



## Job Satisfaction among Certified Registered Anaesthetists in Greater Accra Region, Ghana

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Aims:** This study aimed at assessing the levels of job satisfaction and determining factors that influence job satisfaction among Certified Registered Anaesthetists (CRAs), in Greater Accra Region, Ghana. CRAs are called Nurse Anaesthetists in other parts of the world.

**Study Design:** A cross-sectional survey design, with the structured self-administered questionnaire, was used to collect data.

**Place and Duration of Study:** The study was conducted among CRAs at the Korle-Bu Teaching Hospital, Ridge Regional Hospital, 37 Military Hospital, Tema General Hospital, Tema Polyclinic, Achimota Hospital, Ashaiman hospital, and Ridge School of Anesthesia, between November 2017 and June 2018.

**Methodology:** 100 Participants were randomly selected from these hospitals. Data were analysed using computer-based Statistical Package for Social Sciences (SPSS) version 24. The analyses were presented using tabular and graphic presentations. Chi-Square test was used to determine associations between job satisfaction, demographic factors, and job satisfaction predictors, where  $P$ - values less than 0.05 were interpreted as statistically significant.

**Results:** Out of the sample size of 100, the study recorded 95 (95%) response rate. Participants' age ranged between 20 and 60 years with the mean age of 41 years ( $\pm 0.714$ ). Females were more, 56 (58.9%) compared to males, 39 (41.1%). Majority of respondents (69, 72.6%) were married. There was no statistical significance in the association between job satisfaction and the socio-demographic variables. Providing good quality of Patient care ( $X^2=9.345$ {df1};  $p < 0.001$ ) and the availability of resources, equipment, and supplies ( $X^2=6.368$ {df1};  $p= 0.01$ ) were the only statistically significant predictors of job satisfaction. Overall, 63 (69.2%) CRAs were satisfied with their job.

**Conclusion:** From this study and others from across the globe, Anaesthetists are generally satisfied with their job. The working environment of CRAs is often stressful thus the need to achieve higher levels of job satisfaction. Therefore, improving the factors that influence job satisfaction is strongly recommended.

*Keywords: Certified registered anaesthetist; nurse anaesthetists; job satisfaction; determinants.*

## 1. INTRODUCTION

The strong desire for employees' job satisfaction should be part of every organisation's goals [1,2]. Satisfied employees will produce effective and efficient performance in the optimal time leading to increased productivity [1]. Creativity and innovation come from satisfied employees who will offer advances that allow organisations to evolve positively over time to meet the changes in market conditions [1,2]. Farrell and Stamm [2], in confirming this, draw the conclusion that high employee satisfaction will reduce absenteeism, accident, and employee stress, improve employee satisfaction with life and thus increase productivity and profit. On the other hand, a lack of job satisfaction results in a low level of commitment that, in turn, affects performance and the achievement of organisational goals [1,2]. Therefore, finding solutions to these problems is important. The possibility of retaining employees is high if methods to increase job satisfaction are explored [2].

Job satisfaction has been defined as a pleasurable emotional state resulting from the appraisal of one's job; an affective reaction to one's job; and an attitude towards one's job [2].

Several studies have been conducted globally to find out the level of job satisfaction and quantify the effect of stressor among Anaesthetists. Studies have demonstrated differences in how Anaesthetists feel about their jobs. Findings varied, with some research revealing job satisfaction, while others disclosed dissatisfied Anaesthetists at different countries. However, there is inadequate data on job satisfaction among Anaesthetists, and for that matter Certified Registered Anaesthetists (CRAs) in

Ghana. CRAs are referred to as Nurse Anaesthetists in other parts of the world.

According to a survey of professional satisfaction among Canadian anaesthesiologists in 2001 by Jenkin et al. which recorded 946 (57%) response rate, 75% of respondents reported overall job satisfaction. Associated with job satisfaction was intellectual stimulation, good quality of care and interaction with patients [3]. Job dissatisfaction stemmed from treatment from the provincial government, hospital politics and long hours of work [3]. A similar study in India by Shidhahe et al. [4] revealed that 78% of Anaesthesiologists in India reported full satisfaction with 49% of respondents satisfied with assistance in operating rooms; 51% felt they were duly respected by the surgeons and 50% expressed satisfaction with recognition of their services by patients. The main dissatisfaction factor was lack of resource/equipment [4].

A study by Marla Melana in West Virginia (2009), the USA on job satisfaction of CRNAs found that, out of the 102 participants responding, 11(11%) indicated that they have a certificate, 21(21%) had a bachelor's degree, 67(67%) had a Master's Degree, and 1 (1%) had Doctorate Degree. Most of the respondents were highly satisfied with their professional status (5.81 means), and autonomy (5.00), followed by interactions (4.71) and task requirements (4.51). Lastly, pay (3.95) and organisational policies (3.57) were found least satisfying [5].

In Ethiopia, a study conducted by BlenKassahun (2015) on job satisfaction involving 101 Anaesthetists, 57% were male and 43% were female [6]. Overall, job satisfaction was not associated with socio-demographic variables. However, satisfaction in helping others,

responsibilities, and freedom to choose the techniques of anaesthesia was significantly associated with job satisfaction. Lack of public awareness about the vital role played by Anaesthetists inpatient care in the operating room and inadequate salary were the major dissatisfaction factors among Ethiopian Anaesthetists [6].

A Study in Nigeria by Rukewe et al. [7] revealed that overall 59% of the Anaesthesiologists were satisfied with their job. The factors identified by respondents were time pressure, long working hours with complaints of insufficient sleep and employment status. A high percentage of participants 54.1% declared if they had a definite time for closing, it would enhance their job satisfaction.

In Ghana, Sanjeev Singh [8] study recorded 68% of Anaesthetists totally satisfied with their job. It was found that 82% anaesthesiologists working in teaching hospitals and 69% working in community hospitals were fully satisfied with their job. Female Anaesthesiologists were more satisfied with their job as compared to male Anaesthesiologists.

Similarly, Lauren Kasparian [9], conducted a study on the topic "sleep in safety: A study of Nurse Anaesthetist in Ghana" states; While researching anaesthesia practices in Ghana, she said, I learned about the health care crisis in the nation, and that a startling number of nurse anaesthetists, who are the main anaesthesia providers, providing more than 90% of the anaesthesia cases in Ghana (IFNA) [9,10], emigrate out of the country [9]. In the study, a major grievance cited by all the nurse anaesthetists was the educational system [9]. The Ghanaian Nurse anaesthetists have comparable requirements and educational standards as the master's program in nurse anaesthesia offered in the United States [9]. However, all three schools of the programs offered in Ghana only furnish certificates and just recently a bachelor's degree, rather than advanced degrees [9].

Globally, an estimated five billion people lack access to safe and affordable surgical and anaesthesia care [11]. This is due partly to lack of trained surgeons and anaesthesia providers, a shortage that impacts low and middle-income countries in particular, where 9 out of 10 individuals cannot access basic surgical procedures [8,11]. Previous studies have shown

that the shortage of Anaesthetist in Ghana continues to grow despite the addition of new graduates to the workforce each year. The current ratio of a surgeon to Anaesthetist is 5:1 in Ghana [12]. Moreover, the anaesthesia system and general health care in Ghana are faced with the shortage of equipment, supplies, and staffing. A lot of the times, surgery and anaesthesia are performed by intuition rather than science, as monitors and equipment are either scarce or nonfunctional [9].

The objectives of this study were to assess the level and identify factors associated with job satisfaction of CRAs in the Greater Accra Region (GAR) of Ghana. It was also meant to ascertain the association between socio-demographic characteristics and job satisfaction variables with job satisfaction.

CRAs in Ghana are regulated by the Ghana Medical and Dental Council (GMDC) as mandated by the statutory law [13]. The job description of CRAs' in Ghana may include, but not limited to anaesthesia care for patients at all levels of the health care system across Ghana for procedures including; surgical, obstetrical, diagnostic, therapeutic, and pain management. They perform a comprehensive history and physical examination; conduct a pre-anaesthesia evaluation; obtaining informed consent for anaesthesia, select, order, prescribe and administer anaesthesia drugs and controlled substances; inserting invasive and noninvasive monitoring or therapy, also resuscitation services, request consultations from Physician Anaesthetist, in facilities that have Physician Anaesthetists. CRAs plan and initiate anaesthetic techniques, including general, regional, local, and sedation. CRAs respond to emergency situations using airway management and provide post-anaesthesia care, and discharge from the recovery area [14].

The GAR has a population of 4,010,054 and Accra "district" is an urban metropolis with a total population of 1,665, 086 from the 2010 census [15]. Accra metropolis is the most densely populated part of the region. It was divided into 6 sub-metros namely Ablekuma, Ashiedu-Keteke, Ayawaso, Kpeshie, Okaikoi, and Osu-Clotvey up to mid-2004 when the number of sub-metros was increased by legislative instrument to 13 by further sub-dividing the original [16,17]. Due to human resource and infrastructure constraints, the health sector still works according to the old system of 6 sub-metros [16]. Each of the 6 sub-

metros is treated more or less like an administrative district because of the size of their population and the complexity of the sub-metro health system. Each of the sub-metros is served by a government polyclinic, now being upgraded to hospitals. In addition, there are several small government clinics, hospitals with numerous private clinics, quasi-facilities, and hospitals [17].

## 2. RESEARCH METHODS

This was a cross-sectional survey involving recruitment of CRAs licensed by GMDC and practicing in GAR Ghana. The participants for this study were CRAs in Korle-Bu Teaching Hospital, Ridge Regional Hospital, 37 Military Hospital, Tema General hospital, Tema polyclinic, Achimota Hospital, Ashaiman hospital, and CRAs that came for the sandwich Anaesthesia Degree program at the Ridge Hospital Anaesthesia school during the period of the data collection. Random sampling was used to select the participants.

The study population and sample size calculation were taken from the 2017 Gazette of GMDC, where a total of 607 CRAs were permanently registered in Ghana and 144 CRAs were said to be in GAR [18].

The calculation of the sample size was done using OpenEpi software version 3 [19]. The 21% CRNAs job dissatisfaction reported in Pittsburgh, Pennsylvania, [20] was taken as the most appropriate estimated proportion. The study sample was selected from among the 144 CRAs in GAR. For a 95% confidence level and 5% acceptable margin of error, a sample size of 92 CRAs was required. To adjust for non-response and incomplete data, the sample size was adjusted by 10% to make 101.2 and rounded to 100 participants.

CRAs that were at post in the participating facilities at the period of the data collection were those included in the study. Consented participants were given a structured self-answered questionnaire. Participation was completely voluntary – where a subject could choose not to participate or, if such a subject does decide to participate, could choose to stop participating at any time.

The data were collected and checked for completeness and accuracy and then entered into Excel spreadsheet, cleaned, coded, categorised, and analysed using a computer-

based Statistical Package for Social Sciences (SPSS) version 24 [21]. Descriptive analyses were done, where data were summarised using tabular and graphic presentations for the interpretation of findings. Data from a normal distribution were presented as mean and standard deviation. Association between socio-demographic characteristics and job satisfaction, as well as the comparison of the overall level of job satisfaction with each factor of job satisfaction, was assessed for statistical significance using the 'chi-square' test of association. *P-values* less than 0.05 were considered statistically significant. The level of job satisfaction was interpreted using the highest score percentage for each factor.

## 3. RESULTS

A total of 100 questionnaires were sent to sampled participants (CRAs) in the participating facilities. Out of 100 participants, 95 (95%) returned answered questionnaire whilst 5 participants (5%) did not return their questionnaires at the time of collection. All percentages were calculated on the number of responses to each question, rather than the total of returned eligible questionnaires.

### 3.1 Socio-Demographic Characteristics

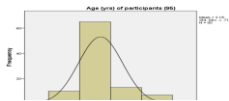
In Fig. 3.1, the participants' age ranged between 20 and 60 years with the mean of 2.18 (approximately 41 years $\pm$ 0.714). Out of the 95 respondents, 65 (68.4%) were within the age range of 31 to 40 years, whilst only 7 (7.4%) were in the age range of 51 to 60 years. This indicated that most of the CRAs in Ghana were still in their active ages and active workforce. The age of the participants was normally distributed.

As shown in Table 3.1, 39 (41.1%) of the participants were males and 56 (58.9%) were female. Moreover, 69 (72.6%) CRAs in the study were married, whereas the remaining 26 (27.4%) were either single, separated or widowed. None of the participants was divorced. On educational qualification, more than half, 55 (57.9%), had Advanced Diploma which was the starting point of the educational ladder for CRAs in Ghana, with 35 (36.8%) holding 1<sup>st</sup> degree and only 5 (5.3%) respondents possessing master's degree, probably in different fields of study other than Anaesthesia as the Ghana education structure still do not have a well-defined Masters in Anaesthesia program, none of the participants had a doctorate degree. Evidently, the majority of

CRAs did not take any further step in the educational ladder after their 1<sup>st</sup> step as CRAs. This could partly be due to lack of flexible study leave structure, the recent start of the 1<sup>st</sup> degree in Anaesthesia course in Ghana (2012), and relatively high fees of the degree course. Comparing to the study in the USA in 2009 by Marla, 67% of the CRNAs had their master's degree [6]. This is to indicate that the CRAs in Ghana still have a long way to go in order to match up with their counterparts in the USA in terms of education. Concerning years of service of participants, one person did not respond to this question of which 39 (41.5%) had worked between 1 to 5 years, 36 (38.3%) were within the working range of 6 to 10 years, and only 12 (12.8%) had worked more 10 years. This means that majority of CRAs practicing were still within

the 1<sup>st</sup> rank placement (CRA) and senior CRA ranks on the grading scale, and not yet attained the Principal and above ranks in the promotion structure of CRAs in Ghana.

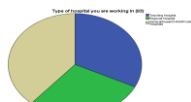
In Fig. 3.2; the distribution of participants among the various facilities representation was fairly done, as 30 (32.3%) of the participants were from Korle Bu Teaching Hospital, 27 (29.0%) where from Ridge Regional Hospital. Tema General Hospital as well as 37 Military Hospital, Ashaiman hospital, Tema polyclinic, and Achimota Hospital with some of the CRAs that came for the sandwich Anaesthesia Degree program at Ridge Hospital Anesthesia school combined, had the highest representation of 36 (38.7%).



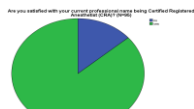
**Fig. 3.1. Age in years at the time of recruitment**

**Table 3.1. Socio-demographic profile of participants at recruitment**

| Variables (Total)              | Units                  | N (%)      |
|--------------------------------|------------------------|------------|
| Sex (95)                       | Male                   | 39 (41.1%) |
|                                | Female                 | 56 (58.9%) |
| Marital Status (95)            | Single                 | 24 (25.3%) |
|                                | Married                | 69 (72.6%) |
|                                | Divorced               | 0 (0%)     |
|                                | Widowed                | 1 (1.1%)   |
|                                | Separated              | 1 (1.1%)   |
|                                | <1 year                | 7 (7.4%)   |
| Years of Service (years) (94)  | 1 to 5 years           | 39 (41.5%) |
|                                | 6 to 10 years          | 36 (38.3%) |
|                                | 11 to 15 years         | 6 (6.4%)   |
|                                | >15 years              | 6 (6.4%)   |
|                                | Advanced Diploma       | 55 (57.9%) |
| Educational Qualification (95) | 1 <sup>st</sup> Degree | 35 (36.8%) |
|                                | Masters                | 5 (5.3%)   |



**Fig. 3.2. Type of hospital**

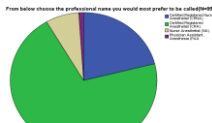


**Fig. 3.3. Professional name**

In Fig. 3.3, Participants were asked if they were satisfied with their current name as CRA, 86% of the major anaesthesia providers in Greater Accra were satisfied with their professional name as Certified Registered Anaesthetist and 14% were not satisfied.

In Fig. 3.4; When participants were given the option to choose from other suitable professional names as against their current name as CRAs, 71% still confirmed that they were most comfortable with the name CRA, 21% would have preferred to be called CRNA as their counterparts in the USA, 7% would want the name Nurse Anaesthetist and only 1% wanted to

be called Physician Assistant, Anaesthesia (PAA). This indicated that almost all of the current CRAs were not satisfied with their initial name being PAA. This further confirms the assertion by the President of the CRAs Association (Mr. Jacob Wumbei) and the parliamentary Act 857, in Ghana news item on 29<sup>th</sup> September 2015, who said “The issue is that we are given a wrong name and “that wrong name we say it is not a name that befits us”. “We were called Physician Assistants, Anaesthesia Assistants but the new name is Certified Registered Anaesthetists (CRAs) according to Act 857, he pointed out” [22,23].



**Fig. 3.4. Preferred professional name**

From Table 3.2 represents participants' responses to their overall job satisfaction. Overall, 4 (4.2%) did not respond to this question. The results revealed that (63) 69.2% CRAs were satisfied with their job and those dissatisfied were 30.8%. This indicates that majority of the anaesthesia providers in Ghana are satisfied with their job. However, the percentage of dissatisfaction among these professionals is still significant and would need further study.

Aside from the overall job satisfaction assessed from participants in this study, respondents' views were also elicited using selected job satisfaction factors as presented below.

When participants were asked if they engage in a part-time job in private hospitals aside the main work in their facility, (69)70.5% CRAs did not have a part-time job whilst (28) 29.5% had a part-time job. Majority of the participants 71 (74.7%) were working between 41 to 50hours a week, whilst 8 (8.4%) respondents were working less than 40hours a week. A significant number 16 (16.9%) were working above 51 hours per week. (87) 91.6% of the participants also indicated that they were working more than required Ghanaian constitutionally mandated

provision of 40hours work a week. Yet when CRAs were asked if they were paid overtime for working beyond 40hours a week, (93)98% indicated they were not receiving any form of overtime compensation. Only (2) 2% were receiving overtime for working more than required hours.

To ascertain the level of supervision and assistance CRAs receive in GAR, 65 (69%) of the participants had Physician Anaesthetist in their facility and 29 (31%) did not have Physician Anaesthetist in their facility. One person did not answer this question. It should be noted that GAR is the Region with the highest concentration of Physician Anaesthetist in Ghana, however, some hospitals in the Region, do not still have Physician Anaesthetists working with CRAs. Only 3% of the respondents had the presence (supervision) of Physician Anaesthetist during every case to be Anaesthetise, 11% were supervised only when there was an emergency, yet 46% of CRAs in GAR, Ghana, could only get supervision from a Physician Anaesthetist when they call on him/her, 8% had their Physician Anaesthetist passing by once/twice a day and 32% of the Participants did not have supervision of Physician Anaesthetist.

**Table 3.2. Descriptive analysis of job satisfaction and job satisfaction variables**

| Variable (n)  | Responses        |                              |
|---|------------------|------------------------------|
|   | Yes<br>n (%)     | N<br>n (%)                   |
| Satisfaction with Current Job (n= 91)                       | 63 (69.2)        | 28 (30.8)                    |
| Part time job (n= 95)                                       | 28 (29.5)        | 67 (70.5)                    |
| Working more than required 40 hours a week (n= 95)          | 87 (91.6)        | 8 (8.4)                      |
| Overtime pay for working more than 8 hours/ day (n= 95)     | 2 (2.1)          | 93 (97.9)                    |
| Presence of Physician Anaesthetist in your hospital (n= 94) | 65 (69.1)        | 29 (30.9)                    |
| <b>Others (5-point scale responses)</b>                     | <b>Category</b>  | <b>Response/<br/>outcome</b> |
| Hours spent at work per week (hours) (n= 95)                | < 40             | 8 (8.4%)                     |
|   | 41 to 50         | 71 (74.7)                    |
|   | 51 to 60         | 11 (11.6%)                   |
|   | 61 to 70         | 1 (1.1%)                     |
|   | >71              | 4 (4.2%)                     |
| The frequency of Physician Anaesthetist supervision (n= 93) | Each case        | 3 (3.2%)                     |
|   | In Emergencies   | 10 (10.8%)                   |
|   | When called      | 43 (46.2%)                   |
|   | Once/Twice daily | 7 (7.5%)                     |
|   | No supervision   | 30 (32.3%)                   |

From Table 3.3 represents; participants were also asked to show their level of satisfaction or dissatisfaction to some variables using a five Likert grading scale (not sure, very dissatisfied, dissatisfied, satisfied and very satisfied). For the simplicity of the presentation and also to show clearly factors that CRAs were satisfied with as against factors that were dissatisfied with, the results were re-coded into Satisfied (Very satisfied and satisfied) and dissatisfied (very dissatisfied and dissatisfied).

The results showed that Anaesthetists were satisfied with eight (8) factors, which were; helping co-workers and clients in times of need 73 (78.5%), providing good quality of Patient care 72 (77.4%), Good Patient outcomes 80 (87.0%), the amount of responsibilities CRAs were given 56 (60.3%), the assistance CRAs receive in the operating room 46 (50.0%), the freedom to choose their own technique 66 (71.7%), their status as a healthcare professional 63 (67.7), and the feeling about their job itself 70 (76.1%).

The anaesthesia providers in Ghana were, however, dissatisfied with ten (10) factors; the availability of resources, equipment and supplies 57 (62%), surgeons' attitude towards CRAs 50 (54.3%), opportunity for advancement (promotion) at work and opportunity to be managers 59 (64.1%), also opportunity for educational advancement with good study leave structure 71 (77.2%), salary structure 84

(89.4%), overburdened workload 61 (65.6%), physical working place conditions 51 (56.1%), the recognition CRAs get for good work done 55 (59.8%), remuneration for professional hazards 72 (81.8%), and low public awareness about the role of CRAs 74 (79.6%).

It is worth mentioning that among the ten dissatisfaction factors, the Anaesthetists in Ghana were very dissatisfied with their salary structure, poor remunerations for professional hazards and the low public awareness about their role.

Table 3.3 represents the Bivariate analysis using Pearson's Chi-Square analysis (presented as Chi-Square value,  $X^2$ , the degree of freedom {df} &  $p$ -value) to determine any associations between the dependent variable (job satisfaction) and the independent variables (demographic and job satisfaction predictor variables). Worth noting is that none of the Demographic factors showed any statistical significance in association with job satisfaction.

In terms of age, it was identified that participants who were less than 40 years old were more satisfied with their job (50; 79.4%) compared to 13 (20.6%) respondents above the age of 40 years. However, there was no statistically significant association between age and job satisfaction [ $X^2=0.094$ {df1};  $p=0.76$ ]. Within the gender group, out of the 63 participants who were satisfied; more females (36; 57.1%) were



satisfied as against 27 (42.9%) males. However, this variation did not demonstrate any statistically significant association ( $X^2=0.102\{df1\}$ ;  $p= 0.75$ ). Participants who were married were more satisfied (49; 77.8%) but was not statistically significant ( $X^2=4.808\{df3\}$ ;  $p= 0.19$ ). Participants who worked less than 10years were more satisfied 55 (87.3%) than those who worked more than 10 years 8 (12.7%) however it did not show any significant association with job satisfaction ( $X^2=0.421\{df1\}$ ;  $p= 0.52$ ). Those who had Advanced Diploma were more satisfied (36)57.1% but was not significantly associated with job satisfaction ( $X^2 =0.318\{df2\}$ ;  $p= 0.85$ ). Participants who worked in General/Quasi hospitals had more satisfaction 28 (45.2%) than those in Regional 18 (29.0%) and Teaching hospitals 16 (25.8%) respectively, yet this was not statistically significant( $X^2 =4.782\{df2\}$ ;  $p= 0.09$ ). Participants with part-time job were more satisfied 44 (69.8%) and was also not significantly associated with job satisfaction ( $X^2 =0.253\{df1\}$ ;  $p= 0.62$ ). Similarly, the following job satisfaction predictor variables did not achieve statically significance (because their Chi-Square  $P >0.05$ ) in association with job satisfaction; part-time job, average hours spent at work per week, works more than 40 hours per week, Overtime pay for working more than 8hours a day, Presence of Physician Anaesthetist, Helping Co-worker and clients in time of need, Surgeon's attitude towards CRAs, Opportunities for advancement at work and to be managers, Opportunities for educational training and good study leave, Salary structure, Workload, Patient outcome, Amount of responsibilities given at

work, Physical working conditions, Operating room assistance, Freedom of choice of technique at work, Healthcare professional status, Recognition for good work, Remunerations for professional hazard, and Public awareness about the role of CRAs.

Regarding job satisfaction predictive variables and their association with job satisfaction, 53 (85.5%) were satisfied with providing good quality of Patient care which was statistically significant in association with job satisfaction ( $X^2 =9.345\{df1\}$ ;  $p< 0.001$ ), availability of resources, equipment and supplies was also significantly associated with job satisfaction ( $X^2 =6.368\{df1\}$ ;  $p= 0.01$ ). The Anaesthetists feelings about their job attained a borderline significance ( $X^2 =3.720\{df1\}$ ;  $p= 0.05$ ) with job satisfaction and hence cannot be completely ruled.

Fig. 3.5 shows the relationship between job satisfaction and participants' choice of Professional name. Though participants were satisfied 48 (76.2%) with their professional name being CRA, it did not show any statistical significance in association with job satisfaction ( $X^2 =3.282\{df3\}$ ;  $p= 0.35$ ).

Fig. 3.6, shows the relationship between job satisfaction and how often CRAs get supervision and/or assistance from Physician Anaesthetists'. There was no statistical significance in the association between the two variables; physician Anaesthetists supervision of CRAs and job satisfaction( $X^2 =2.089\{df4\}$ ;  $p= 0.72$ ).

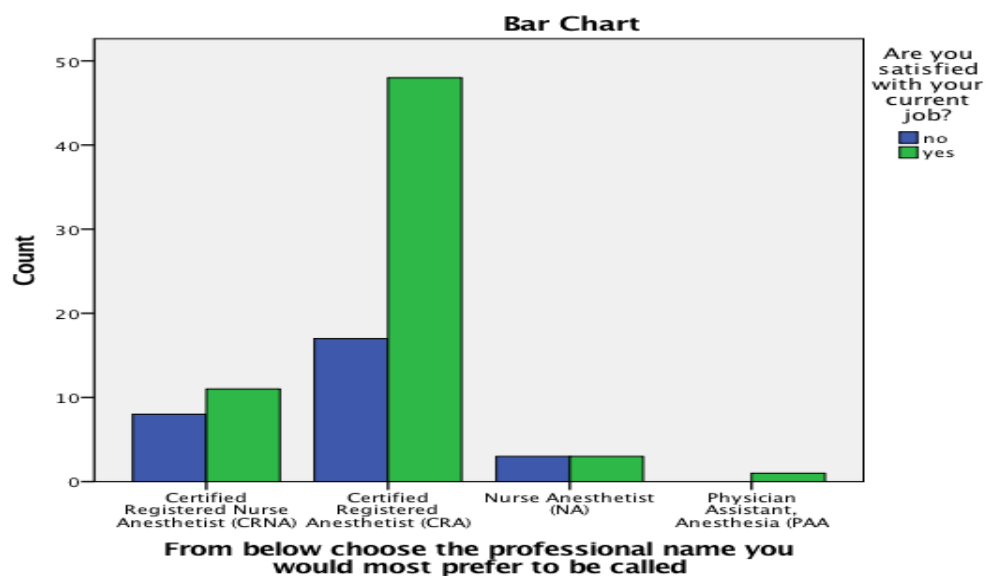


Fig. 3.5. Association between job satisfaction and professional name

**Table 3.3. Analysis of Job Satisfaction and Job Satisfaction factors**

| Variables (n)  | Responses  |                   |              |            |                |
|--|------------|-------------------|--------------|------------|----------------|
|  | Not sure   | Very dissatisfied | Dissatisfied | Satisfied  | Very satisfied |
| The availability of resources, equipment, and supplies (n= 92)                     | 4 (4.3%)   | 8 (8.7%)          | 49 (53.3%)   | 26 (27.4%) | 5 (5.4%)       |
| Helping coworker and Clients in times of need (n= 93)                              | 2 (2.2%)   | 5 (5.4%)          | 13 (14.0%)   | 59 (63.4%) | 14 (15.1%)     |
| Surgeons' attitudes towards CRAs (n= 92)   | 4 (4.3%)   | 13 (14.1%)        | 37 (40.2%)   | 35 (38.0%) | 3 (3.3%)       |
| Opportunities for advancement at work, with the opportunity to be managers (n= 92) | 7 (7.6%)   | 21 (22.8%)        | 38 (41.3%)   | 25 (27.2%) | 1 (1.1%)       |
| Opportunity for training or education, with good study leave structure (n= 92)     | 7 (7.6%)   | 30 (32.6%)        | 41 (44.6%)   | 11 (12.0%) | 3 (3.3%)       |
| Salary structure (n= 94)   | 5 (5.3%)   | 42 (44.7%)        | 42 (44.7%)   | 3 (3.2%)   | 2 (2.1%)       |
| Workload (n= 93)   | 3 (3.2%)   | 26 (28.0%)        | 35 (37.6%)   | 26 (28.0%) | 3 (3.2%)       |
| Providing good quality of patient care (n= 93)                                     | 2 (2.2%)   | 2 (2.2%)          | 17 (18.3%)   | 59 (63.4%) | 13 (14.0%)     |
| Patient outcome (n= 92)  | 2 (2.2%)   | 2 (2.2%)          | 8 (8.4%)     | 63 (68.5%) | 17 (18.5%)     |
| The number of responsibilities you are given (n= 93)                               | 0 (0%)     | 10 (10.8%)        | 27 (29.0%)   | 50 (53.8%) | 6 (6.3%)       |
| Physical working place conditions (n= 91)  | 2 (2.2%)   | 14 (15.4%)        | 37 (40.7%)   | 34 (37.4%) | 4 (4.4%)       |
| The assistance you have in the operating room (n= 92)                              | 2 (2.2%)   | 8 (8.7%)          | 36 (39.1%)   | 41 (44.6%) | 5 (5.4%)       |
| The freedom to choose your own method and technique at work (n= 92)                | 2 (2.2%)   | 3 (3.3%)          | 21 (22.8%)   | 50 (54.3%) | 16 (17.8%)     |
| Your status as a healthcare professional (n= 93)                                   | 6 (6.5%)   | 4 (4.3%)          | 20 (21.5%)   | 52 (55.9%) | 11 (11.8%)     |
| The recognition you get for good work (n= 92)                                      | 2 (2.2%)   | 24 (26.1%)        | 31 (33.7%)   | 30 (32.6%) | 5 (5.4%)       |
| Remunerations for professional hazard (n= 88)                                      | 6 (6.8%)   | 52 (59.1%)        | 20 (22.7%)   | 6 (6.8%)   | 4 (4.5%)       |
| Your feeling about the job itself (n= 92)  | 3 (3.3%)   | 6 (6.5%)          | 13 (14.1%)   | 55 (59.8%) | 15 (16.3%)     |
| Public awareness about the role CRAs (n= 93)                                       | 11 (11.8%) | 49 (51.6%)        | 25 (26.9%)   | 7 (7.5%)   | 1 (1.1%)       |
| The freedom to choose your own method and technique at work (n= 92)                | 2 (2.2%)   | 3 (3.3%)          | 21 (22.8%)   | 50 (54.3%) | 16 (17.8%)     |

**Table 3.4. Bivariate analysis of associations between the demographic factors, job satisfaction predictive factors and job satisfaction**

| Variable  |                   | Job satisfaction n (%) |               | Pearson's Chi-square validation |
|---|-------------------|------------------------|---------------|---------------------------------|
|   |                   | Satisfied              | Not satisfied |                                 |
| Age (years)   | <40               | 50 (79.4)              | 23 (82.1)     | $X^2=0.094(df1)$ ;<br>$p=0.76$  |
|   | $\geq 40$         | 13 (20.6)              | 5 (17.9)      |                                 |
| Sex   | Male              | 27 (42.9)              | 11(39.3)      | $X^2=0.102(df1)$ ;<br>$p= 0.75$ |
|   | Female            | 36(57.1)               | 17(60.7)      |                                 |
| Marital Status  | Single            | 12 (19.0)              | 11 (39.3)     | $X^2=4.808(df3)$ ;<br>$p= 0.19$ |
|   | Married           | 49 (77.8)              | 17 (60.7)     |                                 |
|   | Divorced          | 0 (0.0)                | 0 (0.0)       |                                 |
|   | Widowed           | 1 (1.6)                | 0 (0.0)       |                                 |
|   | Separated         | 1 (1.6)                | 0 (0.0)       |                                 |
| Years of service (years)                                    | <10               | 55 (87.3)              | 23 (82.1)     | $X^2=0.421(df1)$ ;<br>$p= 0.52$ |
|   | $\geq 10$         | 8 (12.7)               | 5 (17.9)      |                                 |
| Education Level   | Advanced Diploma  | 36 (57.1)              | 17 (60.7)     | $X^2=0.318(df2)$ ;<br>$p= 0.85$ |
|   | 1st degree        | 23 (36.5)              | 10 (35.7)     |                                 |
|   | Masters           | 4 (6.3)                | 1 (3.6)       |                                 |
| Type of hospital  | Teaching hospital | 16 (25.8)              | 12 (44.4)     | $X^2=4.782(df2)$ ;<br>$p= 0.09$ |
|   | Regional          | 18(29.0)               | 9 (33.3)      |                                 |
|   | General/Quasi     | 28 (45.2)              | 6 (22.3)      |                                 |
| Part time job   | Yes               | 44 (69.8)              | 21 (75.0)     | $X^2=0.253(df1)$ ;<br>$p= 0.62$ |
|   | No                | 19 (30.2)              | 7 (25.0)      |                                 |
| Average hours spent at work per week (hours)                | $\leq 40$         | 7 (11.1)               | 1 (3.6)       | $X^2=1.374(df1)$ ;<br>$p= 0.24$ |
|   | $>40$             | 56 (88.9)              | 27 (96.4)     |                                 |
| works more than 40 hours per week                           | Yes               | 56 (88.9)              | 0 (0.0)       | $X^2=3.370(df1)$ ;<br>$p= 0.07$ |
|   | No                | 7 (11.1)               | 28 (100.0)    |                                 |
| Overtime pay for working more than 8hours a day.            | Yes               | 2 (3.2)                | 28 (100.0)    | $X^2=0.909(df1)$ ;<br>$p= 0.34$ |
|   | No                | 61 (96.8)              | 0 (0.0)       |                                 |
| Presence of Physician Anaesthetist                          | Yes               | 41 (65.1)              | 21 (75.0)     | $X^2=0.879(df1)$ ;<br>$p= 0.35$ |
|   | No                | 22 (34.9)              | 7 (25.0)      |                                 |
| Availability of resources, equipment and supply             | Satisfied         | 27 (43.5)              | 4 (15.4)      | $X^2=6.368(df1)$ ;<br>$p= 0.01$ |
|   | Dissatisfied      | 35 (56.5)              | 22 (84.6)     |                                 |
| Helping Co-worker and clients in time of need               | Satisfied         | 51 (81.0)              | 19 (73.1)     | $X^2=0.680(df1)$ ;<br>$p= 0.41$ |
|   | Dissatisfied      | 12 (19.00)             | 7 (26.9)      |                                 |
| Surgeon's attitude towards CRAs                             | Satisfied         | 27 (43.5)              | 10 (37.0)     | $X^2=0.328(df1)$ ;<br>$p= 0.57$ |
|   | Dissatisfied      | 35 (56.5)              | 17 (63.0)     |                                 |
| Opportunities for advancement at work and to be managers    | Satisfied         | 21 (34.4)              | 4 (14.8)      | $X^2=3.539(df1)$ ;<br>$p= 0.06$ |
|   | Dissatisfied      | 40 (65.6)              | 23 (85.2)     |                                 |
| Opportunities for educational training and good study leave | Satisfied         | 12 (19.4)              | 2 (7.7)       | $X^2=1.862(df1)$ ;<br>$p= 0.17$ |
|   | Dissatisfied      | 50 (80.6)              | 24 (92.3)     |                                 |
| Salary structure  | Satisfied         | 4 (6.3)                | 1 (3.7)       | $X^2=0.252(df1)$ ;<br>$p= 0.62$ |
|   | Dissatisfied      | 59 (93.7)              | 26 (96.3)     |                                 |
| Workload  | Satisfied         | 22 (35.5)              | 6 (22.2)      | $X^2=1.534(df1)$ ;<br>$p= 0.22$ |
|   | Dissatisfied      | 40 (64.5)              | 21 (77.8)     |                                 |
| Providing good quality of patient care                      | Satisfied         | 53 (85.5)              | 15 (55.6)     | $X^2=9.345(df1)$ ;<br>$p<0.00$  |
|   | Dissatisfied      | 9 (14.5)               | 12 (44.4)     |                                 |
| Patient outcome   | Satisfied         | 54 (88.5)              | 23 (85.2)     | $X^2=0.191(df1)$ ;<br>$p= 0.66$ |
|   | Dissatisfied      | 7 (11.5)               | 4 (14.8)      |                                 |
| Amount of responsibilities given at work                    | Satisfied         | 41 (66.1)              | 13 (48.1)     | $X^2=2.549(df1)$ ;<br>$p= 0.11$ |
|   | Dissatisfied      | 21 (33.9)              | 14 (51.9)     |                                 |

| Variable                               |              | Job satisfaction n (%) |               | Pearson's Chi-square validation |
|--|--------------|------------------------|---------------|---------------------------------|
|  |              | Satisfied              | Not satisfied |                                 |
| Physical working conditions            | Satisfied    | 28 (45.2)              | 9 (34.6)      | $X^2=0.836(df1); p= 0.36$       |
|  | Dissatisfied | 34 (54.8)              | 17 (65.4)     |                                 |
| Operating room assistance              | Satisfied    | 35 (56.5)              | 11 (42.3)     | $X^2=1.469(df1); p= 0.23$       |
|  | Dissatisfied | 27 (43.5)              | 15 (57.7)     |                                 |
| Freedom of choice of technique at work | Satisfied    | 43 (69.4)              | 21 (77.8)     | $X^2=0.661(df1); p= 0.42$       |
|  | Dissatisfied | 19 (30.6)              | 6 (22.2)      |                                 |
| Health care professional status        | Satisfied    | 47 (74.6)              | 16 (59.3)     | $X^2=2.119(df1); p= 0.15$       |
|  | Dissatisfied | 16 (25.4)              | 11 (40.70)    |                                 |
| Recognition for good work              | Satisfied    | 26 (42.6)              | 7 (25.9)      | $X^2=2.226(df1); p= 0.14$       |
|  | Dissatisfied | 35 (57.4)              | 20 (74.1)     |                                 |
| Remunerations for professional hazard  | Satisfied    | 8 (14.0)               | 2 (7.40)      | $X^2=0.767(df1); p= 0.38$       |
|  | Dissatisfied | 49 (86.0)              | 25 (92.6)     |                                 |
| Feelings about the job                 | Satisfied    | 50 (82.0)              | 17 (63.0)     | $X^2=3.720(df1); p= 0.05$       |
|  | Dissatisfied | 11 (18.0)              | 10 (37.0)     |                                 |
| Public awareness about the role CRAs   | Satisfied    | 7 (11.3)               | 1 (3.7)       | $X^2=1.323(df1); p= 0.25$       |
|  | Dissatisfied | 55 (88.7)              | 26 (96.3)     |                                 |

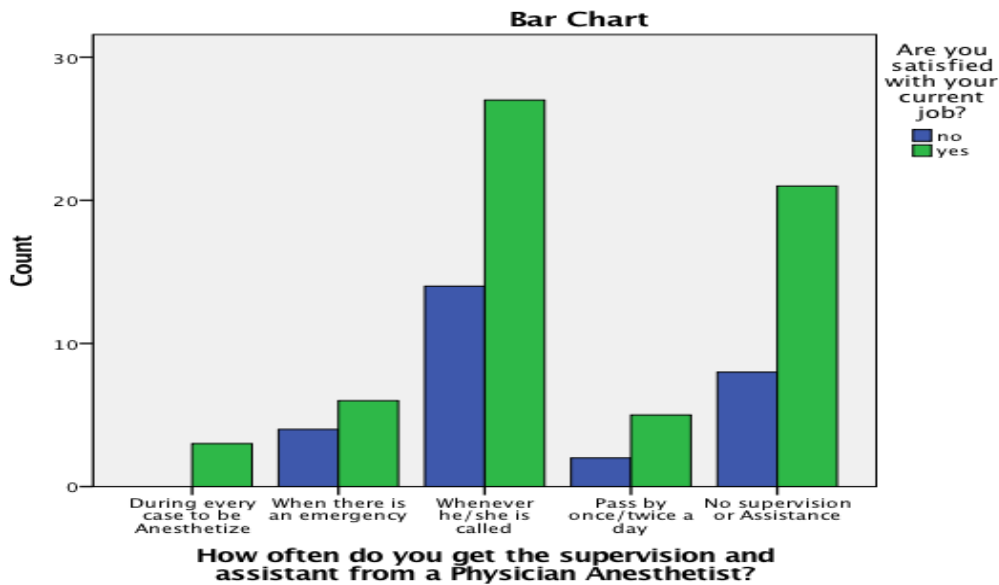


Fig. 3.6. Association between job satisfaction and physician anaesthetists supervision

#### 4. DISCUSSION

The results of this study indicated that more than half (69%) of the major anaesthesia providers in Ghana (CRAs) were satisfied with their job. However, the 31% level of job dissatisfaction among CRAs in Ghana is still significant and requires further studies as compared to the lower dissatisfaction rates in other parts of the world. According to a survey of professional satisfaction among Canadian anaesthesiologists in 2001 by Jenkin et al. [3] 75% of respondents reported overall job satisfaction, meaning only 25% dissatisfaction as compared to the high rate (31%) dissatisfaction among Ghanaian Anaesthetists. A similar study conducted in 2011

by Shidhahe et al. [4] in India showed that 78% of Anaesthetists reported full satisfaction. For Anaesthesiologists in the Manchester region of Great Britain in a study by Parkhouse [20] also indicated that only 21% were dissatisfied with their jobs as against 31% dissatisfaction in Ghana. Yet in Ethiopia, Blen Kassahun [6] study revealed that 53% of the Ethiopian Anaesthetists were satisfied, as against the 69% satisfaction rate among Ghanaian Anaesthetists, likewise, a study in Nigeria by Rukewe et al. [7] also recorded a lower level of satisfaction; overall, 59% of the Nigeria Anaesthesiologists were satisfied with their job. The 69% satisfaction rate among Anaesthetists reported in this study was similar to a previous study conducted by Sanjeev

Singh [8] in different hospitals across Ghana who reported a job satisfaction rate of 68%.

In this study, females were more satisfied than males. This finding was consistent with the study in Ghana by Sanjeev Singh [8] in which female Anaesthesiologists were more fully satisfied with their job as compared to their male counterparts. CRAs who were less than 40 years of age were more satisfied than those more than 40 years, whilst those with comparatively lower education (Advanced Diploma) were more satisfied. Again, those with years of service less than 10 years were more satisfied compared to those with more than 10 years. However, demographic data, in general, did not record any statistical significance in association with job satisfaction. These findings were consistent with the findings in Ethiopia by Blen [6].

The major reasons for job dissatisfaction in this study were; lack of good salary structure, inappropriate remuneration for professional hazards and the lack of public awareness about the vital role CRAs play in the healthcare systems of Ghana. This finding is similar to the study findings in India, 2011 [4] by Shidhah et al. which revealed that the main factors for the dissatisfaction of Indian Anaesthesiologists were lack of resources/equipment and low recognition of anaesthesia service by patients. The study was also consistent with the results by Blen [6] in Ethiopia, where lack of public awareness about the vital role played by Anaesthetists inpatient care in the operating room and inadequate salary were the major factors of job dissatisfaction among Ethiopian Anaesthetists.

Other CRAs job dissatisfaction factors revealed by this study were the lack of availability of resources, equipment and supplies, surgeons' attitude towards Anaesthetists, lack of opportunity for advancement (promotion) at work and opportunity to be managers, inadequate opportunities for educational advancement with good study leave structure, overburdened workload, unsuitable physical working place conditions, and lack of recognition/appraisal for good work done. Similarly, in the 2009 study in West Virginia, the USA by Melana [6] job dissatisfaction among Anaesthetists was due to lack of recognition of anaesthetists' work by anaesthesiologists, unwillingness of anaesthesiologists to help Nurse Anaesthetists improve skills, less opportunity to re-structure tasks, cooperation between personnel, concern with specific tasks rather than teamwork, poor

present salary, low rate of pay increases, and the work schedule.

In contrast, a survey in Canada in 2001 [3] by Jenkin et al. indicated that Job satisfaction was associated with satisfaction with the level of operating room (OR) assistance, perceived high surgical regard and public image, and that discrepancy may be due to differences in the economic status of the healthcare system and not salary. The level of pride in individuals' is tremendously affected by the environment and the work they do. The job that is interesting and that permits one to contribute one's ideas and skills are very important in respect to Anaesthetists. As long as sufficient resources are put at their disposal, Anaesthetists will be able to manage their high demanding tasks and task-related stressors very efficiently. An interesting job as a sole factor would not suffice for an adequate job satisfaction.

In this study, the Anaesthetists in Ghana were satisfied with helping coworkers and clients at work in times of need, providing good quality of patient care, good patient outcomes, befitting amount of responsibilities CRAs were given, adequate assistance CRAs receive in the operating room, the freedom for CRAs to choose their own technique, the status of the Anaesthetists as a healthcare professional, and their feeling about their job itself. The satisfaction factors in Ghana among Anaesthetists were similar to that of Canada where job satisfaction was associated with intellectual stimulation, good quality of care and interaction with patients [3]. The study was also consistent with the findings in Ethiopia in 2015 [6] where satisfaction was mainly due to helping others, responsibilities, and freedom to choose a method of work.

Anaesthesia has long been identified as a stressful specialty. Studies have identified that stressful aspects of anaesthesia include time constraints at work that interfere with home and social life. In this study, 91.6% of the CRAs were working more than required Ghanaian constitutional provision of 40 hours a week. Yet when CRAs were asked if they were paid overtime for working beyond 40 hours a week, only 2% were receiving overtime for working more than required hours. According to the 1992 constitution of Ghana, national labor law Sections, 33 to 39 of the Labor Act cover hours of work. A maximum is set at 8 hours work a day or 40 hours work a week, except in cases expressly noted in the Act. Provision is made for

paid overtime [24]. No wonder 66% of the Anaesthetists in this study were utterly dissatisfied with the overburdened workload and times they spent at work, for their due as stipulated by the constitution of Ghana is not met. The work of the CRA is such that they are most at times prone to work overtime, therefore, they need to have a definite structure that will cater to their overtime like overtime pay or definite relief time, similar to the findings by the study in Nigeria [7], the dissatisfaction factors identified by Anaesthetists were time pressure, long working hours with complaints of insufficient sleep and employment status. A high percentage of the Anaesthetists 54.1% declared that if one change is implemented that would enhance their job satisfaction, that is having a definite closing time.

It is a known fact that a profession that has professionals with advanced education has an improved skill, training, knowledge and self-discipline. Highly educated professionals have broadened minds that enable them to do critical thinking thereby making the sound judgment of situations which will build their output. The majority of the Ghanaian CRA (57.9%) does not still have a 1<sup>st</sup> degree and only 5.3% are even having a Masters' Degree as compare to 67% of CRNA in the USA with Masters Degrees [6]. It is not that CRAs are not ready to further their education, but that the systems in Ghana may not seem to give such opportunities. This is evident by the fact that 92% of CRAs in this study were dissatisfied with the fact that they have fewer opportunities for educational advancement and study leave.

The terms and conditions of CRAs in Ghana require the professional to be supervised by the Physician Anaesthetists', however, the findings in this study proves otherwise. It was noted that though 65 (69%) of the CRAs had Physician Anaesthetist in their facilities in Greater Accra, Ghana, only 3% actually had direct supervision of Physician Anaesthetist during every case to be Anaesthetise. Moreover, 11% were supervised only when there was an emergency, whilst 46% could only get Physician Anaesthetists when they call on them. Similarly, only 8% had their Physician Anaesthetist passing by once/twice a day and 32% of the Participants not having any direct supervision of Physician Anaesthetist at work. This may confirm the assertion of the International Federation of Nurse Anesthetists (IFNA) that the CRA is the main anaesthesia provider in Ghana providing over 90% of the

country's anaesthesia care, and are frequently under stress, overshadowed by the workload [9,10].

This study revealed that providing good quality of Patient care, availability of resources, equipment and supplies, and the Anaesthetist feeling about the job itself were significantly associated with job satisfaction. In Canada, Job satisfaction was associated with satisfaction with the level of operating room (OR) assistance, perceived high surgical regard, intellectual stimulation, good quality of care and interaction with patients per the study in 2001 [3].

## 5. CONCLUSION

From this study and others from across the globe, Anaesthetists are generally satisfied with their job. The working environment of CRAs is often stressful and the majority of the professionals are dissatisfied with not being paid for working overtime, thus the need to achieve higher levels of job satisfaction. Majority of the anaesthesia care in Ghana is done by the CRAs and that they often work independently. Even though the number of Physician Anaesthetist is limited in Ghana for proper supervision of the CRA, it is worth noting that, for better anaesthesia practice in Ghana, the collaborative/combined Physician Anaesthetists' and Nurse Anaesthetists' (CRAs) model of care, will improve job satisfaction and patient quality of care. In this study, there was no significant variation in job satisfaction relating to the type of hospital CRAs were working in. Satisfaction tends to be more among the junior ranked CRAs. The main factors that influenced job satisfaction were the availability of resources, equipment and supplies, provision of good quality of patient care, salary structure, and inappropriate remuneration for professional hazards, and also, the lack of public awareness about the vital role CRAs play in the healthcare systems of Ghana.

## 6. RECOMMENDATIONS

Based on these research findings, the following recommendations are made:

1. CRAs should engage in creating societal awareness regarding their role in anaesthesia and healthcare in general through; public education in the media, improving their quality of care to clients, outstanding involvement in major healthcare activities in the country and

introducing their identity to clients at the point of care.

2. For international recognition, CRAs should engage in international organisations and activities that involve their international counterparts. CRAs may also engage policymakers to make policies that would help them adopt a name that would put them in-line with their international counterparts.
3. Heads of Anesthesia Departments or hospital managers should identify these factors that influence job satisfaction and make attempt to enhance or change them where they have the greatest chance for success. All departments cannot provide satisfaction on all factors, but job satisfaction can exist even with a limited amount of dissatisfaction.
4. The Ministry of Health should create policies that would enhance advanced educational opportunities and motivated scholarships for the CRA. The Government should support the creation of the 1<sup>st</sup> and advanced degree programs for CRAs in Ghana at a subsidised cost.
5. Clearly enforced and motivated hospital policies should be available for professionals who are exposed to occupational hazards and good remuneration created.
6. The fair wages and salary structure in Ghana should give salary negotiation certificate to the CRAs group to be able to negotiate for their own salary structure based on their responsibilities other than generalising their salary structure with other professionals.

## CONSENT

Informed consent for participation in this research project was taken from participants.

## ETHICAL CONSIDERATION

Permission and ethical approval letter were obtained from the school of Anesthesia Directorate, which was sent to the Ghana health service ethical committee, and the leadership of the CRAs group. Written and informed consent for participation in this research project was taken from participants. Data were coded to ensure confidentiality and stored in an encrypted format to prevent unauthorised access whilst hard copies from the questionnaire were stored in a locked-up cabinet.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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