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Public stigma in health and non-healthcare students: Attributions, emotions and willingness to help with adolescent self-harm

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Abstract

Background: For people who self-harm, there is growing evidence to suggest that services and treatment outcomes can be adversely affected by healthcare staffs' stigmatising attitudes and behaviours. To date, the empirical literature has tended to focus on the attitudes of experienced healthcare professionals working with adults who self-harm. Additionally, there has been few theory or model-driven studies to help identify what healthcare students think and feel about young people who self-harm.
Objectives: The aim of the present study was to explore the way healthcare and non-healthcare students think and feel about adolescent self-harm behaviour using Corrigan et al.'s [Corrigan, P.W., Markowitz, F.E., Watson, A., Rowan, D., Kubiak, M.A., 2003. An attribution model of public discrimination towards people with mental illness. Journal of Health and Social Behaviour 44, 162–179] attribution model of public discrimination towards people with mental illness.
Design: The study was a questionnaire-based, cross-sectional, survey that consisted of two hypothetical vignettes.
Settings: Two universities in England, United Kingdom.
Participants: One hundred and eighty-four final-year students, covering health (medicine, nursing, clinical psychology) and non-health care (physics) professions.
Methods: Students were presented with vignettes describing a young female who self-harms. Attributions of controllability were experimentally manipulated across the vignette conditions and students were asked to complete self-report questionnaires measuring attitudes towards self-harm, familiarity with self-harm and social desirability.
Results: Consistent with the public discrimination model, students who believed that a young person was responsible for their self-harm reported higher feelings of anger towards them. Anger, in turn, was associated with a belief in the manipulatory nature of the self-harm and with less willingness to help. Perceived risk was found to be associated with higher levels of anxiety and increased support for the use of coercive and segregatory strategies to manage self-harming behaviour. Gender and student type were important influences on public stigma, with both men and medical students reporting more negative attitudes towards self-harm.
Conclusions: This study provides evidence that a number of factors may adversely affect the care and treatment received by young people who self-harm, namely: students' causal attributions, the gender and profession of healthcare students, and familiarity with self-harm behaviour. To improve the effectiveness of service provision and treatment outcomes for people who self-harm, it is important that health care service providers and teaching institutions consider the implications of these factors when developing staff and services, and base interventions on theoretical models of stigma and discrimination.

Keywords: Adolescent; Attitude; Attribution; Self-harm; Students; Stigma

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What is already known about the topic?

- Unfavourable views towards those with mental health problems and a desire for social avoidance are common across the life-span.
- For people who self-harm, there is growing evidence to suggest that services and treatment outcomes can be adversely affected by healthcare staffs' attitudes and behaviours.
- Healthcare staff have reported negative emotional reactions and behaviours towards people who self-harm.

What this paper adds

- This study demonstrates the usefulness of considering attribution processes to the understanding of cognitive–affective–behavioural responses towards adolescents who self-harm.
- This study highlights important areas for the education and training of healthcare staffs in the reduction of stigmatization and improvement in quality of care.
- The study demonstrates the importance of theory to attitude change.

Unfavourable views towards those with mental health problems and a desire for social avoidance are common across the life-span (Angermeyer et al., 2004; Hinshaw, 2005). The exploration of such stigmatising attitudes, so-called public stigma, is important not only because they can impact negatively upon the recipient's psychological development and well-being, but also because they act as considerable barriers to treatment seeking, treatment access, adherence and efficacy (Link and Phelan, 2006; Penn and Wykes, 2003).

In the UK and across Europe, self-harm in young people is a major concern for health, educational, social and criminal justice services (Anderson and Jenkins, 2005). Recent epidemiological data shows an overall upward trend in the incidence of child and adolescent self-harm in the UK (Brunner et al., 2007; Hawton and James, 2005), with self-harm being the most common reason for presentation of adolescents to hospital (Camelot Foundation/Mental Health Foundation, 2006; Hawton et al., 2000). In the UK, hospital admissions for self-harm are higher in young people than any other age group, with 15–19 year old females being the most vulnerable (Rodham et al., 2004). For people who self-harm, there is growing evidence to suggest that services and treatment outcomes can be adversely affected by healthcare staffs' stigmatising attitudes and behaviours (Feldman, 1988), although this can vary as a function of healthcare profession and gender of staff (Mackay and Barrowclough, 2005; Warm et al., 2002), with medical personnel and men generally reporting more negative attitudes.

Clinical and empirical evidence suggests that a common prejudice held by healthcare staff, notably nursing and medical staff, is that individuals who self-harm are manipulative and attention-seeking (Arnold, 1995; Friedman et al., 2006). This is in spite of the fact that most self-harm is carried out in private and in secrecy (Levenkron, 1998). Additionally, patients are frequently viewed by staff as being uncooperative, untrustworthy, hard to engage, and difficult to manage (Arons, 1981; Bennum, 1983; Huband and Tantam, 2000). Consequently, prejudicial beliefs, together with the emotional reactions of staff, may make it more likely that individuals who self-harm will be discriminated against (Allen, 1995). There is now an abundance of evidence from service users to suggest that people who have self-harmed do encounter negative and unhelpful attitudes from health professionals (e.g., Mental Health Foundation, 2006). In particular, staff are viewed as unsympathetic and unwilling to listen to the patients' perspective (Storey et al., 2005), with medical professionals singled out as the least supportive group overall (Warm et al., 2002). These service users' accounts are supported by independent observations and by nurses own reports of experiencing strong negative emotional reactions and taking an inflexible approach to patients who self-harm (McAllister et al., 2002; Patterson et al., 2007a).

Whilst there is a range of healthcare policy and pronouncement to help inform and guide professionals working with young people who self-harm (DoH, 2002, 2004; NICE, 2004, 2005; NIHME, 2005; RCP, 1998), it is recognised that in order to improve the quality of care patients receive and to work towards best practice, with the aim of reducing repeat episodes of self-harm and subsequent completed suicides, it is important to examine the development of negative attitudes and behaviours towards people who self-harm within the early stages of professional healthcare training. To date, the empirical literature has tended to focus on the attitudes of experienced healthcare professionals working with adults who self-harm and, whilst there is recognition that unhelpful attitudes amongst some staff exist and an acknowledgement of a great and urgent staff training need (Friedman et al., 2006; Mental Health Foundation, 2006), there have been few theory or model-driven studies to help identify what healthcare students and staff understand about self-harm or what they think and feel about young people who self-harm.

To bridge this gap, our study draws on Corrigan et al.'s (2003) attribution model of public discrimination towards people with mental illness. Using Weiner's (1980, 1986) attribution model of helping behaviour as a basis, Corrigan et al. provide a comprehensive theoretical account of how people respond to the behaviours of those with mental health difficulties. The model details the relationships between causal attributions (controllability, responsibility), familiarity with mental health, perceived dangerousness, emotional responses (anger, fear, pity), and helping or rejecting behaviours.

Corrigan et al.'s (2003) model posits that three cognitive–emotional processes determine behaviour: (1) attribution process, (2) danger appraisal process, and (3) effects of

familiarity. For the attribution process, individuals make attributions about the cause and controllability of a person's behaviour that lead to inferences about responsibility. These inferences precipitate emotional reactions such as anger or pity that then affect the likelihood of helping or rejecting behaviours. Thus, if the cause of the behaviour or illness is attributed to forces within the individual's control, then the person is likely to be judged as responsible. Alternatively, if an external attribution is made, then responsibility judgements decrease. Personal responsibility attributions for a negative event or behaviour can lead to anger, because of the belief that the person should have avoided his or her situation, with consequent rejecting behaviour. Conversely, believing that the person is not responsible for their behaviour is likely to evoke a more sympathetic response and a desire to help.

In addition to the above cognitive–emotional process, Corrigan et al. see perceived dangerousness as a key component of attitudinal and behavioural responses towards those with mental health difficulties. Dangerousness, a key stereotype applied to people with mental health difficulties (Phelan et al., 2000), is associated with a desire for social distance and, according to the public discrimination model, danger appraisals affect behaviour due to an increase in fear without a mediating attribution. Moreover, attitudes and emotions towards people with mental health difficulties are likely to be influenced by familiarity with either mental health or the specific behaviours they engage in. Overall, greater familiarity is linked to lower levels of stigma, reduced social avoidance and less perceived dangerousness (Angermeyer et al., 2004; Penn and Couture, 2002).

There are several published studies, across student and adult samples, which have reported consistent evidence for the attribution and danger appraisal processes (Angermeyer and Matschinger, 1996; Corrigan et al., 2001, 2003; Levey and Howells, 1995), as well as the influence of familiarity on public stigma towards adult mental health. However, only a few studies have specifically tested aspects of attribution theory as they relate to helping or discriminatory behaviours of healthcare staff towards adults with mental health problems, and all provide support for the role of attributions of controllability in influencing staff's judgements about and responses towards adults with mental health problems (Mackay and Barrowclough, 2005; Patterson et al., 2007a). To date, there have been no such studies looking at the views of healthcare students towards young people who self-harm.

The aim of the present study was to apply Corrigan et al.'s (2003) model of public discrimination to explore the way healthcare (medicine, nursing, clinical psychology) and non-healthcare students (physics/astronomy) think and feel about adolescent self-harm behaviour. Using hypothetical vignettes, and experimentally manipulating attributions of controllability, this study aimed to examine: (1) the effects of internal (drug misuse) versus external (abuse) attributions on responsibility beliefs, emotional responses and intended behaviour, (2) the effect of manipulating risk of injury (i.e., dangerousness) information on emotional responses and intended behaviour, and (3) the effects of health and non-healthcare student group membership on the same cognitive, affective and behavioural variables.

1. Methods

1.1. Participants

The sample consisted of students studying in their final year at two universities in the West Midlands. Four groups of students were identified based on their area of study: (i) medical, (ii) nursing, (iii) clinical psychology, and (iv) non-health care students (physics students). Final-year health care students were chosen because they were shortly to commence employment in professions where most are likely to have some involvement with young people who self-harm. Nurses and doctors will often be working in front line services providing the initial point of contact for adolescents following an episode of self-harm, whereas clinical psychologists may be called upon to provide specialist risk assessments and treatments further on in the process. The inclusion of non-healthcare students allows an examination of attitudes that are less likely to have been influenced by either theoretical or practice based exposure to self-harm during training. Thus, the non-healthcare student sample acts as a comparison group whose current training experiences could be considered significantly different from those of healthcare students.

A total of 184 questionnaires were distributed to potential participants, of which 157 were returned from across the four student groups (medicine = 31, nursing = 39, clinical psychology = 34, and physics/astronomy = 53), a response rate of 85%. The non-returns were biased towards the medical students (29%), with 13, 15 and 12% for the physics, nursing and clinical psychology students, respectively. No other details of non-respondents are available.

For the participating group, 96 (61%) were women. The physics student group comprised of significantly more males compared with the nursing, clinical psychology and medical student groups ($U = 248.000$, $p < 0.001$; $U = 223.000$, $p < 0.001$; $U = 526.000$, $p = 0.001$, respectively). The medical student group comprised of significantly more males compared with the nursing and clinical psychology student groups ($U = 362.000$, $p < 0.001$; $U = 320.000$, $p < 0.001$, respectively).

For age, clinical psychology students were significantly older (median = 30.5, IQR = 6 years) than medical (median = 24, IQR = 2 years), nursing (median = 22, IQR = 3 years) and physics students (median = 21, IQR = 1 years). The majority of participants within each student group were White-British, with no significant deviation in ethnicity across groups.

1.2. Design

The study was a questionnaire-based, cross-sectional, survey that consisted of two hypothetical vignettes. The study was approved by the researchers' University Human Research Ethics Committee.

1.3. Vignette

Each of the two vignettes required participants to consider a single case based on a frequently cited description of self-harm behaviour (Favazza and Conterio, 1989):

''Mary is a 15 year old female who lives with her family. Mary exhibits self-harm behaviour. She cuts her arms with a sharp instrument which results in some scarring. Mary's self-harm behaviour is caused by [**abuse**] [**drug misuse**]''.[1]

The selection of age and gender was based on epidemiological data that suggests that self-cutting behaviour typically begins in adolescence, with females having a higher prevalence of self-harm behaviour in adolescence (Hawton and Goldacre, 1982). The two vignettes were manipulated only in terms of the controllability of cause—one vignette consisted of self-harm behaviour that reflected a cause which is controllable (i.e. drug misuse) and the other a cause which is not controllable (i.e. abuse). This type of experimental vignette manipulation is similar to that used by Corrigan et al. (2001). A sample, independent of the main study and blind to the rationale, validated the drug misuse and abuse vignettes as representing controllable and uncontrollable causes.

The two vignettes were distributed randomly to participants across the four student groups, with a total of 81 students reading the drug vignette and 76 reading the abuse vignette. Chi-square analysis revealed no statistical difference in the distribution of students between vignette conditions for each of the four groups ($\chi^2 = 0.186$, d.f. = 3, $p = 0.98$). After reading the vignette, participants were asked to complete the following measures.

1.4. Dependent measures

1.4.1. Social desirability

The 33-item Marlowe–Crown Social Desirability Questionnaire (Crown and Marlowe, 1960) was used to measure, and control for, social desirability bias. A high score indicates a preference for greater social desirability. Published internal consistency of the scale, assessed by means of Kuder–Richardson formula 20, is 0.88.

1.4.2. Attitudes towards self-harm behaviour

The Attribution Questionnaire-24 (AQ24; Corrigan et al., 2001) was used to assess participants' attitudes towards the vignette character. Eighteen items were based on those in the published AQ24 (wording adapted to take account of Mary's age), and fell into eight subscales: personal responsibility (e.g., 'How responsible, do you think, is Mary for her self-harm behaviour?'; Cronbach's $\alpha = 0.68$); sympathy (e.g., 'How much sympathy do you feel for Mary?'; $\alpha = 0.68$); anger (e.g., 'How angry would you feel at Mary?'; $\alpha = 0.82$); anxiety (e.g., 'Mary would make me feel nervous'; $\alpha = 0.64$); helping/rejecting behaviours (e.g., 'I think it would be best if Mary's self-harm behaviour was just ignored'; $\alpha = 0.77$); and support for coercion and segregation (e.g., 'If I were in charge of Mary's treatment, I would force her to receive compulsory treatment'; $\alpha = 0.80$). A further six items were altered to measure those variables central to the present study: two items assessing perceived manipulation (e.g., 'How much do you think Mary's behaviour is an attempt to manipulate others?'; $\alpha = 0.65$); and four items assessing perceived severity of risk (e.g., 'How much do you think that Mary could seriously harm herself?'; $\alpha = 0.71$). Each construct is scored on a 9-point semantic differential scale (1 = ''not at all'' to 9 = ''very much''). Higher scores represent more endorsement of that construct, with higher scores on the helping/rejecting scale indicative of greater willingness to help.

1.4.3. Familiarity with self-harm behaviour

Based on the definition by Holmes et al. (1999), four questions were used to quantify participants' familiarity with adolescents who self-harm and the amount of training received in respect of such behaviour. Two items asked 'On average, over you life, how much contact have you had with teenagers/adolescents who exhibit self-harm behaviour?' and 'On average, over you life, how much contact have you had with adults who exhibit self-harm behaviour?'. Each item was coded on a six point Likert scale (0 = ''none'' to 5 = ''a large amount''). Two additional items assessed the extent of training participants had received on adolescent and adult self-harm behaviour: 'How much training have you received about working with teenagers/adolescents who exhibit self-harm behaviour?' and 'How much training have you received about working with adults who exhibit self-harm behaviour?'. Each item was coded on an eight point Likert-type scale (0 = ''none'' to 7 = ''21 + hours''). The four items were summed (possible range 0–24) to provide an overall familiarity score; higher scores indicating a greater level of familiarity with self-harm behaviour.

1.5. Data analysis

All analyses were conducted using SPSS for Windows (v10; SPSS 2000). Data were tested for normality of distribution, and where scores were found not to be normally distributed, non-parametric analyses were performed, with median and inter-quartile ranges (IQR) reported for the

[1] Information that was varied between the two vignette conditions appears bolded and in brackets. All other information was held constant.

Table 1
Means and standard deviations of familiarity, social desirability and age for each student group.

	Medical		Psychology		Nursing		Physics		p
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Familiarity	8.00[a]	7.00[b]	10.00[a]	8.00[b]	12.00[a]	7.00[b]	5.00[a]	5.00[b]	$p < 0.001$
Social desirability	18.26	5.95	11.44	5.48	14.79	3.98	16.49	4.28	$p < 0.001$
Age	24.00[a]	2.00[b]	30.50[a]	6.00[b]	22.00[a]	3.00[b]	21.00[a]	1.00[b]	$p < 0.001$

[a] Median.
[b] Inter-quartile range.

respective variables. Effects of student group and vignette condition on the dependent variables were examined using a series of two-way ANCOVAs. An a priori power analysis (power = 80%, medium effect size, $p = 0.05$) indicated that the study had sufficient power to detect differences between the two vignette conditions and between the four student groups.

2. Results

The means and standard deviations of the familiarity, social desirability and age variables for each student group are presented in Table 1.

A Kruskal–Wallis test revealed a significant difference between the student groups for familiarity ($\chi^2 = 86.374$, d.f. = 3, $p < 0.001$), age ($\chi^2 = 112.687$, d.f. = 3, $p < 0.001$) and gender ($\chi^2 = 74.149$, d.f. = 3, $p < 0.001$), and a one-way ANOVA revealed a significant difference between the groups for social desirability ($F_{3,153} = 12.192$, $p < 0.001$). Mann–Whitney post hoc analyses revealed, as expected, that physics students reported significantly less familiarity with self-harm behaviour, than either medical ($U = 177.000$, $p < 0.001$), clinical psychology ($U = 94.500$, $p < 0.001$) or nursing students ($U = 105.000$, $p < 0.001$). However, both nursing and clinical psychology students reported significantly more familiarity than medical students did ($U = 324.500$, $p = 0.001$ and $U = 310.000$, $p = 0.004$, respectively).

Clinical psychology students were significantly older than medical, nursing and physics students ($U = 615.000$, $p < 0.001$; $U = 800.000$, $p < 0.001$, $U = .000$, $p < 0.001$, respectively). Medical students were significantly older than nursing and physics students ($U = 446.000$, $p = 0.009$; $U = 530.000$, $p < 0.001$, respectively).

2.1. Effects of covariates (age, gender, familiarity and social desirability) on dependent variables

Spearman rank correlations were performed to examine the effects of age, gender, familiarity with self-harm behaviour and social desirability on the dependent variables (as measured by the AQ24). There were no significant relationships between social desirability and any of the dependent variables. However, there were statistically significant weak to moderate correlations between age, gender, and familiarity, and the dependant variables (see Table 2).

The analyses, consistent with Corrigan et al.'s (2003) public discrimination model, indicated that a greater familiarity with self-harm behaviour was associated with higher levels of helping behaviour and sympathy, with less anger, anxiety, perceived risk and coercion/segregation, and being a female student. Increased age was associated with greater familiarity, less social desirability, less perceived risk, less coercion/segregation, and females. Male students were associated with higher levels of social desirability, more self-reported anger and anxiety, perceiving greater levels of risk and manipulation, being less willing to help, and more likely to use coercion/segregation.

When the covariates of age, gender, and familiarity were examined between the two vignette conditions, there were no significant differences ($F = 8.156$, $p = 0.069$; $F = 0.040$, $p = 0.915$; $F = 4.844$, $p = 0.250$, respectively). Hence, age, gender, familiarity and social desirability were not required as covariates for subsequent analyses between vignette conditions.

Table 2
Correlations between key variables.

	Gender	Familiarity	Social	Person	Sympathy	Anger	Anxiety	Help	Coercion	Manipulation	Risk
1. Age	.33*	.43*	−.18**	−.09	.15	−.15	−.12	.08	−.19**	−.06	−.19**
2. Gender		.48*	−.17**	−.13	−.05	−.28*	−.22*	.36*	−.48*	−.18**	−.17**
3. Familiarity			−.12	−.14	−.17**	−.18**	−.27*	.26*	−.39*	.01	−.27*
4. Social desirability				−.08	.01	−.06	.00	−.09	−.0.9	.01	.01

* $p < .01$.
** $p < .05$.

Table 3
Correlations between dependent variables for drug (with control) and abuse (without control) vignette conditions.

	2	3	4	5	6	7	8
Drug							
1. Personal responsibility	−.36*	.48*	.15	−.27*	.17	.36*	−.10
2. Sympathy		−.17	.20	.09	.10	−.14	.17**
3. Anger			.62*	−.32*	.20	.51*	−.03
4. Anxiety				−.48*	.24	.30*	.24**
5. Helping/rejecting behaviour					−.52*	−.12	−.20
6. Coercion/segregation						.17	.39*
7. Manipulation							−.20
8. Risk							
Abuse							
1. Personal responsibility	−.02	.54*	.04	.08	.31*	.14	.11
2. Sympathy		−.10	.14	−.09	−.03	.05	.11
3. Anger			.58*	−.36*	.60*	.51*	.35*
4. Anxiety				−.51*	.56*	.56*	.41*
5. Helping/rejecting behaviour					−.40*	−.24**	−.14
6. Coercion/segregation						.24**	.46*
7. Manipulation							.45*
8. Risk							

* $p < .01$.
** $p < .05$.

2.2. Effects of vignette conditions on the dependent variables

A series of Spearman rank and Pearson's correlations were calculated to examine the relationships between dependent variables for each vignette condition (see Table 3).

Across both vignettes, relationships were found that are consistent with the public discrimination model. Specifically, believing that someone is responsible for their self-harm behaviour was positively associated with feelings of anger towards that person. In turn, anger was associated with the belief that the individual's behaviour was manipulative and resulted in the students expressing more reluctance to help. As predicted, perceived risk was associated with increased feelings of anxiety and, importantly, anxiety was associated with less reported willingness to help. Increased risk was also associated with an individual's endorsement of coercive and segregatory behaviours towards the young person who self-harmed. Interestingly, significant negative relationships were found between the coercion/segregation and helping/rejecting scales, confirming the construct validity of these concepts.

Taking the significant relationship found between perceived risk and anxiety, and the absence of a significant association between personal responsibility (attribution) and risk, these findings support the danger appraisal process of the public discrimination model, such that personal responsibility beliefs do not mediate the relationship between perceived risk and anxiety.

2.3. Differences between the vignette conditions

Table 4 shows means and standard deviations for the dependent variables for both vignette conditions.

Table 4
Means and standard deviations of dependent variables for each vignette condition.

	With control 'drug' condition		Without control 'abuse' condition		Significance
	Mean/median	S.D./I-QR	Mean/median	S.D./I-QR	
Personal responsibility	11.0[a]	5.0[b]	8.0[a]	2.8[b]	$p < 0.001$
Sympathy	19.8	3.5	19.8	3.3	$p = 0.44$
Anger	13.2	4.6	10.8	4.9	$p = 0.001$
Anxiety	13.0	4.3	12.4	4.3	$p = 0.18$
Helping/rejecting behaviour	22.0[a]	6.0[b]	25.0[a]	4.0[b]	$p = 0.004$
Coercion/segregation	12.0[a]	8.0[b]	8.5[a]	7.8[b]	$p < 0.001$
Manipulation	10.3	3.4	8.6	2.3	$p < 0.001$
Risk	25.0[a]	4.0[b]	23.0[a]	8.8[b]	$p = 0.005$

[a] Median.
[b] Inter-quartile range (I-QR).

Mann–Whitney and independent *t*-tests, revealed significant differences between the two vignette conditions on personal responsibility, coercion/segregation, helping/rejecting behaviour, perceived risk, anger and manipulation variables. These results indicate that in contrast to those who read the abuse (without control) vignette, students who read that Mary's self-harm was caused by drug misuse, were more likely to view her as being responsible for the self-harm, to view self-harm as a manipulative behaviour, feel that she was at heightened risk, and feel more anger towards her. Additionally, these students were less willing to be helpful and showed more support for coercion/segregation. Interestingly, no statistically significant differences were found on either the sympathy or anxiety variables.

2.4. Effects of student group on dependent variables

A series of two-way ANOVAs were conducted on the potential confounding variables of familiarity, age, gender, and social desirability, by student group and vignette condition. A significant interaction between student group and vignette condition was observed for familiarity ($F_{3,157} = 5.178$, $p = 0.002$). Therefore, a series of two-way ANCOVAs, controlling for familiarity, were conducted in order to compare the dependent variables between the student groups and investigate any interaction between student group and vignette condition for each of the dependent variables. Significant main effects were found for student group on each of the dependent variables (see Table 5). Significant main effects were followed up with pair-wise comparisons using, as appropriate, either Mann–Whitney *U* or Tukey HSD tests.

2.4.1. Personal responsibility beliefs

Nursing students were significantly more likely to attribute higher levels of personal responsibility beliefs for self-harm than clinical psychology students ($p = 0.14$), but their scores were no different from either medical or physic students.

2.4.2. Anger

Physics students expressed significantly more anger than nursing and clinical psychology students ($p = 0.001$, $p = 0.002$, respectively), but no more than medical students.

2.4.3. Anxiety

Nursing students expressed significantly less anxiety than any of the other three student groups (all, $p < 0.001$).

2.4.4. Helping behaviour

Medical students expressed a lesser degree of helping behaviour than nursing and clinical psychology students ($p < 0.001$, $p = 0.002$, respectively), and nursing students expressed a higher level of helping behaviour than physics students ($p < 0.001$). There was no significant difference between medical and physics students in reported levels of helping behaviour.

2.4.5. Coercion/segregation

Medical students reported significantly more support for coercion/segregation than nursing or clinical psychology students (both, $p < 0.001$), but were no different from physics students.

2.4.6. Perceived manipulation

Medical students were significantly more likely to view self-harm as manipulative in nature compared with clinical psychology students ($p < 0.043$), but this was no different from nursing or physics students.

Interaction effects between student group and vignette condition were only found for the clinical psychology and physics student groups on the two variables of sympathy and risk (see Figs. 1 and 2).

In contrast to medical, nursing and physics students, clinical psychology students expressed significantly more sympathy for the vignette character in the 'with control' drug condition than they did for the vignette character in the 'without control' abuse condition.

For perceived risk, both clinical psychology and physics students were significantly more likely to perceive a higher level of risk for the character in the 'with control' drug condition than for the character in the 'without control' abuse condition ($p < 0.001$, $p = 0.024$, respectively) (see Fig. 2).

The above main effects and interaction effects show that there were significant differences in the way that student groups responded across vignette conditions, and that for clinical psychology students and physics students responses on the variables of sympathy and risk interacted with the vignette they read.

3. Discussion

The main purpose of this study was to apply a specific theoretical model of mental health stigma to investigate the ways in which causal attributions of healthcare and non-health care students affect personal responsibility beliefs, emotional responses and the likelihood of helping and rejecting behaviours towards adolescents who self-harm. There were several key findings. First, consistent with the model tested and irrespective of vignette condition, predicted relationships were found between cognitive, emotional and behavioural

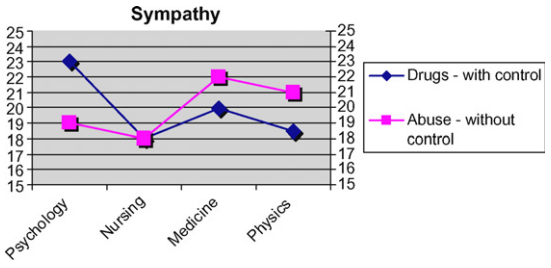

Fig. 1. Interaction effect for sympathy.

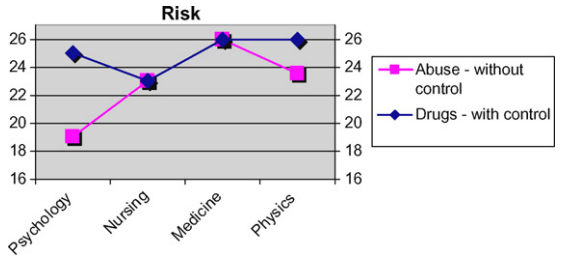

Fig. 2. Interaction effect for risk.

variables. Specifically, students who believed that a young person was responsible for their self-harm, reported higher feelings of anger towards them. Anger, in turn, was associated with a belief in the manipulatory nature of the self-harm and with less willingness to help. Perceived risk was found to be associated with higher levels of anxiety and increased support for the use of coercive and segregatory strategies to manage a young person's self-harming behaviour. Moreover, the relationship between perceived risk and anxiety was not found to be mediated by personal responsibility, thus supporting the danger appraisal process stipulated in Corrigan et al.'s (2003) public discrimination model.

These findings indicate that healthcare training programmes need to challenge beliefs about personal responsibility for self-harm that may underpin feelings of anger and lead to a misconception that the behaviour is aimed at manipulating others, as has been found elsewhere (Friedman et al., 2006). Indeed, research has already identified that the stereotypical portrayal of self-harm as primarily a manipulative strategy is misleading (Conterio and Lader, 1998; Favazza, 1992), especially given its usually private and secret nature (Levenkron, 1998). By focusing more on students' cognitions and helping behaviour, best practice can be shaped and encouraged.

Personal responsibility beliefs were significant in determining the students' thoughts and feelings towards the young person depicted in the vignette conditions. When the cause of the self-harm was perceived as under the young person's control (i.e. through their drug misuse), the students' beliefs and proposed responses were less favourable than when the behaviour was viewed as beyond the young person's control (i.e. the result of abuse). These findings, derived from experimental manipulation, are consistent with those proposed in Corrigan et al.'s (2003) model. Once again, given the association between attributions of controllability and emotional and behavioural variables, training and education programmes should focus on the cognitive processes surrounding the perceived cause(s) of self-harm behaviour (particularly drug misuse and other causes perceives as 'controllable') and aspects of personal responsibility, if they want healthcare students to feel less anger towards such patients and increase the quality and appropriateness of care they provide to individuals who self-harm.

Consistent with previous studies (e.g., Mackay and Barrowclough, 2005; Warm et al., 2002), findings indicated that gender and student type were important influences on public stigma. In comparison to women, the analyses showed that men reported higher levels of anger, anxiety, risk, perceived manipulation, less willingness to help, and greater support for coercive and segregatory behaviours in response to Mary' self-harm. Whilst not always a consistent finding (Patterson et al., 2007a), the gender effect may suggest that healthcare training programmes need to be more aware of and tailored to gender specific differences in the way students respond to young people who self-harm. Findings from previous research add weight to this recommendation, as women have generally been shown to be more sympathetic to expressed mental health needs than men (Samuelsson et al., 1997).

With regard to student type, medical students displayed significantly more negative attitudes towards the young person's self-harm, than did nursing or clinical psychology students. Indeed, the views of medical students were similar to those of the non-healthcare physics group, both of which reported being less familiar with self-harm than either of the other two healthcare student groups. Nonetheless, when familiarity with self-harm was controlled for, medical and physics students reported similar high levels of anger, similar low levels of intended helping behaviour, and similarly high levels of support for the use of coercive and segregatory behaviours, in comparison to nursing and clinical psychology students. These findings suggest that, in a clinical setting, medical students are more likely to endorse discriminatory behaviour towards patients who self-harm, than either nursing or clinical psychology students. This is a worrying finding given that medical staff have been found to report that they have adequate skills to work with people who self-harm and perceive less of a need for further training (Mackay and Barrowclough, 2005).

Interestingly, even when familiarity is controlled for, nursing students reported significantly lower levels of anxiety in response to self-harm behaviour than any of the other three groups. In part, this finding may be influenced by gender. Women were significantly less likely to express anxiety in response to the vignette character's self-harm. However, whilst there were more females students in the nursing group than either the medical or physics groups, the gender distribution was similar to that of the clinical psychology students. For clinical psychology students, they reported Mary as having the lowest level of personal responsibility for her self-harm behaviour, and were the group least likely to see Mary's behaviour as being manipulative. These latter findings most likely reflect the multi-modal theoretical training of clinical psychologists that specifies and contextualises the functionality of behaviour.

A further main finding of this study was a significant interaction effect between student group and vignette condition for sympathy and risk. These findings indicate that, in contrast to the other student groups, clinical psychology students were significantly more sympathetic towards the character in the drug misuse vignette than the abuse vignette,

Table 5
Means and standard deviations for student group and vignette condition, main and interaction effects.

	Medical		Psychologists		Nurses		Physics		Test statistic/significance	Student group × Vignette condition
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Personal responsibility (with control)	11.20	3.12	9.00	3.24	11.00	2.20	11.03	3.71	$F_{3,148} = 3.077$, $p = 0.029$	$F_{3,148} = 1.018$, $p = 0.386$
Personal responsibility (without control)	8.25	3.02	7.31	1.49	8.68	2.91	7.80	2.47		
Sympathy (with control)	20.27	3.24	22.61	2.59	17.95	1.76	18.96	4.00	$F_{3,148} = 7.426$, $p < 0.001$	$F_{3,148} = 7.259$, $p < 0.001$
Sympathy (without control)	22.06	2.46	18.68	2.85	17.53	3.22	20.92	2.83		
Anger (with control)	14.47	3.66	12.56	5.71	10.85	4.55	14.54	4.13	$F_{3,148} = 5.057$, $p = 0.002$	$F_{3,148} = 1.431$, $p = 0.236$
Anger (without control)	10.93	4.80	7.93	3.91	9.74	3.96	13.44	4.95		
Anxiety (with control)	14.40	2.82	14.28	4.08	8.75	2.88	14.57	4.13	$F_{3,148} = 10.322$, $p < 0.001$	$F_{3,148} = 2.258$, $p = 0.084$
Anxiety (without control)	13.38	3.07	11.00	3.98	9.42	4.11	14.92	3.80		
Helping (with control)	24.27	5.66	28.67	5.47	32.50	1.91	25.79	3.38	$F_{3,148} = 11.290$, $p < 0.001$	$F_{3,148} = 2.435$, $p = 0.067$
Helping (without control)	28.36	4.75	32.88	2.31	31.74	2.70	30.44	4.01		
Coercion (with control)	16.00	4.91	9.50	4.51	8.30	2.99	14.96	4.06	$F_{3,148} = 11.790$, $p < 0.001$	$F_{3,148} = 1.693$, $p = 0.171$
Coercion (without control)	11.69	6.29	6.81	3.45	8.16	2.77	12.40	4.41		
Manipulation (with control)	11.67	2.55	9.61	2.35	9.70	5.05	10.39	2.71	$F_{3,148} = 6.457$, $p < 0.001$	$F_{3,148} = 0.779$, $p = 0.508$
Manipulation (without control)	9.31	2.24	7.38	1.71	7.95	2.07	9.28	2.59		
Risk (with control)	26.80	2.55	24.33	2.81	22.65	5.58	26.21	2.44	$F_{3,148} = 7.023$, $p < 0.001$	$F_{3,148} = 3.864$, $p = 0.011$
Risk (without control)	26.38	5.23	17.75	4.13	21.47	5.60	24.08	3.23		

and this may reflect psychologists' greater recognition and understanding of the psychological and social problems comorbid with drugs misuse. Additionally, clinical psychology and physics students were significantly more likely to perceive a higher level of risk for the 'with control' drug vignette character compared to the 'without control' abuse vignette character. Furthermore, like physics students, clinical psychology students are also likely to perceive a higher level of risk for self-harm associated with drug misuse. It could be hypothesised that the observed increase of perception of risk for these two student groups could be related to less familiarity during training with drugs compared to medical and nursing students who are more likely to have had specific training regarding the actions, uses, and side effects of drugs.

Finally, some limitations of the study should be acknowledged. The generalisability of the findings here cannot be assumed due to the use of only two Universities and the relatively high non-completion rate for the medical student group. Also, the student nurses participating in this study were not mental health nurses (and mental health nurses have reported more positive attitudes to self-harm than general nurses; Patterson et al., 2007a), so the findings for this group cannot be automatically generalised across all nursing populations. However, it is likely that these nurses, whether practising in paediatric, adult or accident and emergency settings, will be some of the first health professionals encountering teenage self-harm behaviour, so an exploration of their attitudes is vitally important. A further limitation is the extent to which the self-reported attitudes and behavioural intentions measured here translate into actual behaviour. Although, social desirability was controlled for in this study, what students and staff actually do in care settings within the parameters of available healthcare options and resources or under the influence of care teams' attitudes, remains to be more fully explored and understood. Dagnan et al. (1998) note the difficulties with the development of a valid measure of helping behaviour in clinical settings, particularly as withholding help by staff may not be an option, but is likely to be reflected in alternative ways, which future research needs to investigate (Mackay and Barrowclough, 2005). With regard to familiarity with self-harm, this study used a simplified measure of familiarity (i.e. total score for the amount of contact and training) and, given its importance to attribution, emotional and behavioural variables, future research should look to the development of a more comprehensive measure inclusive of both quantity and quality of contact. Indeed, given that previous research has found that nurses who had previously received self-harm training reported less anger towards patients who self-harm than those who had not received such training (Friedman et al., 2006), and that some nursing staff have felt that they lack skills to deal with self-harm and or that care is 'futile' (Patterson et al., 2007a; Samuelsson and Asberg, 2002), suggests that the perceived importance and adequacy of training should also be measured in future work. Moreover, this study used simple scenarios describing self-harm behaviour that provide a single causation. When students and staff encounter people who self-harm in clinical settings, a range of personal and contextual factors are likely to affect their affective and behavioural responses. Thus, the self-harm behaviour depicted in the vignettes may have had less salience for the participants, thus compromising the ecological validity of the findings.

Notwithstanding these limitations, this study provides evidence that a number of factors may adversely affect the care and treatment received by people who self-harm, namely: students' causal attributions, the gender and profession of healthcare students, and familiarity with self-harm behaviour. To improve the effectiveness of service provision and treatment outcomes for people who self-harm, it is important that health care service providers and teaching institutions consider the implications of these factors when developing staff and services. These factors should be incorporated into training and education programmes, supervision agendas, psychoeducational materials, and specific training programmes on stigma change and self-harm. Students' beliefs about the causes of self-harm should be examined and challenged, and they should have the opportunity to reflect upon and understand the cognitive–affective–behavioural relationships, with access to structured time, space and learning opportunities to facilitate such a process (Friedman et al., 2006; Patterson et al., 2007a). Additionally, to help achieve long-term positive attitude change, previous research highlights the importance of not only considering the education and experiential learning opportunities given to students and staff within professional training programmes, but the necessity for continual professional development and ongoing reflective practice to consider the feelings and experiences of both students, staff and those of service users themselves (McCann et al., 2006; Patterson et al., 2007b). The results of this study might suggest that a multi-disciplinary training forum may help facilitate change by exploring different attitudes and introducing fresh perspectives, and that training should be offered irrespective of perceived need.

This study has shown that different groups of healthcare students hold different attitudes towards self-harm and that such attitudes are related to cognitive–affective and behavioural intention processes. NICE (2004), NIHME (2005) and the Mental Health Foundation (2006), amongst others, acknowledge the unacceptable experiences received by people who self-harm and state the need for greater understanding of self-harm behaviour. To this end, the theoretical model examined here is seen as one way in which healthcare students' attitudes can be explored and understood to hopefully enhance the clinical and ethical aspects of care to those who self-harm. However, in order to continue to address effectively the complex and challenging needs of those young people who self-harm and the complex dimensional attitudes of healthcare staff (Anderson and Standen, 2007), it is imperative that interventions, what ever they may be, continue to apply theory to help bring about change.

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Conflict of interest

None declared.

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