characteristics) factors and retention of health workers*

The study observed that age was significantly associated with health workers' retention. Thus, increasing age was significantly associated with retention with the odds of staying recording 2.932 and 3.025 as large in the age groups 30-34 years and 25-29 years respectively compared to the age group 20-24 years. This finding was similar to other studies, which observed that older health professionals were more likely to stay than the younger age group [40,41]. Arguably, older health workers were less likely to move because of established families at their current workplace. As such, advancing age can be seen as a major pull factor to retention of health professionals in the district. There was a significant association between gender of respondents and retention. Females had 0.44 times decrease in odds of staying compared to males. This could be explained by the fact that more females (78.8%) were married in this study than males (21.2%) and were likely to move to where their families were. A study posited that married females were likely to move to where their families were [45]. A study noted that females in general scarcely live in underdeveloped areas because of security issues, family commitments and life considerations [6]. However, the study finding contrasted with another study, which observed that males were 66.0% less likely to stay as compared to females (54.7%) in Ethiopia [46].

### *Organisational (health provider) factors and retention of health workers*

The study found that retention remained significantly associated with career progression. Health workers had 52.8% decrease in odds of staying when there was no career progression as compared to when this variable was present at the current institution. Similar to this finding, workers in rural areas had complained of slower career progression in comparison with their contemporaries in the urban areas [22]. Another study had earlier showed that health workers considered continuous education and career progression strategies to be

inadequate [47]. This could confirm the revelation that workers in remote areas lacked opportunities for professional development, course and knowledge upgrade and new advances in treatments [27]. The anticipation is that if workers move to far away remote places, they may be unable to pursue further education. Nonetheless, it could be seen that some workers would generally be willing to stay if the time frame for deployment and career progression is specified [22].

In addition, the study revealed that retention remained significantly associated with provision of in-service training. Health workers had 95.5% decrease in the odds of staying when there was no in-service training as compared to when this variable was present at the current institution. Notably, in-service training improves health workers' competencies and knowledge through training opportunities at the workplace [48]. Liu *et al.* [48] show that lack of in-service training prohibits personal growth and development of teams leading to a high rate of leaving. A study intimated that in-service training could improve retention [49]. Hence, the provision of in-service training can be seen as an important pull factor to retention of health workers.

Moreover, the study discovered that retention remained significantly associated with supervision of work. Health workers had 49.2% decrease in odds of staying when there was no supervision of work as compared to when this variable was present at the current institution. Hence, a study noted that among the four factor model of the non- financial incentives, only three, including leadership skill and supervision, were predictors of motivation and retention in district hospitals in Ghana [23]. A study had noted that health workers felt that they were inadequately supervised, with no feedback on performance in Malawi [47]. In other studies, the lack of supervision led to a high turnover of health

professionals in Ethiopia [46]. Lack of effective supervision, especially at the hard-to-reach areas could lead to professional isolation. This study confirmed the general idea in literature that being professionally isolated makes health professionals dissatisfied and less likely to stay [49]. The study found that ineffective supervision was a push factor and a significant predictor of retention.

Furthermore, the study observed that retention remained significantly associated with having management support. Health workers had 71.2% decrease in odds of staying when management support is inadequate as compared to when this variable was present at the current institution. This explains why the presence of support was positively correlated with health workers' decision to stay in earlier studies [25,45]. Notably, management support comes in the form of creating an enabling environment for work and creating a system where respect is upheld in the work environment. Hence, the lack of respect for certain cadre of health staff could push them to leave [12,24]. Similarly, standard human resource management practices such as performance appraisal and the provision of job descriptions were not present in many cases in Malawi [47]. Fundamentally, health workers would prefer to work in non-hostile and friendly environments.

#### *Community factors and retention of health professionals*

The study found a significant association between the presence of family/spouse in the community where the health worker was posted to work and retention. Health professionals had 86.2% decrease in odds of staying if their families were not present in the community. This factor seems protective of retention. Previous studies had also noted the importance of both nuclear and extended family/families in the communities where health professionals work as this increased their likelihood of staying [6,40]. There was a significant association

between the presence of locums and alternative/other job opportunities in the community and retention. Health workers had 94.9% decrease in odds when there were no alternate job opportunities in the community. Literature cited better opportunities for urban dwellers than rural areas as this could improve retention in Ghana [17,28]. This was also discussed as a push factor for retention and consistent with other studies which observed that the lack of other opportunities in the community increased turnover of workers [25].

## **Conclusion**

The study assessed factors associated with retention of health professionals in Ghana using the KEEA District of the Central Region as a test case. Generally, the study concludes that only a small proportion (22%) of health professionals were willing to stay in the district over the next three years against (78%) who did not want to stay. This small proportion portends a critical shortage of health professionals in the near future and should be a matter of concern to policy makers. With regards to individual factors, the study concludes that there was a significant association between gender, age and retention as health workers were less likely to stay if they were females and were 35 years and above. These are the prompts for policy makers to intensify advocacy for gender based policy and succession planning. With regards to organisational (health provider) factors, the study concludes that health professionals were less likely to stay if there was no management support, career progression was inadequate and had no supervision of work. They were more likely to stay if there was provision of in-service training. In respect of community/social factors, the study concludes that the presence of family and alternative/other job opportunities had a significant association with retention.

Thus, the various agencies of the Ministry of Health should review their policy on promotions to allow recognition of flexible study options such as weekend, sandwich and evening modes of education, which are done without study leave. This would encourage health workers to pursue higher degrees whilst still being at post without disrupting healthcare delivery. The Ministry of Health in collaboration with Ghana Health Service should operationalize and fine-tune the national policy on the provision of both financial and non-financial incentives for health professionals who work in the hard-to reach areas [50]. This incentive policy would motivate health professionals to remain in the district and compensate for sacrificing to stay. The health professionals should continue engaging the management of the various hospitals/health institutions in finding amicable solutions in addressing issues of provision of in-service training and management support.

#### *Limitations to the study and future research*

This study had some limitations in respect of the application of the chosen sampling methods with inherent bias, hence, generalisation of the findings should be done with caution. Secondly, the study was conducted among different levels of health care provision. It is possible that work findings from the study may not be generalisable to other districts as each district has its unique challenges with management of health facilities. In view of the above limitations to the study, it is suggested that further studies should use a multistage probability sampling technique like stratified sampling or cluster sampling. Future researchers should consider expanding the sample size to include other districts and regions. This would help in sampling a larger population and collect data on different geographical districts.

#### **Ethical Considerations**

Ethical clearance was granted by the Ghana Health Service Ethical Review Committee with protocol number GHS-ERC: 027/02/22 before data was collected. Written permission was obtained from the management of the respective health facilities for participants' engagement in the study. Participation in the study was completely voluntary and participants were allowed to withdraw at any point in time. Written consent was obtained from those who agreed to participate in the study after the procedures had been explained to them.

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