

Original Research

Suicidal thoughts and attitudes towards suicide among medical and psychology students in Greece

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Abstract: This observational study investigated the self-reported suicidal behavior and attitudes towards suicide held by Greek university students in the spring term of 2009. The Suicide Opinion Questionnaire was given to medical and psychology students. The prevalence of suicidal thoughts was 20% among psychology students and 8.6% in medical school. Furthermore, previous suicide attempts differ between psychology and medical students respectively (8% vs. 3.8%). Mental illness was correlated with suicidal behavior by the medical student group; the right to die was strongly supported by psychology students. Attitudes towards the moral aspects of suicide also differentiated between student groups. This is the first to date Greek comparison study on the prevalence of suicidal behavior and attitudes towards suicide between medical and psychology students. In general, the relationship of suicide with mental illness and the right to take one's life, attributed significantly in differentiating attitudes towards suicide between medical and psychology students in one of the biggest Universities of Greece. Considering the impact of attitudes towards suicide on the professional support of patients at suicide risk, further research should address the differences in suicide related knowledge and own suicidal behavior among future suicide gatekeepers.

Keywords: attitudes towards suicide, medical, psychology, students, Greece.

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In national suicide prevention programs, medical personnel and psychologists are considered to be the ones who intervene in a suicide (Mann et al., 2005; W.H.O., 2000, 2006). A variety of public health strategies are targeting the above occupations, as those staffs' attitudes towards suicide influence

the way that suicidal patients are recognized, supported and treated (Anderson, Standen, Nazir, & Noon, 2000; Anderson & Standen, 2007; Appleby et al., 2000; Berlim, Perizzolo, Lejderman, Fleck, & Joiner, 2007; Michel & Valach, 1992; Neimeyer, Fortner, & Melby, 2001; Rutz, 2001; Szanto, Kalmar, Hendin, Rihmer, & Mann, 2007).

In cross-cultural research assessing attitudes towards suicide, the Suicide Opinion Questionnaire (SOQ) has been repeatedly used (Domino, 2005). Among the findings of SOQ, religiosity and mental illness have been found as significant factors in shaping attitudes towards suicide (Domino, 1981; Domino, Cohen, & Gonzalez, 1981; Domino & Leenaars, 1989; Domino, Macgregor, & Hannah, 1989).

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In the paradigm of attitudes towards suicide in the general population, studies have shown that attitudes are not influenced by education, while liberal attitudes regarding suicides are more connected with a personal history of suicidality in one's family (Beautrais, Horwood, & Fergusson, 2004; Maine, Shute, & Martin, 2001). As restrictive attitudes towards suicide have been listed as protective factors for suicidal behavior in previous research, suicidal ideation has been seen as a predictor of positive attitudes towards suicide (De Wilde, Kienhorst, Diekstra, & Wolters, 1993; Stein, Brom, Elizur, & Witzum, 1998).

Cross-cultural comparisons on attitudes towards suicide have demonstrated overall permissiveness and the view that suicidal acts are a private or joint matter; gender differences have also been seen in the moderator role in the relationship between hopelessness, depressive symptoms and levels of individual's suicidal ideation (Domino & Takahashi, 1991a; Gibb, Andover, & Beach, 2006; Hjelmeland et al., 2008). As well as the importance of loneliness, the strong association of gender, age, field and level of study with the overall knowledge of suicides has been additionally stated (Oncu, Soykan, Ihan, & Sayil, 2008; Voracek, Tran, & Sonneck, 2008). In terms of the study level effect, medical students' attitudes became more sympathetic as their psychiatric and biological knowledge increased through their medical education (Sato et al., 2006; Wallin & Runeson, 2003).

In the Greek context, suicide is under-reported. In 2009, the World Health Organization (WHO) reported that the total number of suicides, per gender and age groups, reached 391 cases. A clinical-epidemiological study revealed that the rates of suicide attempt have increased during the last three decades, with young Greek males especially placed within a higher suicide risk group (Ierodiakonou, Iacovides, & Ierodiakonou-Benou, 1998). High suicide rates have characterized individuals living in Greek rural areas at late 1970, while the low suicide mortality rate in adolescents have reflected the Greek cultural characteristics of the strong family and social network, which are found important in the low expression of suicidality (Bazas, Jemos, Stefanis, & Trichopoulos, 1979; Beratis, 1991). Furthermore, the Greek suicide rate increased from 4.8% to 10.9% after the socio-economic changes that took place from 1978 to 1984 (Madianos, Madianou-Gefou, & Stefanis, 1993).

There remains no research on attitudes towards suicide among Greek mental health professionals and limited comparison studies between doctors and psychologists during their undergraduate education. The aim of this study was

to investigate attitudes towards suicide among Greek psychology and medicine students as future suicide gatekeepers.

Method

Participants

The Greek sample consisted of 212 medical and psychology students from the Aristotle University of Thessaloniki. Students in early school semesters – before the 2nd-year of Psychology and before the 4th-year of Medicine – were excluded from the study since their knowledge about psychiatric disorders and suicidality, an attributable factor on shaping attitudes towards mental illness among undergraduate students, would not be in advanced level. From the initial sample, 205 students took part, resulting in a response rate of 96.7% (100 participants from the psychology school; 105 from the medical school). Reasons for non-participation were: limited free time (five medical students), and refusing to get involved in a topic regarding suicide (one student each in medicine and psychology). The medical students were randomly selected from clinical rotations during the spring term of 2009.

Materials and procedure

The Suicide Opinion Questionnaire (SOQ) developed by George Domino et al. (1980) was used in the study. The SOQ consists of 100 questions regarding attitudes towards suicide and five questions based on one's own suicidal behavior and types of relationships with people who have attempted or completed suicide. Aside from the demographic question of gender, an item regarding the age of the subjects was added. Item 107, regarding the honesty of the responses was not taken into account, since it has been indicated that it is not a valuable indicator of the rest SOQ items (Domino, Gibson, Poling, & Westlake, 1980). The contents of the questionnaire regarding personal questions and demographics are shown in Appendix I. Using the back translation method (Brislin, 1970), the questionnaire was translated into Greek by two independent bilingual official translators. For the attitudinal items, the participants were asked to respond based on a five-point Likert scale ('strongly agree', 'agree', 'undecided', 'disagree', and 'strongly disagree'). Nine specific questions had a reversed scoring. The groups of items used in the study are labeled as the eight clinical sub-scales of the SOQ: "Suicide reflects Mental Illness"; "Suicide threats are "not real" – i.e. a "Cry for Help"; "Right to Die"; "Importance of Religion"; "Impulsivity"; "Suicide is Normal"; "Suicide reflects Aggression/Anger"; and, "Suicide is Morally Bad".

Data from psychology department were collected from two randomly selected classes, with the approval of the two course leaders. Medical school data were collected during one course in the Department of Neurology, AHEPA University Hospital and the student clinical rotations at three hospitals in Thessaloniki, (AHEPA University Hospital, Hippokraton Hospital and Papageorgiou General Hospital). All students were orally informed about the aim of the study; its voluntary and anonymous nature was emphasized. The questionnaires were distributed to the students present in the classes and clinical rotations, with no attempt made to reach students not present at the specific classes/clinics. As the distributor of the questionnaires was a licensed psychologist, it was noted that further enquires on the topic of suicide could be made after the data collection, keeping the confidentiality needed for these cases.

The study was ethically approved by the Research Committee of Aristotle University of Thessaloniki. Additional approval was taken by the President of the Faculty of Medicine of Aristotle University and the Research Committee of Hippokraton Hospital, Thessaloniki.

Data Analysis

Chi square test was performed regarding the differences between psychology and medical students on their own suicidal behavior. In the univariate analysis, Pearson Correlation was used to determine the relationship among the eight clinical sub-scales of the SOQ; a t test was performed in order to find the effect of profession/background on the sub-scales (attitudes). The significance level of the statistical analysis was set at $p < 0.05$. The statistical analysis was performed with the Statistical Package for Social Sciences SPSS version 17 (SPSS Inc., Chicago, IL, USA).

Results

Demographic data

The sample from the medical school was based on 41 males and 64 females in their 4th, 5th and 6th year of study; the psychology sample consisted of 10 males and 90 females in their 2nd, 3rd and 4th year of study. In addition, in both departments, the collective mean age of the students was 22.4 years of age (CI 95%, Range 22.11 – 22.74). In the psychology school, ages ranged from 19 to 33 years (males: 20 to 33 years; females: 19 to 21 years); in medical school, the range was from 21 to 34 years (males: 21 to 29 years; females: 21 to 34 years). Within the entire sample, only eight students were older than 28 years of age (five psychology and three medical students).

Differences between psychology and medical students on suicidal behavior and risk

As shown in Table 1, when the chi square was run ($p < .05$) based on the questions related to one's own suicidal behavior, 14.1% of the student population reported suicidal thoughts ($\chi^2 (1, N= 205)$, $p = .019$; 5.9% reported a previous suicide attempt ($\chi^2 (1, N= 205)$, $p = .201$). The response to the question "Have you personally known someone who committed suicide?" revealed that 22.4% of the students were related with someone who died by suicide ($\chi^2 (1, N= 205)$, $p = .851$). Overall, 4.3% had lost a family member, 6.5% a relative, 13.0% a friend, and 76.1% had an acquaintance who died by suicide ($\chi^2 (3, N= 205)$, $p = .948$). Answers to "What is the probability that at some point in your life you might attempt suicide" revealed: 48.8% of all students replied "zero", 42.9% replied "less that 10%", 4.4% replied "50 – 50", 3.0% replied "somewhat probable", and 1.0% replied "highly probable". Based on the gender proportion differences in each school, an extra chi square test was performed for gender on all suicidality items. A significant relationship was found on the females of psychology school and suicidal thoughts compared to the females of medical school [$\chi^2 (1, N= 153) = 4.49$, $p = .034$]. No other differences were found between gender and rest of items on suicidality (data not presented).

The Pearson Correlation regarding the association between the eight SOQ sub-scales scores revealed that the sub-scale "Suicide reflects Mental illness" is significantly correlated with the sub-scales "Threats are not real", "Importance of religion", "Suicide is morally bad", and "Right to die" (Table 2). No significant correlation was found between the "Mental Illness", "Impulsivity", "Aggression" and "Normality" scales, having "Impulsivity" not correlating with any of the subscales.

As shown in Table 3, the t test between the two different educational backgrounds/professions revealed significant differences regarding the outcome scores of "Mental illness", "Cry for help", "Right to die", "Normality", and "Morally bad" sub-scales. When comparing the means based on gender, no significant differences were found on any of the sub-scales among the psychology students. Among medical students, the "Morally bad" sub-scale was found to be significantly different [$t (103) = - 2.435$, $p = .017$], where males tended to score more positively that a suicide was "morally bad" ($M = 11.975$, $SD = 2.98$) than females ($M = 10.437$, $SD = 3.26$). No significant association was found between gender and age, respectively, when compared to the students' sub-scale scores.

Table 1. Comparison of medical and psychology students regarding personal questions on suicides

SOQ items on suicidal behaviour	Psychology students	Medical students
Suicidal thoughts	20%	8.6%
Suicide attempts	8.0%	3.8%
Known suicide victims	23.0%	21.9%
Family member	4.3%	4.3%
Relative	4.3%	8.7%
Close friend	13.0%	13.0%
Acquaintance	78.3%	73.9%

Probability of attempting suicide		
Zero	42.0%	55.3%
Less than 10%	48.0%	37.9%
50 – 50	5.0%	3.9%
Somewhat probable	4.0%	1.9%
Highly probable	1.0%	1.0%

Table 2. Correlation between the 8 SOQ sub-scales

SOQ scales	Mental Illness	Threats are not real	Right to Die	Religion	Impulsivity	Normality	Aggression	Moral Bad
Threats are not real	.269**	-	-	-	-	-	-	-
Right to Die	-.356**	.066	-	-	-	-	-	-
Religion	.407**	.150*	.344*	-	-	-	-	-
Impulsivity	.007	.117	.000	.102	-	-	-	-
Normal	-.136	.103	.525**	-.098	.028	-	-	-
Aggression	.136	.130	.108	.147*	-.050	.231*	-	-
Morally Bad	.381**	.084	.523**	.575**	.110	-.249**	-.066	-

** . Correlation is significant at the level 0.01 (2 – tailed).

* . Correlation is significant at the level 0.05 level (2 – tailed).

Table 3. Comparison of medical and psychology students on attitudes towards suicide

SOQ sub-scales	Psychology students		Medical students		p value*
	Mean scores	Std. deviation	Mean scores	Std. deviation	
Suicide reflects Mental illness	41.87	5.47	44.51	5.01	0.000
Threats are not real – Cry for Help	38.75	4.40	40.21	4.93	0.026
Right to die	19.92	5.45	16.81	5.12	0.000
Importance of Religion	19.87	4.16	20.82	5.03	0.142
Impulsivity	21.54	2.57	20.92	2.57	0.088
Suicide is Normal	18.33	3.48	16.97	4.29	0.014
Suicide reflects Aggression/Anger	19.51	2.83	18.70	3.17	0.057
Suicide is Morally Bad	9.55	3.02	11.03	3.23	0.001

*significant level at p < 0.05 marked bold; independent variable: profession/background

Discussion

The SOQ has been repeatedly used in cross-cultural studies and has shown significant differences between each study population. Since the aim of this study was to appreciate the attitudes towards suicide among different educational backgrounds in Greece, a substantial number of differences regarding attitudes towards suicide were found.

In terms of one's own suicidal behavior, 14, 1% of the Greek students had previous suicidal thoughts, with psychology students having more than twice the percent compared to the medical department (20% vs. 8.6%). Differences were additionally found between the departments based on the history of previous attempts, with psychology students reporting an increased percentage of previous attempts and probability of attempting suicide compared to medical students (see table 1). As to date this study was the first attempt to study suicidal behavior among Greek university students, the suicidal thoughts among psychology students seem highly significant and pinpoint the need for suicide prevention initiatives (Engin, Gurkan, Dulgerler, & Arabaci, 2009; Gollust, Eisenberg, & Golberstein, 2008; Hjelmeland, et al., 2008). In terms of the exposure to suicides in the social network of the students, medical students had more relatives who committed suicide in their network compared to psychology students. Considering the impact of known suicide victims on students own suicidal behavior, research has indicated this risk factor as culturally dependent, yet to be studied within the Greek culture (Colucci & Graham, 2007; Mehmet Eskin, 1995; Gutierrez, Rodriguez, & Garcia, 2001).

Compared to psychology students, both male and female Greek medical students clearly appreciated the relationship between mental health problems and suicidal behavior, while perceiving suicidal ideation as the initiative of suicidal actions. Previous research on medical students' attitudes towards suicide has similarly shown the perception of mental health problems as the "grounding" of suicidal behavior (Domino, et al., 1981; Domino & Leenaars, 1989; Domino, et al., 1989; Domino & Perrone, 1993; Domino & Takahashi, 1991b). While either a liberal or a rational context has been related with different attitudes towards suicide among medical students in cross-cultural comparisons, students of medicine overall tend to reject the right to take ones' own life (Domino & Takahashi, 1991b; Eskin, Voracek, Stieger, & Altinyazar, 2011; Etzersdorfer, Vijayakumar, Schony, Grausgruber, & Sonneck, 1998). In terms of psychology students' attitudes, previous cross-cultural investigations among undergraduate

psychologists have also noted a tendency in agreeing with the right to die concept, similarly to our study (Hjelmeland, et al., 2008).

Considering the observational basis of this study, an in-depth appreciation of the findings was not attempted. However, the lack of psychiatric knowledge in the pedagogic system of psychology, and the behavioural perspective of mental-ill health, should be taken into account (Hjelmeland, et al., 2008). Potentially this could be the reason that psychology students did not characterise suicidal actions in relation to psychiatric disorders or perceived them to be just attention-seeking gestures. Following the close association of the "Right to Die" and "Normality" sub-scales ($r = .525$, $p = .000$), valuable antithesis was obtained among the two groups of students. Psychology students showed a greater agreement on the attitudinal items of "Right to Die" and "Normality" scales compared to medical students. Psychology students could hold the view of a right to die concept, which mostly refers on assisted suicide in SOQ, as throughout their educational system many courses are focusing on quality of life and psychology of death. In contrast, medical students rejected the belief that people could consider ending their life in specific cases and generally tended not to approve any kind of "natural" behavior regarding suicidal acts. The views of the medical students could well have been a reflection of the medical Greek attitudes towards euthanasia formulated under the Hippocratic oath (Mystakidou, Parpa, Tsilika, Katsouda, & Vlahos, 2005).

As these specific sub-scales ("Right to die" and "Normality") refer to the concept of euthanasia, rather than suicide, cultural differences between our sample and previous studies' samples could also be noted. The antipodal findings from one study suggested that Japanese medical students agreed with the choice of volunteer death under specific circumstances (for example, Item 18 "Suicide is an acceptable means to end an incurable illness" (Domino & Takahashi, 1991a). In Japan, enormous efforts are made to establish the "Dying with Dignity" policies, however Greek medical attitudes towards euthanasia bring dilemmas to both the general population and health staff (Akira, 2002). Overall the ancient medical Greek concept against euthanasia, the lack of "the right to die" concept within everyday life, comprehensive laws, and physician practices could affect the attitudes towards suicide, as indexed in our Greek sample (Mystakidou, et al., 2005).

Moral aspects of suicidality were also crucially different among the study population. More medical students than psychology students perceived

suicide to be a morally bad action. In addition, significant differences were found between males and females from the two departments; females did not perceive suicide to be as non-ethical as the males. Comparing the “moral bad” sub-scale scores of the Greek medical students with previous research, analogous agreement (acceptance that suicide is morally bad) was found (Domino, 2005; Domino, et al., 1989). Gender importance could be mentioned here since the female students of both departments were found to be more liberal with regard to suicide as a morally accepted behavior.

In conclusion psychology students tend to have a higher prevalence of suicidal thoughts and previous suicide attempts compared to medical students. Medical students tended to characterize suicides more as a mental illness outcome, whereas psychology students identified suicide as a personal right/choice. Previous research has shown a similar difference in regards to the component of “People do not have the right to take their own lives”, and the cultural complexity of this statement has been seen in the present study (Domino, Lin J., & Chang, 1995; Domino & Perrone, 1993). Emphasis should be placed on the distinction between the two educational backgrounds and genders, regarding the ethos and morality labels constructed around suicide, considering the cultural differences of morality found in previous SOQ studies (Domino & Perrone, 1993). The students of psychology and medicine in this study proved to have differences in attributing mental illness and normality among people with suicidal behavior. Suicide prevention strategies need to address the knowledge and perception differences during the education of future caregivers. Implications of how to treat a patient at suicide risk or intervene in a suicide crisis can potentially arise based on the attitudes towards suicide held (Neimeyer, et al., 2001).

Limitations of this study

The absence of a control group not related to health care may have limited the study findings, as the attitudes examined may reflect ones from these specific educational backgrounds. Additionally, the hypotheses used among the results should be interpreted with caution, since the study design did not include an in-depth psychological analysis of the attitudes towards suicide. The interpretation of one's own suicidal behavior, based on the students' replies, should be seen with caution as those were based on SOQ's self-reported questions and not on a clinical tool measuring suicidal behavior.

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