

CRITICAL THINKING DISPOSITIONS OF NURSING FACULTY IN SOUTHWESTERN NIGERIA

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ABSTRACT

Background: Critical thinking skills are essential in today's vastly changing world. Preparing students to think critically is a goal of many higher education professionals. CT is a core competency in nursing and has been widely discussed in nursing education. Educators with strong critical thinking dispositions will encourage students to critically reflect on the quality of their thinking as they engage them in teaching and learning and will continually monitor their own thought processes for imperfections.

Purpose: This study assessed the critical thinking dispositions of nursing faculty in Southwestern Nigeria.

Materials and Methods: The study is a descriptive design. California Critical Thinking Disposition Inventory Scale (CCTDI) was administered to 37 nursing faculty from 4 accredited baccalaureate nursing programs.

Findings: Majority of the faculty had more than 10 years of teaching experience with baccalaureate degree in nursing as the highest level of education earned in nursing. The results revealed that the means score for faculty's CCTDI are within the positive disposition range with highest mean scores in inquisitiveness and confidence in reasoning. Conversely, the faculty group had a mean score below 40, for the truth-seeking and open-mindedness subscales. Nursing faculty had relatively high scores in inquisitiveness, confidence in reasoning, analyticity, systematicity, maturity of judgment, open mindedness and low score in truth seeking with an overall mean score of 312.08. 13.5% ($n = 5$) of the participants were categorized as having weak dispositional attitude toward critical thinking, 78.4% ($n = 29$) had positive inclination to think critically, and 8.1% ($n = 3$) had high dispositions toward critical thinking.

Conclusions: Result findings indicated that nursing faculty have positive inclination toward critical thinking. These results suggest that faculty demonstrate hesitant desire for best knowledge and are cautious in their self-monitoring for possible bias. Therefore, they are inconsistent in seeking out adequate information. The results suggest that nursing educators have the critical thinking dispositional scores that would incline them to use critical thinking. Thus, they can effectively promote the development of CT skills in students. However, since the faculty are identified to be hesitant in using truth-seeking and open-mindedness based on their scores, they may be less likely to be open to innovative and evidence-based methods of teaching to facilitate learning because of personal teaching-learning preferences. The classroom environment of such faculty may be faculty centered and not student centered.

KEYWORDS: Critical Thinking, Dispositions, Faculty, Nursing

INTRODUCTION

Critical thinking dispositions are requisite for thinking critically and for developing sound critical thinking skills. Dispositions toward thinking critically have been portrayed as the unswerving internal inclination to problem solving and

decision making achieved by thinking^{[1][2]}. An individual with critical thinking dispositions display a inquiring inquisitiveness, a enthusiastic intellect, a zealous dedication to reason, a hunger for reliable information, and are more apt to use their critical thinking skills than are those who do not have strong critical thinking dispositions^{[1][13]}. These dispositions include the following seven traits: truth seeking, open-mindedness, analyticity, systematicity, inquisitiveness, cognitive maturity, and critical thinking self-confidence^[4]. Not only do students need high level of critical thinking skills and dispositions, but nursing faculty as facilitators of learning should also demonstrate critical thinking as they present information to students^[5]. Thus, the facilitator of learning must support the learner's attempts to engage in critical thinking. Zygmunt and Schaffer noted that faculty's critical thinking skills test results varied considerably, suggesting students taught by a faculty not skilled in CT may experience a drawback in developing critical thinking^[6].

Nursing educators have been asked to develop the most effective teaching methods to enhance the critical thinking disposition of students. Critical thinking dispositions are attitudes that developed over time and are influenced by the environment, social norms, peers and significant adults, and are difficult to change in the short term^[7]. Simply, if there is no disposition toward critical thinking, then critical thinking will not take place, regardless of the presence or absence of the necessary skills. Encouragement, enhancement, and emphasis on the need for a disposition toward problem solving is essential. Educators with strong critical thinking dispositions will encourage students to critically reflect on the quality of their thinking as they engage them in teaching and learning and will continually monitor their own thought processes for imperfections^[8].

Nursing faculty with superior critical thinking is considered to be one of the major precursors to the development of nursing students' critical thinking skills. Faculty is the students' role models whose interactions eventually produce committed and high-proficient nursing professionals^{[8][9]}. Nurse educators who model good critical thinking skills in all aspects of nursing education usually produce students with higher levels of critical thinking^[10]. This places high expectations from and a heavy burden on nursing faculty who may not have had sufficient training from their own previous instructors in developing their own critical thinking skills. Most faculty developed their own professional skills under the archaic teacher-centered approach which generally is weak in inspiring the development of critical thinking skills^[10]. Zygmunt and Schaffer noted that faculty's critical thinking skills test results varied considerably, suggesting students taught by a faculty not skilled in CT may experience a drawback in developing critical thinking^{[6][8]}.

Pendley used CCTDI to assess the critical thinking disposition of the nursing faculty of associate program and baccalaureate program^[11]. She sought for the association between the CCTDI scores and the demographic variables of gender, age, and highest level of formal education. Pendley reported the respective mean composite scores of 328.58 ($SD = 23.98$) for associate program and 331.04 ($SD = 25.74$) for baccalaureate program, which has no significant statistical difference. However, the baccalaureate program had 8% more faculty scoring strongly positive on the critical thinking disposition subscale than the associate program faculty. This might have resulted from the educational differences between the two groups of nursing faculty. Majority of baccalaureate faculty earned or were about to earn doctoral degrees (55%) while majority of associate program faculty (81%) earned or were about to earn master's degrees^{[11][12]}.

MATERIALS AND METHODS

This study is a descriptive quantitative study which aimed at assessing the critical thinking dispositions of

baccalaureate nursing faculty in Southwestern Nigeria. A total of 37 faculty from four accredited nursing programs participated through a purposive sampling technique. Faculty with a minimum of a baccalaureate degree in nursing and teaching theory, clinical, or both were included in the study. Visiting faculty or those on sabbatical assignment were excluded. Participants were asked to complete the CCTDI, which elicited information about their critical thinking dispositions scores and a demographic questionnaire to collect data on participants' demographic variables. Even though all nursing faculty (55) in all the four schools were invited to participate, 37 nursing faculty volunteered to participate, representing 67% of total population. Participants were given 30 minutes to complete the CCTDI and the demographic sheet. Data was scored and entered into the statistical package for social science (SPSS) version 18.

There were seven subscales with 75 items on a six-point likert scale of strongly agree to strongly disagree. The subscales are truth-seeking, inquisitiveness, open-mindedness, critical thinking confidence, analyticity, systematicity, and cognitive maturity. There are between 8 to 12 questions one each subscales. Each subscale has 10 at its minimum score and 60 as its maximum score. In each subscale, scores of 30 or less are considered as weakness or opposition to inclination to think critically; 31 to 40 scores are interpreted as ambivalence toward that subscale; 41 to 50 scores show positive inclination towards critical thinking disposition; while scores higher than 50 reveals a high disposition or inclination toward that subscale^{[1][8]}. All the seven subscales are summed up with 70 points as minimum and 420 points as maximum score. Scored data was analyzed using descriptive statistics and independent t-test. All seven subscales of CCTDI were analyzed using descriptive statistics such as the measure of central tendency and measure of variability. The central tendency provided information on the mean and standard deviation, which will lead to a clearer understanding of the meaning, variety, and utilization of all seven characteristics of critical thinking disposition.

RESULTS

Table 1: Demographic Variables of Participants

Variables	Faculty (n = 37)	Frequency (%)
Gender	Female	27 (73)
	Male	10 (27)
School	School A	14 (37)
	School B	9 (24.3)
	School C	9 (24.3)
	School D	5 (13.5)
Employment Status	Full time	36 (97)
	Part time	1 (3)
Rank	Graduate Assistant	4 (10.8)
	Assistant Lecturer	5 (13.5)
	Lecturer II	11 (29)
	Lecturer I	6 (16.2)
	Senior Lecturer	8 (21.6)
	Associate Professor	0 (0)
	Professor	2 (5.4)
Years of Teaching Experience	Clinical Instructor	1 (2.7)
	Less than 2 years	4 (10.8)
	2 to 4 years	5 (13.5)
	5 to 7 years	8 (21.6)
	8 to 10 years	5 (13.5)
Greater than 10 years	15 (40.6)	

Table 1 described the demographic variables of participants. 37 participants were involved in this study. 27 (73%) were female, 11 (29%) were lecturer I, and 15 (40.6%) had greater than 10 years of teaching experience.

Table 2: Descriptive Statistics of the Critical Thinking Dispositions of Nursing Faculty

Variable (n = 37)	Min	Max	Mean	SD
Truth-seeking	21	58	36.76	8.626
Open-mindedness	25	52	39.78	6.088
Inquisitiveness	34	60	51.41	5.928
Analyticity	35	60	47.62	5.288
Systematicity	35	54	44.97	4.531
Confidence in reasoning	34	58	48.92	5.751
Maturity of judgment	24	56	42.78	8.766
CCTDI overall	256	392	312.08	31.895

As seen in Table 2, the means, standard deviations, and maximum and minimum scores were calculated for each subscale and the total CCTDI. The total possible score for truth seeking ranges from 21 to 58 with $SD = \pm 8.528$, open mindedness from 25 to 52 with $SD = \pm 6.088$, inquisitiveness from 34 to 60 with $SD = \pm 5.928$, analyticity range from 35 to 60 with $SD = \pm 5.288$, systematicity from 35 to 54 with $SD = \pm 4.531$, confidence in reasoning from 34 to 58 with $SD = \pm 5.751$, maturity of judgment from 24 to 56 with $SD = \pm 8.766$ and CCTDI overall from 256 to 392 with $SD = \pm 31.895$. A score between 70 to 209 indicates a low critical thinking disposition, 210 to 280 indicates a weak or inconsistent disposition, score between 281 to 350 indicates positive critical thinking disposition while 351 to 420 score indicates high critical thinking disposition. The overall critical thinking disposition for nursing faculty; 13.5% ($n = 5$) were categorized as weak, 78.4% ($n = 29$) as positive, and 8.1% ($n = 3$) as high. The nursing faculty had relatively high scores in inquisitiveness, confidence in reasoning, analyticity, systematicity, maturity of judgment, open mindedness and low score in truth seeking.

Table 3: Descriptive Statistics of the Critical Thinking Dispositions Scores of Nursing Faculty with Experience Less than 10 Years and Nursing Faculty with Experience Greater than 10 Years

CCTDI Scales	Group	Min	Max	M	SD	t (p value)
	Faculty < 10years n= 22 Faculty > 10 years n= 15					
Truth-seeking	Faculty < 10years n= 22	15	48	29.74	6.843	-1.895(.051)
	Faculty > 10 years n= 15	21	58	31.51	6.088	
Open-mindedness	Faculty < 10years n= 22	25	52	36.68	5, 265	-0.763(0.372)
	Faculty > 10 years n= 15	27	50	37.29	4.810	
Inquisitiveness	Faculty < 10years n= 22	30	58	46.33	6.158	-0.624(0.78)
	Faculty > 10 years n= 15	34	60	47.71	5.307	
Analyticity	Faculty < 10years n= 22	34	58	43.84	5.156	-1.462(0.138)
	Faculty > 10 years n= 15	29	57	44.84	4.524	
Systematicity	Faculty < 10years n= 22	27	54	44.97	5.367	-1.975(0.056)
	Faculty > 10 years n= 15	35	52	42.69	4.531	
Confidence in reasoning	Faculty < 10years n= 22	34	57	43.83	5.762	-3.168(0.003)
	Faculty > 10 years n= 15	35	58	46.31	5.751	
Maturity of judgment	Faculty < 10years n= 22	20	58	36.80	7.842	-1.212(0.226)
	Faculty > 10 years n= 15	26	55	38.04	6.801	
CCTDI overall	Faculty < 10years n= 22	244	389	308.78	32.453	-2.694(0.006)
	Faculty > 10 years n= 15	258	396	314.02	31.785	

Note: Min = minimum; Max = maximum; M = mean; SD = standard deviation, p value <0.05.

Of the respondents, 22 (59.4%) were faculty with less than 10 years of teaching experience and 15 (40.6%) were faculty with more than 10 years teaching experience. The range of CCTDI overall was 244 to 389 for faculty with less than 10 years of teaching experience and 244 to 389 for faculty with more than 10 years teaching experience. As shown in Table 3, nursing faculty with more than 10 years teaching experience scored higher than faculty with 10 years or less teaching experience in truth seeking, confidence in reasoning, maturity of judgment and as well as CCTDI overall while both had relatively equal scores for open mindedness, inquisitiveness, analyticity and systematicity.

t test reflected a significant statistical differences between the faculty with less than 10 years of teaching experience and faculty with more than 10 years of teaching experience in confidence in reasoning and CCTDI, $t(37) = -3.168, p < 0.05$ and $t(37) = -2.694, p < 0.05$ respectively. The *t* test measuring the difference between the total critical thinking dispositions composite scores and subscales scores of faculty with less than 10 years and faculty with more than 10 years teaching experiences indicated no statistically significant difference for Truth seeking, $t(37) = -1.895, p > 0.05$, Open mindedness, $t(37) = -0.763, p > 0.05$, Inquisitiveness, $t(37) = -0.624, p > 0.05$ Analyticity, $t(37) = -1.462, p > 0.05$, Systematicity, $t(37) = -1.975, p > 0.05$ and Maturity of judgment, $t(37) = -1.212, p > 0.05$ while there is statistical significant difference for Confidence in reasoning, $t(37) = -3.168, p < 0.05$ and CCTDI overall, $t(37) = -2.694, p < 0.05$.

DISCUSSIONS

37 nursing faculty from four accredited nursing programs in Southwestern Nigeria participated in this study. Results of the critical thinking disposition profile for the students showed that nursing faculty have positive critical thinking disposition. 13.5% ($n = 5$) nursing faculty were categorized as having weak disposition toward critical thinking because of total scores that ranged between 210 to 280; 78% ($n = 29$) faculty critical disposition total scores were between 281 to 350; and 8.1% ($n = 3$) scored above 350 indicating high critical thinking disposition. The results revealed that the means score for faculty's CCTDI are within the positive disposition range with highest mean scores in inquisitiveness and confidence in reasoning (Table 2). Conversely, the faculty group had a mean score below 40, for the truth-seeking and open-mindedness subscales. Truth-seeking scores ranged from 21 to 58 and 25 to 52 for open-mindedness. Categorical interpretation for the CCTDI Truthseeking, Open-mindedness, Analyticity, Systematicity, Critical Thinking Self-Confidence, Inquisitiveness, and Maturity of Judgment are broken down into four categories: Low (10-29), Ambivalent or Inconsistent (30-40), Positive (40-50), and High (50-60)^[13].

These results suggest that faculty demonstrate hesitant desire for best knowledge and are cautious in their self-monitoring for possible bias. Therefore, they are inconsistent in seeking out adequate information. The results suggest that nursing educators have the critical thinking dispositional scores that would incline them to use critical thinking. Thus, they can effectively promote the development of CT skills in students. However, since the faculty are identified to be hesitant in using truth-seeking and open-mindedness based on their scores, they may be less likely to be open to innovative and evidence-based methods of teaching to facilitate learning because of personal teaching-learning preferences. The classroom environment of such faculty may be faculty centered and not student centered. In addition, the faculty's teaching method will not be reflective of latest research and may lack evidence-based methods to facilitate learning and development of critical thinking skills.

This result is similar to Raymond and Profetto-McGrath who reported an overall mean score ($M = 331.55, SD = 34.45$) and all subscales scores above 40 for nurse educators with inquisitiveness with the highest score

of 53.91, which demonstrates a positive leaning in every disposition^[14]. Similarly the findings of this study indicate that inquisitiveness was a strength among nursing faculty with a mean score greater than 50, the highest scoring disposition in the faculty group, compared with analyticity ($M = 47.62$), systematicity ($M = 44.97$), confidence in reasoning ($M = 48.92$), and maturity in judgment ($M = 42.78$). However, the faculty group had slightly lower scores in open-mindedness ($M = 39.78$) and truth-seeking ($M = 36.76$) when compared with Raymond and Profetto-McGrath^[14].

It has been avowed that the nature of the items that are used to measure truth-seeking disposition is responsible for the lower scores of that critical thinking disposition^[15]. The nursing faculty overall mean total score for the CCTDI in this present study was 312.08, $SD = 31.89$ with scores ranging from 256 to 392 demonstrating a moderately strong disposition to think critically. This finding reveals nurse educators' eagerness and curiosity about gaining knowledge even when it may not have instant application. These results imply that, although the participating faculty were curious about getting explanation for things they confronted in their lives, as portrayed by the inquisitiveness subscale, they might not have a strong inclination to ask questions or desire the best possible explanation of any issue, as described by the truth-seeking subscale.

Similarly, Raymond used the CCTDI to determine the critical thinking disposition scores of 11 nurse educators in Canada^[16]. There were 3 (27%) teachers with strong critical thinking dispositions in Raymond's study while there were 3 (8.1%) faculty with strong critical thinking disposition, 28 (78.4%) with moderate or positive disposition to think critically, and 5 (13.5%) faculty with weak inclination to think critically in Southwestern Nigeria study.

Evidence from this study points to statistical significant difference in the total composite critical thinking disposition scores of 308.70 ($SD = 32.453$) for faculty with less than 10 years teaching experience and 314.04 ($SD = 31.785$) for faculty with more than 10 years teaching experience. This might have resulted from the educational differences between the two groups of nursing faculty. Majority of faculty with less than 10 years teaching experience earned master's degrees and some were about to earn doctoral degrees. Despite the scarcity of researches on critical thinking disposition of nursing faculty, one can safely assume that faculty level of education and teaching experience increases the faculty critical thinking disposition.

CONCLUSIONS, RECOMMENDATIONS AND NURSING IMPLICATION

The findings of this study offer a foundational discussion about the critical thinking dispositions of baccalaureate nursing faculty in Southwestern Nigeria. Nursing faculty in Nigeria, like many other faculty need to demonstrate hesitant desire for the best knowledge. The results suggest that nursing educators have the critical thinking dispositional scores that would incline them to use critical thinking. Thus, they can effectively promote the development of critical thinking in students. However, since the faculty are identified to be hesitant in using truth-seeking and open-mindedness based on their scores, they may be less likely to be open to innovative and evidence-based methods of teaching to facilitate learning because of personal teaching-learning preferences. The classroom environment of such faculty may be faculty centered and not student centered. In addition, the faculty's teaching method will not be reflective of latest research and may lack evidence-based methods to facilitate learning and development of critical thinking skills.

The sample size and the sampling technique are identified as limitations to this study. Thus, the findings cannot be generalized and prevents statistical significance. The sample was limited to four research sites with use of convenience and

purposive sampling of participants. Additionally, the use of the California Critical Thinking Disposition Inventory may not have been socio-culturally congruent with the faculty's own experience.

Critical thinking is an essential component of nursing profession in giving safe and quality nursing care. Disposition to think critically is a pre-requisite to the development of effective critical thinking skills. Therefore, nursing faculty should integrate teaching methods that can facilitate regular interaction between them and their students for development of critical thinking skills. Rarieya affirmed that the teacher is better able to reflect in a sustained manner when the teacher becomes open-minded, responsible, and willing to take risks^[17]. The absence of sufficient reflective ability will prevent teacher or teacher from bringing their knowledge to the appropriate professional level. Hence, nursing students and faculty are encourage to adopt the process that will equip them to function at a higher level of thinking, exhibiting the habits of mind of confidence, inquisitiveness, open-mindedness, and truth-seeking.

The findings have implications for nursing curriculum development and understanding various teaching and learning strategies. Nursing faculty should integrate activities that can enhance truth-seeking. This can be achieved by encouraging students to question personal biases and opinions that differ from others^{[2][5][18]}. Moreover, classroom experience should include reflection and discussion that will promote interaction. Faculty should challenge their prior biases that may differ from opinions of others and assist students in the decision making process, thus truth-seeking is encouraged. Faculty should shift from judgmental to supportive reactions to learners. Asare advised faculty to welcome students' inquiry and should balance the quest to finish the scheduled topic with inspiring critical understanding^[19].

Nursing education should not only focus on transferring knowledge from classroom and clinical experience. Students should be encouraged to develop open-mindedness, or the ability to listen to others points of view. Creating time for students to reflect upon their experience, promoting dialogue, and inquiring about actions taken can promote open-mindedness. This can be achieved through engaging students in role-playing, simulations, and problem based learning rather than exclusively relying on lectures^[2]. Faculty should design their learning environment in order to develop critical thinkers. This implies that nursing faculty should be eager to learn how to train critical thinkers and to exercise the mental effort required applying it.

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REFERENCES

1. P. A. Facione and N. C. Facione. Talking critical thinking change. *Higher Learning*, 39(2), 2007, 38-45.
2. H. Zhang. Critical thinking dispositions and learning styles of baccalaureate nursing students from China. *Nursing and Health Sciences*, 10, 2008, 175 – 181.
3. S. Soeherman. *The relationships of critical thinking skills, critical thinking dispositions, and college experiences of theological students in Indonesia*, doctoral diss. New York University, New York, NY, 2010.

4. American Philosophical Association. *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*. (Millbrae, CA: California Academic press, 1990).
5. A. Alper. Critical thinking disposition of pre-service teachers. *Education and Science*, 35(158), 2010, 14-27.
6. D. M. Zygmunt, and K. M. Schaefer, Assessing the critical thinking skills of faculty: What do the findings mean for nursing education? *Nursing Education Perspectives*, 27(5), 2006, 260-268.
7. T. Irani., R. Rudd, M. Gallo, J. Ricketts, C. Friedel, and E. Rhoades, *Critical thinking instrumentation manual*. Retrieved from http://step.ufl.edu/resources/criticalthinking_/ctmanual.pdf, 2007
8. R. W. Paul and L. Elder. *Critical Thinking: Concepts & Tools*. Santa Rosa, CA: Foundation for Critical Thinking, 2009.
9. D. Hartley, and V. Aukamp, Critical thinking ability of nurse educators and nursing students. *Journal of Nursing Education* 33 (1), 1994, 34–35.
10. A. Mangena, and M. M. Chabeli, Strategies to overcome obstacles in the facilitation of critical thinking in nursing education. *Nurse Education Today*, 25 (1), 2005, 291-298. doi:10.1016/j.nedt.2005.01.012.
11. J. Pendley, *A study of critical thinking disposition of nurse educators, doctoral diss.*, University of New Mexico, NM, 1997.
12. L. C. Blondy, *A correlational study between the critical thinking skills of nursing faculty and their perceived barriers to teaching critical thinking skills to nursing students*, unpublished doctoral diss., Capella University, Minneapolis, MN, 2007.
13. N. Facione, and P. Facione, *The California Critical Thinking Disposition Inventory: CCTDI instrument user's manual* (Millbrae, CA: The California Academic Press, 2010).
14. C. L. Raymond, and J. Profetto- McGrath, Nurse educators' critical thinking: Reflection and measurement. *Nurse Education in Practice*, 5, 2005, 209-217.
15. J. Profetto-McGrath. The relationship of critical thinking skills and critical thinking dispositions of baccalaureate nursing students. *Journal of Advanced Nursing*, 43, 2003, 569-577.
16. C. L. Raymond, *An exploration of nurse educators' critical thinking*, master's thesis Edmonton, Alberta, 2003.
17. Rarieya, J. F. A. (2005). Reflective dialogue: What's in it for teachers? A Pakistan case. *Journal of In-Service Education*, 31, 313-335. doi:10.1080/13674580500200362.
18. J. Cohen. *Critical-thinking disposition and profile of critical-thinking disposition for post-professional graduate athletic training students*, doctoral diss. Capella University, Minneapolis, MN, 2010.
19. S. A. Asare, Reflective collaborative practices: What is the teachers' thinking? A Ghana case. *Creative Education*, 3(4), 2012, 448-456.