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ORIGINAL ARTICLE

Could community pharmacies help to improve youth health? Service availability and views of pharmacy personnel in New Zealand

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Abstract
Objectives To investigate the availability of youth-relevant community pharmacy services in New Zealand (NZ), and the opinions of pharmacy personnel on the appropriateness of these services for young people aged 12–24.
Methods Pharmacist and pharmacy support staff (PSS) questionnaires were developed collaboratively with a Youth Advisory Group (YAG) and were mailed to 500 randomly selected community pharmacies in NZ.
Results Response rates for questionnaires were 50.5 % for pharmacists and 37.0 % for PSS. The majority of community pharmacies in NZ offer public health services relevant to youth health including emergency contraception, condoms, smoking cessation, weight management and harm reduction services for drug use. Not all pharmacy personnel believed these services are appropriate for youth, particularly for those aged 16 or under. PSS appeared less likely than pharmacists to feel services were appropriate.
Conclusions Community pharmacies are offering an increasing range of youth-relevant health services, and may, therefore, be able to improve youth healthcare access. More research is required to investigate the barriers to young people accessing services from pharmacies, and also the challenges for pharmacy personnel in providing services to this age group.

Keywords Pharmacies · Pharmacy · Pharmacists · Youth · Young people · Adolescents · Participatory

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Introduction

The international youth population is growing (World Health Organisation 2002), and around one in five people in New Zealand (NZ) are aged 12–25 (Statistics New Zealand 2006). This age group is often viewed as a population with low health needs, because the majority of youth are strong, resilient, and healthy. Nonetheless, health issues such as drug and alcohol use, mental health issues, unintended pregnancy, sexually transmitted infections (STIs), and obesity in young people are major public health concerns both in the immediate and long term (Viner and Barker 2005). Many barriers to youth healthcare access have been identified including concerns about confidentiality and embarrassment, cost, inability to attend appointment times, and lack of publicity and awareness regarding service availability (Tylee et al. 2007). As a result a substantial number of young people internationally have unmet health needs (World Health Organisation 2002). The Youth'12 Health and Wellbeing survey found that around 19 % of secondary school students in NZ had been unable to access healthcare when needed in the preceding 12 months (Clark et al. 2013).

Tailoring of existing primary care services in the community to better meet the needs of youth has been identified by the NZ Ministry of Health as an important step in addressing these issues (New Zealand Ministry of Health 2002). Community pharmacies are retail pharmacy outlets

which supply medications and associated health products and provide health-related services. In NZ, as in many other countries, the scope of community pharmacy practice is expanding beyond a focus on medicine supply to encompass new preventative and primary healthcare services (Eades et al. 2011; Scahill et al. 2010). It has been suggested that pharmacies may present fewer barriers to youth healthcare access because they are accessible, convenient and visible (Beitz 2004; Horsfield et al. 2013b). Community pharmacies already provide many services relevant to the health needs of young people (Gardner and Oftebro 2003; Horsfield et al. 2013b) and more may emerge as the profession's role in health promotion and preventative interventions develops (Eades et al. 2011).

In particular, pharmacies have been identified as a potential resource for increasing youth access to sexual health services (Beitz 2004), and are already being utilised by charitable organisations in developing countries to combat the spread of HIV (Save the Children 2004). Pharmacies supply pregnancy tests and condoms, and the emergency contraceptive pill (ECP) is available from pharmacies in many countries without a prescription or 'over-the-counter' (OTC) (Anderson and Blenkinsopp 2006). International evaluations have indicated success in terms of customer satisfaction and positive health outcomes (Anderson and Blenkinsopp 2006). This has led to the development of other pharmacy-delivered sexual health services including chlamydia screening (Baraitser et al. 2007), and the Condom Card ('C-Card) scheme whereby young people are supplied condoms discretely and free of charge via pharmacies (Duff 2013).

Community pharmacy services could also help to further positive trends in youth health behaviour such as the decreasing prevalence of smoking, substance use, and binge drinking amongst NZ adolescents (Clark et al. 2013). There is evidence to support the efficacy of pharmacy-based smoking cessation services (Sinclair et al. 2004) where pharmacies offer treatment plans and advice alongside nicotine replacement therapy (NRT). Methadone dispensing and needle exchange services may be offered by community pharmacies in NZ (Sheridan et al. 2005), and some studies have also investigated the potential for pharmacy-based screening and brief interventions to reduce harmful drinking behaviour (Watson and Blenkinsopp 2009).

Weight management products and programmes are also widely available in pharmacies in NZ. There is evidence indicating that weight management services delivered by pharmacy personnel are at least as effective as those delivered by nurses (Blenkinsopp et al. 2008). Although it is uncertain how appropriate they may be for younger customers, young people are likely to be aware of them and therefore, this area deserves investigation.

Some of these services are relatively new to pharmacies and may not be offered by all. More data are required to describe their availability and distribution. Furthermore, most of these services currently target the adult population and there is little information concerning the provision of services to young people specifically, or the perspectives of pharmacy personnel with regards to their appropriateness for younger age groups. Pharmacists surveyed in the United States reported being less likely to supply ECP to younger females (Conard et al. 2003), and a more recent study indicated that a researcher posing as a young person would be more likely to be told ECP was not available than a researcher posing as a General Practitioner (GP) (Wilkinson et al. 2012). Research on the views of young people also suggests that the attitudes and approach of pharmacy personnel may be important factors determining young people's use of pharmacies (Carranza 2003). The views of pharmacy support staff (PSS), including technicians and assistants, remain largely unexplored. This study sought to explore these knowledge gaps, using a youth participatory approach.

Objectives

- To obtain information on the availability of youth-relevant community pharmacy services in NZ.
- To investigate the opinions of pharmacy personnel regarding the appropriateness of these services for young people of different ages.

Methods

Study design

A youth participatory approach (Nolan et al. 2007) was used in which a Youth Advisory Group (YAG) was consulted to provide advice and feedback on the study design and interpretation of results. The rationale for involving young people in the research process follows a strength-based Youth Development perspective which aims to utilise the valuable skills and insights youth have to offer (New Zealand Ministry of Youth Affairs 2002). The theoretical positioning and methodology for this study have been described in more detail elsewhere (Horsfield et al. 2013a).

Survey design

The survey instrument was developed in consultation with the YAG. The YAG consisted of eight young people aged 16–25 who already knew each other and the researcher

(EH), and the group was facilitated by a trained youth worker. Their feedback informed which community pharmacy services were 'youth-relevant' and should be included in the survey. The YAG also defined the age ranges of young people about which pharmacy personnel where questioned (i.e. age 12–15, 16–18 and 19–25 years). The YAG felt that it was important to survey the views of PSS as well as pharmacists. Therefore, both pharmacist and PSS questionnaires were developed.

Piloting, sampling, and data collection methods for this study have been reported previously (Horsfield et al. 2013a). In summary, 500 pharmacies were randomly selected from the NZ Pharmacy Guild's national database of community pharmacies. Each pharmacy received one pharmacist and one PSS questionnaire via post in an envelope addressing 'the pharmacist in charge', together with a cover letter requesting they be distributed to a pharmacist and PSS member at the pharmacy. Envelopes were provided for participants to return completed questionnaires (or blank questionnaires if they did not wish to participate) free of charge. Three mailshots were issued between May and September 2011. All participating pharmacies returning at least one questionnaire were entered into a prize draw to win $100 of supermarket vouchers for the pharmacy.

Service availability

Data on availability of youth-relevant services were collected via the pharmacist questionnaire only. Pharmacists could select 'yes', 'no', or 'would consider offering this service in the future'. The services included in the survey were: ECP (on prescription and OTC); supply of condoms and pregnancy tests; supply of NRT and smoking cessation consultation services; weight management products and consultation services; methadone dispensing and needle exchange services.

Views of pharmacists and pharmacy support staff

The opinions of pharmacy personnel regarding the appropriateness of these services for youth were collected in both pharmacist and PSS questionnaires. Participants were asked whether the services listed above were appropriate for young people aged 19–25, 16–18, and 12–15 years old, with response options of 'yes', 'no', or 'not sure'.

Data on possible predictor variables which might affect pharmacy personnel's views on appropriateness of services were also collected, such as participant demographics including age, gender, and job description. Participants were asked to estimate how frequently they interacted with young people through their work, and the response options were recoded into a binary variable 'never/rarely' or 'sometimes/often'. Similarly, participants were asked to rate their confidence in their knowledge regarding youth health topics such as sexual health, mental health, and weight management, and their responses were again recoded into a binary variable 'very confident/reasonably confident' or 'not very confident/totally lacking in confidence'. Lastly, participants were asked at what age they would provide prescription dispensing and OTC medicine services to young people without a parent/caregiver present to investigate views on independence from parents. Response options were 'all young people aged 12 or over' or 'young people aged 16 or over only'.

Analysis

Data were entered into an SPSS 20 database which was cleaned and quality checked (Field 2009). Descriptive data analysis reported service availability and views of pharmacy personnel regarding service appropriateness for young people aged 12–15, 16–18, and 19–25. Generalised linear mixed models (GLMM) were run in SAS (Brown and Prescott 2006) to investigate variables associated with respondent opinions on appropriateness of services for young people. A separate GLMM was run for each of the opinion questions with the binary outcome of 'yes' or 'no/not sure'. Participant demographics and relevant pharmacy characteristics were included as explanatory variables. The pharmacy identifier number was included as a random effect to account for associations between responses of pharmacists and PSS working at the same pharmacy. The specific variables included in each analysis are shown in Table 3 and results are presented as adjusted odds ratios (AOR) with 95 % confidence intervals (CI). Associations with P values of less than 0.05 were considered statistically significant.

Interpretation of the results

Results were presented to the YAG and their feedback informed the interpretation of the findings. Implications for practice and service delivery raised in the discussion of this paper reflect the YAG's perspectives on the data.

Ethical approval

Ethics approval was obtained from the University of Auckland Human Ethics Committee for this study (Approval Number 2010/590).

Results

Response rates

Three envelopes were returned from pharmacies with address unknown, reducing the denominator to 497.

Table 1 Demographic characteristics of participating pharmacy personnel

	Pharmacists		Pharmacy support staff		Total	
	N	%	*N*	%	*N*	%
Gender						
Male	107	42.6	11	6.0	118	27.3
Female	144	57.4	171	94.0	315	72.7
Age						
25 and under	32	12.8	63	35.4	95	22.2
26–35	73	29.2	39	21.9	112	26.2
36–45	46	18.4	28	15.7	74	17.3
46–55	62	24.8	33	18.5	95	22.2
56 and over	37	14.8	15	8.5	52	12.1

Completed questionnaires were received from pharmacists at 251 pharmacies (50.5 %), and PSS questionnaires from 184 (37.0 %). Both pharmacist and PSS questionnaires were returned by 172 pharmacies, resulting in a response rate of 33.4 % for paired data.

Questionnaires were returned by respondents working in a range of community pharmacies, including group and independent businesses, urban and rural locations, and in retail and healthcare settings. Participant demographics are summarised in Table 1.

Overall 27.3 % of participants were male, with most of these being pharmacists. Participating PSS were, on average, younger than pharmacists.

Service availability

Availability of youth-relevant services reported by pharmacists is summarised in Table 2.

The majority of respondents confirmed the availability of products relevant to youth health needs including emergency contraception (94.3 %), condoms (98.8 %), pregnancy tests (100.0 %), NRT (97.6 %), and weight management products (71.1 %). A quarter also offered services relevant to youth, including quit smoking services (25.4 %) and weight management (39.6 %) consultation services. The majority of those not currently offering these services stated that they would consider doing so in the future. Methadone dispensing and needle exchange services were available from 56.3 and 19.5 % of pharmacies, respectively, but few non-providers indicated future willingness to participate in these services.

Views of pharmacists and pharmacy support staff

Responses indicated that 69.2 % of pharmacists and PSS felt that young people could collect their own prescriptions if they were aged 12 or over. The remaining 31.8 % felt a parent or caregiver should be present with those aged under 16. Just over half (52.3 %) of participants felt that young people could buy OTC medications without a parent or caregiver when they were aged 12 or over; the other half (47.7 %) indicated that young people should be aged 16 or over.

Descriptive results of the opinions of pharmacists and PSS regarding the appropriateness of services for young people of different ages are presented in Fig. 1.

The majority of pharmacists and PSS indicated that they believed that all services were appropriate for young people aged 19–25 years, although some respondents did not feel harm reduction services for drug use were appropriate. The lower the age of the customer, the more likely participants were to select 'no, not appropriate', or 'not sure'. Statistically significant differences between pharmacist and PSS responses were also evident, with PSS less likely than pharmacists to feel services were appropriate for young people.

Details and results of generalised linear mixed modelling performed to investigate associations between participant characteristics and views on appropriateness of services are shown in Table 3. Significant associations between predictor variables and responses were found for all opinion questions analysed. Whether the participant was a pharmacist or PSS

Table 2 Availability of youth-relevant pharmacy services in NZ ($N = 251$ pharmacies)

	Yes we already offer this service (%)	Would consider offering this service in the future (%)	No, would not consider offering this service (%)
ECP on prescription	97.6	0.8	1.6
ECP over the counter	94.3	1.6	4.1
Condoms	98.8	0.4	0.8
Pregnancy tests	100.0	0.0	0.0
NRT products	97.6	1.6	0.8
Quit smoking consultation service	25.4	66.0	8.6
Weight management products	71.1	18.7	10.2
Weight management consultation service	39.6	42.4	18.0
Methadone dispensing	56.3	8.1	35.6
Needle exchange	19.5	17.1	63.4

ECP emergency contraceptive pill, *NRT* nicotine replacement therapy

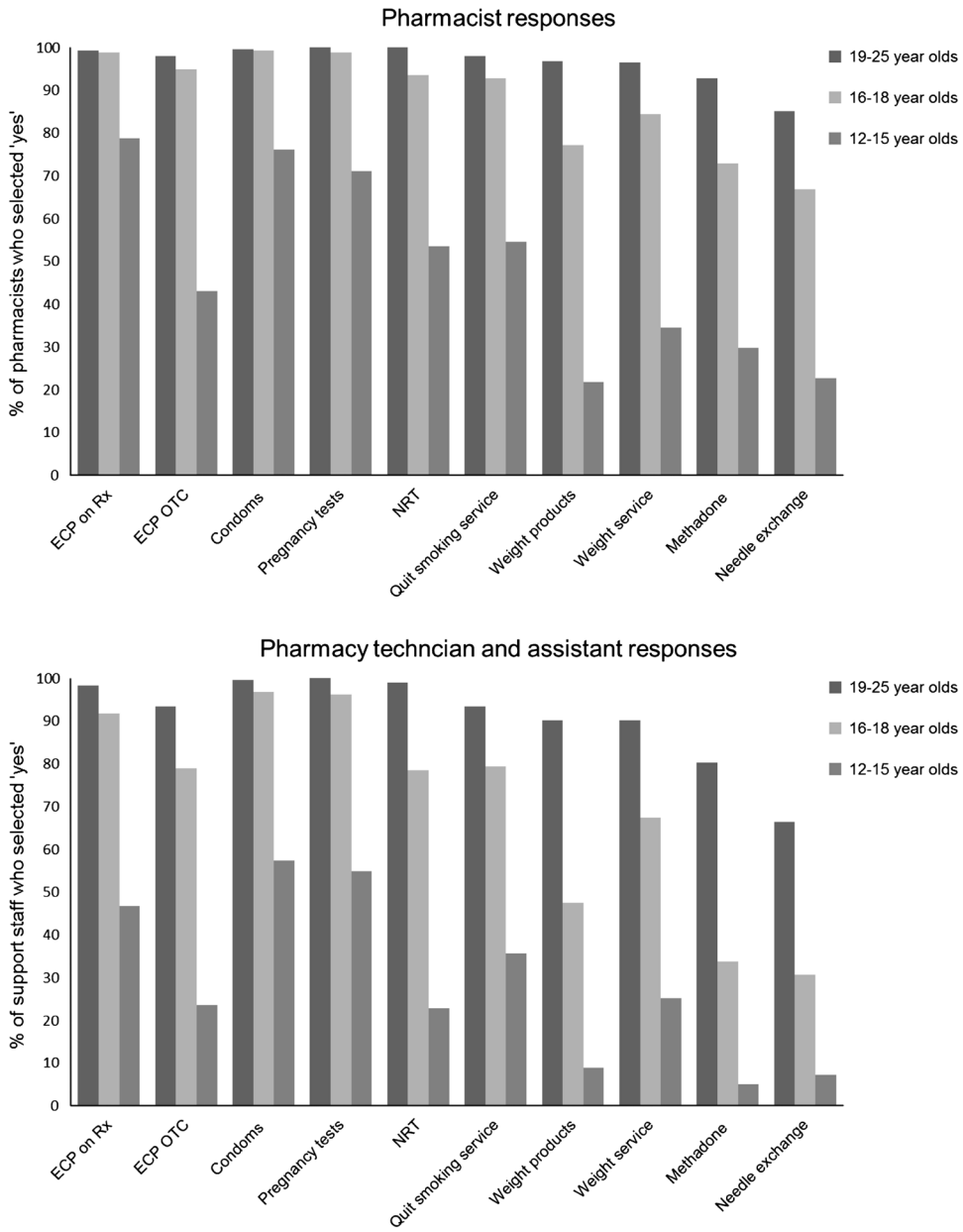

Fig. 1 Participant responses to 'Are these pharmacy services appropriate for young people?' Participants could select Yes, No or Not sure. Responses were collected for young people of different ages (19–25, 16–18 and 12–15 years). *ECP* emergency contraceptive pill, *Rx* prescription, *OTC* over the counter, *NRT* nicotine replacement therapy

was found to be a statistically significant predictor variable in nearly all analyses, with the odds of pharmacists indicating pharmacy services were appropriate for young people two to five times higher than PSS. Responses on whether young people aged 16 years or under can buy OTC medications or collect their prescription without a parent or carer were also a common predictor variable. The odds that the participant would consider services appropriate were usually around twice as high amongst those who reported customers aged 12 and over could buy OTC products independently compared to those who felt an adult should be present until age 16. In the case of weight management services, confidence in knowledge with regards to this area was also found to be a significant factor, with participants who were not confident in their knowledge being less likely to feel weight management services were appropriate for youth. With regards to methadone dispensing, participants working in pharmacies where this service was already available appeared to be more likely to believe it was appropriate for young people.

Discussion

Service availability

This study has found almost universal availability of selected youth-relevant health services from community

Table 3 Generalised linear mixed models investigating potential influences upon views regarding the appropriateness of providing services for young people

Outcome variable (modelling probability of yes)	Predictor variables	OR (95 % CI)	*P* value
Is OTC ECP appropriate for 16–8 year olds? N/414	**Questionnaire type (PSS vs. pharmacist)**	**0.27 (0.12–0.59)**	**0.001**
	Age of participant	0.99 (0.96–1.02)	0.49
	Gender (male vs. female)	0.55 (0.19–1.62)	0.28
	Estimated frequency of interaction with YP (sometimes/often vs. never/rarely)	**2.88 (1.32–6.29)**	**0.008**
	Confidence in knowledge about contraception (confident vs. not confident)	1.37 (0.62–3.0)	0.44
	Can YP under 16 buy OTC products without a parent? (yes vs. no)	1.71 (0.86–3.39)	0.12
Are smoking cessation consultation services appropriate for 16–18 year olds? N/380	**Questionnaire type (PSS vs. pharmacist)**	**0.31 (0.14–0.68)**	**0.004**
	Age of participant	1.01 (0.98–1.04)	0.38
	Gender (male vs. female)	1.06 (0.41–2.73)	0.90
	Estimated frequency of interaction with YP for improving health (sometimes/often vs. never/rarely)	1.64 (0.74–3.64)	0.23
	Confidence in knowledge about smoking cessation (confident vs. not confident)	1.26 (0.50–3.18)	0.62
	Can YP under 16 buy OTC products without a parent? (yes vs. no)	**2.05 (1.02–4.13)**	**0.04**
	Does this pharmacy already offer a quit smoking service? (yes vs. no)	1.12 (0.50–3.18)	0.79
Are weight management consultation services appropriate for 16–18 year olds? N/384	**Questionnaire type (PSS vs. pharmacist)**	**0.54 (0.30–0.96)**	**0.04**
	Age of participant	1.00 (0.98–1.02)	0.98
	Gender (male vs. female)	0.70 (0.35–1.43)	0.33
	Estimated frequency of interaction with YP for improving health (sometimes/often vs. never/rarely)	1.35 (0.74–2.45)	0.33
	Confidence in knowledge about weight management (confident vs. not confident)	**3.68 (1.72–7.86)**	**<0.001**
	Can YP under 16 buy OTC products without a parent? (yes vs. no)	**2.38 (1.37–4.12)**	**0.002**
	Does this pharmacy already offer a weight management service? (yes vs. no)	1.46 (0.82–2.60)	0.20
Is methadone dispensing appropriate for 16–18 year olds? N/391	**Questionnaire type (PSS vs. pharmacist)**	**0.20 (0.12–0.33)**	**<0.001**
	Age of participant	1.01 (0.99–1.03)	0.12
	Gender (male vs. female)	1.20 (0.68–2.13)	0.53
	Estimated frequency of interaction with YP (sometimes/often vs. never/rarely)	0.80 (0.41–1.57)	0.52
	Confidence in knowledge about drug use (confident vs. not confident)	1.29 (0.79–2.11)	0.30
	Can YP under 16 collect their prescriptions without a parent? (yes vs. no)	1.52 (0.93–2.48)	0.10
	Does this pharmacy already offer methadone dispensing? (yes vs. no)	**1.98 (1.23–3.18)**	**0.005**
Is OTC ECP appropriate for 12–15 year olds? N/415	**Questionnaire type (PSS vs. pharmacist)**	**0.46 (0.28–0.76)**	**0.003**
	Age of participant	1.00 (0.98–1.02)	0.90
	Gender (male vs. female)	1.01 (0.60–1.70)	0.96
	Estimated frequency of interaction with YP (sometimes/often vs. never/rarely)	0.92 (0.49–1.74)	0.80
	Confidence in knowledge about contraception & family planning (confident vs. not confident)	1.38 (0.71–2.67)	0.34
	Can YP under 16 buy OTC products without a parent? (yes vs. no)	**2.21 (1.42–3.45)**	**<0.001**
Are condoms appropriate for 12–15 year olds? N/413	**Questionnaire type (PSS vs. pharmacist)**	**0.54 (0.33–0.89)**	**0.02**
	Age of participant	1.03 (0.99–1.03)	0.23
	Gender (male vs. female)	0.92 (0.52–1.64)	0.78
	Estimated frequency of interaction with YP (sometimes/often vs. never/rarely)	1.47 (0.93–2.32)	0.10
	Confidence in knowledge about contraception and family planning (confident vs. not confident)	1.75 (0.97–3.14)	0.06
	Can YP under 16 buy OTC products without a parent? (yes vs. no)	**2.31 (1.47–3.63)**	**<0.001**
Are quit smoking consultation services appropriate for 12–15 year olds? N/381	Questionnaire type (PSS vs. pharmacist)	0.66 (0.40–1.09)	0.10
	Age of participant	1.00 (0.99–1.02)	0.71
	Gender (male vs. female)	0.62 (0.37–1.06)	0.08
	Estimated frequency of interaction with YP for improving health (sometimes/often vs. never/rarely)	1.46 (0.91–2.34)	0.11
	Confidence in knowledge about smoking (confident vs. not confident)	1.09 (0.53–2.23)	0.81
	Can YP under buy OTC products without a parent? (yes vs. no)	**2.26 (1.45–3.51)**	**<0.001**
	Does this pharmacy already offer a quit smoking service? (yes vs. no)	1.28 (0.76–2.15)	0.36

Table 3 continued

Outcome variable (modelling probability of yes)	Predictor variables	OR (95 % CI)	*P* value
Are weight management consultation services appropriate for 12–15 year olds? N/384	Questionnaire type (PSS vs. pharmacist)	0.84 (0.50–1.41)	0.50
	Age of participant	0.98 (0.97–1.00)	0.10
	Gender (male vs. female)	0.67 (0.39–1.16)	0.15
	Estimated frequency of interaction with YP for improving health (sometimes/often vs. never/rarely)	1.15 (0.71–1.86)	0.57
	Confidence in knowledge about weight management (confident vs. not confident)	**3.28 (1.26–8.52)**	**0.02**
	Can YP under 16 buy OTC products without a parent? (yes vs. no)	**2.08 (1.29–3.33)**	**0.003**
	Does this pharmacy already offer a weight management service? (yes vs. no)	0.92 (0.57–1.48)	0.74
Is methadone dispensing appropriate for 12–15 year olds? N/391	**Questionnaire type (PSS vs. pharmacist)**	**0.15 (0.07–0.33)**	**<0.001**
	Age of participant	1.00 (0.99–1.03)	0.30
	Gender (male vs. female)	1.21 (0.65–2.27)	0.54
	Estimated frequency of interaction with YP (sometimes/often vs. never/rarely)	0.97 (0.42–2.24)	0.95
	Confidence in knowledge about drug use (confident vs. not confident)	1.30 (0.72–2.34)	0.38
	Can YP under 16 collect their prescriptions without a parent? (yes vs. no)	1.95 (1.00–3.79)	0.05
	Does this pharmacy already offer methadone dispensing? (yes vs. no)	**2.78 (1.52–5.07)**	**0.001**

Significant results are in bold text and are presented as adjusted odds ratios (OR) with 95 % confidence intervals (CI) in parentheses

OTC over the counter, *ECP* emergency contraceptive pill, *YP* young people, *PSS* pharmacy support staff

pharmacies in NZ, thus providing evidence to suggest that community pharmacies could help to increase youth healthcare access. Almost all of the pharmacies reported providing ECP, condoms, and pregnancy tests. NRT was available in the majority of pharmacies surveyed, and around a quarter also offer smoking cessation consultation services. Methadone dispensing services were provided by just over half and needle exchange by around a fifth of pharmacies. Similarly, weight management products were available in around two-thirds, and weight management consultation services were provided by just over one-third of pharmacies surveyed.

Although these results confirm the availability of pharmacy services which may be relevant to young people in NZ, it is likely that such services may need to be adapted to better meet the specific needs of this age group. For example, the current product-based weight management programmes offered by pharmacies in NZ may be less suitable for youth than motivational counselling which focusses on healthy diet and exercise (Prevost 2008). Similarly, in the context of substance use, the development of health promotion activities in this field by pharmacies may be more appropriate for youth than existing methadone and needle exchange services (Toumbourou et al. 2007).

Furthermore, there may be barriers preventing young people from accessing these pharmacy services. Evidence suggests that youth awareness of pharmacy services is low (Calabretto 2009). This is understandable since only 10 % of pharmacies in NZ report having youth-specific publicity material to inform young people about services offered (Horsfield et al. 2013a). Another important, practical barrier for youth is cost, and healthcare access will be inequitable unless services are free (World Health Organisation 2009). Community pharmacies cannot meet this criterion without funding to subsidise costs to young patients and customers, but there is evidence demonstrating that this may be both feasible and cost effective; for example for services such as chlamydia screening (Baraitser et al. 2007). Condoms and ECP are already provided to young people for free in other countries and this is currently being piloted in NZ (Duff 2013).

Views of pharmacy personnel

Responses from pharmacy personnel participating in this study indicate that there may not always be a consensus on whether it is appropriate to provide these services to younger customers in the community pharmacy setting. It has been suggested that the attitudes of healthcare professionals regarding the provision of services to young people may be affected by personal views on what is 'the right choice' (Duncan and Sawyer 2010), and there is some evidence to show that healthcare professionals (including pharmacists) may deny sexual health services to young people where this contradicts their underlying views about sexual activity or risk taking behaviour (Bennett et al. 2003; Hofstetter and Rosenthal 2013; Wilkinson et al. 2012). In this case however, we believe that pharmacy personnel's knowledge and views on the legal aspects of

providing services to young people may be more influential upon their decisions when dealing with this age group than their individual perspectives on sex or drug use. Some evidence for this is apparent in that the majority of participants felt all services were appropriate for 19–24 year olds, indicating that generally they are comfortable providing these services and products. Furthermore, decision-making processes which are subject to personnel's moral perspectives might be expected to exhibit associations with demographic characteristics such as age or gender, but no such associations were found in any of the analyses run. The two factors consistently identified as influential were participant responses regarding the age at which young people could use pharmacies independent of their parents or caregivers, and whether the respondent was a pharmacist or PSS. We will consider both of these concepts in more detail.

Independence from parents

Opinions were divided regarding the age at which participants considered young people could buy OTC products without a parent or carer present, with a roughly fifty–fifty split between those selecting age 12 or over and age 16 or over. This question was found to be a key predictor variable in many of the GLMM analyses for views on the appropriateness of other services, with participants selecting age 16 and over less likely to feel ECP, condoms, smoking cessation, and weight management consultation services were appropriate. This association suggests that views on independence from parents may be an important factor in the decision-making process of pharmacy personnel with regards to providing services to young people. Legal and ethical considerations surrounding the provision of healthcare to minors can be complex, as the laws pertaining to healthcare access and confidentiality may not always be congruent with laws pertaining to legal majority and consent (Summers et al. 2006). In NZ for example, although young people have the right to access sexual healthcare irrespective of their age, the legal age at which that they can consent to sexual intercourse or refuse medical treatment is 16 (New Zealand Citizens Advice Bureau 2014). This may create grey areas for pharmacists who have a professional responsibility to ensure that young people have access to sexual healthcare even if they are younger than 16 and do not present with a parent. Parental views and confidentiality have been identified as a potential source of legal and ethical dilemmas for pharmacists providing sexual health services such as ECP to young people (Conard et al. 2003; Wingfield and Badcott 2007), and the findings of this research indicate that this may apply to other health issues in youth as well. We suggest that more research is needed to investigate this issue in a community pharmacy context, and that the development of legal guidelines specific to the provision of services to young people may be beneficial.

The importance of pharmacy support staff

Statistically significant differences between responses for pharmacists and PSS were found for the majority of services explored, with PSS responding more cautiously overall. Differences in legal responsibility and in levels of training, and confidence regarding professional decision making may explain these findings. There is little literature available regarding the views of pharmacy personnel other than pharmacists towards youth, however, pharmacy technicians and assistants are likely to be the first and perhaps in some cases the only personnel member a customer may talk to in the pharmacy (Sheridan et al. 2011). Therefore, their views and practices could have an important influence in youth healthcare access. Research investigating the role of PSS in NZ (Sheridan et al. 2011) has highlighted their capacity as potential 'gate-keepers', not only in terms of accessing the pharmacist and pharmacy services but also perhaps the broader healthcare system in cases requiring referral. In this context, issues identified by research investigating decision making processes of GP receptionists (Offredy 2002) may also be relevant in the community pharmacy setting. We suggest that adequately trained PSS offer an accessible healthcare resource for young people, and that future research regarding pharmacy services for youth should consider the role of pharmacy technicians and assistants as well as pharmacists.

Limitations

This study has some limitations. Although better than anticipated, the response rate for this survey was still relatively low. As it was not possible to undertake non-responder follow-up to investigate the potential effects of responder bias, the generalisability of these results is limited. It is possible that there were associations which were too small to reach statistical significance due to the sample size. Results approaching statistical significance have also been reported in Table 3. These were associations between confidence in knowledge about contraception and views on appropriateness for condoms for 12–15 year olds ($P = 0.06$), and between whether participants reported that young people can collect their own prescriptions and their views on appropriateness of methadone for 12–15 year olds ($P = 0.05$).

The YAG consulted for this study were eight self-selected young people from Auckland who cannot be representative of the youth population in NZ.

Lastly, although the results of this study confirm the availability of pharmacy services in NZ which may be relevant to youth, it did not explore whether these services are provided in an appropriate manner for youth.

Conclusion

This study has found almost universal availability of youth relevant services in community pharmacies, signifying potential for pharmacies to have a positive impact on youth access to healthcare in NZ. There have been calls for community pharmacy as a profession to be more youth focussed (Gardner and Oftebro 2003; Horsfield et al. 2010), but there is a lack of professional guidance in this area. Many pharmacy personnel may not feel confident regarding the provision of products and services to young people, and previous research has highlighted training needs which may impact upon service provision (Conard et al. 2003). More research is required to investigate the manner in which these services are provided and whether this is appropriate for youth, the barriers to young people accessing services from pharmacies, and also the barriers to pharmacy personnel in providing services to this age group.

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Conflict of interest None to declare.

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