Attitudes of Pharmacy Students and Pharmacists towards Assisted Suicide

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ABSTRACT

The attitudes of pharmacy students and pharmacists towards the role of the pharmacy profession and prescription drugs in assisted suicide were measured and compared. Differences in proportions of responses and associations of responses with level of religious conviction, sex, and class or graduation year were tested statistically.

Both pharmacy students and pharmacists supported a patient's right to end his or her own life. They agreed that the decision to assist a patient to die should not be made by one physician alone and that it is inappropriate to involve a pharmacist in assisted suicide without his or her knowledge. However, the 2 groups did not agree as to whether dispensing a drug for the purpose of assisted suicide contravenes professional obligation. A higher proportion of pharmacists than students wanted to know if a drug they had dispensed was to be used for assisted suicide. Although many students and pharmacists believed that prescription drugs are an appropriate means to accomplish physician-assisted suicide, students were more unsure about the appropriateness of licensing bodies setting policies against pharmaceutically assisted suicide.

Student and pharmacist respondents with a high level of religious conviction were more critical towards assisted suicide. No significant association of responses with sex or with class or graduation year was found.

Key Words: assisted suicide, pharmacy students, pharmacists, attitudes

RÉSUMÉ

L'attitude des étudiants en pharmacie et celle des pharmaciens vis à vis du rôle de la pharmacie et des médicaments d'ordonnance dans le suicide assisté ont été mesurées et comparées. Les différences en termes de proportion de réponses et d'association de réponses avec le degré de conviction religieuse, le sexe, l'année d'étude ou d'obtention de diplôme ont fait l'objet d'un test statistique.

Les étudiants en pharmacie et les pharmaciens appuyaient le droit du patient à mettre fin à ses jours. Ils étaient d'accord avec l'idée que la décision d'assister un patient à mettre fin à sa vie ne devrait pas être prise par un seul médecin et qu'il est inopportun d'impliquer un pharmacien dans le suicide assisté sans que ce dernier ne le sache. Cependant, les deux groupes étaient en désaccord à savoir si délivrer un médicament dans le cadre d'un suicide assisté transgresse l'obligation professionnelle. Une proportion plus forte de pharmaciens que d'étudiants voulaient savoir si le médicament qu'ils délivraient devait servir à des fins de suicide assisté. Bien que de nombreux étudiants et pharmaciens croyaient que les médicaments d'ordonnance constituaient un bon moyen d'accomplir un suicide assisté par un médecin, les étudiants étaient toutefois moins certains de la pertinence des organismes de réglementation professionnelle à mettre en place des politiques contre le suicide assisté médicalement.

Les étudiants et les pharmaciens dont le degré de conviction religieuse était élevé étaient plus critiques vis à vis du suicide assisté. Aucune association de réponses significative avec le sexe ou l'année d'étude ou d'obtention de diplôme n'a été observée.

Mots clés : suicide assisté, étudiants en pharmacie, pharmaciens, attitudes

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INTRODUCTION

The purpose of this project was to measure and compare the attitudes of pharmacy students and pharmacists towards the role of the pharmacy profession and pharmaceutical products in assisted suicide and to evaluate possible associations of these attitudes with level of religious conviction, sex, and class or graduation year.

In February 1997 a continuing education program on physician-assisted suicide was organized by the Dalhousie Student Pharmacy Society and the Division of Continuing Pharmacy Education at Dalhousie University, Halifax, NS. Two weeks before the program began, students in the College of Pharmacy were asked to respond to a series of statements related to assisted suicide and potential pharmacist involvement in this activity.

In May of the same year, Dr Nancy Morrison, a respirologist at the Queen Elizabeth II Health Sciences Centre in Halifax, was charged with the first-degree murder of a terminally ill cancer patient. A preliminary inquiry on the charge was held by the Nova Scotia Provincial Court in February 1998. The court ruled that the evidence presented by the Crown was insufficient to commit Dr Morrison to stand trail. Despite this ruling, the Crown decided to proceed with the charge against Dr Morrison. The charge was later dismissed

To determine if attitudes had changed as a result of the publicity associated with Dr Morrison's case, in 1998 the students who had been surveyed in 1997 and were continuing in the pharmacy program were asked to respond again to the same questionnaire. Pharmacy practitioners from Zone 1 of the Nova Scotia Pharmaceutical Society (NSPS; Zone 1 is Halifax and the surrounding area) were also asked to take part in the study, before Dr Morrison's preliminary inquiry.

METHODS

In January 1997 a questionnaire was distributed to the first-, second-, third-, and fourth-year students in the Dalhousie University pharmacy program. Students were asked to complete the questionnaire during class time. To determine changes in the students' attitudes after a lapse of 1 year, second-, third-, and fourth-year students were resurveyed in the first week of February 1998.

Questionnaires, accompanied by addressed postagepaid return envelopes, were mailed in mid-February 1998 to all Zone 1 pharmacists in Nova Scotia; membership mailing labels were supplied by NSPS. There was no second mailing to pharmacists who did not return the questionnaire. The questionnaire, consisting of 9 statements related to assisted suicide, was based in part on a survey on the attitudes of some American pharmacists towards physician-assisted suicide, reported by Rupp and Isenhower in 1994.¹ Five of the questions from that survey, relating to the individual's right to die, the appropriateness of health-care professionals helping a patient to die, the pharmacist's knowledge in an assisted suicide, and the use of drugs in ending a patient's life, were modified and included as statements in the present survey.

Students and pharmacists were asked to indicate their attitudes towards the 9 statements on a 3-point scale (1 = agree, 2 = uncertain, 3 = disagree). The first 2 statements, "We have absolutely no right to take our own lives" and "There are no circumstances under which a patient is morally justified in ending his or her own life" related to the individual's right to die. Statements 3 and 4, "It is never appropriate for a health-care professional to actively assist a patient to end his or her life" and "The decision to assist a patient to die should not be that of one physician alone," were related to physician-assisted suicide. Statements 5, 6, and 7, "A physician should never involve the dispensing pharmacist in a patient's suicide without informing the pharmacist," "A pharmacist has the professional obligation to not dispense a prescription drug if the pharmacist knows that the physician intends to use it to end a patient's life," and "As a pharmacist, I would not want to know if the prescription order that I dispensed was to be used in a physician-assisted suicide," were concerned with the role of pharmacists in assisted suicide. Statement 8, "Prescription drugs are never an appropriate means to accomplish physician-assisted suicide," related to the use of pharmaceutical products in assisted suicide. The last statement, "Provincial licensing bodies should not legislate against pharmaceutically assisted suicide," concerned the appropriateness of licensing bodies regulating against assisted suicide accomplished by means of prescription drugs.

As a general guideline for the respondents, the questionnaire stated that for the purposes of this study assisted suicide was to be considered only under one of the following circumstances: terminal illness with no prospect of relief or other treatment options; an explicit, repeated request to die, made by the patient on the basis of an informed, free, and consistent decision; or severe mental or physical suffering with no hope of recovery.²



Table I. Characteristics of Respondents

No i	(and%)	of	Respondents*

		St		***************************************		
Characteristic	In 1997 (n = 223)		In 1998 (n = 156)		Pharmacists (n = 188)	
Sex			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Female	151	(67.7)	113	(72.4)	132	(70.2)
Male	72	(32.3)	43	(27.6)	56	(29.8)
Year of program						
First	50	(22.4)	_	_	_	_
Second	52	(23.3)	49	(31.4)	_	*****
Third	58	(26.0)	50	(32.1)	****	_
Fourth	63	(28.3)	~54	(36.5)	_	_
Year of graduation						
Before 1968	_	mose	_	_	17	(9.0)
1968 to 1977		_	-	_	34	(18.1)
1978 to 1987	_	maga.	-	_	68	(36.2)
1988 to 1997	_		-		69	(36.7)
Religious conviction						
High	94	(42.2)	62	(39.7)	87	(46.3)
Medium	62	(27.8)	49	(31.4)	39	(20.7)
Low	64	(28.7)	42	(26.9)	59	(31.4)
No information available	3	(1.3)	3	(1.9)	3	(1.6)

^{*}Some percentages do not sum to 100 because of rounding.

The χ^2 test was used to determine if a statistically significant association existed between the responses of the first-, second-, and third-year students surveyed in 1997 and those of the second-, third-, and fourthyear students surveyed in 1998 and between the responses of the students surveyed in 1998 and those of the pharmacists. Because the 1998 students were surveyed during the same period as the pharmacists, only their responses, and not those of the students surveyed in 1997, were compared with the responses of the pharmacists. Differences in responses according to level of religious conviction, sex, and class or graduation year were also assessed. For differences between 2 proportions, the one-tailed t-test was used. All χ^2 tests were performed with Minitab Statistical Software, Release 8, whereas the t-tests were performed with the Lotus 1-2-3 program, Release 5. Respondents were asked to indicate their level of religious conviction on a 5-point scale, where 1 was high and 5 was low. However, because the observed frequencies at both ends of the scale were too small to give appropriate expected counts for valid χ^2 analysis, the 5-point scale was reduced to a 3-point scale. Therefore, respondents were grouped as having a high (points 1 and 2 on the rating scale), medium (point 3) or low (points 4 and 5) level of religious conviction.

RESULTS

Response Rates

In total, 223 questionnaires were collected from the 260 students in all 4 classes in 1997, and 156 were collected from the 191 second-, third-, and fourth-year students in 1998, for response rates of 85.8% and 81.7%, respectively. The overall response rate for the pharmacists was 41.8% (188/450).

Characteristics of Respondents

As indicated in Table I, most of the student and pharmacist respondents were female. More than two-thirds of the respondents had a medium or high level of religious conviction. Nearly 73% of the pharmacists had graduated within the past 20 years.

Responses to Statements

Responses to the 9 statements are summarized in Table II. There was no statistical association between the responses of the first-, second-, and third-year students surveyed in 1997 and those of the second-, third-, and fourth-year students surveyed in 1998 (χ^2 test, p > 0.05). The lapse of 1 year and the publicity associated with Dr Morrison's preliminary inquiry did



Table II. Responses to Statements about Assisted Suicide

No. (and%) of Respondents*

1. We have absolutely no right to take our own lives' Agree	31 (16.6) 11 (5.9) 45 (77.5) 87 (100.0) 33 (17.6) 34 (18.2)
1. We have absolutely no right to take our own lives' Agree 25 (15.6) 16 (10.3) 36 Uncertain 37 (23.1) 48 (30.8) 3 Disagree 98 (61.3) 92 (59.0) 12 Total no. of responses 160 (100.0) 156 (100.0) 18 2. There are no circumstances under which a patient is morally justified in ending his or her own life' Agree 14 (8.8) 14 (9.0) 3 Uncertain 27 (16.9) 27 (17.3) 1 Disagree 19 (74.4) 115 (73.7) 14 Total no. of responses 160 (100.0) 156 (100.0) 18 3. It is never appropriate for a health-care professional to actively assist a patient to end his or her life' Agree 24 (15.1) 25 (16.0) 3 Uncertain 54 (34.0) 67 (42.9) 3 Disagree 81 (50.9) 64 (41.0) 12 Total no of responses 159 (100.0) 156 (100.0) 18 4. The decision to assist a patient to die should not be that of one physician alone* Agree 130 (81.8) 133 (85.3) 15 Uncertain 12 (7.5) 10 (6.4) 2 Uncertain 15 (7.5) 10 (6.4) 2 Uncertain 16 (7.5) 10 (6.4) 2 Uncertain 17 (10.7) 13 (8.3) 11	36 (19.3) 30 (16.0) 21 (64.7) 87 (100.0) 31 (16.6) 11 (5.9) 45 (77.5) 87 (100.0) 33 (17.6) 34 (18.2)
Agree 25 (15.6) 16 (10.3) 36 (10.3) 36 (10.3) 15 (10.3) 36 (10.3) 15 (10.3) 36 (10.3) 15 (10.3) 37 (23.1) 48 (30.8) 31 (10.3) 15 (10.0) 12 (10.3) 15 (10.0) 12 (10.0) 15 (10.0) 12 (10.0) 15 (10.0) 18 (10.0) 15 (10.0) 18 (10.0) 15 (10.0) 18 (10.0) 15 (10.0) 18 (10.0) 15 (10.0) 18 (10.0) 15 (10.0) 18 (10.0) 15 (10.0) 18 (10.0) 15 (10.0) 18 (10.0) 15 (10.0)	30 (16.0) 21 (64.7) 87 (100.0) 31 (16.6) 11 (5.9) 45 (77.5) 87 (100.0) 33 (17.6) 34 (18.2)
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Disagree 98 (61.3) 92 (59.0) 12: Total no. of responses 160 (100.0) 156 (100.0) 18: 2. There are no circumstances under which a patient is morally justified in ending his or her own life! Agree 14 (8.8) 14 (9.0) 3 Uncertain 27 (16.9) 27 (17.3) 1* Disagree 119 (74.4) 115 (73.7) 14* Total no. of responses 160 (100.0) 156 (100.0) 18: 3. It is never appropriate for a health-care professional to actively assist a patient to end his or her life! Agree 24 (15.1) 25 (16.0) 3: Uncertain 54 (34.0) 67 (42.9) 3: Disagree 81 (50.9) 64 (41.0) 12: Total no of responses 159 (100.0) 156 (100.0) 18: 4. The decision to assist a patient to die should not be that of one physician alone! Agree 130 (81.8) 133 (85.3) 15: Uncertain 12 (7.5) 10 (6.4) 2: Disagree 17 (10.7) 13 (8.3) 1: Total no. of responses 159 (100.0) 156 (100.0) 18:	21 (64.7) 87 (100.0) 31 (16.6) 11 (5.9) 45 (77.5) 87 (100.0) 33 (17.6) 34 (18.2)
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3. It is never appropriate for a health-care professional to actively assist a patient to end his or her life [†] Agree 24 (15.1) 25 (16.0) 33 (16.0) 67 (42.9) 36 (16.0) 120 (1	34 (18.2)
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Total no. of responses 159 (100.0) 156 (100.0) 18	25 (13.5 <u>)</u> 13 (6.9
5. A physician should never involve the dispensing pharmacist in a patient's suicide without informing the pharmacist [†]	
Agree 112 (70.0) 112 (72.3) 11	
Uncertain 28 (17.5) 30 (19.4) 3	35 (18.6
Disagree	35 (18.6 88 (100.0
Total no. of responses 160 (100.0) 155 (100.0) 18 6. A pharmacist has the professional obligation to not	
dispense a prescription drug if the pharmacist knows that the physician intends to use it to end a patient's life [‡]	
Agree (All a)	62 (33.2
Officer tain (24.2)	66 (35.3 59 (31.6
Disagree 50 (31.3) 33 (21.2) 5 Total no. of responses 160 (100.0) 156 (100.0) 18	
7. As a pharmacist, I would not want to know if the prescription order that I dispensed was to be used in a physician-assisted suicide [†]	
	74 (39.4
Uncertain 35 (21.9) 41 (26.3) 4	41 (21.8
Diagree	73 (38.8 88 (100.0
8. Prescription drugs are never an appropriate means to	
accomplish physician-assisted suicide ¹ Agree 28 (17.7) 25 (16.4) 2	25 (13.4
	35 (18.7
Disagree 85 (53.8) 75 (49.3) 12	27 (67.9
Total no. of responses 158 (100.0) 152 (100.0) 18	87 (100.0
9. Provincial licensing bodies should not legislate against pharmaceutically assisted suicide [†]	
7.19.00	12 (60.2
25 (22.0)	
Disagree 3/ (23.1) 35 (22.9) 2 Total no. of responses 160 (100.0) 153 (100.0) 18	45 (24.2 29 (15.6

^{*}Student responses for 1997 cover only first-, second-, and third-year classes (160 respondents in total); student responses for 1998 cover second-, third-, and fourth-year classes (156 respondents in total). There were 188 pharmacist respondents. However, not all respondents provided a response for every question. Some percentages do not sum to 100 because of rounding.

^{*} No significant association in responses for this statement between students surveyed in 1998 and pharmacists (χ^2 test, p > 0.05).



[†] Significant association in responses for this statement between students surveyed in 1998 and pharmacists (χ^2 test, p < 0.05).

not appear to have caused any change in attitudes. In contrast, the responses of the students surveyed in 1998 and those of the pharmacists were significantly associated for 7 of the 9 statements (Table II).

Although at least half of the students surveyed in 1998 (59.0%) and the pharmacists (64.7%) disagreed that we have absolutely no right to take our own lives (statement 1), a significantly larger proportion of the students were uncertain about this statement, as indicated by the *t*-test for difference between 2 proportions (30.8% and 16.0%, respectively).

The majority of both groups (73.7% of the students and 77.5% of the pharmacists) disagreed that a patient is never morally justified in ending his or her own life (statement 2). However, a significantly higher proportion of the students were unsure about this statement (17.3% and 5.9%, respectively).

There was no significant difference in the proportions of students (16.0%) and pharmacists (17.6%) who felt that it is never appropriate for a health-care professional to actively assist a patient to end his or her life (statement 3). However, a significantly higher proportion of pharmacists than students (64.2% and 41.0%, respectively) disagreed with this statement, and a significantly higher proportion of students than pharmacists were uncertain (42.9% and 18.2%, respectively).

A higher proportion of pharmacists than students (18.6% and 8.4%, respectively) believed that the dispensing pharmacist should not be informed by the physician in a case of assisted suicide (statement 5). However, 72.3% of the students and 62.8% of the pharmacists believed that the pharmacist should be informed.

The proportion of pharmacists who did not want to know if a prescription order they had dispensed was to be used in assisted suicide (statement 7) was significantly higher than that of students (39.4% and 25.6%, respectively).

A significantly higher proportion of pharmacists than students (67.9% and 49.3%, respectively) disagreed that prescription drugs are never an appropriate means to accomplish physician-assisted suicide (statement 8). Of significance was the finding that more students than pharmacists (34.2% and 18.7%, respectively) were uncertain about the appropriateness of using drugs in assisted suicide.

There was a large difference of opinion between students and pharmacists as to whether provincial licensing bodies should regulate against pharmaceutically assisted suicide (statement 9). A significantly higher proportion of pharmacists than students (60.2% and 31.4%, respectively) agreed that licensing bodies should not introduce regulations to prohibit pharmaceutically assisted suicide. This observation appears to be supported by the responses to statement 8, in that a higher proportion of pharmacists than students (67.9% and 49.3%, respectively) believed that drugs are an appropriate means to accomplish assisted suicide. Again, a larger proportion of students than pharmacists (45.8% and 24.2%, respectively) were uncertain whether licensing bodies should regulate against using drugs in assisted suicide. This result could be due to the students' uncertainty about the role of licensing bodies.

The χ^2 tests showed that the responses for statements 4 and 6 were statistically the same for students and pharmacists. The majority of both students (85.3%) and pharmacists (79.8%) agreed that the physician should not decide alone to assist a patient to die (statement 4).

For statement 6, that a pharmacist has a professional obligation to not dispense a drug if he or she knows that it will be used by a physician to end a patient's life, the pharmacists' responses in the 3 categories were similar (33.2% agreed, 35.3% were uncertain, and 31.6% disagreed). Among the students, 37.8% agreed and 21.2% disagreed with this statement, and 41.0% were uncertain.

It is of interest that among the 62 pharmacists who believed that a pharmacist has a professional obligation to not dispense a drug intended for assisted suicide, 22 (35%) indicated that they would want to know if a prescription order that they had dispensed was to be used for that purpose, 27 (44%) believed that prescription drugs are an appropriate means to accomplish physician-assisted suicide, and 24 (39%) were not in favour of licensing bodies banning pharmaceutically assisted suicide.

Factors Contributing to Responses

The responses from the students surveyed in 1998 and the pharmacists were further analyzed to determine if level of religious conviction, sex, and class or graduation year were contributory factors. The χ^2 tests indicated that sex and class or graduation year were not contributory factors (p > 0.05). However, level of religious conviction was significantly associated with responses to statements 1, 2, 3, 8, and 9 for both students surveyed in 1998 and pharmacists and with responses to statements 4, 5, and 6 for pharmacists only. There was no significant association between



level of religious conviction and the responses of students and pharmacists to statement 7.

The one-tailed *t*-test indicated that the proportions of both students and pharmacists with a high level of religious conviction who disagreed with ending one's own life (statements 1 and 2), with a health-care professional ending a patient's life (statement 3), and with the use of prescription drugs for assisted suicide (statement 8) were significantly higher than those of respondents with a low level of religious conviction who disagreed with these concepts. However, a significantly higher proportion of both students and pharmacists with a low level of religious conviction agreed that licensing bodies should not set policy against pharmaceutically assisted suicide (statement 9).

A greater proportion of pharmacists with a high level of religious conviction agreed that the decision to proceed with assisted suicide should not be made by a physician alone (statement 4), that the dispensing pharmacist should be informed in a case of assisted suicide (statement 5), and that it is the professional obligation of the pharmacist to not knowingly dispense a drug intended for physician-assisted suicide (statement 6).

DISCUSSION

In general, the pharmacists in both this study and that of Rupp and Isenhower¹ agreed that terminally ill patients are sometimes justified in ending their own lives, that the assistance of health-care professionals in a patient's death is appropriate, that it is inappropriate to involve a pharmacist in assisted suicide without his or her knowledge, and that prescription drugs are an appropriate means to accomplish assisted suicide. Similarly, both studies showed that pharmacists with a high level of religious conviction were more critical towards assisted suicide.

Students surveyed in 1998 who had a high level of religious conviction also had a more negative attitude towards assisted suicide. In addition, students surveyed in 1998 were significantly more uncertain than pharmacists about a patient's right to die (statements 1 and 2), the appropriateness of a health-care professional's involvement in assisted suicide (statement 3), the use of prescription drugs to accomplish physician-assisted suicide (statement 8), and regulating against pharmaceutically assisted suicide (statement 9).

Dr Jack Kevorkian's well-publicized cases in the United States in 1990 drew the public in that country into the debate about physician participation in a patient's suicide.³ In January 1997, the US Supreme Court heard 2 appeal cases from Washington and New

York, *Washington* v. *Glucksberg* and *Vocco* v. *Quill*, to decide whether to uphold the state laws banning physician-assisted suicide.⁴ The ruling was in favour of the states. As a result, Oregon is the only state with a *Death with Dignity Act* permitting assisted suicide by prescription medications. Recently, 4 articles on the issue of physician-assisted suicide, specifically written for American pharmacists, were published.⁴⁷

In Canada the case of Sue Rodriguez generated a great deal of interest in assisted suicide on the part of the public and the media. A special committee of the Senate of Canada was appointed to investigate euthanasia and assisted suicide in 1994, shortly after Ms Rodriguez's death. The committee's final report, issued in June 1995, included the recommendation that the prohibition against assisted suicide be maintained.⁸ Therefore, everyone who aids or assists a person to commit suicide is guilty of an indictable offence under the Canadian Criminal Code.

To assist physicians to formulate a policy position on euthanasia and physician-assisted suicide, a series of 5 articles was published by the Committee on Ethics of the Canadian Medical Association. The final position of the Canadian Medical Association, taken in 1995, was not to support euthanasia and assisted suicide. In its presentation to the special Senate committee, the Canadian Pharmaceutical Association stated that it could not strongly support the legalization of euthanasia and assisted suicide.

In most cases of physician-assisted suicide, prescription drugs have been used to hasten death. Therefore, pharmacists have a great stake in the issue. It would be in the best interest of pharmacists to take a more active role in addressing the ethical, legal, and professional issues associated with assisted suicide. The high proportion of uncertain responses to several of the 9 statements in our questionnaire showed that many pharmacists and future pharmacists were unsure of what positions they should and would take on these issues.

Although some believe that assisted suicide directly contradicts the practice of pharmaceutical care, ¹⁵ Dixon and Kier¹⁶ brilliantly linked the philosophy and practice of pharmaceutical care to the 4 elements of mercy, which form the foundation of assisted suicide. They noted that to identify, resolve, and prevent drugrelated problems and to improve quality of life in providing pharmaceutical care, the pharmacist must know the patient (seeing the face of the patient as the first element of mercy), respond to the patient (focussing on the patient as the second element of



mercy), account for the quality of the patient's care (assuming responsibility as the third element of mercy), and accept new and unexpected challenges (the rupture of the ordinary as the fourth element of mercy). Accordingly, the authors stated that only when the best efforts to provide pharmaceutical care have failed, meaning that mercy has also failed, should a pharmacist assist in facilitating death.

The decision to actively participate in helping a person to die is not expected to be easy, especially for health-care providers such as pharmacists, whose traditional role is to help to prolong life. The results of this study indicate that level of religious conviction is an important factor in determining whether a pharmacist or future pharmacist will take part in assisted suicide. However, as one of the respondents commented, each decision will likely be made individually, as each case is likely to be different.

Limitations

This study had certain limitations. First, the statements were worded in negative form, so there may have been confusion in interpretation. Second, the manner in which the questionnaire was distributed to students and pharmacists was not identical: questionnaires were presented to students during class time, whereas pharmacists received their questionnaires by mail. This difference may have introduced bias. Third, there was no differentiation between hospital pharmacists and community pharmacists.

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