

A survey of Canadian and Australian pharmacists' stigma of suicide

Andrea L Murphy^{1,2} , Claire L O'Reilly³, Randa Ataya¹, Steve P Doucette⁴, Ruth Martin-Misener⁵, Alan Rosen^{6,7} and David M Gardner^{1,2}

Abstract

Background: There is limited information available regarding community pharmacists' stigma of suicide. Pharmacists regularly interact with people at risk of suicide and stigmatizing attitudes may impact care.

Objective: To measure community pharmacists' stigma of suicide.

Method: Pharmacists in Canada and Australia completed an online survey with the Stigma of Suicide Scale–Short Form. Data were analysed descriptively and with univariate and multivariate analyses.

Results: Three hundred and ninety-six pharmacists returned completed surveys (Canada $n=235$; Australia $n=161$; female 70%; mean age = 38.6 ± 12.7 years). The rate of endorsement of stigmatizing terms was low overall. Canadian and Australian pharmacists differed ($p < 0.05$) for several variables (e.g. age, friend or relative with a mental illness, training in mental health crisis). Pharmacists without someone close to them living with a mental illness were more likely to strongly agree/agree with words describing those who die by suicide as pathetic, stupid, irresponsible, and cowardly. Those without a personal diagnosis of mental illness strongly agreed/agreed with the terms immoral, irresponsible, vengeful, and cowardly. More Australian pharmacists strongly agreed/agreed that people who die by suicide are irresponsible, cowardly, and disconnected. Independent variables associated with a higher stigma were male sex, Australian, and negative perceptions about suicide preventability.

Conclusion: Community pharmacists frequently interact with people at risk of suicide and generally have low agreement of stigmatizing terms for people who die by suicide. Research should focus on whether approaches such as contact-based education can minimize existing stigma.

Keywords

Stigma, suicide, pharmacists, surveys and questionnaires

Date received: 6 September 2018; accepted: 26 November 2018

Introduction

Community pharmacists, typically working in retail environments, are readily accessible to the public.^{1,2} Pharmacists reportedly see patients 1.5–10 times more often than other primary care providers³ and routinely care for people considered to be at risk of suicide.^{4,5}

Self-poisoning, including the use of pharmaceuticals,^{6–11} is common in suicide attempts, thereby creating an inextricable link among pharmacists and the public in suicide care. Psychotropic medications are commonly a primary means of deliberate self-poisoning, particularly in urban areas as demonstrated by a Canadian-based observational study in one province that reported over 60% of deaths by suicide to be a result of psychotropic medication overdose and over 20% of deaths to be a result of over-the-counter medications.¹²

There is limited evidence to describe the frequency and nature of pharmacists' interactions with those requiring care

¹College of Pharmacy, Dalhousie University, Halifax, NS, Canada

²Department of Psychiatry, Dalhousie University, Halifax, NS, Canada

³School of Pharmacy, The University of Sydney, Sydney, NSW, Australia

⁴Research Methods Unit, Nova Scotia Health Authority, Halifax, NS, Canada

⁵School of Nursing, Dalhousie University, Halifax, NS, Canada

⁶Brain and Mind Centre, The University of Sydney, Camperdown, NSW, Australia

⁷Illawarra Institute for Mental Health, University of Wollongong, Wollongong, NSW, Australia

Corresponding author:

Andrea L Murphy, College of Pharmacy, Dalhousie University, 5968 College Street, PO Box 15000, Halifax, NS B3H 4R2, Canada.

Email: andrea.murphy@dal.ca



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons

Attribution-NonCommercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

for suicidal thoughts or actions.⁴ From the existing literature, people seeking care in a crisis may experience screening, triaging, and gatekeeping of the medication supply by pharmacists.⁴ There is limited information available regarding whether those with a history of suicidal thoughts, plans, and attempts experience stigma in the community pharmacy context. Health-related stigma is defined as ‘... a social process, experienced or anticipated, characterized by exclusion, rejection, blame or devaluation that results from experience, perception or reasonable anticipation of an adverse social judgement about a person or a group’.¹³ For patients with lived experience of mental illness and suicidal thoughts, plans, and attempts, stigma experiences can act as a barrier to accessing care, leading to poorer health outcomes.^{14–16} People with mental illness who experience stigma from pharmacists are impacted and can change how they interact with pharmacists over time, including switching pharmacies,¹⁷ which can lead to significant consequences for patients (e.g. inconvenience, emotional responses) and disrupt continuity of pharmacy care. The genesis of stigma by pharmacy staff towards people with mental illness is multifactorial,^{18–21} yet suicide-related stigma specifically is inadequately described compared to other groups, including members of the public.²² Factors contributing to stigma by pharmacy staff towards those with suicidal thoughts, plans, and attempts are likely complex and may include variables such as fear or perceived powerlessness by pharmacists required to help in a crisis situation.²³ Given the potential negative impact of stigmatizing attitudes from health care professionals, including pharmacists, toward patients with experience of suicidal thoughts, plans, and attempts, it is important to measure pharmacists’ stigma of suicide. The purpose of this study was to explore the stigma of suicide by pharmacists through a self-administered online survey using the Stigma of Suicide Scale–Short Form (SOSS-SF).²⁴

Methods

Survey design and deployment

The survey was self-administered, online, and available through a link hosted on Dalhousie University’s Opinio site (<https://surveys.dal.ca>). The survey consisted of four sections. Section 18 Tw -1 Uni(a J0.01 Tw 6.5 ey)1(using)1(tharmacy staf)18(sor rea. stu0lj/T1_3 1.ca).)18(Thaw 6.5 i0 0 10 4ag-1 Uni.a8y.

independent factors (e.g. sex) on potentially relevant dependent variables (e.g. proportion who answer agree/strongly agree on a specific survey item). The latter analyses were intended to be hypotheses generating.

Data analysis

Characteristics of Canadian and Australian pharmacist respondents were described. Continuous data were summarized as means and standard deviation and categorical data were presented as frequencies with percentages. Comparisons between countries were made using Fisher's exact test and t-test as appropriate. The association between SOSS 16 items (8 stigma, 4 isolation/depression, and 4 glorification/normalization) and variables deemed to represent respondents' 'closeness to mental illness and suicide' was shown as the proportion agreeing with each of the 16 items. Respondents' closeness to mental illness and suicide was defined as having a personal diagnosis of mental illness, a person close to them living with mental illness, a person close to them attempted or died by suicide, and/or a patient who they care for had died by suicide. Comparisons were made using Fisher's exact test. The proportion agreeing with the 16 individual items was also compared by country. The stigma subscore was calculated as the mean score of the eight (i.e. pathetic, shallow, immoral, an embarrassment, irresponsible, stupid, cowardly, and vengeful) 5-point Likert-type scale (*strongly disagree* (1) to *strongly agree* (5)) stigma items, and a multivariate linear regression model was used to determine the relationship between variables potentially related to stigma scores. These variables include age, sex, country, location (rural, urban), years of patient care experience as a pharmacist, mental health crisis training (yes, no), length of time since mental health crisis training, preparedness to directly help a person in a suicidal crisis, number of times interacting with a person at risk of suicide (none vs 1–2 times, and none vs more than twice), patient who died by suicide, diagnosed with a mental illness, someone close to the respondent lives with a mental illness, someone close to the respondent died from suicide, permissive attitudes towards suicide, perceived preventability of suicide, and two assessment activity variables (determined thoughts of suicide with or without plan, intentions, and means vs not asking any questions).

Items from the survey on the ATTS Scale were combined to create the variables for permissiveness (11 items)²⁶ and preventability (7 items) of suicide. *Assumptions of the linear model were assessed* via standardized residual and leverage plots. All analyses were performed using SAS, version 9.4 (SAS Institute, Cary, North Carolina) with an α level of 0.05.

Ethics

The research study was approved by both Dalhousie University (# 2016-3832) and The University of Sydney (#

2016/464) research ethics boards. For both countries, completion and submission of the survey indicated consenting to participation.

Results

A total of 396 pharmacists' respondents returned completed surveys, with 235 from pharmacists in Canada and 161 from Australia. Most respondents were female (70% overall; 71% Canada; 68% Australia). The mean age of respondents overall was 38.6 years (SD=12.7). Significant differences existed in terms of age, years of experience in community pharmacy practice, geographic location, position in the pharmacy, whether a close friend or relative lives with a mental illness, and previous training in mental health crisis (all $p < 0.05$). The majority of pharmacists interacted with someone at risk of suicide at least once (84.3% Canadian; 85.1% Australian), with 20.2% of Canadian and 16.2% of Australian pharmacists interacting with people at risk at least 6 or more times (Table 1).

SOSS and closeness to mental illness or suicide

Pharmacists without someone close to them living with a mental illness were more likely to strongly agree/agree with words describing those who die by suicide as pathetic ($p=0.008$), stupid ($p=0.007$), irresponsible ($p=0.01$), and cowardly ($p=0.01$) (Table 2). Those without a personal diagnosis of mental illness strongly agreed/agreed with immoral ($p=0.01$), irresponsible ($p=0.001$), cowardly ($p=0.02$), and vengeful ($p=0.04$). Five percent of pharmacists without patients dying by suicide endorsed it as immoral, but none (0%) endorsed the word immoral if patients they cared for had died by suicide ($p=0.02$). Most differences that were statistically significant were found with the stigma items compared to the other SOSS-SF factors (i.e. isolation/depression, glorification/normalization) (Table 2).

More Australian than Canadian pharmacists endorsed that those who die by suicide are cowardly ($p=0.02$), irresponsible ($p=0.002$), and disconnected ($p=0.0003$) (Table 3). Pharmacists from both countries were more likely to agree/strongly agree with the SOSS-SF scale items for isolation/depression (i.e. lonely, isolated, lost, disconnected) versus stigma and glorification/normalization factors (Table 3).

In the multivariate regression analysis (Table 4), male sex was associated with an increase in stigma scores of 1.89 points ($p=0.001$). Being a Canadian pharmacist was associated with a decrease in stigma score of 1.54 points compared to Australians ($p=0.011$). For each unit increase in the preventability score, there was a drop of 0.3 on the stigma score inferring that those with more preventable views of suicide are less likely to endorse stigmatizing terms ($p=0.0005$).

Table 1. Characteristics of Australian and Canadian pharmacist respondents.

	Overall	Canada	Australia	p value
Sample size	396	235	161	
Means \pm SD				
Age	38.6 \pm 12.7	42.2 \pm 12.2	33.3 \pm 11.7	<0.0001
Years of experience in community pharmacy	14.1 (12.4)	17.0 (12.5)	9.9 (11.1)	<0.0001
Frequencies				
Sex				
Female	276 (69.7%)	167 (71.1%)	109 (67.7%)	0.4
Male	119 (30.1%)	68 (28.9%)	51 (31.7%)	
Other	1 (0.3%)	0 (0%)	1 (0.6%)	
Currently practicing as a community pharmacist	343 (86.6%)	195 (83%)	148 (91.9%)	0.01
Geographic location ^a				
Remote	6 (1.5%)	2 (0.9%)	4 (2.5%)	0.02
Rural	105 (26.5%)	73 (31.1%)	32 (19.9%)	
Urban	285 (72%)	160 (68.1%)	125 (77.6%)	
Position in the pharmacy				
Pharmacist employee	235 (59.3%)	150 (63.8%)	85 (52.8%)	0.03
Pharmacist manager	92 (23.2%)	53 (22.6%)	39 (24.2%)	
Pharmacist owner	69 (17.4%)	32 (13.6%)	37 (23%)	
Ever diagnosed with a mental illness	110 (29.6%)	71 (32.7%)	39 (25.3%)	0.13
Close friend or relative lives with a mental illness	267 (72%)	166 (76.5%)	101 (65.6%)	0.03
Close friend or relative has attempted suicide or died from suicide	144 (38.8%)	86 (39.6%)	58 (37.7%)	0.75
Had training in mental health crisis	73 (18.4%)	27 (11.5%)	46 (28.6%)	<0.0001
Number of times you have interacted with a person at risk of suicide				
0	61 (15.4%)	37 (15.7%)	24 (14.9%)	0.38
1–2	159 (40.2%)	88 (37.4%)	71 (44.1%)	
3–5	103 (26%)	63 (26.8%)	40 (24.8%)	
6–10	34 (8.6%)	25 (10.6%)	9 (5.6%)	
>10	39 (9.8%)	22 (9.4%)	17 (10.6%)	

^aGeographic location was determined by the respondent and not defined in the survey.

Discussion

To our knowledge, this is the first study investigating pharmacists' stigma of suicide. This is important due to the accessibility of pharmacists and frequent contact pharmacists report having with people with suicidal thoughts, plans, and suicide attempts.

People with lived experience of mental illness report stigma in all facets of life,²⁷ including in health care environments. Stigma is a significant barrier to care with approximately one in five people with mental illness experiencing issues with help-seeking for their condition due to shame/embarrassment and fear of negative social judgements.²⁷ Stigma in community pharmacists' practice for those with lived experience of mental illness (e.g. depression, schizophrenia) has previously been reported and can impact care.^{28–32} Black et al.,³³ reported that 23% of patients living with mental illness in one Canadian province experienced some form of stigma or discrimination from community pharmacists, and as a result, approximately one in four people indicated they did not feel comfortable speaking to a pharmacist about their mental health medication.³³ Adding to the complexity of this phenomenon is that the experience of stigma can contribute to feelings of suicidality.³⁴

Stigmatizing attitudes, specifically towards those with suicidal thoughts and behaviours, create barriers to help-seeking.³⁵ People who have attempted suicide report that the most commonly endorsed stereotypes they experience include immortality, selfishness, malingering, emotional weakness, attention-seeking, and incompetence.²² They also report fear, blame, and anger from others for attempting suicide, and from health care professionals, they experience misunderstandings, overreactions, lack of patience, and lack of empathy.²² Overall, pharmacist respondents in our survey in Canada and Australia have a low rate of agreement with stigma items in the SOSS-SF. However, there was some agreement for describing people who die by suicide with stigmatizing terms (e.g. pathetic, stupid, irresponsible, cowardly, immoral). This occurred more often in those respondents without a close friend or relative living who had experience with mental illness or in those without a personal diagnosis of mental illness. Given these findings, closeness to mental illness and suicide could be important to reducing suicide stigma. Successful approaches in reducing stigma towards those with lived experience of mental illness during pharmacy education have included contact-based approaches, in which a person with lived experience of mental illness and

Table 2. Stigma of Suicide Scale and pharmacists' closeness to mental illness or suicide.

	Someone close to you lives with mental illness			Have you been diagnosed with a mental illness			Someone close to you attempted or died by suicide			Patients that you cared for died from suicide		
	No (n = 104)	Yes (n = 267)	P value	No (n = 261)	Yes (n = 110)	P value	No (n = 227)	Yes (n = 144)	P value	No (n = 161)	Yes (n = 104)	P value
Stigma items												
Pathetic	5 (4.8%)	1 (0.4%)	0.008	6 (2.3%)	0 (0.0%)	0.19	4 (1.8%)	2 (1.4%)	1	4 (2.5%)	0 (0.0%)	0.16
Shallow	4 (3.8%)	2 (0.7%)	0.05	6 (2.3%)	0 (0.0%)	0.19	2 (0.9%)	4 (2.8%)	0.21	3 (1.9%)	1 (1.0%)	1
Immoral	7 (6.7%)	6 (2.3%)	0.06	13 (5.0%)	0 (0.0%)	0.01	10 (4.4%)	3 (2.1%)	0.39	8 (5%)	0 (0.0%)	0.02
An embarrassment	3 (2.9%)	1 (0.4%)	0.07	4 (1.5%)	0 (0.0%)	0.32	4 (1.8%)	0 (0%)	0.16	2 (1.2%)	1 (1.0%)	1
Irresponsible	13 (12.5%)	13 (4.9%)	0.01	25 (9.6%)	1 (0.9%)	0.001	19 (8.4%)	7 (4.9%)	0.22	11 (6.8%)	8 (7.7%)	0.81
Stupid	6 (5.8%)	2 (0.7%)	0.007	8 (3.1%)	0 (0.0%)	0.11	6 (2.6%)	2 (1.4%)	0.49	5 (3.1%)	1 (1%)	0.41
Cowardly	10 (9.6%)	8 (3.0%)	0.01	17 (6.6%)	1 (0.9%)	0.02	13 (5.8%)	5 (3.5%)	0.46	7 (4.4%)	4 (3.9%)	1
Vengeful	5 (4.9%)	5 (1.9%)	0.15	10 (3.9%)	0 (0.0%)	0.04	5 (2.2%)	5 (3.5%)	0.52	3 (1.9%)	4 (3.9%)	0.44
Isolation/depression items												
Lonely	52 (50.0%)	126 (47.5%)	0.73	123 (47.5%)	55 (50.0%)	0.73	115 (50.9%)	63 (44.1%)	0.24	84 (52.2%)	44 (42.7%)	0.16
Isolated	58 (56.3%)	158 (59.4%)	0.64	153 (59.1%)	63 (57.3%)	0.82	144 (63.4%)	72 (50.7%)	0.02	98 (61.3%)	60 (57.7%)	0.61
Lost	72 (69.2%)	181 (68.0%)	0.9	182 (70.0%)	71 (64.5%)	0.33	162 (71.7%)	91 (63.2%)	0.11	108 (67.1%)	71 (68.9%)	0.79
Disconnected	65 (62.5%)	173 (65.0%)	0.72	166 (63.8%)	72 (65.5%)	0.81	151 (66.8%)	87 (60.4%)	0.22	106 (66.3%)	69 (66.3%)	1
Glorification/normalization items												
Strong	14 (13.5%)	31 (11.6%)	0.6	32 (12.3%)	13 (11.8%)	1	28 (12.3%)	17 (11.8%)	1	18 (11.2%)	14 (13.5%)	0.57
Brave	14 (13.5%)	29 (10.9%)	0.48	24 (9.2%)	19 (17.3%)	0.03	28 (12.4%)	15 (10.4%)	0.62	20 (12.5%)	11 (10.6%)	0.7
Noble	4 (3.8%)	6 (2.2%)	0.48	6 (2.3%)	4 (3.6%)	0.49	7 (3.1%)	3 (2.1%)	0.75	3 (1.9%)	5 (4.8%)	0.27
Dedicated	12 (11.7%)	21 (7.9%)	0.31	22 (8.5%)	11 (10.0%)	0.69	22 (9.7%)	11 (7.6%)	0.58	13 (8.1%)	11 (10.6%)	0.52

p values <0.10 are shown in bold.

Table 3. Stigma of Suicide Scale–Short Form Responses by Australian and Canadian Pharmacists.

In general people who die by suicide are (% strongly agree/agree)	Canada (n=235)	Australia (n=161)	p value
Stigma items			
Pathetic	2 (0.9%)	4 (2.5%)	0.23
Shallow	3 (1.3%)	4 (2.5%)	0.45
Immoral	5 (2.1%)	8 (5.0%)	0.15
An embarrassment	4 (1.7%)	1 (0.6%)	0.65
Irresponsible	8 (3.4%)	19 (11.8%)	0.002
Stupid	3 (1.3%)	5 (3.1%)	0.28
Cowardly	6 (2.6%)	13 (8.2%)	0.02
Vengeful	5 (2.1%)	7 (4.4%)	0.24
Isolation/depression items			
Lonely	109 (46.4%)	88 (55.0%)	0.1
Isolated	133 (56.4%)	105 (66.0%)	0.06
Lost	155 (66.0%)	120 (74.5%)	0.08
Disconnected	135 (57.4%)	121 (75.2%)	0.0003
Glorification/normalization items			
Strong	24 (10.2%)	23 (14.3%)	0.27
Brave	30 (12.8%)	18 (11.2%)	0.75
Noble	7 (3.0%)	3 (1.9%)	0.75
Dedicated	18 (7.6%)	16 (10%)	0.47

p values <0.10 are shown in bold.

addictions is directly involved in the education and training of students.^{36,37} This approach, with exposure to people with experience of suicide in the clinical setting, may also be responsible for decreasing stigmatizing attitudes in medical students.³⁸ Contact-based education with survivors of suicide may therefore be promising for pharmacists and pharmacy students. However, best practices for this approach are not known, and given the potential for significant stigma and distress experienced by survivors of suicide and suicide attempts,^{39,40} more research in this area is required. Other approaches such as including mental health first aid (MHFA) training in pharmacy curricula may also be beneficial. Implementation of MHFA training programmes can decrease social distance measures of pharmacy students.¹⁹ In a recent study by El-Den et al.,⁴¹ senior pharmacy students had high levels of self-reported confidence regarding their ability to encourage someone to seek the help of another professional upon completion of MHFA. However, self-reports may be incongruent with behaviours as fewer than half of the participants acted appropriately (i.e. referred the patient, did not leave the patient alone) in a simulated patient exercise.⁴¹ In our study, more Australian pharmacists had training in mental health care crisis compared to Canadians, yet the overall number of respondents with training was low (Australia, 28.6% vs Canada, 11.5%). Despite training, some stigmatizing views were more prominent in the Australian respondents. For example, more Australian versus Canadian pharmacists (11.8% vs 3.4%) strongly agreed/agreed with the descriptor that people who die by suicide are irresponsible.

The Australian pharmacists' rate is comparable to results from a survey of the Canadian public in which 14.3% strongly agreed/agreed that those who die by suicide are irresponsible.⁴² These rates are lower than a sample of Australian medical students in which 23.9% agreed that those who die by suicide are irresponsible.³⁸ Generally, most pharmacists rate their abilities to intervene and assess people with thoughts, plans, and attempts of suicide poorly in both Canada and Australia as demonstrated by previous studies.^{43–45} Suicide knowledge gaps have also been identified in European pharmacists.⁴⁶

An approach to suicide prevention designed by the European Alliance Against Depression (EAAD) has led to international recommendations and a global call for action,⁴⁷ citing the need for holistic multi-level intervention strategies combining all available programmes and the collaboration of people in many sectors, including primary, specialized and hospital health care, community, self-support, digital health, and social media, with a restriction of access to lethal means such as firearms, medication, pesticides, and erecting barriers at jumping sites.^{47–50} Initiatives such as those by the EAAD place European countries ahead in implementing and evaluating suicide prevention programmes, including those that also target pharmacists. An implementation of the EAAD model in a town in Hungary⁵¹ included the delivery of educational packages developed for community facilitators to pharmacists and other individuals (e.g. hotline workers, district nurses, police people, nurses, clerics, counsellors, teachers). Although it is difficult to determine the extent to which educating pharmacists contributed to the overall effects size in reduction of suicides, a significant reduction in suicides was found. Targeted education programmes for pharmacists and pharmacy staff may assist in early intervention for those experiencing thoughts or behaviours towards suicide.^{15,16,19,28} In our results, male gender also impacted stigma scores. Gender differences regarding stigma of suicide have been previously reported with men endorsing more stigmatizing factors on the SOSS-SF.^{42,52} Whether education and training require different approaches based on sex is unknown, and the majority of studies have not reported the impact of education and training on outcomes such as knowledge and attitudes by sex.

Strengths and limitations

This is the first study of its kind to use the SOSS-SF to explore stigma by pharmacists. There is good convergent and discriminant validity and reliability of the SOSS-SF.^{24,52} This is also the first study to compare pharmacists' stigma of suicide from two countries.

Direct observations of practices and behaviours were not observed as data were collected from self-administered surveys. Volunteer bias is possible with the potential that the sample represents participants with an interest, history, or

Table 4. Multivariate regression analysis of pharmacists' stigma scores towards people who die by suicide.

Independent variables	Stigma subscore of eight stigma items describing people who die by suicide		
	Estimate	Standard error	p value
Age	0.003	0.063	0.96
Male sex	1.89	0.57	0.001
Canada vs Australia	-1.54	0.602	0.011
Urban vs rural	0.5	0.58	0.38
Years of patient care experience as a pharmacist	0.037	0.063	0.56
Mental health crisis training (yes vs no)	-0.81	0.94	0.39
Length of time since mental health crisis training	0.013	0.023	0.56
Prepared to directly help a person in a suicidal crisis	-0.07	0.64	0.91
No. of times interacting with a person at risk of suicide (1–2 vs 0)	0.091	0.87	0.92
No. of times interacting with a person at risk of suicide (>2 vs 0)	-1.39	0.95	0.15
Patient cared for died from suicide	0.1	0.62	0.87
Diagnosed with mental illness	-0.95	0.59	0.11
Someone close to respondent lives with mental illness	-0.94	0.62	0.13
Someone close to respondent died from suicide	-0.37	0.55	0.5
Permissiveness ^a	-0.065	0.043	0.13
Preventability ^a	-0.3	0.086	0.0005
Assessment 1 (determined thoughts of suicide were present and whether the patient had any of the following: plan, intent, and means vs not asking any questions)	-0.29	0.73	0.69
Assessment 2 (determined thoughts of suicide were present but did not ask about a plan, intent, and means vs not asking any questions)	-0.23	0.76	0.77

^aItems from the Attitudes Towards Suicide Scale were combined to create variable for permissiveness (11 items)²⁶ and preventability (7 items).

experience of caring for people with suicidality; therefore, the rigour of external validity may be in question.

While the target population in 2017 has been reported to be around 26,472 community pharmacists in Canada⁵³ and approximately 28,128 general registrants in Australia,⁵⁴ the number of potential participants was expected to be limited by the low reach of e-surveys and their modest response rates as shown with other disciplines and members of the public.^{55,56}

The stigma subscore was calculated as the mean score of the eight stigma items, and multivariate linear regression model was used to determine characteristics associated with larger stigma scores. This approach could be criticized for not recognizing important distinctions and meaning that could be attributed to individual words (e.g. immoral vs vengeful) included in the stigma factors of the SOSS-SF.

Framing effects are a potential concern for the survey.⁵⁷ For example, the SOSS-SF section of the survey is preceded by the attitudes towards stigma items, which could have influenced participants' answers in the following sections.

Conclusion

Pharmacists interact with people at risk of suicide and differ in their agreement regarding stigmatizing terms used to describe people who die by suicide. Personal and professional experience with mental illness and suicide may impact their use of stigmatizing terms. Opportunities for contact-based

education and training on suicide, currently minimal in Canada and Australia, should be explored concurrent with research that examines the impact of these programmes on pharmacists' behaviours in practice.

Acknowledgements

We would like to acknowledge Drs Fred Burge, Timothy F Chen, Stanley Kutcher, Luis Salvador-Carulla, Ms Dani Himmelman, and Ms Stephanie Webster for the contributions to the successfully funded Dalhousie Pharmacy Endowment Fund (DPEF) grant.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Dalhousie Pharmacy Endowment Fund (DPEF) and the Pharmacy Council of New South Wales. The initial meetings for A.L.M. and D.M.G. to collaborate with Australian colleagues to prepare the DPEF grant proposal were supported by the Drug Evaluation Alliance of Nova Scotia through sabbatical support for A.L.M. and D.M.G.

Informed consent

Written informed consent was obtained from all subjects before the study.

Trial registration

Not applicable as the study was not a clinical trial.

ORCID iD

Andrea L Murphy  <https://orcid.org/0000-0001-5093-6681>

References

- Rubio-Valera M, Chen TF and O'Reilly CL. New roles for pharmacists in community mental health care: a narrative review. *Int J Environ Res Public Health* 2014; 11(10): 10967–10990.
- Law MR, Heard D, Fisher J, et al. The geographic accessibility of pharmacies in Nova Scotia. *Can Pharm J* 2013; 146(1): 39–46.
- Tsuyuki RT, Beahm NP, Okada H, et al. Pharmacists as accessible primary health care providers: review of the evidence. *Can Pharm J* 2018; 151(1): 4–5.
- Murphy AL, Hillier K, Ataya R, et al. A scoping review of community pharmacists and patients at risk of suicide. *Can Pharm J* 2017; 150(6): 366–379.
- Luoma JB, Martin CE and Pearson JL. Contact with mental health and primary care providers before suicide: a review of the evidence. *Am J Psychiatry* 2002; 159(6): 909–916.
- Navaneelan T. Suicide rates: an overview. Statistics Canada (Catalogue no. 82-624-X:1-11), <http://www.statcan.gc.ca/pub/82-624-x/2012001/article/11696-eng.pdf> (2012, accessed 10 March 2018).
- Fleischmann A, Bertolote JM, DeLeo D, et al. Characteristics of attempted suicides seen in emergency-care settings of general hospitals in eight low- and middle-income countries. *Psychol Med* 2005; 35(10): 1467–1474.
- Gunnell D, Bennewith O, Peters TJ, et al. Do patients who self-harm consult their general practitioner soon after hospital discharge. *Soc Psychiatry Psychiatr Epidemiol* 2002; 37(12): 599–602.
- Tuan NV, Dalman C, Thiem NV, et al. Suicide attempts by poisoning in Hanoi, Vietnam: methods used, mental problems, and history of mental health care. *Arch Suicide Res* 2009; 13(4): 368–377.
- National Trauma Registry Analytic Bulletin. *Hospitalizations due to suicide attempts and self-inflicted injury in Canada, 2001–2002*. Toronto, ON, Canada: Canadian Institute for Health Information, 2004, http://secure.cihi.ca/free_products/ntr_suicide_2004_e.pdf
- Benson T, Corry C, O'Neill S, et al. Use of prescription medication by individuals who died by suicide in Northern Ireland. *Arch Suicide Res* 2017; 22: 139–152.
- Sinyor M, Howlett A, Cheung AH, et al. Substances used in completed suicide by overdose in Toronto: an observational study of coroner's data. *Can J Psychiatry* 2012; 57(3): 184–191.
- Weiss MG, Ramakrishna J and Somma D. Health-related stigma: rethinking concepts and interventions. *Psychol Health Med* 2006; 11(3): 277–287.
- Batterham PJ, Calear AL and Christensen H. Correlates of suicide stigma and suicide literacy in the community. *Suicide Life Threat Behav* 2013; 43(4): 406–417.
- Hom MA, Stanley IH, Podlogar MC, et al. 'Are you having thoughts of suicide?' Examining experiences with disclosing and denying suicidal ideation. *J Clin Psychol* 2017; 73(10): 1382–1392.
- Knox K, Fejzic J, Mey A, et al. Mental health consumer and caregiver perceptions of stigma in Australian community pharmacies. *Int J Soc Psychiatry* 2014; 60(6): 533–543.
- Murphy AL, Martin-Misener R, Kutcher SP, et al. From personal crisis care to convenience shopping: an interpretive description of the experiences of people with mental illness and addictions in community pharmacies. *BMC Health Serv Res* 2016; 16(1): 569.
- O'Reilly CL, Bell JS, Kelly PJ, et al. Exploring the relationship between mental health stigma, knowledge and provision of pharmacy services for consumers with schizophrenia. *Res Social Adm Pharm* 2015; 11(3): e101–e119.
- O'Reilly CL, Bell JS, Kelly PJ, et al. Impact of mental health first aid training on pharmacy students' knowledge, attitudes and self-reported behaviour: a controlled trial. *Aust N Z J Psychiatry* 2011; 45(7): 549–557.
- O'Reilly CL, Bell JS and Chen TF. Pharmacists' beliefs about treatments and outcomes of mental disorders: a mental health literacy survey. *Aust N Z J Psychiatry* 2010; 44(12): 1089–1096.
- O'Reilly CL, Bell JS and Chen TF. Consumer-led mental health education for pharmacy students. *Am J Pharm Educ* 2010; 74(9): 167.
- Sheehan LL, Corrigan PW and Al-Khouja MA. Stakeholder perspectives on the stigma of suicide attempt survivors. *Crisis* 2017; 38(2): 73–81.
- Murphy AL, Ataya R, Himmelman D, et al. Community pharmacists' experiences and people at risk of suicide in Canada and Australia: a thematic analysis. *Soc Psychiatry Psychiatr Epidemiol*. Epub ahead of print 23 June 2018. DOI: 10.1007/s00127-018.
- Batterham PJ, Calear AL and Christensen H. The Stigma of Suicide Scale. Psychometric properties and correlates of the stigma of suicide. *Crisis* 2013; 34(1): 13–21.
- Renberg ES and Jacobsson L. Development of a questionnaire on attitudes towards suicide (ATTS) and its application in a Swedish population. *Suicide Life Threat Behav* 2003; 33(1): 52–64.
- Murphy AL, O'Reilly C, Martin-Misener R, et al. Community pharmacists' attitudes on suicide: a preliminary analysis with implications for medical assistance in dying. *Can Pharm J* 2017; 151: 17–23.
- Clement S, Schauman O, Graham T, et al. What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychol Med* 2015; 45(1): 11–27.
- Phokeo V, Sproule B and Raman-Wilms L. Community pharmacists' attitudes toward and professional interactions with users of psychiatric medication. *Psychiatr Serv* 2004; 55(12): 1434–1436.
- Scheerder G, De Coster I and Van Audenhove C. Pharmacists' role in depression care: a survey of attitudes, current practices, and barriers. *Psychiatr Serv* 2008; 59(10): 1155–1160.
- Liekens S, Smits T, Laekeman G, et al. Pharmaceutical care for people with depression: Belgian pharmacists' attitudes and perceived barriers. *Int J Clin Pharm* 2012; 34(3): 452–459.
- Rickles NM, Dube GL, McCarter A, et al. Relationship between attitudes toward mental illness and provision of pharmacy services. *J Am Pharm Assoc* 2010; 50(6): 704–713.

32. Bell JS, Aaltonen SE, Airaksinen MS, et al. Determinants of mental health stigma among pharmacy students in Australia, Belgium, Estonia, Finland, India and Latvia. *Int J Soc Psychiatry* 2010; 56(1): 3–14.
33. Black E, Murphy AL and Gardner DM. Community pharmacist services for people with mental illnesses: preferences, satisfaction, and stigma. *Psychiatr Serv* 2009; 60(8): 1123–1127.
34. Hamilton S, Pinfold V, Cotney J, et al. Qualitative analysis of mental health service users' reported experiences of discrimination. *Acta Psychiatr Scand* 2016; 134(Suppl. 446): 14–22.
35. Han J, Batterham PJ, Cleave AL, et al. Factors influencing professional help-seeking for suicidality. *Crisis* 2018; 39: 175–196.
36. Bell JS, Johns R, Rose G, et al. A comparative study of consumer participation in mental health pharmacy education. *Ann Pharmacother* 2006; 40(10): 1759–1765.
37. Patten SB, Remillard A, Phillips L, et al. Effectiveness of contact-based education for reducing mental illness-related stigma in pharmacy students. *BMC Med Educ* 2012; 12: 120–6920.
38. Chan WI, Batterham P, Christensen H, et al. Suicide literacy, suicide stigma and help-seeking intentions in Australian medical students. *Australas Psychiatry* 2014; 22(2): 132–139.
39. Corrigan PW, Sheehan L, Al-Khouja MA, et al. Insight into the stigma of suicide loss survivors: factor analyses of family stereotypes, prejudices, and discriminations. *Arch Suicide Res* 2018; 22(1): 57–66.
40. Scocco P, Preti A, Totaro S, et al. Stigma and psychological distress in suicide survivors. *J Psychosom Res* 2017; 94: 39–46.
41. El-Den S, Chen TF, Moles R, et al. Assessing mental health first aid skills using simulated patients: exploring observed behaviors. *Am J Pharm Educ* 2018; 82: 185–193.
42. Oliffe JL, Ogrodniczuk JS, Gordon SJ, et al. Stigma in male depression and suicide: a Canadian sex comparison study. *Community Ment Health J* 2016; 52(3): 302–310.
43. Leong C, Alessi-Severini S, Sareen J, et al. Community pharmacists' perspectives on dispensing medications with the potential for misuse, diversion, and intentional overdose: results of a province-wide survey of community pharmacists in Canada. *Subst Use Misuse* 2016; 51(13): 1724–1730.
44. Leong C, Sareen J, Enns MW, et al. Community pharmacy practice barriers in preventing drug misuse, divergence and overdose: a focus group study. *Healthc Q* 2015; 18(3): 28–33.
45. Kirschbaum M, Peterson H and Bridgman H. Mental health first aid training needs of Australian community pharmacists. *Curr Pharm Teach Learn* 2016; 8(3): 279–288.
46. Coppens E, Van AC, Iddi S., et al. Effectiveness of community facilitator training in improving knowledge, attitudes, and confidence in relation to depression and suicidal behavior: results of the OSPI-Europe intervention in four European countries. *J Affect Disord* 2014; 165: 142–150.
47. Zalsman G, Hawton K, Wasserman D, et al. Evidence-based national suicide prevention taskforce in Europe: a consensus position paper. *Eur Neuropsychopharmacol* 2017; 27(4): 418–421.
48. Hegerl U, Wittenburg L, Arensman E, et al. Optimizing suicide prevention programs and their implementation in Europe (OSPI Europe): an evidence-based multi-level approach. *BMC Public Health* 2009; 9: 428–2458.
49. Hegerl U, Rummel-Kluge C, Varnik A, et al. Alliances against depression – a community based approach to target depression and to prevent suicidal behaviour. *Neurosci Biobehav Rev* 2013; 37(10 Pt 1): 2404–2409.
50. Zalsman G, Hawton K, Wasserman D, et al. Suicide prevention strategies revisited: 10-year systematic review. *Lancet Psychiatry* 2016; 3(7): 646–659.
51. Szekely A, Konkoly Thege B, Mergl R, et al. How to decrease suicide rates in both genders? An effectiveness study of a community-based intervention (EAAD). *PLoS ONE* 2013; 8(9): e75081.
52. Williams CL, Cero I, Gauthier JM, et al. An examination of the latent factor structure and construct validity of the stigma of suicide scale-short form. *Death Stud* 2018; 42: 616–626.
53. National Association of Pharmacy Regulatory Authorities. National statistics, <https://napra.ca/national-statistics> (2017, accessed 10 March 2018).
54. Pharmacy Board of Australia. Statistics: registrant data. PharmacyBoardofAustralia, 2017, <http://www.pharmacyboard.gov.au/About/Statistics.aspx>
55. Pit SW, Vo T and Pyakurel S. The effectiveness of recruitment strategies on general practitioner's survey response rates – a systematic review. *BMC Med Res Methodol* 2014; 14: 76–2288.
56. Sinclair M, O'Toole J, Malawaraarachchi M, et al. Comparison of response rates and cost-effectiveness for a community-based survey: postal, Internet and telephone modes with generic or personalised recruitment approaches. *BMC Med Res Methodol* 2012; 12: 132.
57. Magelssen M, Supphellen M, Nortvedt P, et al. Attitudes towards assisted dying are influenced by question wording and order: a survey experiment. *BMC Med Ethics* 2016; 17(1): 24.