

RESEARCH

What Secondary School Career Advisors in New Zealand Know about Pharmacy and How that Knowledge Affects Student Career Choices

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Objective. To explore what career advisors at secondary schools (high schools) in New Zealand know about the pharmacy profession, how they obtain that knowledge, and what their potential influence is on students' decisions to study pharmacy.

Methods. This study employed a cross sectional questionnaire design. A postal questionnaire was sent to 250 randomly selected secondary schools in New Zealand.

Results. The response rate was 112/248 (45%). Responding career advisors were familiar with many of the roles of pharmacists (mean knowledge score 11.5 out of 16). Over 90% of career advisors were familiar with the roles of pharmacists in the community setting; however, many had a poorer understanding of other pharmacist roles. One suggestion for improving the promotion of pharmacy within secondary schools was a greater involvement of pharmacists and pharmacy students in the promotion of pharmacy as a profession.

Conclusion. Career advisors need a broader understanding of the potential roles of pharmacists. Increasing contact from practicing pharmacists and undergraduate pharmacy students are potential ways of increasing student interest in pharmacy.

Keywords: career advisors, pharmacy, education, career choice

INTRODUCTION

Many factors influence students' decisions to follow a particular career pathway. These include personal interests, family, teachers, the media, web-based information, and exposure to the job itself.^{1,2} Career workshops have also been found to influence a student's career decision.² A number of factors influence a decision to undertake a career in pharmacy including the potential to earn a high salary, to work in a respected profession with job security, family influences, an interest in science and mathematics, and the desire to help, care for, and interact with the public.³⁻⁶

Although career advisors, careers days, and university publicity may be less important in contributing to students' career decisions, career advisors may have an impact on early school subject choices, an important consideration for degrees such as pharmacy that have subject prerequisites.^{3,5,7} Furthermore, students themselves have

reported that career advisors are a useful resource when it comes to career decision-making.⁷⁻¹¹ Not surprisingly, students prefer career advisors who are proactive in seeking them out, rather than career advisors who rely on students to initiate contact with them.¹⁰ Students also prefer career advisors who adopt a student-centered approach, although information-centered approaches, which include written materials and group talks, are also valued.⁸⁻¹⁰ Alexander and Fraser found that while career advisors had access to information on universities and health courses, they lacked access to motivational activities such as visits from undergraduates and local health professionals, health career days, and workshops.¹²

In New Zealand, it is compulsory for students to attend school from age 6 to 16. Primary school covers years 1-6 of the education system with children aged 5 to 11. Intermediate school follows, covering educational years 7 and 8 with children aged 11 to 13. Secondary school follows and covers educational years 9 to 13 for students aged 13 to 18 or 19. Two schools of pharmacy provide undergraduate training in the form of a 4-year bachelor of pharmacy degree (BPharm). This is followed by a 1-year internship, after which students are invited to

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register as practicing pharmacists with the Pharmacy Council of New Zealand. Beyond school, no formal entrance examination is required to enter a BPharm program, although at the University of Auckland, students must attend an interview. At the time we carried out this research, the University of Otago accepted students into their BPharm degree after they had successfully completed a common health science year at the university, while the University of Auckland (the site of this study) accepted students directly from secondary school, students who had completed a common health science year, and students who had already completed an undergraduate degree. There are usually more applicants than available BPharm places, yet New Zealand has a shortage of pharmacists working in rural areas. The University of Auckland in particular wishes to broaden the demographics of its applicants beyond those applying from the main cities to help address this issue.

The role career advisors play in influencing secondary school students to pursue studies in pharmacy is poorly defined in the current literature, particularly career advisors' perspectives in the New Zealand context. The country lacks standardized career advice in schools.¹³ Only 15% of responding career advisors surveyed in New Zealand in 2012 held a qualification related to career education—most had backgrounds in teaching.¹³ Internationally, the role of career advisors varies, depending on school policy and individual attitudes about how they should fulfil their position.^{9,10,12-14}

This study aimed to explore what career advisors in New Zealand knew about the pharmacy profession, how they obtained that knowledge, and their potential influence on students' decisions to study pharmacy.

METHODS

Participants in this study were career advisors working in New Zealand secondary schools. A database of secondary schools was obtained using the country's Ministry of Education website.¹⁵ In New Zealand, schools are often requested to participate in research. As a courtesy to an ongoing national study, we excluded schools already participating in that study. Thus, of the remaining 512 secondary schools eligible to participate in our study (ie, those that covered educational years 9-13), 250 were selected using the random number selection tool in Excel.

The study used a cross-sectional, self-completion postal survey instrument. Once the questionnaire was developed, piloting was undertaken in June 2012 using 10 schools randomly selected from those schools not participating in our main study. The 10 schools were located across New Zealand from both rural and urban areas. Eight out of 10 career advisors were successfully contacted and

agreed to participate in the pilot study. Each career advisor received a participant information sheet, draft questionnaire, feedback form, and a free postal envelope for the return of the questionnaire and feedback form.

Face-to-face contact was made with career advisors in the Auckland-based and Waikato-based schools taking part in the piloting process to encourage prompt return of the materials. It was also an opportunity to gain further information, allowing career advisors to offer suggestions. Schools geographically distant were contacted by telephone. Seven out of the 8 schools provided feedback, and the draft questionnaire was amended accordingly.

The final version of the questionnaire included both quantitative and free-text response options. The questionnaire covered demographic information about the school and the career advisor. Career advisors' knowledge of pharmacy and the roles and responsibilities of pharmacists was assessed using a 3-point Likert scale ("agree," "unsure," or "disagree"). Statements were derived from the list of pharmacists' tasks on Careers NZ, a website containing information pertinent to career professionals, young people deciding on their careers, and older people wanting to change careers or return to work.¹⁶ Participants were asked whether they promoted pharmacy as a career, and if not, why they did not do so. They were also asked whether they had been approached by students about a career in pharmacy, and the ways in which they might respond to students, using a 4-point Likert scale ("always," "sometimes," "rarely," or "never"). A section was included on how career advisors obtained information about pharmacy degrees and the profession. Participants were also asked whether they believed that increasing the promotion and awareness of pharmacy as a profession would influence student career choices, and, if yes, what improvements in promotion they would like to see.

Data were collected from June to August 2012. Envelopes addressed to school principals contained a participant information sheet, a questionnaire, a return envelope, and a cover letter explaining the purpose of the study and asking the principal to pass the questionnaire on to the career advisor(s). If they or the advisors did not wish to participate in the study, they were asked to return the uncompleted questionnaire to the research team. Each return envelope was annotated with a unique identifier to record the schools that had returned questionnaires; however, the questionnaires themselves did not contain this number. This allowed the anonymity of the responses to be preserved, while allowing follow-up of nonrespondents.

Data from each questionnaire were entered into IBM-SPSS version 20, (IBM, Armonk, NY) for results analysis. Two people were assigned to each data entry session where one person entered the data into SPSS, with

the other reading out data from the questionnaire while double-checking they were entered correctly. For quality assurance, 10% of the data entered into SPSS was checked against the original questionnaire to determine the data entry error rate which was found to be 0%.

To obtain a composite measure of career advisors' knowledge about pharmacy and pharmacist roles, a "pharmacy knowledge score" was calculated with a maximum score of 16. The Likert scale consisting of agree, unsure, or disagree was transposed into "correct" and "incorrect" depending on the participant response. For example, if a participant agreed with a statement when they should have disagreed, this was marked as "incorrect." If career advisors specified "unsure" for any items, these were also considered to be "incorrect." Those who did not answer 1 or more items were excluded from the analysis.

Free-text questions were used to explore the promotion of the pharmacy profession, characteristics of students to whom pharmacy as a potential career is typically suggested, the types of information sent out, and the methods universities use to contact career advisors. Data from these questions were analyzed by identifying common themes in responses and allocating the free-text statements to each theme. The number of statements in each theme was then calculated.

Ethics approval for the study was obtained from the University of Auckland Human Participants Ethics Committee.

RESULTS

Of the 250 schools contacted, 2 had an incorrect address and were "returned to sender," leaving 248 schools in the study. Of these 248 schools, 85 questionnaires were returned after the first mailing, with a further 27 schools responding to a second mailing, resulting in a final response rate of 45.1% (112/248).

Almost half of the participants (40.2%; n=45) were from schools with students in years 9-13. The most common school size had 251-500 students (24.1%; n=27) followed by those with 250 students or fewer (20.5%; n=23). School deciles, a measure of the socio-economic status of its catchment communities, were grouped into 3 categories: 1-2 representing low deciles (highest proportion of students from low socio-economic communities); 3-8 representing mid-range deciles, and 9-10, high deciles.¹⁵ Most participants were from schools with mid-range deciles (57.1%; n=64). Thirty eight percent (n=42) of schools were situated in urban areas, 58% (n=65) were public schools, and 8.9% (n=10) private schools. Most participants were from schools employing 1 (71.4%; n=80) or 2 (18.8%; n=21) career advisors. Two schools (1.8% of respondents), however, had no career advisors

and it was assumed that the respondent from these schools was not actually a career advisor, but had taken on that role, so their responses were included in the study. Seventy percent of respondents (n=78) worked in coeducational schools (Table 1).

Almost half of the participants had been a career advisor at their current school for 5 or fewer years (49.1%; n=55), 25.9% (n=29) for 6-10 years and 22.3% (n=25) for more than 10 years. Approximately 3 quarters of participants (74.1%; n=83) reported that

Table 1. Demographics of Schools Responding to Survey (N=112)

	n	(%)
Year levels		
1-13	22	19.6
7-13	23	20.5
9-13	45	40.2
11-13	2	1.8
Missing values	20	17.9
Region		
Rest of North Island	56	50.0
South Island	30	26.8
Auckland	24	21.4
Missing values	2	1.8
Number of students in year 9 and above		
<250	23	20.5
251-500	27	24.1
501-750	18	16.1
751-1000	16	14.3
1001-1250	9	8.0
1251-1500	7	6.3
>1500	10	8.9
Missing values	2	1.8
Decile		
1-2	13	11.7
3-8	64	57.1
9-10	27	24.1
Missing values	8	7.1
Location		
Urban	42	37.5
Rural	34	30.4
Missing values	36	32.1
School type		
Public	65	58.0
Private	10	8.9
Missing values	37	33.0
Student sex		
Co-educational	78	69.6
Single sex - female	17	15.2
Single sex - male	12	10.7
Missing values	5	4.5
Schools with careers advisor	108	96.4
Missing values	3	2.7

they had undertaken some form of career advisor training; but only 35.7% (n=40) of participants indicated they held a career advisor-related qualification.

It was compulsory in roughly one third of schools (34.8%; n=39) for the career advisor to see all students. Of those schools where contact was not compulsory (n=66), almost all (98.5%; n=65) encouraged students to contact the career advisors. Sixty-two percent (n=69) of respondents replied that they started talking to students regarding potential career choices by year 10 (ages 13-14).

Participants were asked to specify whether they received any contact from the 2 universities that offer a BPharm degree and, if so, how they were contacted. Sixty-six (58.9%) were contacted by electronic means such as e-mail and 44 (39.3%) by regular mail. Participants who received contact (91.1%; n=102) were asked to describe in a free-text response the different types of information universities provided to them. These were reclassified into 10 themes, including an "other" category with 2 responses. The most common type of information provided was a prospectus, which included information about course outlines, subject requirements, and entry requirements (54.5%; n=61 responses). Other forms of written material such as pamphlets, brochures, posters, and student profiles were the next most common (40.2%; n=45 responses). Nine percent (n=10) reported visits from university representatives such as liaison officers, or from students pursuing the pharmacy degree. Other themes each reported by less than 8 advisors included details of open days and careers evenings, financial information, and verbal advice.

Ninety-four percent of respondents were aware that pharmacists could work in community/retail pharmacy (93.8%), hospitals (92.9%), the pharmaceutical industry (laboratories) (91.1%), research facilities (92.9%), and government health agencies (91.1%). Ninety-two respondents (82.1%) were aware that pharmacists could work in universities. Only 33.9% (n=38) knew pharmacists could work in airports and a mere 15.2% (n=17) knew schools employed pharmacists.

Responses to 16 knowledge statements about pharmacy are shown in Table 2. The statements most often answered correctly were: "Pharmacists are competent in preparing, mixing, and dispensing medicines" (99.1%; n=108); "Pharmacists can provide information on the use of medicines/health products" (97.2%; n=106); "Pharmacists must always check prescription doses and possible interactions between medicines" (94.4%; n=102); and "Once registered, a pharmacist does not need to undertake any further training" (92.6%; n=100). The statements most often answered incorrectly were: "Pharmacists usually have no input into a patient's medication management"

(14.8%; n=16); and "Pharmacists can be involved in the design and manufacture of medicines" (14.8%; n=16). The mean knowledge score was 11.5 (SD 3.12; range 3-16).

Participants were asked whether they actively promoted pharmacy as a potential career choice to students and, if not, why they did not. Eighty (71.4%) participants promoted pharmacy to students. Of the 26 (23.2%) who did not, 10 (32.3%) indicated the main reason was that they believed that the promotion of any career should be predominantly driven by student interest and ability (Table 3).

Participants who promoted pharmacy as a career choice reported that they tended to suggest it to students who possessed characteristics such as personal interest and/or strength in science (75.9%; n=85), and people, social, and communication skills (39.3%; n=44).

Sixty-eight percent of participants had received a student enquiry about pharmacy as a career choice during the previous 5 years (data missing in 3 cases). Of those, the mean number of students making an enquiry per year was 3.4 (SD 5.5; range 0.5-30). The most common actions (at least "sometimes") taken by more than 90% of respondents were encouraging interested students to attend a university open day (95.5%), consulting with interested students one on one (96.4%), considering the student's subject choices (96.5%), and referring students to a tertiary education provider to obtain additional information (92%). The least common approaches taken by those who responded (at least "sometimes") were referring the student to a pharmacist (82.4%; n=85), arranging work experience (74.5%; n=81), and organizing a meeting with a recent pharmacy graduate or current undergraduate (37.2%; n=35). (Table 4).

Two thirds of participants (68.8%; n=77) agreed that increasing the promotion of the pharmacy profession would influence more students to pursue it as a career. Seventy-one (63.4%) participants provided responses concerning ways to increase the promotion of pharmacy as a career, the most common suggestion being pharmacists or current pharmacy students visiting schools (48.8%; n=40), followed by the suggestion that universities disseminate more written (20.7%; n=17) and electronic forms of promotion (19.5%; n=16) (Table 5).

DISCUSSION

The purpose of our study was to determine the level of knowledge New Zealand secondary school career advisors had regarding the pharmacy profession, how they obtained knowledge of the profession, and their potential influence on students' decisions to study pharmacy. Advisors who responded to the survey were found to have varying levels of knowledge about the pharmacy profession. Several trends emerged. The first was that career

Table 2. School Career Advisors' Knowledge of Pharmacists' Roles and Job Description

Statement	Career advisors' interpretations of statements			
	Correct n (%)	Unsure n (%)	Incorrect n (%)	Total n (%)
Pharmacists are competent in preparing, mixing, and dispensing medicines. ^a	108 (99.1)	1 (0.9)	0 (0.0)	109 (100)
Pharmacists can provide information on the use of medicines/health products. ^a	106 (97.2)	3 (2.8)	0 (0.0)	109 (100)
Pharmacists must always check prescription doses and possible interactions between medicines. ^a	102 (94.4)	6 (5.6)	0 (0.0)	108 (100)
Once registered, a pharmacist does not need to undertake any further training. ^b	100 (92.6)	7(6.5)	1 (0.9)	108 (100)
Pharmacists must supervise and check the work of other dispensary staff. ^a	93 (85.3)	15 (13.8)	1 (0.9)	109 (100)
Pharmacists are involved in the sale of medical and surgical aids and other health products. ^a	91 (83.5)	17 (15.6)	1 (0.9)	109 (100)
Pharmacists often assist patients in managing long-term health conditions. ^a	85 (78.7)	20 (18.5)	3 (2.8)	108 (100)
Pharmacists spend most of their time in the dispensary counting pills. ^b	71 (65.1)	27 (24.8)	11 (10.1)	109 (100)
Pharmacists and pharmacologists are the same profession. ^b	70 (64.2)	34 (31.2)	5 (4.6)	109 (100)
Pharmacists usually have no input into a patient's medication management. ^b	69 (63.9)	23 (21.3)	16 (14.8)	108 (100)
Pharmacists can be involved in designing and carrying out clinical trials. ^a	67 (62.6)	33 (30.8)	7 (6.5)	107 (100)
Pharmacists can be involved in the design and manufacture of medicines. ^a	62 (57.4)	30 (27.8)	16 (14.8)	108 (100)
Pharmacists can provide services such as blood pressure, glucose, or cholesterol testing. ^a	58 (53.7)	41 (38.0)	9 (8.3)	108 (100)
Pharmacists are involved in the design and implementation of policies and procedures for medicines use throughout hospitals. ^a	54 (49.5)	43 (39.4)	12 (11)	109 (100)
Pharmacists can provide information to individual ward areas on budgets and expenditure on drugs. ^a	52 (48.1)	51 (47.2)	5 (4.6)	108 (100)
Pharmacists can participate in hospital ward rounds. ^a	51 (47.7)	49 (45.8)	7 (6.5)	107 (100)

^a Statement is true

^b Statement is untrue

advisors were most knowledgeable about basic community pharmacy roles, suggesting that career advisors are familiar with the traditional roles of a pharmacist. They were, however, less aware of pharmacists' roles in other settings. The statements career advisors answered as "incorrect" or "unsure" predominantly related to the role of a pharmacist in the hospital or industrial settings. This may reflect the perceptions of the general population regarding the activities of pharmacists.^{17,18} Nonetheless, the varying levels of knowledge may have limited what career advisors told students regarding a career in pharmacy and, in turn, potentially dampened interest or hindered students' understanding of the full range of career pathways open to them. Research into health careers in general indicates that providing pharmacy-specific career

progression workshops in schools may increase the number of students applying to pharmacy programs and seeking pharmacy-related jobs.^{12,19}

Career advisors can play an important role in students' career decisions and the information they provide to students can influence their potential career choices.^{7,9,10} Our study indicated that almost two thirds of respondents had received requests about pharmacy as a career in the previous 5 years. Therefore, having accurate, informative resources about pharmacy courses and career paths easily accessible to career advisors is essential. Of the career advisors who received contact from universities, the most common form of contact was a prospectus. Advancements in information technology can also help school career advisors address the needs of students.^{20,21} Efficiently

Table 3. Reasons Why Career Advisors do not Promote Pharmacy as a Career Option (n=31)

Reasons for not promoting pharmacy as a career option	n (%)
Promotion is mainly driven by student interest and ability	10 (32.3)
Not many people are interested in the field	5 (16.1)
Respond to requests and queries rather than actively promote (eg, from students)	3 (9.7)
Only suggest but not promote to pharmacy students	2 (6.5)
Students mainly want to do medicine	2 (6.5)
Need to be top science students to do pharmacy	1 (3.2)
Secondary school location is far from Auckland and Otago	1 (3.2)
We don't promote any particular pathways	1 (3.2)
Missing values	7 (22.6)
Total	103.3*

* The total percentage (%) adds to >100% as career advisors were able to give more than one reason as to why they do not promote pharmacy

utilizing advancing technology such as credible websites and promotional videos combined with a proactive approach is considered an effective method to provide career counseling services to students.^{9,20}

The majority of career advisors had begun career discussions with students by year 10. At this level, most students have transitioned from intermediate to secondary (high) school and are beginning to make decisions regarding subject choices. Since entry into the pharmacy degree in New Zealand from secondary school requires prerequisite subjects such as chemistry and biology, students need to be informed as early as possible. In 2001, Alexander and Fraser found most career advisors believed students should be made aware of health careers prior to Year 10 (the equivalent of Year 11 in New Zealand).¹² In schools where career advisors begin career discussions in years 11 and 12, students may be disadvantaged by missing out on essential information earlier in their schooling, which could inform their subject choices.

Of interest were the responses to the question regarding the characteristics of students to whom career advisors would recommend pharmacy as a potential career choice. The most common characteristic was personal interest and/or strength in science, especially chemistry and biology. Personal interest has been shown to be a major influence

on students when deciding on a career pathway.² Other common characteristics were good social and communication skills, and academic and practical traits such as being highly organized and responsible. Our results were consistent with those from King et al's nursing study conducted in Australia, which showed that personal interest and/or strength in science, people, social and communication skills, and practical traits are among characteristics considered important to career advisors when recommending nursing as a potential career option.²²

Participants in our study responded that increasing the promotion of pharmacy to secondary school students is likely to influence the choice to pursue pharmacy as a career. Increasing face-to-face contact with pharmacists, guest speakers, and current pharmacy students may be one way to increase pharmacy promotion to students. However, due to geographical constraints, especially for rural schools, this approach may be difficult to organize. A concerted and coordinated effort by the pharmacy profession in New Zealand might help this situation, as may improvements in communication technology.

Increasing promotion of pharmacy in schools that do not actively promote pharmacy as a career would be valuable, especially for students who are not fully informed of pharmacy as a career option in the first place. Langridge

Table 4. Career Advisors' Actions Following Student Approaches for Information about Pharmacy as a Potential Career Choice

Actions	Always n (%)	Sometimes n (%)	Rarely n (%)	Never n (%)
Consult with the student one on one (mv=4)	100 (89.3)	8 (7.1)	0 (0%)	0 (0)
Encourage attendance at university open days (mv=4)	94 (83.9)	13 (11.6)	1 (0.9)	0 (0)
Refer to pharmacists (mv=9)	33 (29.5)	52 (46.4)	15 (13.4)	3 (2.7)
Refer to tertiary provider contacts (mv=7)	70 (62.5)	33 (29.5)	2 (1.8)	0 (0)
Consider students subject choices (mv=4)	105 (93.8)	3 (2.7)	0 (0)	0 (0)
Encourage self-directed research into the profession (mv=9)	89 (79.5)	11 (9.8)	2 (1.8)	1 (0.9)
Arrange working experience (mv=6)	23 (20.5)	56 (50.0)	22 (19.6)	5 (4.5)
Organize a meeting with pharmacy undergraduate students or recent graduates (mv=18)	6 (5.4)	29 (25.9)	33 (29.5)	26 (23.2)

mv=missing values

Table 5. School Career Advisors' Opinions on What they Would Like to See Done to Increase the Promotion of the Pharmacy Profession (n=82)

How promotion should be done	n (%)
School visits from pharmacists, guest speakers, and current pharmacy students	40 (48.8)
Written materials*	17 (20.7)
Electronic promotion**	16 (19.5)
School visits and presentations from universities	13 (15.9)
Work experience	12 (14.6)
School programmes and activities to introduce pharmacy careers	8 (9.8)
Career evenings and open days	7 (8.5)
Other***	4 (4.9)
Targeted to specific students (eg, Māori and Pacific role models)	3 (3.7)
Greater awareness of pharmacist income	2 (2.4)
Missing values	6 (7.3)
Total	156.1****

* Written materials examples: posters, brochures, pharmacy specific handouts, university information, and entry criteria

** Electronic promotion examples: Skype interviews, DVDs, advertising on TV, media, radio, websites such as careers NZ, university websites

*** Other includes: "expand perceptions from retail pharmacies," "pharmacist teaching classes in schools"

**** The total percentage (%) adds to >100% as career advisors were able to provide multiple comments on how to promote pharmacy

et al showed that a pharmacy career explorer program increased student participant awareness of pharmacy and the roles of pharmacists and resulted in changes in opinions and attitudes towards pharmacy among many participants.²³ Attractive and youth-targeted written and electronic materials such as brochures, videos, and posters may also help promote careers in pharmacy. Promotion specifically focusing on geographical areas and ethnicities with low pharmacy applications (eg, targeting rural areas, and Māori and Pasifika students) was another point mentioned by career advisors. Research indicates that rural areas lack access to promotional activities compared to urban areas.^{12,19}

Student-centered approaches taken by some career advisors in our study included referring students to pharmacists and arranging work experience, although these were used less often than activities such as one-on-one consultations and encouraging attendance at university open days. This is possibly due to challenges associated with finding available pharmacists with sufficient time to talk to interested students.

Our study was not without limitations. A response rate of 45.1% means our results cannot be generalized to all secondary school career advisors throughout New Zealand. The low response rate may have partly been caused by the ethical approval requirement for the school principals to distribute the questionnaires to the career advisors. Another limitation was that the questions used to elicit information on resources available to career advisors were presented as free-text questions without prompts or examples. This resulted in varied responses, which depended on how career advisors interpreted the questions. In the future, providing

prompt-free example answers for such questions may give participants a better indication of the sort of responses needed.

Our research findings raise some important issues, which could be further explored through qualitative studies. For example, a better understanding of how and why career advisors decide which students are appropriate for a career in pharmacy might help in more targeted promotion of the degree. Future research regarding secondary school students' perceptions of pharmacy as a profession could also be conducted. Strategies to promote pharmacy to secondary school students could then be explored and evaluated to determine which strategies are most useful for targeting students underrepresented in pharmacy schools and the pharmacy profession.

CONCLUSION

Our study found that secondary school career advisors in New Zealand were familiar with the traditional roles of pharmacists in a community setting, but had limited knowledge of the roles of pharmacists in other settings. The majority of school career advisors believed that increasing the promotion of pharmacy as a profession would increase student interest in it. If such promotion were to be increased, career advisors' knowledge about pharmacy, its associated degree, and possible career pathways would need to be addressed, perhaps with a professional development course for career advisors specific to pharmacy. Increasing the number of visits from university liaison officers, pharmacists, and pharmacy students to schools throughout New Zealand might also raise awareness of the profession as a career choice. Further investigations

into secondary school students' perceptions of the pharmacy profession would provide more information on whether the proposed strategies to increase student applications from all over New Zealand would be appropriate.

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