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Original Paper

Motivation of Clinical Year Students in the School of Allied Health Sciences at the University of Ghana.

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ABSTRACT

Background: Health professions require self-directed and life-long learners as practitioners and motivation is instrumental in producing these kinds of health professionals. Not much is known about motivation of students in Ghana's health professions education. This study therefore sought to create a foundation for further research into this area and also to highlight some useful information for formulating policies for improved clinical educational environments that will enhance more mastery-oriented goals in students. Therefore the objective of this study was to investigate the motivations of under-graduate clinical students at the School of Biomedical and Allied Sciences, University of Ghana.
Methodology: This cross-sectional survey was made up of 210 third and fourth year allied health students recruited with a convenience sampling method from the University of Ghana. The Modified Archer's Health Professions Motivation Scale was used to obtain data on goal-orientation and learning strategies from the students and analysed using SPSS Version 17. Friedman test was used to investigate the differences of motivation within scales at 95% significance level.
Results: Mastery goal orientation was most represented (50.13%) among students. Internal locus of control and meta-cognitive learning were more represented **(**67.82% and 73.93 % respectively). Students also rated the preference for difficult tasks higher (54.23%). However, there was no significant difference between the preference for difficult task of the third-year group and fourth year group ($p = 0.733$).
Conclusion: Students of the school have an orientation for mastery of the course content and believe they have control over their success.
Recommendation: A further study that involves interviews that will specify each gender's reasons for their academic behaviour for greater insight into the motivation of the students in the Ghanaian setting is proposed.

Key words: *Goal orientation, causal attributions, learning strategies, Self-directed learners, life-long learners*

1. Introduction

The patients' charter of the Ghana Health Service lists a health professional as doing all in his capacity to help. This capacity of a professional was defined by Koehn [1] as standards and ideals of behavior, knowledge and skills not shared by others and, exercising autonomy in their work. At the clinical education stage, health students are required to integrate and apply knowledge gained in class; this should provide greater striving for mastery of the course content [2]. Given the rapidity of scientific development via research, the health professional, will have to continually update him- or her- self on what is current. This necessitates life-long self-regulated learning. Clinical Education is the phase where students are transformed from novices into professionals [3]. It is necessary that students be profoundly engaged at this stage, in order to lay significant and secure foundation for the future as they practice and apply classroom knowledge and skills to on-the-job responsibilities. Motivation is described basically as what students want and if basic needs exist to answer these questions, as posited by Higgins and Kruglanski [4]. The recognized constructs-value, self-efficacy and

competence belief, attribution and control belief, goal concept, interest and intrinsic motivation are formed from needs and motive domains as well as cognitive domains because motivation scholars find that motivation is not only social-cognitive but affective as well [5].

These constructs cannot be strictly separated from each other; there is interplay among them. In this way, although a discussion may involve goal concepts, it requires the contemplation of value for there can be no goals without value, for example. It is therefore important that a good appreciation of goal concept, attribution, control belief and self-regulation in the Ghanaian context be made to facilitate understanding. Context or culture impacts on motivation. The reasoning is that since there is situated cognition (cognition influenced by the environment of the individual); there also is a situated motivation [6]. Thus, context would either allow or constrain cognition and motivation. For example, researchers found differences in motivation between African American and Latino boys, and between White students while ethnic minority girls valued high-achieving same-gender students [7]. Students who believe they are able and will do well are much more likely to be motivated in effort, persistence and behavior than those with less belief of ability and success expectation [8-9] while sizable evidence suggests that cognitive engagement from these confident students in thinking and learning is more than those who have qualms [10].

Bandura [8] stated that if these self-efficacy beliefs are excessively positive or negative, they can be dangerous; for instance, a student who overestimates his reading ability, that he is a good reader when he is not, is unlikely to go back and repair his understanding or change his behavior and strategy use [11]. These are important considerations in self-regulation i.e. the use of strategies, and the perception of their need, given certain self-perceptions. Perceptions of task value have been shown to affect involvement in a given course, career choice by Eccles and others [12], Wigfield and Eccles [13]. In Eccles and others [14] expectancy-value model however, value works in tandem with task expectancy (difficulty, self-ability to achieve, expectation of success) where they both affect choice, performance and persistence of and in an act [6]. Failure when linked to external causes leads to anger while leading to shame, if the attribution is internal. Weiner [15], however states that at certain times, having low internal control locus is adaptive for students when involving failure where attributions are ascribed to outside forces. Attribution can generally be referred to beliefs about the causes of success and failure and how much perceived control one has to bring about outcomes or to control one's behavior [5, 14].

There are three achievement goals: mastery orientation, performance orientation [5] and academic alienation [15]. Mastery goals orient the student towards learning or understanding, to focus on the task in terms of how to do the task. Contrarily, performance orients the individual to focus on the self, ability or performance relative to others; obtaining recognition of high ability, protection of self-worth and the focus on competition and intent to overtake others [5]. Alienated students exert little effort as possible, not because they fear poor performance or are concerned with concealing lack of ability, but because their interests and sources of self-esteem lie outside the classroom [16]. Both self-regulation and motivation combine to produce the situation where opposing motivations appear and one motivation is chosen over the other for the value, expectancy of success or goal of the person. Zimmerman [17] reports that, self-regulated students are meta-cognitively, motivationally and behaviorally active in their own learning processes and in achieving their goals.

In Ghana, there appears to be a dearth of information on the actual motivations of students. However, there is the need for such information, so that evidence-based policies can be made to effectively deal with the motivations of students and thus, the quality of their education. This study aims to investigate whether the clinical education segment of allied health professions which includes physiotherapy, radiography, medical laboratory science and dietetics undergraduate clinical students at the University of Ghana does indeed motivate students, toward more professionally inclined goal of mastery, self-regulation, and consequently life-long learning.

2. Methodology

About 80% of the student population of the School of Biomedical and Allied Health Sciences was used in this cross-sectional study. This comprised of third and fourth year physiotherapy, radiography, medical laboratory science and dietetics undergraduate clinical students. Students who were available at the time of attendance of the researcher were recruited using a convenience sampling method. Non-clinical students and graduate students of the School were excluded from this study. Ethical approval was sought and obtained from the Ethics and Protocol Review Committee of the School of Biomedical and Allied Health Sciences, College of Health Sciences, University of Ghana. Permission was sought and obtained from the authorities of the various departments. Written consent was also obtained from participants, after the rationale of the study had been explained to them. Participants were also assured of anonymity and confidentiality of information obtained.

Data collecting tool

The data was collected using the Modified Archer's Health Professions Motivation Scale developed by Perrot and others [16]. The scale measures goal-orientation, learning strategies, preference for easy or difficult tasks and use of metacognitive/non-metacognitive strategies. It comprised: of goal scales (41 items), learning strategies (15 items), preference for difficult and easy tasks (2 items) and causal attributions (10 items). Goal scales comprised mastery goal orientation, performance goal orientation and academic alienation. Learning strategies comprised meta-cognitive learning strategy and superficial learning strategy. Preference for difficult task and preference for easy task are subscales of the preference for difficult and easy tasks scale. Causal attributions comprised internal locus of control and external locus of control. Responses were scored on a five-point Likert-type scale: one represented the 'least' favorable response and five represented the 'most' favorable response. For each

respondent, the scores for each scale and subscale were calculated by adding the rating for each item (in the scale/subscale) and dividing by the number of items. Demographic data, including gender, age, level and programme were also collected.

Procedure for data collection

Copies of the questionnaire were distributed by the researchers to the various classes (third and fourth year physiotherapy, radiography, dietetics and medical laboratory science students) approximately 10 to 15 weeks into the second semester of lecture periods. The completed copies of the questionnaire were retrieved by the researchers over a four-week period. Out of the 210 copies of the questionnaire distributed, 201 were received completed representing 95.7% response rate. Follow-ups were done while data collection was on going till one week after data collection.

Data analysis

Data from the questionnaire was analyzed using SPSS Version 17 for descriptive and inferential statistics. Descriptive statistics of means, standard deviations and frequency were computed for the demographic data. Means and standard deviations were calculated for each scale, subscale, and item. Bar charts are used to depict results. The Friedman test was used to seek differences of motivation within the scales; p (significance) = 0.05 and Wilcoxon Signed Ranks test for differences of motivation within the scales; p (significance) = 0.017 by Bonferroni adjustment. Kruskal-Wallis test was also used to seek the differences of motivation between the programmes; p (significance) = 0.05 and Mann-Whitney U test for the differences of motivation between sex and classes; p (significance) = 0.05.

3. Results

The participants were largely male (57.2%) reflecting the male dominance of the population. Out of the total number, the third year (level 300) was 110 (54.7%) while the fourth year (level 400) was 91 persons (45.3%). The age range obtained was 20 – 44 years with the average age of 23.38 ± 3.09 for the third years while the fourth years reported an average age of 25.45 ± 3.51. On the whole, the average age was 24.31 ± 3.44. The age range among males was 24.28 ± 2.87 (21 – 36 years) and was 24.37 ± 4.00 for the females. Table 1 shows the demographic characteristics of participants.

In the mastery orientation scale, 8.49% of students rated "saw improvement in my work" highest. Table 2 shows mastery orientation scale comparison by gender, level and department. About 22.64% students rated "you worked hard" highest in internal locus of control scale. Table 3 shows internal locus of control scale comparison by gender, level and department.

Table 1: Demographic characteristics of participants (N=201)

Category	Sub - category	No.	%	Average age ± SD (years)
Gender	Male	115	57.2	24.28 ± 2.87
	Female	86	42.8	24.37 ± 4.00
Levels	300	110	54.7	23.38 ± 3.09
	400	91	45.3	25.45 ± 3.51

Table 2: Mastery Orientation Scale Comparison by Gender, Level and Department

Category	Sub-category	Mean ± sd	p-value
Gender	Male	3.94 ± 0.47	0.538
	Female	3.96 ± 0.52	
Levels	300	4.04 ± 0.45	0.004*
	400	3.84 ± 0.51	
Departments	Physiotherapy	3.89 ± 0.52	0.134
	Radiography	4.09 ± 0.38	
	Med. Lab.	3.90 ± 0.52	
	Dietetics	3.95 ± 0.43	

Note: The higher the score, the more favorable the response
Key: Med. Lab. = Medical Laboratory Sciences, Sd = Standard deviation, Asterisk (*) indicates significance.

Table 3: Internal Locus of Control Scale Comparison by Gender, Level and Department

Category	Sub-category	Mean ± sd	p-value
Gender	Male	3.44± 0.75	0.141
	Female	3.31± 0.80	
Levels	300	3.29± 0.81	0.152
	400	3.45± 0.72	
Departments	Physiotherapy	3.39± 0.85	0.008*
	Radiography	3.59 ± 0.62	
	Med. Lab. Sci	3.34± 0.74	
	Dietetics	2.74± 0.88	

Table 4 shows meta-cognitive learning strategies scale comparison by gender, level and department of which 11.50% students rated "when I prepare tasks/assignments, I try to pull together the information from lectures, tutorials and my own reading" highest in the meta-cognitive learning strategy scale. More than half (54.23%) of the students preferred difficult tasks.

Table 4: Meta-cognitive Learning Strategies Scale Comparison by Gender, Level and Department

Category	Sub-category	Mean ± sd	
Gender	Male	3.51 ± 0.61	0.401
	Female	3.56 ± 0.74	
Levels	300	3.63 ± 0.62	0.008*
	400	3.41 ± 0.70	
Departments	Physiotherapy	3.42 ± 0.86	0.507
	Radiography	3.62 ± 0.64	
	Med. Lab. Sci	3.56 ± 0.55	
	Dietetics	3.40 ± 0.72	

Note: The higher the score, the more favorable the response
Key: Med. Lab. Sci. = Medical Laboratory Sciences, Sd = Standard deviation, Asterisk (*) indicates significance

Table 5 shows the comparison of preference for difficult/easy tasks between gender, levels and departments. A little over half (50.13%) of the students sought to master the course, 67.82% students attributed control of success or failure to themselves and 73.93% of the students used metacognitive learning strategies. Table 6 shows sample-wide comparison of the scales.

Table 5: Comparison of Preference for Difficult/Easy Task between Genders, Levels and Departments

Category	**Sub-category**	**Mean ± sd (Pd)**	**Mean ± sd (Pe)**	**p-value (Pd)**	**p-value (Pe)**
Gender	Male	3.55 ± 1.23	3.04 ± 1.35	0.3500	0.0280*
	Female	3.43 ± 1.15	3.45 ± 1.29		
Levels	300	3.52 ± 1.20	3.13 ± 1.37	0.7330	0.334
	400	3.47 ± 1.19	3.33 ± 1.29		
Department	Physiotherapy	3.24 ± 1.28	3.30 ± 1.41	0.489	0.208
	Radiography	3.54 ± 1.34	3.46 ± 1.38		
	Med. Lab. Sci	3.58 ± 1.07	3.02 ± 1.28		
	Dietetics	3.67 ± 1.11	3.33 ± 1.17		

Note: The higher the score, the more favorable the response
Key
Med. Lab. Sci. = Medical Laboratory Sciences, Sd = Standard deviation
Pd = Preference for difficult task, Pe = Preference for easy task, Asterisk (*) indicates significance

Table 6: Sample-wide Comparison of Scales

M – A		P – M		P – A		E – I		Mc– Su		Pd – Pe	
M	A	P	M	P	A	E	I	Mc	Su	Pd	Pe
3.95 ± 0.49	2.54 ± 0.71	3.42 ± 0.73	3.95 ± 0.49	3.42 ± 0.73	2.54 ± 0.71	2.67 ± 0.85	3.37 ± 0.77	3.54 ± 0.67	2.56 ± 0.80	3.50 ± 1.19	3.22 ± 1.33
P < 0.001*		P < 0.001*		P <0.001*		P <0.001*		P <0.001*		P = 0.037	

Note: The higher the score, the more favourable the response
Key
M = Mastery Goal Orientation scale mean, P = Performance Goal Orientation scale mean
A = Academic Alienation scale mean, E = External Locus of Control scale mean
I = Internal Locus of Control scale mean, Mc = Meta-cognitive Learning Strategies scale mean
Su = Superficial Learning Strategies scale mean, Asterisk (*) indicates significance

4. Discussion

Students were more interested in mastering their programme content and believed they had control over their success or failure. Students used more meta-cognitive learning and preferred difficult tasks. Third year (level 300) students were more interested in mastery while radiography students believed they had control over their success or failure. Third year (level 300) students used more metacognitive learning while female students preferred easy tasks. Why males were less mastery oriented cannot be answered by this study but may be due to females having greater propensity to be more motivated in pursuit of health professions as is postulated for the female psychology [18]. It could also be due to the male-dominated culture of the Ghanaian society where men have to be the financial support of the family.

For the performance orientation scale, students saw good grades as being most important to them. This item is identified as performance-approach oriented and is linked with the predominant item for mastery as good grades provides good evidence of getting better, thus students are not only demonstrating their ability by a performance-approach but are also testing themselves. The students saw finding the work easy as a great factor in their motivation in the academic alienation scale. This may also be linked to a sense of self-worth and greater ability especially considering how lowly the academic alienation scale represented among the students. Students saw improvement in their work as most important to them, thus students liked to see themselves getting better in their chosen professional programs [2], an attitude that will serve well as future professionals. Students saw their effort being most important to their success/failure. This reflects the theory and research findings, which report that in order to avoid insult to their self-worth, students attribute their success/failure to effort so that in case there is failure, their self-worth would be protected [14]. In general, the predominant use of meta-cognitive strategies reflects the theory and research findings [5] that mastery-oriented students favour meta-cognitive strategy use. This also has a favorable portent as the combination of the two constructs produces the archetypal professional as defined in the literature [1].

Physiotherapy was found to be the least mastery-oriented among the programmes sampled. In Ghana, physiotherapy is probably not as popular as some of the allied health professions and this may affect the students' value for it and what others think of them thus reducing their motivation. In addition, the physiotherapy department does not have an adequate gymnasium or laboratory due to space even though there are adequate handy materials for the educational needs of students, and this situation could probably deflate the interest and value of students for the programme. With respect to preference for difficult and easy task, the difference between males and females in this scale confounds the finding of lower mastery orientation in males. It is expected that males would rather avoid difficult tasks but in a male-centered society, it may be a strategy for the males to maintain their self-worth and belonging.

Conclusion

Students of the School of Allied Health Sciences at the University of Ghana have an orientation for mastery of the course content and thus believe they have control over their success. It appears context is very important to motivation, thus it is important that physiotherapy education takes its effect into account in order to formulate effective educational plans.

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Author contributions

JQ, JD and SK contributed to the study design, collected and analysed data. JD and SK sourced and reviewed relevant literature. JQ, JD and SK wrote and also reviewed the manuscript for important intellectual content. JQ, JD and SK revised the draft version and approved the final version of the manuscript for submission.

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