ORIGINAL ARTICLE

Attitudes towards suicide following an undergraduate suicide prevention module: experience of medical students in Hong Kong

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Objectives To explore qualitative and quantitative changes in attitudes and experiences of medical students following a special study suicide prevention module.

Design Pilot study.

Setting The University of Hong Kong, Hong Kong.

Participants A 2-week intensive special studies module was delivered to third- and fourth-year medical students in June 2011. The module was elective and involved several modes of teaching. All students filled the Chinese Attitude toward Suicide Questionnaire before and after the course. They also provided written feedback about the module experience. Three students participated in in-depth interviews.

Results In all, 22 students aged 20 to 23 years enrolled in the special studies module; 15 (68%) of whom were male and only one was married. Positive trends were noted in attitudes towards suicide following the participation in the special studies module, namely, reduced negative appraisal of suicide, reduced stigmatisation of the phenomena, and increased sensitivity to suicide-related facts. Feedback of the students suggested inclusion of this module into the main medical curriculum, increased confidence in dealing with issues related to suicide, and appreciation of skills focusing on interviewing in patients. Overall the module was well received by medical students.

Conclusions A suicide prevention training module seems to have been valued by students and lead to positive attitudes towards understanding suicide. Adopting this initiative as a suicide prevention strategy warrants further exploration.

New knowledge added by this study

- An undergraduate suicide prevention module provided to medical students changed their attitudes towards suicide and its prevention.
- A training module involving education about the problem was well received and valued by medical students.

Implications for clinical practice or policy

- Attitudes of medical students towards suicide and its prevention begin in the undergraduate years.
- Educating medical students about suicide prevention warrants further exploration.

Key words
Attitude; Hong Kong; Students, medical; Suicide

Hong Kong Med J 2013;19:377-85
DOI: 10.12809/hkmj133950

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Introduction

Physicians are a unique target for suicide prevention programmes. They are potential gatekeepers who have contact with high-risk patients.[1-3] This is true regardless of their specialty, but general physicians encounter more such cases than mental health professionals.[4] At the same time they are themselves a population at high risk of depression,[5] burnout,[6] substance use,[7] and suicide,[8-10] even during their years of undergraduate medical training. Their vulnerability is enhanced by their reluctance to seek help,[11-13] due to stigma or fear of career implications, even when they are convinced they need it.[12,14] A 'physician heal thyself' culture promoted within the medical community and society complicates matters.

修讀防止自殺課程後學生對自殺的態度：香港醫科生的經驗

目的 探討醫科生讀畢一個防止自殺的專題研究課程後，對防止自殺的態度及經驗的定性和定量變化。

設計 試點研究。

安排 香港大學。

參與者 於2011年6月，三年級和四年級的醫科生接受兩週密集式的專題研究課程。該課程屬選修科，並涉及多種教學模式。所有修讀的學生均須於課程前和後填寫中國人自殺態度問卷，並就課程中的經驗提供書面意見。本研究亦深入採訪了其中三名修讀的學生。

結果 共22名年齡介乎20至23歲的醫科生修讀此專題研究課程，當中15人（68%）為男性，只有一人已婚。修讀課程後，學生對自殺的態度有較為正面的反應，即減少對自殺的負面評價及標籤化現象，並對於與自殺有關的報導增加了敏感度。學生反映應把此課程納入本科的主要醫學課程；他們認為在修讀課程後，處理與自殺有關的問題時增加了信心；縱使在複雜的情況下仍能掌握與病人面對面交談的技能。整體來說，此專題研究課程深受醫科生歡迎。

結論 醫科生似乎重視這個防止自殺的專題研究課程，而且參與課程後對自殺有正面的理解。至於是否採用這種專題研究課程的模式作為防止自殺的一個策略值得進一步研究。

The need to incorporate suicide prevention programmes in the undergraduate years has been highlighted recently. Surveys have shown that medical students, psychology students, and general practitioners report receiving little training in suicide prevention.[15-18] Undergraduate dissemination of knowledge on suicide prevention forms only a small part of psychiatry/psychology rotations.[19-21] Moreover, modes of teaching have involved lectures rather than skill-based exercises,[22] although both medical students and physicians stress the need for skill improvement to feel competent in dealing with suicidal patients.[23]

Attitudes of medical professionals towards suicide may influence not only their motivation to treat patients in suicidal crises or during deliberate self-harm behaviours,[24] but also their consideration of suicide at times of personal crises. Ironically, a religious upbringing has been associated with intolerance towards suicide.[25] Many studies have also shown that negative attitudes towards suicide prevail among medical students,[20,26] although for some these attitudes may change over the years of medical training.[27] Cross-cultural studies have also demonstrated differences in the permissiveness towards suicide. These studies have shown that those with a permissive attitude are more likely to seek help, whereas those from cultures that sanction suicide and stigmatise it show reluctance in seeking help for suicidal behaviour.[28-30]

Undergraduate suicide prevention curricula have the potential of altering attitudes of medical students towards suicide, in addition to instilling therapeutic skills. Skills without the right attitude may not be effective in dealing with suicidal patients. In Hong Kong, there are two universities that offer medical education to the entire population (7.1 million) and each has an annual intake of about 160 medical students, generating on average of 1.8 medical practitioners per thousand inhabitants per year. Suicide risk assessment and management are covered in psychiatry rotations during the fourth and final years of the medical school curriculum. No knowledge is imparted on public health interventions and the necessary multidisciplinary approach to manage suicidal patients.

A recent retrospective study of 26 hospitals across Hong Kong reported 166 suicidal acts in general hospital wards between 2002 and 2004, 34 of which resulted in death, but only 20% of these patients were admitted to the hospital for attempted suicide.[31] This may reflect failure to identify such patients by doctors on duty. Therefore, the urgency for incorporating education on suicide prevention in the undergraduate medical curriculum should not be ignored.

Against this background, we piloted and evaluated a 2-week special studies module (SSM) on suicidology and suicide prevention for undergraduate medical students. We explored changes in the medical students' quantitative and qualitative information about their experiences and attitudes towards suicide following participation in the module. Because the course lasted 2 weeks, and the students had no direct contacts with suicidal patients during the training, we did not expect major changes in their skills in handling suicidal patients. Instead, we hoped that after the training, they would adopt different attitudes towards suicide. The findings of such a pilot study could be used to inform on the feasibility, practicability, and usefulness for designing a suicide prevention course that could be integrated into mainstream teaching in medical schools.

Methods

Participants

In a 5-year curriculum of the Bachelor of Medicine and Bachelor of Surgery (MBBS) degree at the University of Hong Kong, medical students are required to undertake two Special Summer Modules, one by the end of Year Three and another by the end of Year Five (after the Final Examination). The SSMs

afford students opportunities to explore areas of individual interest by means of clinical attachments or laboratory and/or clinical research. Some students undertake clinical attachment overseas. In June 2011, 22 medical students who had completed their second or third year at the University of Hong Kong participated in this study. These were students who voluntarily selected an SSM titled "Suicide prevention: knowledge, attitudes and skills for medical students" as a special summer course.

Curriculum: content of the materials

This course was developed and conducted by two facilitators (SY and PW), and entailed 5 to 6 hours of attendance daily for a total of 10 days (ie 2 weeks from Monday to Friday). The practice recommendations offered in this SSM were consistent with American Psychiatric Association clinical guidelines[32] and targeted core competencies for mental health professionals dealing with suicidal patients identified by the American Association of Suicidology and the Suicide Prevention Resource Center (Suicide Prevention Resource Center, 2006). Also, risk assessment, case conceptualisation, treatment planning, and crisis intervention materials were based on the rationales of cognitive and behavioural approaches. Table 1 shows the course topics, teaching and learning activities, and related matters.

Procedures

Being a pilot study, we asked students to provide information on a number of issues related to the course. All students were asked to fill the Chinese Attitude toward Suicide Questionnaire (CASQ-HK)[33] before and after the course. They were also asked to provide written feedback about the SSM experience. Three students were invited for in-depth interviews within the 2 weeks following module completion. The written reflective accounts and attitude scale were parts of the formal assessments of the course, and we sought for approval from students through emails after using their information for the present study. We also sought consent from the students who participated in the interviews to use their feedback for the study.

Quantitative and qualitative measurements

Attitude towards suicide

The CASQ-HK[33] comprises three parts: (1) 73 statements about attitudes towards suicide on a

TABLE 1. Details of the course attended by participants

Area	Details	Mode of Teaching
Suicide and suicidal behaviour	Definitions, global trends and the context of Hong Kong	Presentation
Theories of suicide and deliberate self-harm	Stress-diathesis model, cognitive model, and social theories	Presentation
Factors associated with suicide	Risk and protective factors	Presentation and case scenarios–based discussion
Suicide and ethics	Ethical principles governing the role of the doctor in handling suicidal patients Ethics of physician-assisted suicide	Presentation Movie on euthanasia ("*You Don't Know Jack*") about Dr Jack Kevorkian followed by discussion
Risk assessment of suicidal patients	Method of questioning and grading of level of risk	Presentation followed by group skills-based training session
Prevention strategies	Public health approach to suicide prevention: universal, selective, and indicative measures	Presentation
Intervention strategies	Crisis intervention and short-term management Hospital management of suicide attempts	Presentation followed by skill-based training session Presentation
Postvention strategies	Handling families bereaved by suicide Measures for the workplace or school following a suicide Media regulations	Presentation
Suicide among health professionals	Risk among doctors	Presentation
Concept of life, death, and the suicidal patient	Different point of views about death and discussion about perception of someone who dies or wants to die voluntarily	Group discussion Fiction film: "*Ordinary People*"; based on the story of a character who attempts suicide following the accidental death of his brother and how his family is affected
Stress, and mental health and well-being	Ways of increasing positive health activities and overcoming stress	Presentation
Skills for overcoming stress	Problem solving and assertive training skills	Skills-based training session

5-point Likert scale (1 = absolutely agree and 5 = absolutely disagree), (2) 12 difficulties-related scenarios (eg suffering from a chronic mental illness, business failure, etc) and participant's likelihood of considering suicide in each scenario on a 5-point Likert scale (1 = definitely not consider and 5 = definitely consider) and finally, (3) socio-demographic information, presence of suicidal ideation, previous attempt or exposure to an attempt or suicide in any acquaintance(s). This scale was developed using 1226 subjects from Hong Kong through focus groups, in-depth interviews, and after modifications based on two pilot studies. The questionnaire was found to have high internal consistency/reliability (Cronbach's alpha of 0.852). The authors described nine factors that loaded significantly. These were: 'negative appraisal of suicide', 'stigmatisation of suicide', 'suicidal spectrum', 'fatalism towards suicide', 'acknowledging the relation between social change and suicide', 'support towards suicidal people', 'contagiousness of suicide', 'sympathy towards suicide', and 'function of suicide'.

In this study, only part 1 was filled out before and after the course, while parts 2 and 3 were filled out once at the end of the course. We felt that part 1 would be more sensitive to attitude changes and did not want the questionnaire to be too time-consuming, as that could lower the quality of responses.

Self-reflection reports and unstructured qualitative interviews

All students were also asked to write a testimonial about their opinion/experience of the module. There was no word limit, but they were encouraged to write no less than 800 words to share their insights about attending this SSM. The qualitative interviews of the medical students who volunteered to share their experience of the course comprised the following areas: (1) personal attitude towards suicide, (2) perspectives on manifestations of illness and personal/social issues, (3) opinions about any effect on future work, (4) circumstances involving a suicidal patient in which they would have acted differently, (5) which part of the module was most helpful, (6) which part of the module was least helpful, and (7) which parts of the module they would be able to apply in practice. The in-depth interviews of all three volunteer students were conducted by SY and the notes were reviewed by SY and PW. Each interview lasted 30 minutes approximately.

Statistical analysis

Descriptive statistics were computed for demographic information. Data from the CASQ-HK pre- and post-course exposure were analysed by independent sample *t* tests using the Statistical Package for the Social Sciences (Windows version 18.0; SPSS Inc, Chicago [IL], US); paired *t* tests were not performed as the questionnaires were filled in anonymously. Gender and presence of religious affiliation patterns across the factors were also compared. Qualitative content analyses of the testimonials and interviews of students were carried out using NVivo 8.0 (QSR International Pty Ltd). The content was read for themes that emerged and re-read again to confirm the themes.

Results

Demographics

All participants belonged to the age-group of 20-23 years; 21 of them reported being single (96%). In all, 15 (68%) were male, and 15 (68%) did not state any religious affiliation. Three students had had suicidal ideation in the past, but none had attempted suicide. Four participants knew of a person who had committed suicide; three of them reported that person to be a friend and one was a friend's brother.

Attitudes towards different aspects of suicide

Table 2 shows scores on different factors of the CASQ-HK and the changes in the mean values following the course. The mean changes in scores for the first four factors were statistically significant ($P<0.05$). Following the course, there was reduced negative appraisal, stigmatisation and fatalism towards suicide, and an increased awareness of the similarities between attempted and completed suicides across various characteristics. Regarding the other factors, although the changes in scores were not statistically significant, trends towards increased awareness were evident, as was increased support for suicide attempters and recognition of suicide contagiousness.

Table 3 shows gender patterns for attitude scores in the pre-course questionnaires. Statistically significant gender differences were found for the mean scores on factors for: 'Negative appraisal of suicide' and 'Suicidal spectrum'; females showed more agreement with the negative view of suicide than males, but the opposite was true for knowledge about the suicidal spectrum. Also, male participants scored higher than females on all the other factors except 'Support towards suicidal people' but these differences were not statistically significant.

Religious affiliation, history of exposure to suicide/suicide attempts, and history of suicidal ideation were also analysed. None of them were found to be significantly linked with any attitude subscales.

Scenario-based likelihood of considering suicide

Table 4 shows the responses of participants to the 12

scenarios. Frequency of responses is shown in two collapsed categories of 'Considered' (scores 3 and above) and 'Not considered' (scores 1 and 2). The mean score for each scenario is also shown. For all scenarios, mean scores were higher than 2 (in the order): severe depression, suffering from chronic mental illness, being a burden on others, no security in senior years, having a terminal illness, having a gambling debt of monumental proportions, being sentenced to prison, drug addiction, being sued/

TABLE 2. Attitudes towards suicide as measured on the Chinese Attitude toward Suicide Questionnaire before and after the course

Factor	Mean score (before)	Mean score (after)	Change in mean score	*t*-Test value
Negative appraisal	2.65	3.00	-0.38	-2.23*
Stigmatisation	3.30	3.59	-0.22	-2.09*
Suicidal spectrum	3.29	2.79	0.49	2.70*
Fatalism of suicide	3.63	4.00	-0.38	-2.33*
Suicide and social change	2.52	2.70	-0.18	-1.49
Support towards suicidal people	2.33	2.37	-0.04	-0.32
Contagiousness of suicide	2.65	2.56	0.09	0.45
Sympathy towards suicide	3.08	3.05	0.03	0.16
Function of suicide	2.64	2.97	-0.33	-1.79

* P<0.05

TABLE 3. Gender differences in pre-course mean scores on attitude subscales of the Chinese Attitude toward Suicide Questionnaire

Factor	Mean score (male)	Mean score (female)	*t*-Test value
Negative appraisal	3.21	2.58	-2.44*
Stigmatisation	3.71	3.34	-1.66
Suicidal spectrum	2.59	3.22	2.41*
Fatalism of suicide	4.07	3.86	-0.77
Suicide and social change	2.71	2.65	-0.28
Support towards suicidal people	2.33	2.45	0.59
Contagiousness of suicide	2.58	2.50	-0.28
Sympathy towards suicide	3.09	2.95	-0.42
Function of suicide	2.99	2.90	-0.32

* P<0.05

TABLE 4. Participants' responses to endorsement of suicide under difficult life scenarios

Scenario	Likelihood of suicide		
	Considered (scoring ≥3)	Not considered (scoring 1 and 2)	Score (mean ± SD*)
Being sued/breaking the law	4	18	2.09 ± 0.81
Suffering from terminal illness	9	13	2.59 ± 0.96
In a battering marital relationship	3	19	1.91 ± 0.61
Is a burden to others and have no foreseeable prospect	10	12	2.77 ± 1.07
Sentenced to prison	9	13	2.45 ± 1.01
No securities in senior years	12	10	2.59 ± 1.05
Business failure	7	15	2.14 ± 0.71
Severe depression	13	8	3.14 ± 1.08
Traumatic experience as rape victim	6	16	2.05 ± 0.95
Drug addiction	8	14	2.32 ± 0.95
Gambling debt of monumental proportion	9	13	2.50 ± 1.14
Sufferer of chronic mental illness	14	8	3.05

* SD denotes standard deviation

breaking the law, business failure, and traumatic experience as rape victim. However, for nine of these, the mean score was less than 3. Having severe depression or a chronic mental illness were scenarios for which participants scored slightly above 3. The frequency responses on 'Considered' were also highest for these scenarios, particularly the first two.

Qualitative content analysis of the testimonials

Four discussion themes emerged from the 22 medical students' testimonials: (1) course content, (2) course logistics, (3) personal opinions/experiences, and (4) facilitator characteristics. For the course content, the comprehensiveness of topics covered in presentations was appreciated; many students felt inclusion of stress/mental illness/suicide among physicians was particularly informative. Movies on suicide and euthanasia were also considered useful. In particular, the students found skills-training (listening, counselling, and assessment of risk) and discussions most beneficial and site visits to suicide-prevention centres or hospitals were recommended. Regarding logistics and timing, most of the students also thought the content was covered in too short a time and was too intense. They recommended it to be incorporated into the main medical curriculum as few sessions within the current curriculum address this problem. One of them commented as follows:

> *"I reckon that it is good to introduce this course into the medical curriculum. Although it is true that there are some projects from the Department of Community Medicine that help students to understand the emotion of patients, students are seldom asked to reflect on their emotions during the whole curriculum. As mentioned in the lectures, addressing the emotion is always an important step in postvention of suicide, and helping students to acquire these skills is important to reduce the stress in the whole curriculum."*

Students also reflected on their personal opinions about suicidal patients and how these changed during the course. Some parts of their views are given below:

> *Before attending this SSM course, I considered people with suicidal ideation were trying to avoid problems; for that I have responsibility to teach them. Being a medical student and a medical-doctor-to-be, I have emphasised my role too much with regard to helping people through my own knowledge. Now, I have learnt that suicidal people are experiencing something that outweighs their perceived coping capability and they want people to address their helpless feelings. In the past, I thought that people wanting others to address their helpless feelings were seeking others' attention; now I realise that I had pre-judged these people and had stigmatised them as weak. In the past, we learnt to be non-judgemental in communication skill classes, but we did not realise that being non-judgemental is more than just being neutral or indifferent!"*

> *"I frequently reflect on my previous attitude towards counselling. In the past, I tried to give a lot of comments and advice after listening to my friends' problems. However, after this course, I learnt that a good listener should never give premature advice and should help ventilate the emotion of the subjects. I believe that these skills may also help me to know how to help others."*

Students also mentioned that a level interaction between the facilitator and themselves was a positive feature of the course, encouraging communication:

> *"There was a very short distance between the lecturer and the students. It felt more like a discussion on equal grounds than a lecture without expectation of feedback or questions."*

Qualitative content analysis of the interviews

All the three students felt a change in attitude towards suicide, whereby they emphasised increased comfort talking about suicide within families, with people who appeared sad or distressed and reduced labelling of suicidal patients as incapable of handling life situations. They reported becoming aware of the multifaceted causality of suicide and the public health approaches that are necessary. They felt the course taught them what the suicidal person expects from a health professional so that their communication skills were enhanced. Risk assessments and group discussions (related to movies, case scenarios, and euthanasia) were helpful and easy to apply in practice. Two students expressed appreciation for including the topic of physician distress and suicide, explaining that they did not expect this topic to be discussed in other rotations.

Discussion

Undergraduate medical school curricula provide an important platform to equip future doctors with education and skills on suicide prevention. Studies on completed suicides have revealed that contact with a physician was common preceding a suicide; in one series more than half of the patients did so in the preceding month[34-36] and this proportion was even higher (76.5%) for elderly patients.[37] Incorporation of such a course into the undergraduate medical curriculum may be considered as an important and cost-effective component of a suicide prevention

strategy in Hong Kong. Such a course could provide a degree of gatekeeper training for medical professionals.

This article describes the development, implementation, and evaluation of a 2-week structured curriculum on suicide prevention with undergraduate medical students. Findings of our pilot study, albeit based on a small number of students and lacking a comparator group and longer-term follow-up, show that such a course is appreciated and valued by medical students. It demonstrated that attitudes towards suicide may change following short-lived training, and can provide medical students an opportunity to review their personal perspectives and experiences on suicide-related issues. However, the long-term impact of such training has not been assessed and should be a research focus for future study.

Attitude change

Attitudes towards illnesses, especially mental illnesses, are believed to influence physician-patient interactions[38,39] and result in 'diagnostic overshadowing' or the tendency for psychiatric diagnoses to overshadow physical disorders within a patient. Since the majority of the medical students in each class will not choose psychiatry as their specialty, acquisition of appropriate attitudes towards suicidal patients among all medical students is of prime importance. In this study, attitudes towards suicide were measured using an indigenously developed questionnaire, because of its cultural relevance to the population of Hong Kong.

Changes in attitudes to suicide were observed after the course. There was a reduction in mean scores for negative appraisal, stigmatisation, and fatalism towards suicide. Negative appraisal was conceptualised with statements such as 'Suicide is a stupid act', 'Suicide is an irresponsible act', 'Suicide is a betrayal to family and friends' and reverse scoring on 'Suicide is a rational act', 'Suicide can be a responsible act' etc. Stigmatisation was measured using items such as 'Most people would avoid a person who attempted suicide', 'Suicide is carried out by primitive people', 'Everyone dislikes the act of suicide' etc. For fatalism items such as 'Suicide cannot be prevented' and 'Suicide happens without previous warning' were scored. Participant scores for the suicidal spectrum also changed, reflecting increase in knowledge of similarities between completed and attempted suicides with regard to some clinical characteristics. These changes were positive and encouraging, as the very goal of a suicide prevention programme for future physicians is to sensitise and motivate them to handle suicidal subjects as patients with a treatable clinical concern/diagnosis.

Most of the students reported they would consider suicide in the scenario of 'suffering a chronic mental illness' and 'severe depression'. More affirmative responses were observed for these categories than other seemingly major life events such as being sued, suffering business loss, being raped etc. This may reflect the stigma that mental illness carries among medical students. They may equate mental illness with social isolation, dependency, low functioning, and negative social consequences. Research on barriers to help-seeking among medical professionals and students has pointed to several factors such as stigma, lack of confidentiality, fear of documentation in academic records, professional sanctions following disclosure, and change in attitude of colleagues.[40,41] Since medical students are a group at risk of mental illness, strategies addressing these barriers may improve help-seeking behaviour and are therefore warranted.

Teaching and learning components

In this course, the components described as most useful by students were skills training and group discussions—a finding consistent with previous research.[23,42] The skills training covered suicide risk assessment and crisis intervention. The format used was small-group role plays with different case scenarios in which students could exchange roles between patient, clinician, and observer. Moving between the roles, the students learnt to appreciate how different and similar patients and clinical agendas can produce therapeutic interactions. Having more skill sessions instead of theory-based presentations may facilitate home study. Most students indicated the importance of the course and suggested its inclusion in the main curriculum for all medical students, of which recommendation has also been noted in similar studies from other countries.[43] This type of exercise highlights the desire in young professionals for knowledge on the subject of suicide. Its qualitative content also showed that the course: (1) challenged the judgemental stance that medical students often take when dealing with suicidal patients, and (2) clarified application of counselling/listening in such situations. Stress management was also found to be useful, consistent with a previous study by Redwood and Pollak,[14] who demonstrated high participation rates among medical students.

Limitations

One limitation of this study was the small sample size of subjects that may not be representative of medical students in general. Only immediate changes in attitudes are reported and therefore the study could not predict long-term impacts. Moreover,

the changes in attitudes were self-reported and therefore the extent to which these were genuinely internalised remains unknown. Without longer-term follow-up, this study was not fit to examine changes in practice regarding suicidal patients. Future studies with more methodological rigor could be helpful in examining the effectiveness of such courses in suicide prevention.

Declaration

No conflicts of interest were declared by the authors.

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