Physiological Effect of Stress of Nurses Engaged in Continuing Medical Education on Job Performance

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Abstract:- **The study assessed the impact of continuing medical education on job performance among nurses. A quantitative approach was used to explore nurses' views with regards to continuing formal education. A sample size of eight (8) categories of nurses was adopted. The study was limited to various categories of practicing nurses. Inferential analysis was conducted to investigate contingency with educational status groups. The result shows that response to physiological effects (Cardiovascular diseases) was significantly related (Chi-Square=23.382, p —value=0.00) to health professionals' educational status. Results indicated that more health professionals engaged in continuing medical education (CME) without official approval experienced cardiovascular diseases.**

Keywords: **Stress, Continuing medical education, Nurses**

I. INTRODUCTION

This research deals with the impact of continuing medical education on job performance among nurses, this describes how nurses in pursuit of continuing education without study leave or official approval from their employers can cope with the physical effects of stress and related issues. Knowles (1984) introduced several concepts about andragogy defining it as both the science and art of assisting adults in learning. It is also a process that continually takes place throughout a person's lifetime assisting adults in developing self-directed learning characteristics that enable them to mature. Knowles' (1984) early work helped to establish our current understanding of lifelong learning. Andragogy is an important aspect of nursing. Health care organizations assert the need for strategic, sensitive individuals to effectively deliver health care services to the consumer. It is extremely important to maximize these behaviours among nurses and nursing leadership.

According to Isarawatana, (1989) Adult learning does not happen only through the experiences of listening to a lecture or by doing what a teacher says, but may happen in a range of situations. The type of learning that takes place for adults is less formal. Therefore, self-directed learning skills are particularly important for adult learners to gain. Characteristics of self-directed learning may not be developed or encouraged in childhood because learning is formal, school based and often teacher directed (Isarawatana, 1989). This presents a challenge for adult learners who, as a result of their earlier learning experiences, may have difficulty in developing self-directed learning traits. Paradoxically, learning as an adult allows for greater self-development and enhanced problem-solving ability due to the scope of experience they have acquired throughout their lives.

Knowles (1984) introduced several concepts about andragogy defining it as both the science and art of assisting adults in learning. It is also a process that continually takes place throughout a person's lifetime assisting adults in developing self-directed learning characteristics that enable them to mature. Knowles' (1984) early work helped to establish our current understanding of lifelong learning. Andragogy is an important aspect of nursing. Health care organizations assert the need for strategic, sensitive individuals to effectively deliver health care services to the consumer. It is extremely important to maximize these behaviours among nurses and nursing leadership.

Problem Statement

Few professionals that need to improve on their performance by pursuing continuing education and one of them is the nurse. CME would give health professionals competencies in their daily activities, for them to be effective there will be the need for them to engage in CME.

However, a lot of them go through stress, that is what this study is looking at and there is the need to talk about. Moreover, as they undergo continuing medical education other variables impact on their performance and one of them is stress.

Aiken et al. (2005) concluded that hospitals with a greater number of BSN-prepared nurses had lower mortality rates and better patient care documented. Also, fewer medication errors were identified at hospitals with a greater number of BSN-prepared nurses. Results indicated that nurses‟ years of experience alone were not a predictor of patient mortality. Also, the study reinforced the importance of educational preparation for quality patient care. These ones were evaluated after they had gone through continuing medical education. However, this researcher would like to find out if the same quality patient care would be achieved when nurses engaged in continuing medical education without official approval are evaluated during the process of schooling at the same time practicing on the job.

The American Association of Colleges of Nurses, AACN, (2007) documented that patients experienced more positive health benefits when nurses had higher degrees such as the

baccalaureate degree. However, this researcher would want to find out if patients are more likely to experience more positive benefits when nurses engaged in continuing medical education without official approval and practising are evaluated on performance. What is more likely to be the outcome if a variable such as stress is exhibited during schooling and practicing?

Researches have dealt with the impact of schooling on job performance in other areas but the same has not been conducted among nurses undergoing continuing medical education without study leave. This study is important to be undertaken among the nurses because health issues are essential to the citizenry of every nation and their government, especially in developing countries and therefore there cannot be any compromise.

Also, practicing nurses were chosen for this study because they are the largest group in the health care system (Calder, 1986). How does the stress they go through affect their job performance?

However, previous studies examined the performance of nurses after going through CME and practicing on the job. They had not looked at health professional performance during the period of education and how it influences performance.

Therefore, the question that needs appropriate response is the impact of continuing medical education on job performance among these nurses and the relationship between transactional theory of stress and health professionals engaged in work and schooling without official approval.

The gap has been necessitated because the research is not just a theoretical one but it is a practical problem in developing countries including Ghana.

Objective:

To evaluate the relationship between continuing medical education and the physical effect of stress of nurses on performance.

Purpose:

- The purpose of the study is expected to serve as a reference point for policy makers to have a critical policy formulated to help strengthen continuing medical education because policies made for continuing medical education seems to add more stress, to those that are not officially approved and engaged in continuing medical education. Also, the study examines how the physiological effect of stress (cardiovascular diseases) experienced by nurses engaged in CME without official approval affect their performance.

Phenomenon of stress

Aspinwall & Taylor (1992) state that while it was an unavoidable fact for the beginning students to avoid stressors, their ability to cope with the different demands would contribute to their successes they would achieve at the university. Stress is understood by Folkman, Lazarus, Gruen and Delongis (1986) as a relationship between an individual and the situation that is being appraised as being beyond the individual's capabilities to manage. However, the evaluation an individual give to a challenging event makes it to be stressful or not. Because of that, individuals react differently to the same threatening event based on their evaluation and their personality type. More things that happen that are stressful could be managed especially when the stressors are identified and avoided.

According to Lazarus and Folkman (1984) health and energy are among the most all-encompassing resources individuals use as they are pertinent to coping in many if not all stress filled situation. A person who is ill or a sick person, weak, worn-out or otherwise incapacitated does not a larger amount of energy to apply on coping than a fit and healthy person. Although there is the suggestion that individuals are capable of coping astonishingly well regardless of reduced wellbeing and exhausted energy, we are cautioned and reminded that it is certainly easier for individuals to manage coping efforts when feeling our best.

Lazarus and Folkman (1984) states that, an imperative coping resource is having positive beliefs about oneself, these include those wide-ranging and specific beliefs that function as a basis for hope in an individual which in turn upholds their coping efforts despite the most difficult, unwelcome and unpleasant circumstances. Lazarus and Folkman (1984) indicate that hope can be further supported by the notion that the outcome of the difficult circumstances faced by the individual is a common problem and that it is within the power of the individual to influence the outcome. It must be stated emphatically though that not all beliefs are useful to coping efforts, negative beliefs can eventually restrain and be a barrier to coping.

Additionally, Patry, Blanchard and Mask (2007) state that the interaction correlating problem-focused coping strategies like organising and planning as well as feeling-focused coping strategies such as distraction and support seeking has asynergistic outcome. Their collective effects augment the coping process. It is essential to note that distraction is far from avoidance, Connor-Smith, Compas, Wadsworth, Thomsen & Saltzman (2000) indicate that whilst distraction and avoidance involve an individual separating out from a stressful event, the meaning of destruction is that the individual is directing attention towards actions that have a more positive leaning for example reading or listening to music.

It is important for students to have a positive thought about their studies. In a study by Struthers, Perry and Menec (2000), it was found that more students go through negative experience and suffer distress, but those that had positive thought of having the capability to cope effectively they become motivated to reach their goals. This correlates positively with the conclusions of Lazarus and Folkman

(1984) that positive experiences exemplified by positive feelings help individuals cope more effectively by providing them with the alternative to escape stressful event within a short time and also to experience happiness, which in turn helps to restore exhausted resources allowing them to preserve their coping mechanisms.

Additionally, according to Newton *et al (*2009b) Health service environments can be very challenging even for the most seasoned health professional. Psychosocial stressors such as high workload, low levels of control, high role ambiguity and/or conflict, problematic working relationships, lack of supervisor and co-worker support, poorly managed change, perceived organisational injustice, and low levels of recognition and reward are all too commonly and often reported themes in health service delivery environments. For many students, it is more likely that this environment is their first encounter with life and death decisions

Newton *et al (*2009b), and their first engagement with professional culture (the good and the bad). The nature of clinical work is emotionally laborious, and unlike more physical or cognitive work roles students have encountered. Therefore, it is conclusive that clinical education is certainly stressful for students (Lincoln *et al* 2004; James & Chapman 2009; Moscaritolo 2009; Anthony & Yastik 2011). The following is an outline of common stressors identified by students, the impact of stress on the individual, and strategies to manage stress in the placement environment.

II. METHOD

Design-Survey

This portion focuses on the research design, population sampling, instruments that were used for the study.

The descriptive survey was used by this researcher to collect information from a specific population from the field in order to answer a questionnaire.

Sample Size and Sampling Technique

A sample size of eight (8) categories of nurses was adopted. The study was limited to various categories of practicing nurses.

These various categories of nurses were used because they are directly involved in health delivery and at the same time engaged in continuing medical education, either with official approval or without official approval. Korlebu teaching hospital was chosen because it happens to be the biggest health facility in Ghana. Also, Korlebu is a teaching hospital as well as referral hospital. Additionally, the facility is in the metropolis, the capital city of Ghana, Accra. The facility served as a good place for the study because It provided an opportunity for practitioners from different backgrounds to participate. Therefore, it served as an appropriate place to have diverse views examined.

These various categories of nurses were randomly selected. Total number of respondents was 400.

Name of facility	Category of nurse	Sample size
Korelebu	Clinical Nurses	250
Korelebu	Mid-Wife	13
Korelebu	E&T	18
Korelebu	Anaesthesia	24
Korelebu	Opthalmic nurses	4
Korelebu	Paedrytric	12
Korelebu	Public Health Nurses	11
Korelebu	State if not listed	65
Total		397

Instrument for data collection

The instrument for the data collection comprised questionnaire for the various categories of nurses to establish the impact of CME on the performance of nurses engaged in CME, either officially approved or not officially approved. The questionnaire was developed by the writer in consultation with a measurement expert, it took into consideration the methodology of evaluating nurses in Ghana. This was approved by measurement expert.

To ensure the validity of the instrument, it was pre-tested using (30) practicing nurses engaged in CME either approved or not approved at the clinical department of Korlebu teaching hospital. A pilot study was conducted to check the validity and reliability of the questionnaire. Based on the intensive literature search a pool of 30 questions were constructed. After the pre-test questionnaire, participants were asked to mark the items that they thought would measure identification. Based on those outcomes a pool of 23 questions were remaining. The 23-item scale shows adequate internal reliability with a Cronbach's coefficient alpha of α=0.867. According to Pallant, (2007) to have an adequate internal reliability the Cronbach's coefficient alpha should be above α=0.7. The 23 items were split into specific factors and the factors relevant to this article has been attached as appendix.

This helped to determine the time frame that was used to respond to the instrument. Adjustments and corrections were made to suit respondents understanding.

Table 1: Cross tabulation of educational status and Cardiovascular diseases as a consequence of Stress					
			Cardiovascular diseases		Total
			No	Yes	
As a health professional which of the answers best describes you Currently	Working and continuing medical education without approval	Count	90	195	285
		% within Row	31.6%	68.4%	100.0%
		Std. Residual	.5	-.3	
	Completed a continuing medical education course/program	Count	3	51	54
		% within Row	5.6%	94.4%	100.0%
		Std. Residual	-3.3	2.2	
	Only continuing medical education with approval	Count	24	26	50
		% within Row	48.0%	52.0%	100.0%
		Std. Residual	2.3	-1.5	
Total			117	272	389
			30.1%	69.9%	100.0%

Source: Authors

The result presented suggests that most health practitioners responded yes to having experienced cardiovascular diseases.

Results presented in the Table suggests that most health practitioners responded yes to having experienced cardiovascular diseases effects as a result of the stress in continuing education. This is evidenced in an estimated total percentage of 69.9% in favour of the response Yes. The result suggests that almost 7 out of 10 health professionals experience some physiological effect as a result of stress. To investigate if these effects had any relationship which the education status of the health professional, a critical look at the distributions was done across educational groups. The distribution of responses across education status category, suggest none identical distributions with estimated percentages of 68.4%, 94.4% and 52.0% in favour of yes observed for Working and continuing medical education, completed a continuing medical education course/program and only continuing medical education respectively. The distribution of responses hence suggests some level of non-identical distributions which calls for further analysis to determine underlying patterns.

Inferential analysis was conducted to investigate contingency with educational status groups

The result of the Chi-square test is presented in the table below

Table 2: Chi-Square Tests results			
	Value	**Df**	**Asymp. Sig. (2sided)**
Pearson Chi-Square	23.382[a]	2	.000
Likelihood Ratio	27.869	2	.000
Linear-by-Linear Association	.538	1	.463
Source: Authors			

The result shows that response to physiological effects (Cardiovascular diseases) was significantly related (Chi-Square=23.382, p —value=0.00) to health professionals' educational status. We can therefore reject the null hypothesis at a significant of 5%. The finding implies that there exist significant differences in the distribution of responses to Cardiovascular diseases as a consequence of different stress levels associated with the various continuing education groups. This indicates that practicing health professionals engaged in continuing medical education without official approval suffered from Cardiovascular diseases, while those engaged in continuing medical education with approval did not suffer from cardiovascular diseases.

A follow up test to determine the nature of the relationship is done using the Cramers V statistic. The results of the Cramers V are presented in the table.

Table 3: Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.245	.000
	Cramer's V	.245	.000
	Contingency Coefficient	.238	.000

Source: Authors

The measure of symmetric association in the table above show moderate associations (Cramer V. = 0.245, p value = 0.001) between Cardiovascular diseases and the educational status. A critical look at the standardized residuals in the table reveals that while more people than were expected responded 'Yes' for the group completed a continuing medical education course/program. The finding implies that whiles more health workers who were completed a continuing medical education course/program were more affected by cardiovascular diseases than for the other groups. Results indicated that more health professionals engaged in CME without official

approval experienced cardiovascular diseases. Statistical Package for Social Sciences (SPSS) was used in analysing the data.

III. DISCUSSION

The findings showed that most health practitioners experienced cardiovascular diseases as a result of the stress in continuing education. This is evidenced in an estimated total percentage of 69.9% in favour of the response Yes. The result suggests that almost 7 out of 10 health professionals experience some physiological effect as a result of stress; which is precipitated by the environmental challenges. This finding is supported by Newton *et al (*2009b) which indicate that health service environments can be very challenging even for the most seasoned health professional. Newton *et al (*2009b), has indicated that the nature of clinical work is emotionally laborious, and unlike more physical or cognitive work roles students have encountered. Therefore, it is conclusive that clinical education is undoubtedly stressful for students. It is more evident in health professionals that undergo CME without official approval, as findings indicate that they experienced cardiovascular diseases due to the stress of CME without official approval. This finding is supported by the fact that stress is understood by Folkman, Lazarus, Gruen and Delongis (1986) as a relationship between an individual and the situation that is being appraised as being beyond the individual's capabilities to manage.

However, the evaluation an individual give to a challenging event makes it to be stressful or not. Because of that, individuals react differently to the same threatening event based on their evaluation and their personality type. More things that happen that are stressful could be managed uniquely when the stressors are identified and avoided. This is supported by Lazarus (1984), who indicates that the effect that stress has on a person is based more on that persons feeling of threat, vulnerability and ability to cope than on the stressful event itself. He defines psychological stress as a "particular relationship between the person and environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing." Though there were different personalities with different dynamics involved in the study, those engaged in CME without official approval experienced cardiovascular despite different personalities. Since these nurses that are supposed to facilitate health delivery are themselves diseased due to their engagement in CME without official approval, there will be the need to remedy the situation. Therefore, those engaged in continuing medical education without official approval suffer from cardiovascular diseases, while those engaged in continuing medical education with official approval do not suffer from cardiovascular diseases.

IV. CONCLUSION

This research examined the physiological effects of stress (cardiovascular diseases) on nurses engaged in continuing medical education without official approval on job performances. The study indicated that health professionals engaged in CME without official approval experienced physiological effects of stress (cardiovascular diseases).

V. RECOMMENDATION

Health facilities in the developing world should identify real need of their facility and make funds available for health professionals to undergo continuing medical education in specific areas of need, this is because continuing medical education yields higher effectiveness in developing countries.

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APPENDIX

Physiological effects of stress on nurses engaged in Continuing Medical Education Continuing education is one of the modern strategies to maintain and elevate knowledge and professional skills of nurses which in turn elevate the health status of society. Since several factors have an impact on the job performance of health professionals' participation in continuing education, it's essential to know the impact of physiological effects of stress among health professionals (practicing nurses).

Read each question carefully and choose the appropriate answer that best describe your opinion. Where you need to give explanations or comments give a brief and concise answer. If you do not understand a question properly you may leave it or seek clarification.

RESPONDENT BIO DATA

1. Age (Select one option) a. [20-30] b. [30-40] c. [40-50] d. [50-60]

2. Qualification (State): _____

3. Type of Medical Institution (Select one option): a. [Private] b [Public]

4. District (State): ……..……..

5.Department (state): ……..……..

6. Your specialty (Area of operation or current designation) Choose one option:

a. Clinical nurses.

b. Midwife

c. E & T. nurses

d. Nurses anaesthesia

e. Dental nurses

f. Psychiatric nurses.

g. Ophthalmic nurses.

h. Paediatric nurses.

i. Public health nurse

State if not listed

RESPONDENT DATA

	SA	A	D	SD
7. As a health professional which of the answers best describes you currently? *(Select one option)*				
7a) Working and continuing medical education				
7b) Completed a continuing medical education course/program				
8. As a health professional, do you have study leave facilities that support staff or workers who want to pursue further education to enhance their professional work?				
9. Did you apply for a study leave to further your education?				

10. If NO, why did you not apply for the study leave? (*select multiple options*)				
10 a) Because I was not due to apply for study leave				
10 b) The process takes a longer period				
10 c) Only few people qualify at a time				
10 d) You must serve a number of years to qualify for study leave				
11. Are you furthering your education with the consent of your employer? (*Select one option*)				
12. If NO, what is your reason? (*Select Multiple Options*)				
12 a) There would be no support from employer				
12 b) I need further knowledge to improve myself				
12 c) No reason				
12 d) I was in school before taking up my current job				
12 e) It is Personal				
13. Is the current course of study related to the area of work? (*Select One Option*)				
a. [Yes]				
14. Can you tell of any physiological change(s) like back pains, rapid heart rate or high blood pressure as a health professional and a student?				