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Research Article

The Determinants of Positive Teamwork Attitudes: An Analysis of Age, Gender, and Academic Progression Among Nigerian Nursing Students

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Abstract

Background: Positive teamwork attitudes are crucial components of effective interprofessional collaboration, which is crucial to promoting patient safety and quality healthcare, with these attitudes being developed and influenced during the formative years of professional education. *Aim:* The aim of this study was to analyse the determinants of positive teamwork attitudes, specifically examining the influence of age, gender, and academic progression among Nigerian nursing students. *Methods:* A descriptive cross-sectional design was used to examine 218 clinical nursing students from level two to five at the University of Port Harcourt, Nigeria. Each participant was selected using a stratified random sampling to ensure impartial. Data was collected using a structured, self-administered questionnaire that was adapted from Huyen's (2010) questionnaire. Each instrument had a section focusing on socio-demographic characteristics of each student and an attitude scale to measure their perceptions of teamwork learning skills. The data was analysed using descriptive statistics and Analysis of Variance (ANOVA) to check whether or not any associations between the determinants and attitude scores were significant with SPSS version 27.0. <0.05 was considered statistically significant. *Results:* The collective disposition towards teamwork was highly positive (Mean score = 34.15 ± 4.40 on a range of 8 to 40). A one-dimensional analysis of covariance (after evaluating covariant homogeneity using Levene's test) showed that age (F=2.816, p=0.026), gender (F=7.791, p=0.006), and level of study (F=2.887, p=0.037) were all statistically significant determinants of attitudes towards teamwork. Female students reported significantly more positive attitudes (M=34.72 ± 2.83) than their male counterparts (M=32.97 ± 6.42). Age generally had a positive linear relationship with attitudes toward teamwork, with the most positive attitudes reported among students older than 23 years (M=36.64 ± 1.81). There was no discernable linear relation with level of study, but attitudes peaked among 3rd year students (M=34.91 ± 2.91), and then dropped among 4th year students (M=32.16 ± 4.18). *Conclusion:* Age, gender, and academic transition appear to be important factors that influence the teamwork beliefs of Nigerian nursing students. The results highlight the variability of teamwork attitudes among groups of students and within the same cohort of students as they progress through the program. Nursing education programs should adopt specific and considered longitudinal approaches to building and maintaining positive collaborative attitudes in consideration of these factors to prepare students for contemporary healthcare practice.

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Keywords

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1. Introduction

In today's healthcare environment, professionals are faced with complexities, a growing burden of chronic disease, and the need to deliver patient-centred care, and consequently professionals must transition away from traditional models of practice that are siloed. Effective interprofessional teamwork has not only become a necessity for any safe, effective, and high-quality patient care [19, 27], but it is now also recognised that the collaborative work of a well-functioning team of health professionals will reduce medical errors, morbidity in patients, improve patient satisfaction, and improve overall well-being and job satisfaction of providers [3, 7, 8, 22]; This collaborative spirit, in which people from various disciplines share information, accountability, and decision-making is a prerequisite for a resilient and responsive health system. However, team work requires more than simply following protocols and fixating team structures; it is fundamentally tied to the attitudes of the individual practitioners who comprise these teams.

Attitude, described as the psychological tendency to evaluate certain entities with some degree of favour or disfavour, is a key antecedent of behaviour [12]. Within healthcare, sharing a positive attitude towards teamwork is fertile soil for developing teamwork skills such as communication, conflict resolution, and mutual support. Attitudes form the foundation of pro-teamwork beliefs, and lacking a belief in the value of team collaboration and a positive attitude towards colleagues makes it very unlikely for positive and sustainable behaviour to occur, regardless of the quality of any teamwork training that they have received [5, 25, 28]. A healthcare professional that thinks of team as yet another bureaucratic requirement rather than a central part of patient care will be unlikely to engage in the type of proactive communication and joint problem-solving that are elements of a higher-functioning team [4]. Therefore, positive attitudes about teamwork are an important but often taken-for-granted part of professional development.

This urgent need is especially prevalent during these key learning years when future healthcare practitioners are being formed. It is during their time in university and their placements in teaching hospitals that students form their initial behaviours, values, and professional identities. The student cohort that must be strongly influenced, is nursing students, as the largest group in the health workforce, and they spend the most time physically exposed to patients [16]. Traditionally, health professions education such as in Nigeria, has structured learners' education along rigid professional lines, which has fostered professional tribalism instead of professional intercollegiality. This siloing of education has only worsened interprofessional rivalry and communication breakdowns within many health systems, including Nigeria, where inter-professional rivalry and communication were cited as problems which affect health outcomes significantly [21, 23]. Thus, the need to develop positive teamwork behaviours must happen early, lest they become later entrenched professional behaviours and hierarchies.

While it is clear that there is value in developing these attitudes, we have much work to understand the influences behind their development. A "one-size-fits-all" approach to teamwork education may be ineffective, particularly if it does not acknowledge the various demographic and developmental differences of the student population. A student entering school today from an older developmental reference point could experience a relationship with teamwork that differs significantly from a student entering school directly from high school. Other factors, such as gender-based socialisation or the social construction of nursing as a caring profession, could significantly alter how students perceive and relate to teamwork. Age and maturity also limit the extent to which someone's attitude towards working together evolves. Importantly, what impact does the transition from a primarily theoretical perspective -understanding teamwork in the first years of the curriculum— to the emotionally and significantly intense clinical realities of later years of the schooling program have on teamwork attitudes? Thinking through and answering these questions can be critical for developing appropriate educational strategies that can help anticipate challenges to the possible development of positive attitudes -that could serve to help overcome existing challenges to their positive attitude development.

In light of the lack of research examining these previous mentioned determinants for the Nigerian context, little is known, therefore, this study was needed. Although some have researched knowledge and attitudes [10], very few have researched understanding specifically which demographic and academic-related factors affect nursing students' attitudes toward teamwork. This is important for Nigerian nursing schools to understand as they prepare graduates with clinical knowledge and skills but also with the mindset to engage in teamwork to help improve the modern-day healthcare system. Thus, the purpose of this study was to assess the determinants of positive attitudes towards teamwork by assessing several

factors (age, gender, and academic progression) among Nigerian nursing students.

2. Methodology

This study utilized a descriptive cross-sectional design to examine the factors associated with the attitudes of clinical nursing students towards teamwork at the University of Port Harcourt, Nigeria. This university is a federal tertiary institution located in the South-South geo-political zone in Nigeria and provides an appropriate context with a heterogeneous student population. The study population in the research included all clinical nursing students in levels 200 - 500 of the Bachelor of Nursing Science programme. Students in the first year (100 levels) were excluded since they had not yet begun their core nursing training or clinical postings. It was felt that the first-year nursing students had limited exposure to the healthcare team environment and therefore the scope of the study would not include them as participants.

Using the formula for a descriptive study, the total sample size of 218 students was determined based on a 15% prevalence of good knowledge in a previous Nigerian study [10], a 95% confidence level, a 5% margin of error, and a 10% non-response rate. The participants were included with a representative inclusion across levels by using stratified random sampling with proportionate allocation. The total population of 410 clinical nursing students was stratified by academic level (Level 200 - 230 students; Level 300 - 60 students; Level 400 - 60 students; Level 500 - 60 students). The sampling restrictions were determined as per the eligible students in each stratum; 122 students from Level 200; and 32 students each from Levels 300, 400, and 500. The simple random sampling technique was performed to select the participants within each stratum.

Data was collected from a structured, self-administered questionnaire, which was based on a previous instrument developed by Huyen [15] and validated with a Cronbach's alpha coefficient of 0.95; this indicates high internal consistency. The questionnaire was divided into several sections. The first section was socio-demographic data, including all independent variables needed in this study (age, gender, and academic level). The second section, which is key to the research, measured students' attitudes toward the need to develop team work skills. This part of the questionnaire included eight items (e.g., "Team work helps students meet future career professional requirements," "Teamwork is a basis for developing social skills") indicated on a 5-point Likert scale: 1 = Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. In total, attitudes scores were derived from the eight items in each questionnaire, and could total from a minimum of 8 to a maximum of 40.

The data were analysed using the Statistical Package for Social Sciences (SPSS) version 27.0, and descriptive statistics, including frequencies, percentages, means, and standard deviations (SD), were employed to summarize the socio-demographic characteristics of the participants, as well as the overall attitude scores. To facilitate the primary aim of this study, which was to identify the determinants of teamwork attitudes, inferential statistics were used. Specifically, a one-way Analysis of Variance (ANOVA) was conducted to compare the mean attitude scores between the categories of age, gender, and academic level, to determine if statistically significant differences in attitudes existed between the categories ($p \leq 0.05$).

3. Results

A total of 218 questionnaires were completed and returned, yielding a 100% response rate. The analysis of the data provided a comprehensive profile of the participants and revealed significant associations between demographic and academic factors and their attitudes towards teamwork.

3.1. Participant Characteristics

The socio-demographic characteristics of the 218 nursing students who participated in the study are recorded in Table 1. The age of the participants varied, with the largest age group being less than 20 (29.4%), followed by 22 (24.3%) and 23 (22.9%) years. The sample was primarily female (67.4%), which reflects similar gender distribution among the nursing profession in Nigeria. More than half of the respondents (56.0%) were in year 2 (Level 200) of their studies, which was anticipated as this level contained the largest number of students (35 in academic year 2022/2023), and this is reflected in our sampling strategy. Levels 300, 400, and 500 respectively made up 14.7% of the sample for each level.

Table 1. *Socio-demographic Characteristics of Participants (N=218).*

Variable	Category	Frequency (n)	Percent (%)
Age (years)	< 20	64	29.4
	21	29	13.3
	22	53	24.3
	23	50	22.9
	> 23	22	10.1
Gender	Male	71	32.6
	Female	147	67.4
Academic Level	Level 200	122	56.0
	Level 300	32	14.7
	Level 400	32	14.7
	Level 500	32	14.7

3.2. Overall Attitude Towards Teamwork Learning Skills

To measure the students' overall attitude towards needing to develop teamwork learning skills, I totaled the scores from the eight-item attitude scale. The overall results, reported in Table 2, showed on average a positive attitude towards teamwork from the students. The total mean attitude score for the entire sample was 34.15 (SD = 4.40), out of a maximum possible score of 40. The mean scores for each of the individual attitude items also tended to be high, falling between 4.09 and 4.33 on the 5-point scale, which gives a positive baseline from which to assess the variables that will explain variations across this generally positive pattern.

Table 2. *Overall Attitude towards the Need to Develop Teamwork Learning Skills.*

Variable	Mean	Standard Deviation (SD)	Range
Total Attitude Score	34.15	4.40	8–40

3.3. Determinants of Teamwork Attitudes

A one-way Analysis of Variance (ANOVA) was conducted to examine the influence of age, gender and progression on the teamwork attitudes of the students. The results in Table 3 indicated statistically significant contributions of all three factors to students' attitudes.

A statistically significant relationship was found between age and the teamwork attitude scores (F = 2.816, p = 0.026). A steady trend of more positive attitudes with increasing age was noted. Students over the age of 23 had the highest mean attitude score (M = 36.64, SD = 1.81), while the students that were 19 and younger had the lowest mean score (M = 33.23, SD = 6.02).

Gender was also determined to be a highly significant factor in affecting teamwork attitudes (F = 7.791, p = 0.006). Female students exhibited a significantly more positive attitude towards teamwork (M = 34.72, SD = 2.83) than male students (M = 32.97, SD = 6.42). The large standard deviation, compared to females, led to greater variance in attitudes for males.

Finally, academic level was significantly associated with teamwork attitudes (F = 2.887, p = 0.037). However, the relationship was not linear. Attitude scores were highest among third-year (Level 300) students (M = 34.91, SD = 2.91). A notable decline was observed among fourth-year (Level 400) students, who reported the lowest mean attitude score (M = 32.16, SD = 4.18), before a slight recovery among final-year (Level 500) students (M = 33.97, SD = 4.84).

Table 3. *Analysis of Variance (ANOVA) of Factors Associated with Attitudes towards Effective Teamwork.*

Variable	Category	Mean ± SD	F-value	p-value
Age (years)			2.816	0.026*
	< 20	33.23 ± 6.02		
	21	34.72 ± 3.85		
	22	33.72 ± 4.02		
	23	34.36 ± 2.81		
	> 23	36.64 ± 1.81		
Gender			7.791	0.006*
	Male	32.97 ± 6.42		
	Female	34.72 ± 2.83		
Academic Level			2.887	0.037*
	Level 200	34.52 ± 4.56		
	Level 300	34.91 ± 2.91		
	Level 400	32.16 ± 4.18		

Variable	Category	Mean ± SD	F-value	p-value
	Level 500	33.97 ± 4.84		

Note: *Statistically significant at $p < 0.05$

4. Discussion of Results

This study aimed to evaluate the important factors related to favourable teamwork attitudes of Nigerian nursing students, specifically, age, sex, and stage in the academic program. The study identified that as a group, students generally have positive attitudes about teamwork; however, and as indicated, those attitudes are not uniform, and those attitudes were related to the age, sex and the stage in their academic program. The findings provide important insight for nursing educators to consider as they promote a collaborative framework with the next set of health care professionals.

The relationship revealed between age and attitude suggests a potential developmental factor contributing to the understanding of the concept of teamwork. The results demonstrated that students over the age of 23 had the most positive attitudes by age group. The favourable attitudes by the older students would seem to resonate with adult learning theories and the development of professional identities which suggest that places participants in context, as adult learners build upon their experiences which lead to the development of understanding of more complex social behaviours, including collaborations [11, 18]. The principles of andragogy described by Knowles suggest that adult's readiness to learn is influenced by social roles, and their basis of understanding is rooted in experience, which only develops with age - thus positively influencing the older student's ability to understand the nuances of teamwork [1, 14, 26]; In other words, younger students may have positive attitudes toward teamwork but may be more naively optimistic about the value of teamwork since they do not have as developed the contextual understanding of teamwork's benefits and challenges, as they have had fewer and/or less complex experiences. This implies that educational strategies for younger cohorts should focus on building a foundational understanding and providing concrete examples of teamwork's impact on patient outcomes.

The fact that female students have greater positive teamwork attitudes compared to male students is a provocative finding worthy of careful thought. There may be multiple reasons behind this difference, including factors related to gender and demographic influences, societal gender norms, and cultural factors related to the historical feminization of nursing as a profession due to the communal and relational aspects of care. This finding reflects studies whereby female nursing students demonstrate greater clinical competence in relational skills (communication and empathy), which are central to teamwork [24]. While there may be socialization processes that promote more communal and communicative behaviours with females, these are then expressed through more positive attitudes towards teamwork, coupled with the historical feminization of nursing in Nigeria (where 84.5%-87.9% of students are female), emphasizes the communal values and collaborative perspectives among them, through the ongoing processes of socialization [9, 29]. The variability in attitudes among male students is also interesting, as while some male students are clearly showing higher levels of collaboration, there may be others who are less collaborative, which also needs attention for educators in terms of gender and whether it would be able to make interventions to help all students do all they can, to accept also their collaborative professional identity [17].

The most intriguing finding is the non-linear relationship between academic progression and teamwork attitude. An increase in positive attitude in third-year students followed by a marked decline in fourth-year students poses a significant challenge to nursing education. The positive attitude increases from the second to the third year could represent a positive learning experience where students are gaining clinical exposure and begin to see the value of teamwork, and have yet to adapt jaded views about the dysfunction of the healthcare system [6. 13]. The drop in fourth-year positive attitude could represent a type of "reality shock" or disillusionment. The more exposure students have to working autonomously and being immersed in the clinical environment, the more exposure students have to the troubling realities of healthcare practice, such as poor communication, conflicts that are not resolved, and the very interprofessional rivalries presented in the Nigerian health system [2, 20, 21]. To some extent, these troubling exposures may eliminate their initial positive perceived attitudes.

The modest gain during the last year could signal a maturing phase, where students begin to see teamwork in a more realistic, robust way, see the challenges, and yet reaffirm a commitment to teamwork. This learning trend leads to a promising conclusion that the curriculum needs to do more than just teach teamwork skills. It must allow for support whilst students navigate the confusion and disillusionment of real clinical practice [17]. Students may be left to deal with their difficult experiences individually, when no structured debriefing, reflection, or mentoring is part of their curriculum, contributing to disillusionment and cynicism, and depending on profession, reduced buy-in to collaborative practice [6]. Due to the nature of teamwork skills, educational programs need to be longitudinal, meaning they need to socially construct understanding and trust with students over extended periods and

reinforce the components of effective teamwork throughout the academic career of the students while they undergo the rigors of clinical learning interconnectedly, particularly during the later and more taxing years of professional practice [13].

5. Conclusion

Evidently, this study marks the first step towards making a strong case about the roles of age, gender, and progress through academic program in driving teamwork attitudes of Nigerian nursing students, (while affirming that this important professional disposition is a dynamic and non-linear process). While pro-teamwork attitudes seem to be overall positive for now, we see that older students and female students have more favourable attitudes, and that each academic stage appears to carry a watershed of possible disappointment in later academic preparation as enthusiasm arises. The implications of the findings are significant for nursing education. A general one-off approach to teaching teamwork will not suffice. Nursing curricula must reflect these determinants of teamwork, such that nursing education offensively considers modifying and adapting the teaching and assessment of teamwork for age and gender. Above all, educational interventions must be longitudinal to provide students with the continuity and reinforcement as they move through the academy and beyond. This will enable students to better contend with the anticipated "reality shock" when entering clinical practice as prospective nurses and become equipped with the attributes (or dispositions) for interprofessional collaborative practice and team work, instead of receiving a "at every turn pessimism and cynicism about collaborative teamwork" as "nurses" as they tread through clinical placements and become cynical. They have been trained for working interprofessionally and collaboratively, educational programs must do all they can to positively nurture and protect these attitudes will enable graduates to be better team players who will strengthen nursing and thus strengthen Nigeria's health-care system.

6. Ethical Considerations

The researcher sought formal approval from the Ethics Committee of the University of Port Harcourt prior to data collection, and all ethical requirements were satisfied which included seeking informed consent from all participants. The students were provided with a detailed information sheet informing them of the aims of the research, the voluntary nature of their participation, and included a assurance of confidentiality. The students were made aware that they could refuse to participate in the study or withdraw from the study at any time without any negative academic repercussions. As noted earlier, the questionnaires did not seek personal identifiers such as the students' names or student number ensuring anonymity and confidentiality in their responses and participation. In addition, completed questionnaires would be stored securely and data would be pooled for analysis ensuring the confidentiality of individual responses.

Conflicts of Interest

We declare no conflicts of interest.

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