Impact of Socratic teaching on pharmacy students' critical thinking and patient-centredness regarding emergency contraception

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Impact of Socratic teaching on pharmacy students' critical thinking and patient-centredness regarding emergency contraception

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Abstract

Introduction: Pharmacists' timely provision of emergency contraception (EC) requires critical thinking and a sensitive patient-centred approach.

Aim: To explore the impact of Socratic teaching on pharmacy students' professional judgement, critical thinking and patient-centredness, in relation to EC provision.

Methods: One hundred and fifty-three first and second year graduate entry Master of Pharmacy students, representing pre- and post-EC teaching groups, were presented with a questionnaire comprising an array of challenging hypothetical scenarios involving pharmacy requests for EC.

Results: One hundred and forty-two (92.8%) students responded. First and second year students showed significant differences in their intentions to supply EC or refer to another health professional. Student comments demonstrated differences in both social and professional judgement pre- and post-teaching. Justifications provided to explain their choices indicated that post-teaching students better understood that context impacts on decision making, especially when delivering patient-centred care.

Conclusion: Socratic teaching enhances students' critical thinking and patient-centredness in relation to hypothetical EC provision.

Keywords: *Australia, Contraception, Postcoital, Decision Making, Education, Pharmacy, Patient-Centred Care*

Introduction

Australian pharmacy codes of ethics and conduct reinforce the view that a patient's best interests should always be a practitioner's primary concern (Pharmaceutical Society of Australia, 2011a; Pharmacy Board of Australia, 2014), and require pharmacists to consider their duty of care to the patient first and foremost (Pharmaceutical Society of Australia, 2011a). These professional codes provide a framework to guide practitioners' professional judgement (Pharmacy Board of Australia, 2014). Developing critical thinking, professional judgement and patient-centredness in graduates is a challenge for pharmacy academics and requires mindful planning to facilitate integration with other curricular content.

Critical thinking is a valued concept in health professional practice (Oyler & Romanelli, 2014) and is considered an essential outcome of pharmacy education (Cisneros, 2009), yet is challenging to teach. It refers to the ability to make reasoned and defensible judgements based on available information (Austin, Gregory, & Chiu, 2008). Professional and clinical judgement is expected to be refined and developed over the course of one's practice experience (Pharmacy Board of Australia, 2014). While a pharmacist should consider all information to make an informed clinical judgement regarding the supply of a non-prescription medicine (Pharmaceutical Society of Australia, 2010), practitioners may be influenced by inherent biases or beliefs, yet "decisions about access to care need to be free from bias and discrimination" (Pharmacy Board of Australia, 2014).

The topic of emergency contraception (EC) provides an ideal context within which to explore ethical and professional scenarios as it requires careful sensitivity in questioning and counselling (Higgins & Hattingh, 2012; Hope, King, & Hattingh, 2014), and is also a topic prone to issues of negative social judgement (Miller *et al*., 2011).

EC is used following unprotected sexual intercourse to prevent unintended pregnancy, and may follow lack of contraception, contraceptive failure, or sexual assault (Committee on Health Care for Underserved, 2012). In Australia, oral levonorgestrel has been available as a non-prescription emergency contraceptive for more than a decade (National Drugs and Poisons Schedule Committee, 2003). It is available in all Australian

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jurisdictions as a 'Pharmacist Only' (Schedule 3) behind-the-counter medicine and therefore requires a pharmacist's professional judgement to ascertain the appropriateness of supply (Pharmaceutical Society of Australia, 2010). The Pharmaceutical Society of Australia has developed a professional protocol to aid pharmacists in the safe and appropriate provision of EC and related advice (Pharmaceutical Society of Australia, 2011b). Despite the fact that EC is classified nationally as a 'Pharmacist Only' medicine, the legislation of one Australian state, Queensland, prohibits the non-prescription supply of Schedule 3 medicines, including EC, to persons less than 16 years of age (Queensland Parliamentary Council, 2014).

The efficacy of EC is directly linked to the time interval between unprotected intercourse and EC administration, therefore timely availability is crucial (Harvey, 2010). Levonorgestrel is considered safe (World Health Organisation, 2010) and there is no evidence that repeated doses, even within the same menstrual cycle, cause patient harm (Pharmaceutical Society of Australia, 2011b). Studies show that non-prescription access or advanced provision of EC are not associated with increased sexual risk taking behaviours or sexually transmitted infection risk and do not discourage regular contraceptive use (Glasier *et al*., 2004; Marston, Meltzer, & Majeed, 2005; Harper, Weiss, Speidel, & Raine-Bennett, 2008; Polis *et al*., 2010).

Despite the evidence about the safety and effectiveness of EC there are various misconceptions about its use (Hobbs *et al*., 2011; Mazza *et al*., 2012). A Socratic approach to EC education enables exploration of the clinical, ethical and legal dilemmas related to the medicine's provision. This approach involves the teacher questioning learners, to encourage critical enquiry and to consider variable presentations of patient interactions (Oermann, 1997; Greenwald & Quitadamo, 2014). The Socratic approach is used to deliver EC teaching to second year graduate entry Master of Pharmacy (M.Pharm) students at Griffith University, Queensland, Australia.

The aim of this research was to explore the impact of Socratic EC teaching on students' professional judgement, critical thinking and patient-centredness, in relation to an array of challenging hypothetical scenarios involving pharmacy requests for EC.

Methods

One hundred and fifty-three students enrolled in two consecutive years of an M.Pharm programme were presented with a questionnaire containing a series of request scenarios for EC. The two distinct student cohorts represented pre- teaching (first year) and post- teaching (second year) groups, as the directed EC teaching in the programme occurred at a time point after the first year group were surveyed and prior to the second year survey. Teaching on the topic of EC involved Socratic and didactic lectures, ethical case study lectures and workshops in which students were required to supply, record, label and prepare counselling for EC provision.

The questionnaires were distributed in April-May 2011 during timetabled classes. For each scenario the student was to assume the role of the pharmacist and record their hypothetical actions if they were presented with a request for EC that day from a range of patients (Table I).

Table I: Hypothetical Scenarios for EC Request

A patient who had a history of regular EC use, but not in the last month
A patient who had already used EC since her last period
A patient under 16 years of age
A third-party, *i.e*. NOT the patient requiring the EC
For a future incidence, *i.e.* getting it 'just in case'
A scenario in which they believed that the patient was a victim of sexual assault

Respondents were asked to check boxes to indicate that they would supply the medication; refuse to supply; refer the patient to a doctor; refer the patient to another pharmacist or pharmacy; other (please state action) in response to each scenario. Each scenario also provided space for free text for participants to explain their responses. Responses were analysed and comparisons made based on year level, to determine if this factor influenced students' judgement and hypothetical actions. Chi-squared tests were performed, and if expected cell counts were less than five Fisher's exact tests were performed, using SPSSv22. A p-value <0.05 was considered statistically significant. Institution ethics approval was granted PHM/05/11/HREC.

Results

Questionnaires were distributed to 89 first year M.Pharm students and 64 second year M.Pharm students. A total of 96.6% (n=86) first and 87.5% (n=56) second year students completed questionnaires. The overall response rate was 92.8%. The different year levels, and therefore the impact of teaching, showed significant differences in supply, referral and additional comments between the two cohorts (Tables II and III). A Queensland legal issue was imbedded in the hypothetical request for EC by a patient under 16 years of age and was identified by all students post-teaching. Comments included those that reflected both professional and social judgement, however social judgement appeared to be less prevalent post-teaching (Table III).

Table II: Summary of responses from first and second year M.Pharm students to hypothetical EC request scenarios

Scenario What would you do if you were presented with a request for EC today:	Year	Supply the medication		*p*-value	Refuse to supply		*p*-value	Refer to doctor		*p*-value	Refer to another pharmacist/ pharmacy		*p*-value	Other		Proportion with Comments		*p*-value
		n	%		n	%		n	%		n	%		n	%	n	%	
From a patient who had a history of regular EC use, but not in the last month?	**1**	52	(60.5)	**<0.001**	6	(7.0)	0.081	44	(51.2)	0.731	4	(4.7)	0.153	15	(17.4)	43	(50.0)	**<0.001**
	2	54	(96.4)		0	(0.0)		27	(48.2)		0	(0.0)		22	(39.3)	46	(82.1)	
From a patient who had already used EC since their last period?	**1**	23	(26.7)	**<0.001**	13	(15.1)	0.451	46	(53.5)	0.684	11	(12.8)	**0.003**	7	(8.1)	32	(37.2)	**0.001**
	2	34	(60.7)		6	(10.7)		28	(50.0)		0	(0.0)		5	(8.9)	37	(66.1)	
From a patient under 16?	**1**	11	(12.8)	0.063	25	(29.1)	0.207	56	(65.1)	**<0.001**	7	(8.1)	**0.042**	8	(9.3)	37	(43.0)	**0.007**
	2	2	(3.6)		11	(19.6)		56	(100.0)		0	(0.0)		2	(3.6)	37	(66.1)	
From a third party, i.e. NOT the patient requiring the EC?	**1**	9	(10.5)	**<0.001**	67	(77.9)	**<0.001**	8	(9.3)	0.316	4	(4.7)	0.153	10	(11.6)	44	(51.2)	**<0.001**
	2	20	(35.7)		21	(37.5)		2	(3.6)		0	(0.0)		27	(48.2)	50	(89.3)	
For a future incidence, i.e. getting it 'just in case'?	**1**	7	(8.1)	**<0.001**	69	(80.2)	**0.020**	14	(16.3)	0.209	3	(3.5)	0.278	5	(5.8)	38	(44.2)	**0.003**
	2	20	(35.7)		35	(62.5)		5	(8.9)		0	(0.0)		8	(14.3)	39	(69.6)	
And you believed that the patient was a victim of sexual assault?	**1**	58	(67.4)	0.335	1	(1.2)	1.000	55	(64.0)	**0.005**	5	(5.8)	0.157	33	(38.4)	50	(58.1)	**0.022**
	2	42	(75.0)		0	(0.0)		48	(85.7)		0	(0.0)		33	(58.9)	43	(76.8)	

Table III: Selected student comments reflecting professional (P) or social (S) judgement

Scenario What would you do if you were presented with a request for EC today:	Year	Student Comments
From a patient who had a history of regular EC use, but not in the last month?	**1**	"Reiterate the importance of regular protection & STD [sexually transmitted disease] prevention as well." (P) "Educate on its use, discuss contraceptive use" (P) "Explain that OCPs [oral contraceptive pills] are available and also condoms so she does not need to keep using EC if she gets a bit organised first" (S) "Obviously aren't listening to previous counselling + it is their fault/being slack → Dr needs to see them" (S)
	2	"Has a therapy need, but needs counselling about other long term contraception alternatives. Refer doctor." (P) "Appropriate management strategies are required and explanation of effectiveness of EC vs. regular contraceptive" (P) "Supply but counsel pt [patient] that she can no longer obtain EC, needs a better form of contraception. Counsel on STDs [sexually transmitted diseases], safe sex → That it is NOT good for her to use this medication" (S)
From a patient who had already used EC since their last period?	**1**	"Has to go see the doctor to make sure not pregnant." (P) "Educate patient, discuss contraception use" (P) "May not be using any contraception → irresponsible." (S)
	2	"Supply medication but also advise to take pregnancy test first to ensure not already pregnant from previous occasion and if pregnant, don't use EC and go see Dr." (P)
From a patient under 16?	**1**	"Discuss/explain requirement, encourage doctor's involvement, reassure privacy will be upheld" (P)
	2	"The pharmacist still has a duty of care to ensure continuity of care." (P)
From a third party, *i.e.* NOT the patient requiring the EC?	**1**	"Need to have a therapeutic need for the product" (P) "You don't know the details, they may be lying to you" (S)
	2	"Unless I can see the patient or talk on the phone, I can't supply as the third party may force them to take it or it may be inappropriate e.g. for a child." (P)
For a future incidence, *i.e.* getting it 'just in case'?	**1**	"In overseas travel as a precaution/ women who live in distant areas for long periods of time (ie mine workers) it is appropriate however full and comprehensive investigation for the need must be done and proper counselling & info (printed) MUST be supplied." (P) "Go on a pill- see the doctor!!" (S) "Must be on regular contraception." (S)
	2	"This scenario would require a lot of discussion with patient about circumstance, must check it's appropriate for patient. Talk about other alternatives! If patient was going on holiday to somewhere without pharm[acy] maybe." (P)
And you believed that the patient was a victim of sexual assault?	**1**	"Supply medication, provide support, strongly encourage involvement of police/reporting it, provide with appropriate contact number *eg*. women's health clinic" (P)
	2	"Need to talk to patient and advise on police counselling services, but they still need EC to prevent unwanted pregnancy." (P)

Discussion

Our teaching methods were effective in focussing students on their professional obligations and patient care, whilst also encouraging them to practise within legal parameters. The Socratic method of teaching can facilitate discussion and improve critical thinking skills (Ofstad & Brunner, 2013; Greenwald & Quitadamo, 2014). Socratic teaching leads students to understand that context impacts on decision making, especially when delivering patient-centred care. This was especially evidenced by the comments, including justifications provided by students to explain their choices.

Post-teaching (second year) students were more willing to manage the situation without the need to refer the patient to another pharmacist or pharmacy (no post-teaching students referred to another pharmacist across all six scenarios). These students were also significantly more likely to refer victims of sexual assault and patients under 16 years of age to a doctor (Table II). All post-teaching students reported that they would refer the latter to a doctor, which is the legally required action in Queensland, as compared to approximately two-thirds of pre- teaching (first year) students.

Post-teaching students were more likely to supply EC based on clinical need when compared with pre-teaching students (Table II). They also qualified many of these decisions with comments. Indeed, significantly more comments were made by post-teaching students for every scenario. This appears to indicate that post-teaching students critically analysed these situations in a patient-centred way and were able to explain their actions, reflecting improved professional judgement. Almost half of post-teaching students chose 'other' in response to the hypothetical scenario of a third party request, with the majority qualifying this option with a desire to discuss the case with the patient over the phone, or to request that she present to the pharmacy for direct consultation. These students sought further information to allow for evaluation, reflection and decision-making, as to whether there may have been a valid or extraordinary reason underpinning the patient request. This outcome is positive and shows that these students were more active, and hence less passive, in obtaining additional information to provide patient-centred care (Cooper, Bissell, & Wingfield, 2008). Socratic teaching, therefore, assisted the students in applying critical thinking principles to address an ethical dilemma, a skill important for their future practices.

In contrast, pre-teaching students appeared more socially and morally judgemental, as evidenced by their qualitative comments and lack of qualification and critical thinking about each hypothetical scenario. Pre-teaching students appeared more likely to make comments alluding to the patient's disorganisation or irresponsibility as being behind a request for EC than post-teaching students (Table III) but some post-teaching students still expressed judgements that lacked a professional approach. This finding is consistent with EC research that identified practising health professionals' punitive attitudes towards patients seeking EC, with many of them associating a request with irresponsible behaviour (Miller *et al*., 2011). Pharmacy teaching needs to further emphasise the autonomy of patients so that professional judgements are made without bias and discrimination, in alignment with professional expectations (Pharmacy Board of Australia, 2014).

Pharmacy educators must be mindful that students' ability to demonstrate critical thinking in specific circumstances may not necessarily equate to a propensity toward critical thinking in other situations, or in health professional practice (Austin *et al*., 2008).

Strengths and limitations

The study was strengthened by a good response rate (92.8%) and the number and quality of considered qualitative student responses to each scenario. Conclusions made are limited by the fact that this study was limited to a single programme in one school of pharmacy. Further research could explore the critical thinking and patient-centredness associated with EC provision of pharmacy students' at other universities, or of practising pharmacists at differing stages of career progression.

Conclusion

Socratic teaching enhanced students' critical thinking and patient-centredness regarding EC provision. Post-teaching students demonstrated increased knowledge of clinical parameters and legal boundaries to EC provision. They demonstrated a more professional approach to gathering patient contextual information and decision-making and were less likely to express negative moral or social judgements than their pre-teaching counterparts.

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