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Pharmacy Students' Proclivity Towards Entrepreneurship – A Sign of Future Innovation in Pharmaceutical Care Service Delivery

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A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of the article.

Abstract

Background: Entrepreneurial inclination is linked with improved pharmaceutical care service innovations and improvements.

Objective: This study examined the propensity of pharmacy students towards entrepreneurship and factors influencing this.

Material and Methods: Two hundred and eighty-one pharmacy students at the University of Ibadan participated in a two-year prospective study using a self–administered validated Pharmacy Students Entrepreneurial Orientation summated scale questionnaire with five subscales in seven-points Likert scale type graded responses. Mean and percentage mean scores were determined with a high mean score indicative of entrepreneurial tendency.

Results: Percentage mean score for PSEO were 88.5% and 88.8% for the first and second year of the survey, respectively. Post-graduation business ownership intentions were high (83.0%) in both years. These intentions had significantly higher mean scores on PSEO scale ($p<0.001$), empathic super salesperson subscale ($p=0.007$), innovativeness subscale ($p<0.001$), and risk taking subscale ($p=0.024$), in the first year of survey. Pharmacy students who had taken business courses had higher PSEO mean scores than those who had not taken business courses ($p=0.003$). Male pharmacy students were more likely to take risks more than their female counterparts in the first year of the study ($p=0.035$).

Conclusion: Pharmacy students maintained a high level of entrepreneurial tendency in both years of the study with most students aspiring to become business owners. Male pharmacy students were more inclined to take risk and hope to be innovative in pharmaceutical care services. To further strengthen entrepreneurial inclination, pharmacy schools curricula should include entrepreneurial courses.

Keywords: Entrepreneur, Pharmacy students, Pharmacy Students Entrepreneurial Orientation summated scale, Nigeria.

INTRODUCTION

Pharmacists and other healthcare professionals are social entrepreneurs because they are responsible for the well-being and health of the population (Bissell, 2001), thus protecting social capital. However, entrepreneurship in pharmacy practice is more visible in community pharmacy and business management. When properly utilized, it enhances pharmaceutical care practice innovations. These include repeat dispensing, medication management, pharmacists prescribing medications, patient adherence to medication and management of minor ailments (Laverty *et al*., 2015)**.** Because of this linkage, **t**here is a growing interest in developing entrepreneurial skills in pharmacy students ready to engage in entrepreneurship after graduation (Laverty *et al*., 2015)**.**

Most pharmacy education curricula are partly geared towards stimulating innovative pharmaceutical service ideas in trained pharmacists during their practice years (Hermansen-Kobulnicky and Moss, 2004). Over the years, academic institutions developed interest in imparting entrepreneurial skills in pharmacy students due to the changing faces of pharmaceutical care services and practice (Desai *et al.,* 2010; Olorundare and Kayode, 2014). This is with the intention of identifying pharmacy students with inclination towards entrepreneurial pursuits, motivate them, and provide adequate support pre- and post-graduation (Hermansen-Kobulnicky and Moss, 2004). However, with more adoption of pharmaceutical care concept and inclination towards clinical practice settings by schools of pharmacy, the current curriculum of pharmacy training appears more disposed to professional development and competence than developing entrepreneurial orientation and inclination towards innovative pharmaceutical care services. Entrepreneurship is a vehicle on which innovation rides (Siyanbola *et al.,* 2012) and knowledge on its practice would be needed in uplifting pharmacy practice (Inegbenebor, 2007).

Pharmacy student entrepreneurial orientation has been defined as "the beliefs, behavioural intentions, and self-reported behaviours that suggest a pharmacy student's proclivity to initiate new market-entry activities" (Hermansen-Kobulnicky and Moss, 2004). This is in line with entrepreneurial orientation which encompasses the processes, requirements, intentions, and behaviours of important marketplace players which have five dimensions and these include risk-taking propensity, innovativeness, pro-activeness, autonomy and competitive aggressiveness (Lumpkin and Dess, 1996; Hermansen-Kobulnicky and Moss, 2004).

Small and medium-sized enterprises are driven by entrepreneurs and are important market players in the economic development of any nation especially developing economies like Nigeria. Entrepreneurial pharmacists are more likely to adopt new practice in responding to perceived opportunities (Inegbenebor, 2007). As entrepreneurship becomes more appealing to students as a means of market entry and independence (Martinez *et al.,* 2007), the need arises for understanding their entrepreneurial proclivity. Several studies have been conducted on entrepreneurial tendencies among undergraduate students in various disciplines (Siyanbola *et al.,* 2012; Saeed *et al.,* 2014; Zhang *et al.,* 2015; Popescu *et al.,* 2016), and among pharmacists and pharmacist interns (Inegbenebor, 2007; Sweaney *et al.,* 2014), but few studies are available on pharmacy students (Afolabi *et al.,* 2016; Teixeira, 2008). These studies were mostly cross-sectional and did not evaluate changes in pharmacy students' entrepreneurial tendencies as they progress to the next level in their undergraduate education. To this end, we evaluated the inclination of pharmacy students' at the University of Ibadan in becoming future entrepreneurs and assessed demographic factors determining their entrepreneurial orientations in a pilot two-year prospective study.

METHODOLOGY

The study was conducted among undergraduate pharmacy students at the University of Ibadan during the 2015/2016 and 2016/2017 academic sessions. Pharmacy students in the 2nd year of their undergraduate study to the penultimate year of the pharmacy program (the 4th year of undergraduate program) were included in the first year of the survey (2015/2016 session) while students in the 3rd year of undergraduate pharmacy program to the final year of the undergraduate program (the 5th year) were involved in the second year of the survey (2016/2017 session). This was to ensure that the same set of students took part in the study since they would have moved to the next level in their academic program. The total number of students in the classes surveyed each year was 281. Formal ethical approval was not deemed necessary for this study since it was not invasive and only required the opinion of students on future entrepreneurial aspirations. However, throughout the periods of the study, the principle of Helsinki adopted at the World Medical Association General Assembly in 1964 and reviewed in 2008, was strictly adhered to (Williams, 2008). Prior to participation in the study, participants were acquainted with the study protocol and informed consent was sought from each student. Only those who gave informed consent participated in the study.

A 2-year prospective design was used. Convenient sampling method was employed to recruit consenting students into the research. Both surveys were carried out at the end of the first semester of each session. The study was carried out in such a way that students who participated in the first year of the study survey were followed up in the second year of the survey after they had been promoted to another level in their undergraduate pharmacy program. This was done to compare changes in entrepreneurial orientations of students as they moved higher in their undergraduate study.

The questionnaire used in the two-year survey was the validated Pharmacy Students Entrepreneurial Orientation (PSEO) summated scale which cotains 23

items on a seven-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree). The summated scale is made up of six subscales which are Proactiveness (3-items), Work ethics (4-items), Empathic Super salesperson (4-items), Innovativeness (5-items), Autonomy (4-items), and Risk taking (3-items). The questionnaire was not pre-tested as it was previously validated and used among pharmacy students (Hermansen-Kobulnicky and Moss 2004). Other section of the questionnaire contained the demographic characteristics of the participants which included age, sex, year of study (or level of study), nature of career aspiration, and proposed post-graduation job inclination. The nature of career aspiration was divided into business owner, pharmacy manager, hospital pharmacist and pursuit of Masters' or Ph.D degree. Proposed post-graduation job inclination was classified based on the Pharmacists Council of Nigeria's job classification for pharmacists (Pharmacists Council of Nigeria, 2005). This included community practice (comprising retail, wholesale and distribution pharmacy practice), hospital and administrative pharmacy (comprising hospital practice, Non-governmental organizations, and practice in government parastatals), industrial practice made up of marketing and manufacturing, and lastly, pharmacists in academia and research institutes. Other questions asked were: if participants had led an effort to create change before, if participants had taken or planned to take courses in business while in school and if participants would consider owning a business after graduation.

Data analysis

Descriptive statistics including frequency, percentages, mean ± standard deviation, mean score and average percentage mean score were used to summarize the data obtained. Cronbach alpha coefficient values were determined for the Pharmacy Students Entrepreneurial Orientation (PSEO) summated scale and the six subscales contained in it. High PSEO mean score, signifies a high tendency to entrepreneurial orientation.

Independent sample t-test (2-tailed) was used to compare the effect of dichotomised demographic variables like gender, led an effort to create change, have taken or plan to take a course in business, and would consider owning a business, on the means scores of PSEO summated scale and its subscales. P-values reported for independent sample t-test were based on the Levene test for equality of variances.

One way analysis of variance with *a priori* Turkey HSD or Games Howell *post hoc* test determined after homogeneity of variance test was employed to determine the influence of nature of carrier aspirations, level of study (or year of study) and first choice of post-graduation job inclination, on the students entrepreneurial orientations using the mean scores of PSEO summated scale and its subscales. Data were analysed with IBM Statistical Package for Social Sciences version 23 (IBM Corp, New York, USA) and significance was set *a priori* at $p<0.05$.

RESULTS

Cronbach alpha reliability scale coefficient for PSEO summated scale and subscales ranged from 0.601 to 0.906. The response rate was 85.7% in the first year of the study and 79.0% in the second year. Mean age of participants were 20.7 ± 2.38 and 21.6 ± 2.45 years during the first and second year of survey, respectively. In both periods of the survey female students (54.2% - first year of survey; 57.0% – second year of survey) were more than male students (Table 1).

In both periods of the study, about 83% of the students considered owning a business post-graduation (Table 1). Several of the students claimed to have handled leadership activities, towards creating change (first and second year of survey 119 (50.6%) and 140 (65.1%), respectively). In the first year of the survey, 94 (39.3%) of the respondents had taken or plan to take a business-related course while in the second year of the survey, the number had increased to 94 (43.3%). Other demographic characteristics are shown in Table 1.

The percentage mean score for the Pharmacy Students' Entrepreneurial Orientation summated scale was similar for the two years of the survey, 88.5% and 88.8%, respectively. High scores (above 90%) were obtained for proactiveness and empathic supersalesperson subcategories with respondents agreeing to plan for future opportunities upon graduation, seek new opportunities that have the wherewithal to advance patient care (Table 2). The lowest percentage mean score was recorded for risk-taking subscale, where pharmacy students scored 84.3% and 85.5% in the first and second year of the survey, respectively. Other mean scores and percentage mean scores on the PSEO subscales are shown in Table 2.

In the first year of the survey pharmacy students who had undertaken business-related courses had significantly higher mean scores than pharmacy students who had not undertaken any business study courses on the PSEO summated scale ($p=0.003$) and the subscales: pro-activeness ($p=0.003$), work ethics ($p=0.027$), innovativeness ($p=0.049$), autonomy ($p=0.042$), and risk taking ($p=0.027$) were all significant (Table 3).

Table 1: Descriptive statistics of pharmacy students in the two-year survey

Demographic characteristics	**First year of survey (n=235)**	**Second year of survey (n=215)**
Age, years, mean±SD	20.7 ±2.38	21.6 ± 2.45
Gender	**(n=240)**	**(n=221)**
Male	110 (45.8%)	95 (43.0%)
Female	130 (54.2%)	126 (57.0%)
Level of study	**(n=241)**	**(n=222)**
200	87 (36.1%)	-
300	72 (29.9%)	70 (31.5%)
400	82 (34.0%)	75 (33.8%)
500	-	77 (34.7%)
Nature of career aspiration	**(n=226)**	**(n=115)**
Business owner	96 (42.5%)	39 (33.9%)
Pharmacy manager	47 (20.8%)	26 (22.6%)
Master/Ph.D degree	67 (29.6%)	29 (18.3%)
Hospital pharmacy	16 (7.1%)	21 (9.5%)
Led effort to create change	**(n=235)**	**(n=215)**
Yes	119 (50.6)	140 (65.1%)
No	116 (49.4%)	75 (34.9%)
Have taken or plan to take a course in business	**(n=240)**	**(n=217)**
Yes	94 (39.2%)	94 (43.3%)
No	146 (60.8%)	123 (56.7%)
Would consider owning a business	**(n=241)**	**(n=218)**
Yes	201 (83.4%)	182 (83.5)
No	40 (16.6%)	36 (16.5%)
Proposed post-graduation job inclination	**First choice**	
	(n= 239)	**(n= 203)**
Community practice	55 (23.0%)	48 (23.6%)
Hospital/Administrative practice	94 (39.3%)	100 (49.3%)
Industrial practice	64 (26.8%)	27 (13.3%)
Academia	26 (10.9%)	28 (13.8%)
	Second choice	
	(n=237)	**(n=199)**
Community practice	76 (32.1%)	75 (37.7%)
Hospital/Administrative practice	70 (29.5%)	76 (38.2%)
Industrial practice	53 (22.4%)	19 (9.5%)
Academia	38 (16.0%)	29 (14.6%)

Table 2: Comparison of year of survey with the mean score and percentage mean score of Pharmacy Student' Entrepreneurial Orientation summated scale and subscale

		First year of survey (n=241)	Second year of survey (n=222)		First year of survey (n=241)	Second year of survey (n=222)
Scale description (n items)	**Min/Max possible score**	**Mean score (SD)**	**Mean score (SD)**	**p-value* (2-tailed)**	**% mean score**	**% mean score**
Proactiveness (3 items) Pharmacy students agreed to plan for future opportunities upon graduation, seek new opportunities and have the wherewithal to advance patient care	3/21	19.20(2.06)	19.10(2.42)	0.616	91.4%	90.9%
Work ethics (4 items) Pharmacy students agreed to be hard working, ambitious about the profession, like challenges that come with practice and are highly motivated to work.	4/28	23.95(2.82)	24.41(5.15)	0.238	85.5%	87.2%
Empathic supersalesperson (4 items) Pharmacy students have a strong desire to help others, empathize with patients by being responsive to their needs believe in making contributions to the society and that strong personal relationship is key to professional practice.	4/28	25.44(2.35)	25.37(3.06)	0.794	90.8%	90.9%
Innovativeness (5 items) Pharmacy students would like to be known as innovators and being innovative. They hope to develop a new pharmacy and patient-care services in the future.	5/35	31.12(3.47)	31.11(4.43)	0.992	88.9%	88.9%
Autonomy (4 items) Pharmacy students would like to work where all employees are concerned about new opportunities and where they will be allowed to explore encouraged to develop and try new ideas and where new ideas will be acted upon by decision makers.	4/28	25.10(2.85)	25.09(3.65)	0.964	89.6%	89.6%
Risk taking (3 items) Pharmacy students believed that they are risk takers and successful pharmacists must have taken risks.	3/21	17.71(2.43)	17.96(2.81)	0.305	85.5%	84.3%
Pharmacy students entrepreneurial orientation (23 items)	23/161	142.52(11.21)	143.04(17.34)	0.703	88.9%	88.5%

**Independent sample t-test*

Table 3: Effect of previous business studies or intention to undertake a professional course in business by pharmacy students on the mean scores of PSEO summated scale and the subscales

Scale and subscale	Previous business studies or intent to take a business course	First year of survey mean score (SD)	p-value[a]	Second year of survey mean score (SD)	p-value[a]
Proactiveness	Yes	19.68 (1.94)	0.003*	19.11 (2.66)	0.807
	No	18.88 (2.08)		19.02 (2.26)	
Work ethics	Yes	24.44 (2.63)	0.027*	24.27 (3.07)	0.853
	No	23.62 (2.89)		24.40 (6.36)	
Empathic supersalesperson	Yes	25.70 (2.46)	0.162	25.15 (3.44)	0.480
	No	25.27 (2.27)		25.45 (2.77)	
Innovativeness	Yes	31.67 (3.59)	0.049*	31.22 (4.79)	0.591
	No	30.77 (3.36)		30.89 (4.19)	
Autonomy	Yes	25.58 (2.78)	0.042*	24.93 (4.32)	0.661
	No	24.81 (2.88)		25.15 (3.08)	
Risk Taking	Yes	18.15 (2.47)	0.027*	17.83 (3.23)	0.586
	No	17.44 (2.38)		18.04 (2.46)	
PSEO	Yes	145.21 (11.29)	0.003*	142.50 (18.96)	0.850
	No	140.77 (10.88)		142.95 (16.21)	

*PSEO - Pharmacy Student' Entrepreneurial Orientation summated scale, SD – standard deviation [a]Independent sample t-test, *p<0.05*

Male pharmacy students believed more than their female counterparts that they are risk-takers and successful pharmacists must have taken risks, p=0.035 (Table 4). This difference in belief was observed only in the first year of the survey. In the second year of the survey female pharmacy students agreed more than the male pharmacy students that they would like to work where all employees are concerned about new opportunities and where they will be allowed to explore, encouraged to develop and try new ideas and where new ideas will be acted upon by decision makers, p=0.043, (Table 4)..

Pharmacy students who considered owning a business upon graduation had significantly higher mean scores on empathic supersalesperson subscale (p=0.007), innovativeness subscale (p<0.001), risk taking subscale (p=0.024), and the Pharmacy Student' Entrepreneurial Orientation summated scale (p<0.001) all these were significantly different in the first year of survey but were not statistically significant in the second year of the survey (Table 5).

The nature of carrier aspirations by pharmacy students, their year of study and first choice or second choice of the type of job they would like to take post-graduation had no influence on the mean scores of the PSEO summated scale and its subscales p>0.05

Table 4: Pharmacy students gender effect on the mean score of Pharmacy Student' Entrepreneurial Orientation summated scale and subscale in the first and second year of survey

Scale and subscale	Gender	First year of survey mean score (SD)	p-value[a]	Second year of survey mean score(SD)	p-value[a]
Proactiveness	Male	19.04 (2.40)	0.286	18.76 (3.14)	0.080
	Female	19.33(1.72)		19.33 (1.66)	
Work ethics	Male	23.96 (3.20)	0.945	23.83 (3.82)	0.163
	Female	23.94 (2.48)		24.81 (5.94)	
Empathic supersalesperson	Male	25.56 (2.56)	0.446	25.03 (4.02)	0.164
	Female	25.33 (2.16)		25.61 (2.05)	
Innovativeness	Male	31.34 (3.38)	0.405	30.87 (5.53)	0.520
	Female	30.96 (3.54)		31.26 (3.89)	
Autonomy	Male	25.39 (2.76)	0.177	24.51 (4.83)	0.043*
	Female	24.89 (2.91)		25.51 (2.33)	
Risk Taking	Male	18.06 (2.35)	0.035*	17.87 (3.50)	0.726
	Female	17.40 (2.46)		18.01 (2.17)	
PSEO	Male	143.36 (11.85)	0.300	140.87 (22.48)	0.121
	Female	141.85 (10.67)		144.53 (11.96)	

*PSEO - Pharmacy Student' Entrepreneurial Orientation summated scale, SD – standard deviation [a]Independent sample t-test, *p<0.05*

Table 5: Influence of pharmacy students' consideration of owning a business on the Pharmacy Students Entrepreneurial Orientation summated scale and subscales

Scale/subscales items description	Would you consider owning a business soon	First year of survey		Second year of survey	
		Mean(SD)	p-value	Mean(SD)	p-value
Proactiveness Pharmacy students agreed to plan for future opportunities upon graduation, seek new opportunities and have the wherewithal to advance patient care.	Yes	19.28(2.07)	0.179	19.18(2.29)	0.163
	No	18.80(1.96)		18.56(3.06)	
Work ethics Pharmacy students agreed to be hard working, ambitious about the profession, likes challenges that comes with practice and are highly motivated to work.	Yes	24.09(2.78)	0.095	24.55(5.35)	0.231
	No	23.28(2.97)		23.42(4.12)	
Empathic supersalesperson Pharmacy students have strong desire to help others, empathize with patients by being responsive to their needs believe in making contribution to the society and that strong personal relationship is key to professional practice.	Yes	25.62(2.33)	0.007*	25.45(2.88)	0.235
	No	24.53(2.23)		24.78(3.89)	
Innovativeness Pharmacy students would like to be known as innovators and being innovative. They hope to develop a new pharmacy and patient-care services in the future.	Yes	31.55(3.23)	<0.001*	31.23(4.33)	0.215
	No	28.95(3.84)		30.22(4.96)	
Autonomy score Pharmacy students would like to work where all employees are concerned about new opportunities and where they will be allowed to explore encouraged to develop and try new ideas and where new ideas will be acted upon by decision makers.	Yes	25.26(2.85)	0.051	25.07(3.61)	0.850
	No	24.30(2.79)		24.94(3.99)	
Risk taking score Pharmacy students believed that they are risk takers and successful pharmacists must have taken risks.	Yes	17.87(2.34)	0.024*	18.03(2.80)	0.360
	No	16.93(2.76)		17.56(2.92)	
Pharmacy students entrepreneurial orientation	Yes	143.67(10.73)	<0.001*	143.50(16.57)	0.250
	No	136.78(11.94)		139.47(20.98)	

DISCUSSION

The literature is replete with studies examining the influence of motivation and personality traits on entrepreneurship. Despite the abundance of research, the results are still inconclusive with respect to personality trait, social influence and motivational factors such as determinants of entrepreneurial intents (Grassl and Jones, 2005; Liñán *et al.,* 2011). This present study evaluated the inclination of pharmacy students towards entrepreneurship and the socio-demographic factors that influenced this proclivity.

Pharmacy students in this study had high mean scores on the PSEO summated scale and its subscales signifying high propensity towards entrepreneurial intents. This is comparable to a similar study conducted among pharmacy students in a university in the same region in Nigeria (Afolabi *et al.,* 2016). Though this study used a different scale, the outcome was, however, similar to ours. The students also scored high on items measuring entrepreneurial intentions. Teixeira (2008) also reported that pharmacy and chemistry students have high entrepreneurial inclinations. The advantage of this present study over the other two (Afolabi *et al.,* 2016; Teixeira, 2008) was that the pharmacy students' entrepreneurial intentions were measured over two years and there was no change. Though the student's entrepreneurial proclivity seems high according to the PSEO scale, this does not tally with their choice of post-graduation job as seen in the survey. Most students in the first year of the survey preferred hospital practice, an inclination towards clinical practice. Nevertheless, the majority of the students still considered owning a business but it seems from this survey that it may be a future aspiration. Perhaps the students feel that acquiring clinical exposure first is paramount.

In explaining entrepreneurial intents, several studies aligned with the "pull" factors especially internal locus control, need for achievement and desire for profit. (Orhan and Scott, 2001; Robertson *et al.,* 2003; Eijdenberg and Masurel, 2013;). However, "push" factors such as job dissatisfaction, unemployment, carrier setbacks, low family income, market saturation etc.are also relevant (Grassl and Jones, 2005; Kumar,

2007). While other schools of thought state that perceived desirability and perceived feasibility are major factors of entrepreneurial intents (Kennedy *et al.,* 2003; Zampetakis, 2008; Liñán *et al.,* 2011). Findings in this study seem to agree with this second school of thought in that four-fifth of the pharmacy students desired to own a business post-graduation. This is in tandem with the high score on PSEO summated scale. Afolabi *et al* also identified that desire for independence and being one's own boss was a strong motivating factor for entrepreneurship by the pharmacy students (Afolabi *et al.,* 2016).

Studies have shown that the factors responsible for entrepreneurial inclinations are age, gender, professional background, work experience, educational and psychological background (Delmar and Davidsson, 2000; Martinez *et al.,* 2007). In this study, age and gender had no effect on entrepreneurial inclination except on the risk taking subscale in the first year of the study where male pharmacy students had higher mean scores than females. This difference was not noticed in the second year of the survey. In the study by Teixeria (2008) pharmacy students showed a higher propensity for taking risk which was the main determinant of their entrepreneurial tendencies and males were more inclined to entrepreneurship than females. To improve pharmaceutical service delivery, innovation is a key element and this requires taking risk. Pharmacy students in this present study would like to be known as innovators and being innovative. They hope to develop a new pharmacy and patient-care services in the future.

In both years of this study, there was no association between pharmacy students' career aspiration or post-graduation job inclination on the tendency towards entrepreneurship. This is contrary to the report of Afolabi *et al* where future job descriptions and areas of future practice were associated with entrepreneurial intention (Afolabi *et al.,* 2016). This could be due to the different scales used in measuring entrepreneurial intentions of the students.

Entrepreneurial action is an intentional behaviour and governing this behaviour is the theory of planned behaviour which suggests three conceptually independent antecedents of intentions namely attitude towards the behaviour, subjective norm and the degree of perceived ease of performing the behaviour (Veciana *et al.,* 2005; Guerrero *et al.,* 2008; Turker and Sonmez Selçuk, 2009; Liñán *et al.,* 2011;). Pharmacy students envisaged to be business owners in the future and there was an improvement in the number of students who had taken courses in business from 39% in the first year to 43% in the second year of the survey. Since pharmacy students who had taken business courses had higher inclination towards entrepreneurship, this could be planned behaviour towards their future entrepreneurial aspiration and the stronger these antecedents of intentions, the stronger the intention to perform the behaviour (Grassl and Jones, 2005). However, as stated by Kennedy *et al* (2003), intents alone may be a poor predictor of actual entrepreneurship behaviour. As early as 1988, Katz and Gartner reported that only 8.7% of 30% of people who showed entrepreneurial intentions actually became entrepreneurs after four years (Katz and Gartner, 1988).

The high inclination of pharmacy students towards entrepreneurship may be an indication of innovation in pharmaceutical service deliveries. These students agreed to plan for future opportunities upon graduation, seek new opportunities and have the wherewithal to advance patient care. They also hope to develop a new pharmacy and patient-care services in the future. Inegbenebor (2007) observed that pharmacists' entrepreneurial inclination is required to provide innovative pharmaceutical services to society with attendant financial rewards. Pharmacists are coming to terms with this fact and Hindle and Cutting reported that pharmacists with entrepreneurial education rendered more innovative pharmaceutical services and experienced job satisfaction more (Hindle and Cutting, 2002).

To encourage entrepreneurship in students, the Nigerian Universities Commission in 2006 approved the inclusion of entrepreneurship studies as part of the topics to be undertaken by students under the general electives (Siyanbola *et al.,* 2012). In addition, the curriculum of Pharmacy at University of Ibadan had seen inclusion of more topics from entrepreneurship, management, and administration as a means of bridging the entrepreneurial gaps identified from earlier researches.

Limitation of the study

The results of this study may not be generalizable considering that it was conducted in a pharmacy school among several in the nation. Though, a study by Afolabi *et al* conducted among pharmacy students in the same southwestern part of Nigeria reported similar high entrepreneurial propensity among these students (Afolabi *et al.,* 2016). The two-year prospective study may also be considered as a limitation in a four-year pharmacy undergraduate program to evaluate the change in entrepreneurial proclivity of pharmacy students as they progress in the undergraduate program. Small sample size and the convenient sampling method may also limit the generalizability of the findings in this study; thus, the results should be interpreted in the light of these limitations.

CONCLUSION

Pharmacy students maintained a high level of entrepreneurial tendency in both years of the study

with most students aspiring to become business owners. Male pharmacy students were more inclined to take risk and hope to be innovative in pharmaceutical care services.

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