

Pursuing additional pharmacy education among practicing pharmacists in the Republic of Trinidad and Tobago

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Abstract

Background: When pharmacists across The Republic of Trinidad and Tobago were asked whether they were interested in additional pharmacy education, a large proportion responded positively.

Aims: To identify the perceptions of registered pharmacists regarding the potential benefits of pursuing additional pharmacy education and factors that may affect decisions to do so.

Method: A cross-sectional survey using a paper questionnaire, along with an invitation letter and a pre-stamped return envelope, were mailed to all registered pharmacists in November 2010. This was followed two weeks later by a reminder letter.

Results: Two-thirds of pharmacists who held BSc pharmacy degrees indicated interest in obtaining an additional degree. Perceived benefits of pursuing additional pharmacy education that were rated the highest were: (1) not wanting to remain with current knowledge, (2) improving clinical and research skills and (3) providing better patient care.

Conclusions: A large proportion of registered pharmacists in the Republic of Trinidad and Tobago, particularly those with a BSc pharmacy degree were interested in additional university-level education.

Keywords: *pharmacists, additional pharmacy-education, benefits, barriers*

Introduction

The Republic of Trinidad and Tobago (RTT) is an emerging developed country at the southern end of the Caribbean Sea. With growing affluence and a rising standard of living, RTT is also experiencing rapid growth in its rates of Type 2 diabetes, hypertension and the other chronic diseases (Grell 1986; Forrester *et al.*, 1998; Wilks *et al.*, 1998; Sargeant *et al.*, 2001; Forrester 2003; Fraser 2003; Hennis & Fraser, 2004). As these chronic diseases increasingly represent a greater proportion of the health challenges in RTT, the ability of patients to access effective primary care services becomes increasingly important.

In the mid-1990s, in part to support a greater clinical role for pharmacy, The University of the West Indies St Augustine campus (UWI, STA), introduced a Bachelor of Science in Pharmacy (BSc Pharm) that replaced the previous four-year diploma certification. The objectives of the programme included: to increase focus on professional practice, to train pharmacists who could function more effectively in a health care team, and to enable students to pursue post-graduate education or practice if desired (UWI, 2008). Practising pharmacists in RTT, who did not possess the BSc Pharm, were given the option of upgrading their education through an

accelerated programme at the School of Pharmacy, UWI (SOP, UWI). This programme commenced in September 2002 however, as of 2011, only 11 pharmacists have opted for the upgrade.

The changes that took place in pharmacy education in RTT and the motivation for pursuing higher academic credentials may be compared with the adoption of the Doctor of Pharmacy (Pharm.D) as the single entry-to-practice degree in the United States (USA) (a similar transition is currently underway in Canada). The main motivations reported by baccalaureate pharmacists for pursuing a Pharm.D included improving clinical skills and quality of work (Kelly *et al.*, 1994; Fjortoft & Engle, 1995). However, not being left behind by peers, possible promotions, work schedule flexibility, staying current with available knowledge and remaining competitive on the job market should also be considered as factors of motivation (Kelly *et al.*, 1994; Fjortoft & Engle, 1995; Zgarrick & MacKinnon, 1998).

Potential barriers to additional education included practice site, age, current job satisfaction, supervisory and management support level, career commitment, personal and monetary costs required for education, and perceived lack of need (Kelly *et al.*, 1994; Fjortoft & Engle, 1995; Fjortoft and

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Lee, 1995; Zgarrick & MacKinnon, 1998). Those who practised in hospitals reported a greater inclination to pursue further education (Kelly *et al.*, 1994; Fjortoft & Engle, 1995; Zgarrick & MacKinnon, 1998). This may be due to the greater perceived value of enhanced clinical skills in the hospital, versus community practice (MacKeigan & McGhan, 1988; Zgarrick & MacKinnon, 1998; Cox & Fitzpatrick, 1999).

Although the reasons for the introduction of the Pharm.D degree in the USA may be comparable to the reasons for introduction of the pharmacy degree being reformed in RTT - which is to enable students to attain a higher level of competency prior to entry-to-practice - relocation issues should also be considered when assessing pharmacists' motivations to pursue supplementary education. Before September 2011, the BSc Pharm was only available as a face-to-face modality at SOP, UWI. This relative inconvenience may create numerous challenges for working pharmacists, including relocation, financial instability, and separation from family members. A mixed-mode (distance and live) programme was initiated as of September 2011 but is currently in its early phases. Neither the effects of the educational transition nor the interest of practitioners in further education have been formally reviewed. This study aims to identify the attitudes and perceptions of licensed pharmacists in RTT regarding the potential benefits of pursuing additional pharmacy education, as well as factors that would affect their decision to obtain such.

Methods

The study population and sample consisted of all registered pharmacists in the RTT. A list of names and addresses of practicing pharmacists was obtained from the Pharmacy Board of Trinidad and Tobago. In 2010, there were 600 registered pharmacists in RTT.

Drawing on the research of Zgarrick & MacKinnon (1998), a questionnaire was developed to assess the benefit expected from additional pharmacy education, and to determine the importance of factors to be considered when deciding whether to obtain additional pharmacy education. A 5-point Likert scale was created for the benefit items ranging from none at all to a great deal. A 4-point scale was used to rate deciding factors from not important to very important. Items were also developed to collect demographic data (gender, age), pharmacy education level, current position (*e.g.* staff pharmacist, manager) and the setting and characteristics of their practice. Pharmacists were asked to indicate their interest in pursuing additional pharmacy education, award of interest, expected benefits, and deciding factors (barriers and motivation).

To assess the face validity of the questionnaire items for RTT, two focus groups (one in Trinidad and one in Tobago) involving both hospital and community pharmacists were convened in May 2009. These groups were asked to consider the suitability of each item for the proposed study. Based on feedback from these groups, the questionnaire was modified to better reflect the realities of pharmacy practice in RTT. The modified questionnaire was piloted with ten pharmacists in RTT. Based on feedback from the pilot, additional modifications were made to the questionnaire and

resubmitted to the focus group members for additional comments. The final research protocol and questionnaire were submitted to the Ethics Committee of the Faculty of Medical Sciences, University of the West Indies (UWI). Ethics approval was received in July 2010.

Data collection was started in November 2010. Initially, an introductory letter was sent to all registered pharmacists in RTT, inviting them to participate in the study by completing the questionnaire when it arrived. The letter was followed one week later by the questionnaire together with a cover letter and a pre-stamped return envelope. Two weeks later a mailed reminder was sent. The data collection period ended two weeks after the reminder was mailed.

Analyses of the data were performed using SPSS 19.0 for Windows®. In addition to descriptive statistics, comparative analysis based on current pharmacy credential (diploma or degree) was performed using independent t-tests ($p < 0.05$) and general linear modelling to control for gender, age, current position, and practice location.

Results

A total of 144 out of the 600 questionnaires were returned to achieve a response rate of 24 percent. Of these, nearly 70 percent were female (Table I). More than one-half of the respondents indicated their highest pharmacy credential as a pharmacy diploma or certificate. Almost one-half indicated a retail pharmacy as their primary practice site, followed by community health centre pharmacy, followed by the hospital. A small number of pharmacists indicated other practice sites such as government and academia. In reporting their practice position, the largest group was staff pharmacists, followed by managers and other supervisory position, and then pharmacy owners (including managers that were also owners).

Table I: Characteristics of Respondents – Practice Site and Position based on Credentials

Characteristics	Pharmacy Credential		Total
	Diploma n (%)	Degree n (%)	
Gender			
Female	48 (61.5)	52 (78.8)	100 (69.4)
Male	30 (38.5)	14 (21.2)	44 (30.6)
Primary Practice Site †			
Retail Pharmacy	44 (56.4)	19 (29.2)	63 (44.1)
Health Centre	14 (17.9)	8 (12.3)	22 (15.4)
Hospital	11 (14.1)	33 (50.8)	44 (30.8)
Other (<i>e.g.</i> Government, academia)	9 (11.5)	5 (7.7)	14 (9.8)
Primary Practice Position			
Staff Pharmacist	20 (26.0)	43 (65.2)	63 (43.8)
Head/Senior/Manager	28 (36.4)	12 (18.2)	40 (27.8)
Owner	24 (31.2)	7 (10.6)	32 (22.2)
Other	5 (6.5)	4 (6.1)	9 (6.2)
Total Respondents	78 (54.2)	66 (45.8)	144 (100)

† Controlling for gender, age, position and primary practice site

Based on their current credentials, diploma pharmacists were twice as likely to be practicing in retail pharmacy (Table I). Degree pharmacists were almost four times more likely to practise in a hospital, and they were also less likely to practise in a community health centre pharmacy or government. Diploma pharmacists were three times more likely to be a pharmacy owner, and twice as likely to be a manager/supervisor as a degree pharmacist.

When asked if interested in obtaining additional pharmacy education (Table II), most pharmacists indicated either Definitely Yes (59%) or Probably Yes (36%), with degree pharmacists more likely to indicate Definitely Yes (69%). In terms of the level of additional education being sought, two-thirds of degree pharmacists were interested in obtaining either a Pharm.D or a graduate degree (MSc or PhD). Approximately one-quarter of diploma pharmacists indicated interest in obtaining a bachelor of pharmacy degree. Among diploma pharmacists, the greatest interest was in obtaining additional education through continuing education programmes and professional updates. For diploma and degree pharmacists, the stated reason for obtaining additional pharmacy education was to increase their knowledge and skills.

Table II: Interests in additional education based on current credentials

	Current Credential		Total n (%)
	Diploma n (%)	Degree n (%)	
Interested in obtaining additional pharmacy education			
Definitely Yes	37 (49.3)	45 (69.2)	82 (58.6)
Probably Yes	31 (41.3)	19 (29.2)	50 (35.7)
Probably No	6 (8.0)	0 (0.0)	6 (4.3)
Definitely No	1 (1.3)	1 (1.5)	2 (1.4)
Level of additional pharmacy desired			
BSc Pharm	16 (23.5)	0 (0.0)	16 (12.1)
Pharm.D	3 (4.4)	31 (48.4)	34 (25.8)
MSc/PhD	7 (10.3)	18 (28.1)	25 (18.9)
Specialty Certification	4 (5.9)	3 (4.7)	7 (5.3)
CE Programmes	25 (36.8)	6 (9.4)	31 (23.5)
Professional Updates	11 (16.2)	4 (6.3)	15 (11.4)
Other	1 (1.5)	2 (3.2)	3 (2.4)
Not Indicated	1 (1.5)	0 (0.0)	1 (0.8)
Reasons for wanting additional pharmacy education			
Increase knowledge/skills	65 (95.6)	52 (81.3)	111 (88.6)
Improve chances for advancement	2 (2.9)	9 (14.1)	11 (8.3)
Financial gain	0 (0.0)	2 (3.1)	2 (1.5)
Other	1 (1.5)	1 (1.6)	2 (1.5)

The Benefits of Further Pharmacy Education

In rating the benefits of further pharmacy education, the items rated highest included remaining current with knowledge, improving clinical and research skills, and providing better patient care (Table III). Based on a 5-point scale (1 = none at

all and 5 = a great deal), scores indicated pharmacists perceived a substantial level of benefit.

Table III: Level of Benefit Expected from Additional Education

Survey Item	Current Credential†		
	Diploma (n=78)	Degree (n=66)	All
	Mean (sd)	Mean (sd)	Mean (sd)
Remain current with my knowledge	4.66 (0.72)	4.48 (0.91)	4.57 (0.82)
Improve my clinical skills	4.39 (0.89)	4.43 (0.89)	4.39 (0.92)
Improve my research skills	4.37 (0.94)	4.38 (0.95)	4.37 (0.96)
Provide better patient care	4.31 (1.12)	4.41 (0.99)	4.35 (1.07)
Improve my job satisfaction	4.15 (1.10)	4.43 (1.00)	4.28 (1.08)
Improve my job performance	4.14 (1.21)	4.25 (1.04)	4.18 (1.14)
Gain more respect from physicians	3.88 (1.16)	4.24 (1.02)	4.02 (1.12)
Have knowledge comparable to peers	4.10 (1.15)	3.60 (1.36)	3.85 (1.25)
Gain more respect from my patients	3.79 (1.33)	3.75 (1.28)	3.75 (1.30)
Better career mobility*	3.35 (1.43)	4.05 (1.28)	3.65 (1.42)
Competitive advantage for jobs	3.34 (1.55)	4.00 (1.35)	3.64 (1.48)
Gain more respect from peers	3.48 (1.40)	3.80 (1.28)	3.62 (1.34)
Competitive advantage for promotion	3.16 (1.50)	3.50 (1.44)	3.31 (1.49)
Earn a better salary**	2.40 (1.43)	3.80 (1.30)	3.08 (1.54)
Improve my job security	2.66 (1.56)	3.56 (1.34)	3.06 (1.53)
More flexible work schedule*	2.03 (1.22)	2.59 (1.18)	2.31 (1.24)

* p value < 0.05 ** p value < 0.01

† Controlling for gender, age, position and primary practice site

Items with the lowest ratings of expected benefits (in the range of very little and some) included providing a competitive advantage for promotion, possibility to earn a higher salary, improving job security, and ensuring a more flexible work schedule. In total, seven out of sixteen items received a rating greater than 4 (moderate) out of 5 (a great deal).

There were not many significant differences seen between diploma pharmacists and degree pharmacists, however degree pharmacists indicated greater benefit of additional pharmacy education in terms of greater mobility, income and job security.

Factors Affecting Decision to Seek Additional Pharmacy Education

In rating the importance of individual factors when considering obtaining additional pharmacy education, flexibility of their work schedule, class schedule, time required to complete the programme of study, and their ability to also meet family obligations while obtaining additional education were rated the highest (Table IV). Factors considered least important included the level of family support, educational needs for a preferred or current practice site, and age. No significant differences in rating were seen between pharmacists based on their current credentials.

Table IV: Important factors when considering additional pharmacy education

Survey Item	Current Credential†		
	Diploma (n=78)	Degree (n=66)	All
	Mean (sd)	Mean (sd)	Mean (sd)
Flexibility of my work schedule	3.64 (0.74)	3.30 (0.89)	3.49 (0.83)
When class is held (Time of Day)	3.58 (0.76)	3.13 (1.02)	3.37 (0.93)
Time needed to complete the programme	3.37 (0.90)	3.22 (0.83)	3.31 (0.88)
Ability to meet family obligations	3.35 (0.97)	3.16 (0.96)	3.24 (0.98)
Proximity to my work	3.25 (0.98)	2.86 (1.06)	3.07 (1.03)
Financial cost of the programme	2.93 (1.11)	3.22 (0.92)	3.06 (1.04)
Proximity to my home	3.18 (1.03)	2.86 (1.08)	3.05 (1.05)
My level of workplace support	3.16 (1.09)	2.91 (0.99)	3.03 (1.05)
Effort required to obtain education	3.11 (0.97)	2.87 (1.08)	2.98 (1.04)
When class is held (Time of Year)	3.09 (1.07)	2.76 (1.13)	2.94 (1.11)
My level of family support	2.84 (1.11)	2.84 (0.98)	2.84 (1.04)
Education need for preferred practice	2.58 (1.00)	2.86 (1.12)	2.68 (1.06)
Education need for current practice	2.41 (1.14)	2.67 (1.06)	2.50 (1.11)
My age	2.50 (1.18)	1.97 (1.08)	2.20 (1.15)

† Controlling for gender, age, position and primary practice site

Discussion

There are many factors that influence a pharmacist's motivation to pursue additional education. In our study, we report mixed results. Seeing that retail and hospital practitioners were the largest groups, the proportion of respondents may not be reflective of the pharmacists in RTT in terms of gender and pharmacy qualification; more than half of the senior pharmacists were diploma graduates, while most staff pharmacists were degree graduates. This result may be due to promotion based on length of service rather than qualifications. Furthermore, few respondents identified "improve chances of advancement" as the main reason for additional pharmacy education, suggesting that additional education by pharmacists may not improve opportunities for promotion.

Most respondents indicated that interest in attaining further pharmacy education, regardless of present qualification, were mainly from continuing education (inclusive of professional updates). Among the diploma pharmacists, the greatest interest was participating in continuing education and obtaining the BSc Pharmacy degree. Although continuing education is not a requirement for re-licensure in the RTT, many pharmacists view it as a way to maintain professional competence. It is mainly offered by professional organizations such as The Pharmaceutical Society of Trinidad and Tobago (TPSTT) and regional associations such as the Caribbean Association of Pharmacists (CAP). Other sources

of continuing education include product updates by pharmaceutical companies and occasional workshops and seminars facilitated by the SOP, UWI. Among the degree respondents, the main programmes of interest were the Pharm.D, Masters and Doctor of Philosophy degrees.

The main reason indicated for desiring additional pharmacy education was to increase knowledge and/or skills, presumably to improve delivery of patient services. Financial gain and promotion were not significant reasons. In absence of the latter, the actual proportion of pharmacists who pursue further education may provide further perspective but this was beyond the scope of this study.

The highest rated benefits were related to improved job performance, respect from peers, physicians and patients, and career mobility. These may point to areas seen by pharmacists as limitations to job satisfaction, performance and mobility. Ratings of perceived benefits were not significantly different between diploma and degree respondents. One study among pharmacists of the Department of Veteran Affairs (Batz *et al*, 1991) identified perceived benefits of personal development, enhanced job satisfaction and improved patient care, similar to the findings of this study.

The main factors of importance were related to convenience (work and class scheduling, proximity), duration, workplace and family support, family responsibilities, and practice-based need. Educational administrators (professional and tertiary) may consider these factors to develop pharmacy education programmes for practicing pharmacists in RTT. These factors were not significantly different between diploma and degree respondents. This contrasted with findings of Riley in a 1981 survey of pharmacists who indicated issues of degree type, areas of study and willingness to pay a reasonable tuition as primary concerns (Riley, 1986). The main barriers identified by VA pharmacists in the study by Batz (1991), noted time, money and location of the programme as barriers (Batz, 1991).

The low response rate may have been due to the short data collection period (four weeks), the inefficiencies of the postal system and possible changes in addresses obtained from the Pharmacy Board of Trinidad and Tobago. This study gave a brief insight into interest, motivational factors, and barriers to the pursuit of further pharmacy education among practicing pharmacists in RTT.

Practising pharmacists in the RTT responding in this study were mainly interested in acquiring further pharmacy education through continuing professional and various tertiary education programmes. The main reason for the interest indicated was to increase knowledge and skills. Maintaining professional competence, improving clinical and research skills, improving service provision and career mobility are the main perceived benefits of further pharmacy education. Important factors for those considering further education were convenience (scheduling, proximity), family obligations, workplace and family support and practice needs. By gaining an understanding of the motivation and environmental factors that affect the decision to pursue additional education, pharmacy educators in RTT will be better able to design and deliver education programmes that are relevant and accessible to practicing pharmacists.

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