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ORIGINAL PAPER

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Sex, gender role orientation, gender role attitudes and suicidal thoughts in three generations

A general population study

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Abstract *Background* Suicide and other suicidal behaviours are markedly (though differently) patterned by gender. The increase in young male suicide rates in many countries has heightened interest in whether suicidal behaviours and ideation (thoughts) are related to masculinity. Relatively little research has explored the relationship between gender role attitudes and orientation and suicidal behaviours and ideation. Most research in this area has been conducted with young people. *Objective* We investigated whether gender role orientation (masculinity and femininity scores) and gender role attitudes were related to the reporting of serious suicidal thoughts in three generations (early adulthood, and early and late middle age) in a community sample. *Methods* Subjects (653 men and women aged around 23 years, 754 aged around 43 years, 722 aged around 63 years) completed home interviews with nurses as part of an ongoing longitudinal community-based study of social factors and health. These included measures of suicidal ideation (thoughts), attitudes to traditional gender roles, and a validated measure of gender role orientation (masculinity and femininity scores). *Results* The prevalence of serious suicidal thoughts was higher in early adulthood (10% men, 15% women) than in early (4% men, 8% women) and late (6% men, 5% women) middle age. In early adulthood only sex was significantly related to suicidal thoughts, with women at higher risk (adjusted OR 1.74, 95% CI 1.01–3.00). In early middle age masculinity scores were negatively related to suicidal thoughts (adjusted OR for each unit increase in score 0.65: 95% CI 0.46–0.93), and more traditional views on gender roles were positively associated with suicidal thoughts (adjusted OR 1.48: 95% CI 1.07–2.04). In late middle age trends were in the same direction as in early middle age, but were not statistically significant. Femininity scores were unrelated to serious suicidal thoughts at any age. *Conclusion* The high rates of suicidal thoughts amongst men and women in early adulthood point to the importance of understanding mental health problems at this age. The results raise a number of questions and suggest that suicide researchers should pay more attention to gender roles and attitudes in older adults.

Key words gender – gender role attitudes – masculinity – suicidal ideation

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Introduction

Suicide is a cause of death that is markedly patterned by gender. World Health Organisation (WHO) data for 1995–1996 show that male suicides exceeded female suicides in every country except China [1, 2]. The resgularity of this pattern has been described as "remarkable considering that the 84 reporting countries represent a wide variety of cultures, religions, standards of living, education systems, mental health services, reporting criteria, economies and other factors that might be presumed to have some effect on reported suicide" (p. 373) [2]. However, the magnitude of the sex ratio in suicides is not static across

age, geographical location or time. In the UK, for example, the ratio of male to female suicides in people aged 15 and over increased from 1.6 in 1979 to 3.5 in 2001, as female suicide deaths declined (until the mid–1990s), whilst male suicides rose throughout the 1980s and then declined steadily until 2001 [3].

Whilst the aetiology of suicide is complex at an individual level, [4] Hawton has suggested that social factors, "especially [those] linked to changes in gender roles", are the most likely explanation for differential trends in suicide in men and women [1]. Similarly, Maris et al. emphasize the "complex and important role" which gender plays in suicidal behaviour [5] (p. 167). Explanations proffered for a male predominance in suicide include that: men tend to choose more lethal methods [6–8]; they may be less resilient in the face of major stressors (life events), such as marriage breakdown [6]; they may have more psychopathology [6–8]; they have a greater propensity to violence [5, 6, 8]; they are more inclined to abuse substances [5, 7–11]; they tend to be more reluctant to seek help or less able to articulate emotional distress [6, 8, 12]; and suicide may be seen as more acceptable for men. [7, 8] Several of these, and particularly the latter four, are linked to contemporary constructions or "practices" [13] of masculinity.

Attention was drawn to issues of gender, and masculinity in particular, when several countries [14] (including the USA [15], France [16], New Zealand [17] and the UK [3]) noted a marked increase in suicides in *young* men in the 1980s and 1990s. This has raised questions not only about whether serious mental health problems are higher in young adults, [18] but also whether young men's high suicide rates are linked to a "crisis" in masculinity. Moller-Leimkuhler asserts that "significant changes in social roles and reality for women have led to a deconstruction of traditional masculinity which has not yet been substituted by new role models for men ... [A]lthough the content of gender stereotypes has remained stable over years ... male-associated attributes, which were positively valued two decades ago, are now consistently less valued compared to female-associated attributes" (p. 4) [19]. In a review of the reasons for the trends in young suicides in the UK, Hawton concludes that "the most likely explanation ... lies in social changes, particularly in terms of perceived or actual reduction of role opportunities, which have differentially affected the relative vulnerability of males and females to emotional difficulties; compounded by hopelessness ... with substance abuse and difficulty in help-seeking being additional contributory factors (p. 122–123) [14].

However, few studies have examined suicide rates in relation to measures of "masculinity". A study which explored "cultural values" as predictors of suicide incidence rates did include a "masculinity" dimension. Suicide data for 33 nations for the years 1965, 1970, 1975, 1980 and 1985 (from the WHO's World Health Statistics) were correlated with "cultural" variables derived from earlier (1967) questionnaire data on "work-related values" (Hofstede, 1980 cited in ref. [2]) from 88,000 people in 66 countries. This included a "masculinity" dimension which was said to describe "a people's differentiation of men and women into distinct roles, with women and their social and environmental concerns having lower status" (p. 374) [2]. This measure of "masculinity" was "completely unrelated" to suicide in young men and women, with a weak negative correlation between "masculinity" and suicide for men and women aged over 24. The authors argued that the cultural values they identified "have inertia in that they are resistant to change and are transmitted to successive generations" (p. 378) [2]. However, the degree to which this is true for the "masculinity" dimension and how robust this was as a measure of masculinity (rather than gender inequality) is open to question. Certainly as this was an ecological analysis at country level it was not able to address individual variations in masculinity and suicide.

The link between suicide and suicidal ideation is complex. High suicidal intent in an episode of non-fatal suicidal behaviour is associated with an elevated risk of future completed suicide, [20] although fewer than 1 in 200 people who experience suicidal thoughts go on to complete suicide posing challenges for effective prevention [21]. It has been estimated that 31% of the clinical population, and 24% of the general population, have considered suicide at some time in their lives [22]. In contrast to "completed" suicide, rates of other (non-fatal) suicidal behaviours and deliberate self-harm (DSH) are typically higher among women rather than men (with Finland posing a "possible exception" within Europe), although there is evidence in many countries that DSH is increasing amongst men, especially in the UK [1]. An 18 month follow-up survey of 2404 adults taking part in the second National Psychiatric Morbidity Survey (in Great Britain) found an overall annual incidence of suicidal thoughts of 2.6% (95% CI 2.0–3.4) in women and 2.0% (95% CI 1.3–3.1) in men [21]. In the USA adolescent females are 1.5–2 times more likely to report suicidal ideation (around 24% of females and 15% of males aged 14–18 years experienced suicidal thoughts over their lifetime) and more likely to engage in nonfatal acts of suicide behaviour (average ratio 3:1) [15]. This again suggests the importance of trying to understand the link between gender and non-fatal suicidal thoughts and behaviours.

Electronic searches [using suicid* and (gender role or masculin* or feminin*) as keywords on the Web of Science] identified more published research on gender roles in relation to other suicidal behaviours (rather than suicide itself). However, the studies we identified used widely differing operationalisations of "masculinity" and "femininity". One study [23] reviewed the medical charts of 112 11–18 year old patients who were assessed consecutively for suicidal

behaviour or ideation at a Canadian hospital to try and discern whether they recorded "any crisis related to conflict based on gender roles" (p. 474). However, this study was not able to distinguish between what young men and women actually discussed in their consultations and what doctors recorded. In another study [24] "masculinity" was assessed in relation to "psychosomatic" symptoms, with a "high tendency to produce psychosomatic symptoms" being taken to indicate low "masculinity".

Two studies (both from the USA) [25, 26] used a validated measure of masculinity, derived from the Personal Attributes Questionnaire (PAQ) [27]. The first [25] compared depression, self-esteem, and "suicidality" [as assessed using the Beck Depression inventory self-harm item (item 8)] in 290 female and 247 male psychology undergraduates at a large state university in the western USA. As anticipated from earlier research, self-reported depression was negatively associated with the masculinity score for both men and women (even after controlling for gender, femininity score and life events). Self-reported depression was negatively related to the femininity score for women only. There was, however, no gender difference in suicidality, and amongst both men and women suicidality was negatively associated with masculinity, even after controlling for life events. Waelde et al. [25] "cautiously" concluded that their findings "did not support arguments that masculinity constitutes a vulnerability to suicidality .. [but] ... suggest that masculinity served as a protective factor, consistent with the thrust of the gender roles literature" (p. 8). In this study, suicidality was not related to PAQ femininity score. In a later study, Cato and Canetto [26] investigated young adults' attitudes towards peers who engaged in suicidal behaviour in response to four hypothetical scenarios (coming out as gay, a physical illness, relationship loss and an academic failure) in relation to sex and gender identity (as assessed with the PAQ). They found that whilst all "suicidal persons" were perceived as relatively feminine, suicidal males were rated as "more masculine if they engaged in suicidal behavior because of an academic failure or a physical illness, while suicidal females were viewed as more masculine only if their suicidal behavior followed an academic failure" (p. 201). This is consistent with Canetto's earlier review [15] of studies (conducted primarily with adolescent and young adult respondents) from independent research teams in the United States. She reported that these consistently found that "nonfatal suicidal behavior (so called 'suicide attempts') is viewed as feminine ... [suggesting] that some identification with, or adoption of, behaviours considered feminine in the United States may lead to an increased risk for nonfatal suicidal behavior" (p. 343–344). Whilst nonfatal suicidal behaviour is viewed as feminine, she notes that "killing oneself is considered less permissible for females than for males" (p. 345) and is viewed as masculine. Conversely, surviving a suicidal act is "perceived as inappropriate behaviour for a male". She suggests that young women's high rates of nonfatal suicidal behaviour and low rates of suicide mortality, and young men's low rates of nonfatal suicidal behavior and high rates of suicide mortality, might be explained at least in part by these beliefs and attitudes about gender and suicidal behaviour.

In summary, both suicide and other suicidal behaviours are strongly (though differently) patterned by gender. However, the emerging literature on gender, gender role orientation (masculinity and femininity) and suicidal behaviour [1, 15, 19, 25, 28] is difficult to summarise because existing studies have used very different conceptualisations and measures both of suicidal behaviour and "masculinity". Most of this research has focussed to date on adolescents or young adults. Certainly there is a consensus developing that we need further research to understand the links between gender and suicidal behaviours [1, 15, 19].

The present study uses data from a UK community-based longitudinal study in order to investigate relationships between suicidal ideation (thoughts) and two measures of gender (gender role orientation and gender role attitudes) in three generations (men and women in early adulthood, and early and late middle age). Extrapolating from existing literature, our hypotheses were that:

1. in each cohort, women would be more likely to report ever having had serious suicidal thoughts than men;
2. the prevalence of serious suicidal thoughts would decline with age;
3. those with higher masculinity scores would be less likely to report suicidal thoughts (as masculinity scores have been shown to be associated with better mental health);
4. femininity scores would be unrelated to suicidal thoughts (given the lack of association between femininity scores and health, including depression, in other studies).

Given the widespread challenges to traditional gender roles in the lifetimes of the three generations in our study, [29–31] we examined these hypotheses separately in the three different cohorts. We also examined how *attitudes* towards gender roles were related to suicidal thoughts, although we did not have a prior hypothesis as to whether traditional attitudes would be positively or negatively related to suicidal thoughts.

Methods

Participants are from the West of Scotland Twenty-07 Study, a longitudinal study of social patterning of health in three age cohorts, born in the early 1970s, 1950s and 1930s, aged around 15, 35 and 55 years when first studied in 1987/8. Respondents were sampled from residents in the Central Clydeside Conurbation, a socially varied but mainly urban area centred on Glasgow. Initial sample

sizes in 1987/88 were around 1000 per cohort. Detailed structured interviews conducted by nurses trained in interview techniques were completed in 1987/8, 1990/1, 1995/6 and 2000/2, usually in the respondent's home. These included a wide range of measures of self-reported health and health behaviour, of physical development and functioning, and of personal and social circumstances.

In 1990/1 interviews included questions on suicidal ideation (*any* suicidal thoughts ["Have you ever thought that life was not worth living?"] and *serious* suicidal thoughts ["Have you ever seriously thought about taking an overdose of drugs or injuring yourself deliberately?"] [32]. In 1995/6, when the cohorts were aged around 23 (n = 676), 43 (n = 754), and 63 years (n = 723), they were asked similar questions covering the period from 1991 to the time of interview. Responses from both periods of data collection were combined to give measures of suicidal ideation up to 1995/6. Here we use ever having had *serious* suicidal thoughts as our outcome variable.

Gender role orientation was assessed using the Short Form of the Bem Sex Role Inventory (BRSI), a widely used measure of gender role orientation [33, 34]. This measure is premised on the assumption that masculinity and femininity are both conceptually and empirically independent. It relies on an individual's endorsement (assigning a score from 1 – "never or almost never true" to 7 – "always or almost always true") of a series of qualities which have been judged to be culturally characteristic of either males or females. This measure has been validated in Scotland [35]. The masculinity and femininity scores are each the mean of ratings of 10 items (masculinity – defend my own beliefs, independent, assertive, strong personality, forceful, have leadership abilities, willing to take risks, dominant, willing to take a stand, aggressive; femininity – affectionate, sympathetic, sensitive to the needs of others, understanding, compassionate, eager to soothe hurt feelings, warm, tender, loves children, gentle). As an inspection of missing data showed that cases with any missing data mostly either missed all or only one or two items, masculinity and femininity scores were calculated for subjects who answered eight or more of the 10 items.

The masculinity and femininity scores were generally normally distributed [36]. The correlations between masculinity and femininity scores were low for males in each of the cohorts (r = 0.15, r = 0.00, r = 0.09 for 1970s, 1950s and 1930s cohorts respectively), and only slightly higher amongst women (r = 0.13, r = 0.18, r = 0.21). The internal reliability of both scales was high for all cohorts (Cronbach's α for masculinity scales for the 1970s, 1950s and 1930s cohorts 0.79, 0.85 and 0.84 respectively; equivalent figures for the femininity scores 0.87, 0.90 and 0.89). As expected masculinity scores were significantly higher for males than females in each cohort (although the magnitude of this gender differences was smallest in the oldest cohort) and masculinity scores decreased with age for both sexes. Femininity scores were higher in females in each cohort, and showed a slight increase with age in both sexes.

A gender role attitude scale (range 1–5) was calculated from the level of agreement (strongly agree, just agree, neither agree nor disagree, just disagree, strongly disagree) with three statements about traditional gender roles (high scores = more traditional). These were: "Some equality in marriage is a good thing, but by and large the husband ought to have the main say-so in family matters"; "Women rather than men should look after relatives that need care"; and "A husband's job is to earn the money, a wife's job is to look after the home and family". Cronbach's αs for the gender roles attitudes scale were 0.82, 0.73 and 0.65 for men in the 1970s, 1950s and 1930s cohorts respectively and 0.66, 0.70 and 0.72 for females. In all cohorts males had significantly more traditional views than females, the biggest gender difference being apparent in the youngest cohort, and older people had more traditional attitudes with respect to gender roles.

A series of logistic regression models was conducted separately for the outcome measure, serious suicidal thoughts (ever thought about taking an overdose or deliberate self-harm). For each cohort, sex was first entered into the model alone (unadjusted odds ratio). Then the masculinity, femininity and gender role attitudes scores were each separately entered into the model with sex. Finally sex, and all measures of gender role orientation and attitudes were modelled together (fully adjusted model).

Results

The prevalence of serious suicidal thoughts was significantly higher in the 1970s cohort (9.7% of men, 14.5% women), than in the 1950s (3.9% of men, 8.3% women), and 1930s (5.6% of men, 5.3% women) cohorts (X^2 = 25.3, p = 0.000 comparing 1970s cohort with 1950s and 1930s cohorts combined) (Table 1, column 1).

There was no gender difference in serious suicidal thoughts in the oldest group (OR 0.93, 95% CI 0.49–1.79; Table 1, column 2). In early middle age women were more likely than men to express serious suicidal thoughts (OR 2.21, 95% CI 1.15–4.25). In the youngest cohort the elevated odds ratio for women was of borderline significance (OR 1.58, 95% CI 0.97–2.55).

The masculinity score was not associated with serious suicidal thoughts in the 1970s cohort (see adjusted only for sex in Table 1, column 3). In the older two cohorts, higher masculinity scores were associated with a decreased likelihood of reporting serious suicidal thoughts, although this was only statistically significant for the 1950s cohort (OR 0.64, 95% CI 0.46–0.91). The magnitude and the significance of these associations were little affected by adjusting for the femininity and attitudes scores (Table 1, column 6). The femininity scores showed no association with serious suicidal thoughts in any of the cohorts, either before (column 4) or after adjustment (column 6).

The association between the gender role attitudes score and suicidal thoughts also showed a different pattern in the youngest cohort in comparison with the two older cohorts. Gender role attitudes were unrelated to suicidal thoughts in the 1970s cohort, either before or after adjustment for the masculinity and femininity scores (columns 5 and 6 respectively). In the 1950s cohort, those with more traditional scores were more likely to report suicidal thoughts (unadjusted OR 1.46, 95% CI 1.07–2.00; adjusted OR 1.48, 95% CI 1.07–2.04). In the 1930s cohort the odds were again raised, but fell short of conventional levels of statistical significance (unadjusted OR 1.36, 95% CI 0.98–1.88; adjusted OR 1.37,95% CI 0.96–1.96).

Finally, adjusting for gender role orientation and attitudes slightly increased the odds ratio for sex for serious suicidal thoughts from 1.58 (95% CI 0.97–2.55) to 1.74 (95% CI 1.01–3.00) in the youngest cohort but decreased it in the older two cohorts (see Table 1, columns 2 and 6).

Discussion

Whilst it has been argued that suicidologists have "historically ignored the question of gender" [15] (p. 341) and that gender differences in "the expression of and associations among various suicide-related behaviours have been a relatively neglected topic"

Table 1 Serious suicidal thoughts ("Ever thought about an overdose or deliberate self-harm"), according to gender, gender role orientation and gender role attitudes by cohort

	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6	
	N	% (95% C.I.)	(95% C.I.)	Sig.	(95% C.I.)	Sig.	(95% C.I.)	Sig.	(95% C.I.)	Sig.	(95% C.I.)	Sig.
1970s cohort	80/652	12.3 (10.0–15.0)										
Sex – Male	30/308	9.7 (6.9–13.6)	1.00		1.00		1.00		1.00		1.00	
Female	50/344	14.5 (11.2–18.7)	1.58 (0.97–2.55)	0.064	1.71 (1.04–2.83)	0.035	1.65 (0.99–2.76)	0.054	1.57 (0.95–2.60)	0.079	1.74 (1.01–3.00)	0.046
Bem masculinity score					1.10 (0.80–1.51)	0.560					1.10 (0.80–1.52)	0.541
Bem femininity score							0.95 (0.69–1.30)	0.731			0.94 (0.68–1.30)	0.709
More traditional gender role attitudes									0.97 (0.71–1.33)	0.842	0.96 (0.70–1.32)	0.799
Nagelkerke R^2			0.010		0.014		0.012		0.011		0.014	
1950s cohort	48/753	6.4 (4.8–8.4)										
Sex – Male	13/331	3.9 (2.3–6.6)	1.00		1.00		1.00		1.00		1.00	
Female	35/422	8.3 (6.0–11.3)	2.21 (1.15–4.25)	0.017	1.70 (0.86–3.35)	0.128	1.96 (0.98–3.91)	0.057	2.43 (1.24–4.77)	0.010	1.74 (0.84–3.63)	0.139
Bem masculinity score					0.64 (0.46–0.91)	0.013					0.65 (0.46–0.93)	0.017
Bem femininity score							1.11 (0.73–1.69)	0.614			1.22 (0.79–1.88)	0.370
More traditional gender role attitudes									1.46 (1.07–2.00)	0.017	1.48 (1.07–2.04)	0.018
Nagelkerke R^2			0.022		0.041		0.019		0.039		0.063	
1930s cohort	39/720	5.4 (4.0–7.3)										
Sex – Male	18/321	5.6 (3.6–8.7)	1.00		1.00		1.00		1.00		1.00	
Female	21/399	5.3 (3.5–7.9)	0.93 (0.49–1.79)	0.839	0.77 (0.39–1.53)	0.454	0.83 (0.41–1.68)	0.611	0.98 (0.51–1.88)	0.953	0.77 (0.37–1.58)	0.476
Bem masculinity score					0.74 (0.51–1.08)	0.124					0.74 (0.50–1.10)	0.135
Bem femininity score							0.98 (0.62–1.54)	0.936			1.06 (0.67–1.67)	0.814
More traditional gender role attitudes									1.36 (0.98–1.88)	0.068	1.37 (0.96–1.96)	0.080
Nagelkerke R^2			0.000		0.012		0.001		0.014		0.026	

[28] (p. 839), the marked patterning of both completed suicide and other suicidal behaviours by gender has led to an increasing recognition of the importance of undertaking more research on their association [1, 15]. Kung et al. have noted that there are few *empirical* investigations of gender differences in putative risk factors for suicide, [37] although there have been a number of reviews of likely explanations for gender differences, particularly amongst younger people [7, 8, 11, 15]. Despite the concern that excess male suicides, particularly amongst younger people, [18] may reflect a crisis in expressions of gender, particularly masculinity, there are few published studies which look explicitly at masculinity and suicidal behaviours, and fewer still (for example, ref. [25]) using well validated measures of masculinity.

In this study we were able to examine the relationship between serious suicidal thoughts, gender role attitudes and well validated measures [34] of masculinity and femininity in a community sample of men and women from three generations. The prevalence of ever having had serious suicidal thoughts was higher in women than men in early adult life (15% and 10% respectively) and early middle age (8% and 4%), but not in late middle age (6% and 5%). Our prevalence figures for serious suicidal ideation in the older two cohorts are comparable with levels of suicidal ideation (assessed using the GHQ28) in an Australian community sample of men (5.6%) and women (5.3%) [38].

In men and women in early and late middle age, we found a negative association between higher masculinity scores and serious suicidal thoughts (as did Waelde et al. using the PAQ [25]) in men and women in early and late middle age, and a positive association between more traditional gender role attitudes and serious suicidal thoughts at older ages. No such associations were seen amongst people in early adulthood. No relationship was seen between serious suicidal thoughts and femininity scores at any age. These results raise a number of questions.

First, why might higher masculinity scores be related to lower suicidal thoughts in older adults? Perhaps this is best understood in relation to the specific items contributing to the Bem [34–39] masculinity score. Several of these (e.g. defend my own beliefs, independent, assertive, strong personality, have leadership abilities, dominant, willing to take a stand) are plausibly associated with self-mastery and feeling in control of one's life. Furthermore, we have shown, in the 1950s cohort at least, [36] that higher masculinity scores are associated with lower GHQ scores and better self-assessed mental health, and these "masculine" characteristics are highly valued by contemporary western societies. However, in recent years theorists of masculinity have stressed the complex and multifaceted nature of masculinity, or masculinities [13]. Whilst the Bem Sex Role Inventory allows people to rate themselves against some aspects

contributing to common cultural notions of masculinity, other aspects of hegemonic (or dominant forms of) masculinity – which might be health-damaging and in particular make men more vulnerable in relation to suicidal behaviour – are not included. Perhaps the most important of these in this context is the widespread belief that men are reluctant or unable to express their emotions, and to seek help either from family and friends or medical professionals, when they are depressed. Certainly recent empirical research, with both younger [40] and older men [41], supports this view and also suggests that many men who have experienced depression (and contemplated suicide) need to find ways of reconstructing or reaffirming their masculinity after depression [42].

The second question the results raise is why more traditional attitudes to gender roles should be positively associated with suicidal thoughts in older adults. This is less straightforward to address. Perhaps, as traditional gender roles have been increasingly eroded in Britain over the last three decades or so, [29–31] those who still espouse more traditional views feel more at odds with contemporary society. Alternatively, their more traditional views could be a reflection of a more general lack of flexibility and adaptability to social change.

The third question raised is why the associations seen between these dimensions of gender and suicidal thoughts in later adulthood are not seen amongst men and women in early adult life. Again, this is somewhat perplexing. It may be that a sense of one's own gender role and identity is still in a state of flux in early adult life, or that the specific dimensions of masculinity covered by items in the BSRI are not the most relevant to young people's constructions of gender.

Strengths and limitations of the study

Our study has a number of strengths. First, it is a community-based general population sample, whilst many other studies are based on (typically psychology) undergraduates. Secondly, we have a well validated and transparent measure of gender role orientation (masculinity and femininity scores) and a robust measure of attitudes towards traditional gender roles. Perhaps most unusual are our data on older adults (in their early 40s and early 60s) in addition to young adults (in their early 20s).

A limitation of our study is that our measure of serious suicidal thoughts is a single-item measure. Furthermore, when this was asked in 1990/1 ("ever"), it was subject to different periods of recall in the three cohorts. However, when we reanalysed the data looking at the same recall period (i.e. the period between interviews in 1990/1 and 1995/6), the prevalence figures were, as expected, again higher for serious suicidal thoughts in the youngest cohort than in the other cohorts (4.5%, 2.9% and 1.5% for the 1970s, 1950s and 1930s cohorts respectively), and lower in all cases for this shorter and more recent recall period than for the earlier "lifetime" measures.

Conclusion

In the introduction, we highlighted Hawton's observation that social factors, and particularly gender roles, seem to offer the most likely explanation for changing patterns of suicide in men and women [1]. Waelde et al. also note that "Several authors have implicated gender, gender roles, and gender-related negative life events in attempts to account for susceptibility to suicidality ... In the absence of direct empirical evidence, several authors have speculated that traditional gender roles moderate the impact of particular types of life events on suicidality" (p. 4) [25]. Canetto [15] has described the search for explanations for the expanding gender differences in suicide behaviour as one of "the remaining key challenges for suicide research" (p. 343) and remarks that although many theories to explain gender differences in suicide behaviour in adolescence have been proposed, none has been firmly supported, "mostly because the relevant research has not been performed" (p. 343). The findings of our, largely exploratory, study are intended to be a contribution to this developing area and to underline the importance of focusing on other age groups in addition to the period of adolescence and early adulthood which has dominated this area of research to date.

References

1. Hawton K (2000) Sex and suicide. Gender differences in suicidal behaviour. British Journal of Psychiatry 177:484–485
2. Rudmin FW, Ferrada-Noli M, Skolbekken J-A (2003) Questions of culture, age and gender in the epidemiology of suicide. Scand J Psychology 44:373–381
3. Brock A, Griffiths C (2003) Trends in suicide by method in England and Wales, 1979 to 2001. Health Statist Q 20(Winter):7–18
4. Plutchik R (2000) Agression, violence and suicide. In: Maris R, Berman A, Silverman M (eds) Comprehensive textbook of suicidality. Guildford Press, New York 407–423
5. Maris R, Berman A, Silverman M (2000) Suicide, gender, sexuality. In: Maris R, Berman A, Silverman M (eds) Comprehensive textbook of suicidality Guildford Press, New York, pp 145–169
6. Brent D, Moritz G (1996) Developmental pathways to adolescent suicide. In: Cichetti D, Toth S (eds) Adolescents: opportunities and challenges. University of Rochester Press Rochester, NY
7. Canetto SS, Sakinofsky I (1998) The gender paradox in suicide. Suicide life-threat behav 28(1):1–23
8. Beautrais AL (2002) Gender issues in youth suicidal behaviour. Emerg Medi 14:35–42
9. Wadsworth MEJ (1997) Health inequalities in the life course perspective. Social Sci Med 44:859–870
10. Uhlenberg P, Cooney TM (1990) Male and female physicians: family and career comparisons. Social Sci Med 30(3):373–378
11. Wunderlich U, Bronisch T, Wittchen H-U, Carter R (2001) Gender differences in adolescents and young adults with suicidal behaviour. Acta Psychiatr Scand 104:332–339

12. McQueen C, Henwood K (2002) Young men in 'crisis': attending to the language of teenage boys' distress. Social Sci Med 55:1493–1509
13. Connell R (1995) Masculinities. Polity Press, Cambridge
14. Hawton K (1998) Why has suicide increased in young males? Crisis 19(3):119–124
15. Canetto SS (1997) Meanings of gender and suicidal behavior during adolescence. Suicide life-threat behav 27(4):339–351
16. Gasquet I, Choquet M (1993) Gender role in adolescent suicidal behaviour: observations and therapeutic implications. Acta Psychiatr Scand 87:59–65
17. Ferguson S, Blakely T, Allan B, Collings S (2003) Suicide rates in New Zealand. Exploring associations with social and economic factors. Public Health Consultancy, Department of Public Health Wellington School of Medicine and Health Sciences. University of Otago Wellington
18. Rutter M, Smith D (eds) (1995) Psychosocial disorder in young people: time trends and their causes. Wiley Chichester
19. Moller-Leimkuhler AM (2003) The gender gap in suicide and premature death or: why are men so vulnerable? Eur Arch Psychiatry Clin Neurosci 253:1–8
20. Hawton K (2000) General hospital management of suicide attempters. In: Hawton K, van Heeringen K (eds) The international handbook of suicide and attempted suicide. John Wiley and Sons, Chichester 519–537
21. Gunnell D, Harbord R, Singleton N, Jenkins R, Lewis G (2004) Factors influencing the development and amelioration of suicidal thoughts in the general population. Br J Psychiatry 185:385–393
22. Linehan M, Laffaw J (1982) Suicidal behaviours among clients of an outpatient clinic versus the general population. Suicide life-threat behav 12:234–239
23. Pinhas L, Weaver H, Bryden P, Ghabbour N, Toner B (2002) Gender-role conflict and suicidal behaviour in adolescent girls. Can J Psychiatry 47(5):473–475
24. Angst J, Degonda M, Ernst C (1992) The Zurich study: XV Suicide attempts in a cohort from age 20 to 30. Eur Arch Psychiatry Clin Neurosci 242:135–141
25. Waelde LC, Silvern L, Hodges WF (1994) Stressful life events: moderators of the relationships of gender and gender roles to self-reported depression and suicidality among college students. Sex Roles 30:1–13
26. Cato JE, Canetto SS (2003) Young adults' reactions to gay and lesbian peers who became suicidal following "coming out" to their parents. Suicide life-threat behav 33(2):201–209
27. Spence JT, Helmreich RL (1978) Masculinity and femininity: their psychological dimensions, correlates, and antecedents. University of Texas Austin
28. Langhinrichsen-Rohling J, Lewinsohn P, Rohde P, Seeley J, Monson CM, Meyer KA, et al. (1998) Gender differences in the suicide-related behaviours of adolescents and young adults. Sex Roles 39:839–854
29. Walby S (1997) Gender transformations. Routledge, London
30. Annandale E, Hunt K (2000) Gender inequalities in health: research at the crossroads. In: Annandale E, Hunt K (eds). Gender Inequalities in Health. Open University Press, Buckingham, pp 1–33
31. Hunt K (2002) A generation apart? An examination of changes in gender-related experiences and health in women in early and late mid-life. Social Sci Medi 54:663–676
32. West P, Sweeting H (1996) Nae job, nae future: young people and health in the context of unemployment. Health Social Care Community 4(1):50–62
33. Hunt K, Hannah MK, West P (2004) Contextualising smoking: masculinity, femininity and class differences in smoking in men and women from three generation in the west of Scotland. Health Educ Res Theory Pract 19:239–249
34. Bem SL (1981) Bem Sex-Role Inventory. Professional Manual. Consulting Psychologists Press, Inc., Palo Alto, CA
35. Stroebele SA (1992) A validation of the Bem Sex Role Inventory (BSRI) in the West of Scotland. Perception of sex stereotypes. MPH Thesis, University of Glasgow
36. Annandale E, Hunt K (1990) Masculinity, femininity and sex: an exploration of their relative contribution to explaining gender differences in health. Sociol Health Illness 12(1):24–46
37. Kung H-C, Pearson J, Liu X (2003) Risk factors for male and female suicide decedents ages 15–64 in the United States. Social Psychiatry Psychiatr Epidemiol 38:419–426
38. Goldney RD, Wilson D, Dal Grande E, Fisher LJ, McFarlane AC (2000) Suicidal ideation in a random community sample: attributable risk due to depression and psychosocial and traumatic events. Austr N Zeal J Psychiatry 34:98–106
39. Bem S (1974) The measurement of psychological androgyny. J Consult Clin Psychol 42:155–162
40. Biddle L, Gunnell D, Sharp D, Donovan J (2004) Factors influencing help-seeking in mentally distressed young adults: a cross-sectional survey. Br J General Prac 54:248–253
41. O'Brien R, Hunt K, Hart G (2005) Men's accounts of masculinity and help-seeking: 'It's caveman stuff, but that is to a certain extent how guys still operate'. Social Sci Med 61:503–516
42. Emslie C, Ridge D, Ziebland S, Hunt K (2006) Men's accounts of depression: reconstructing or resisting hegemonic masculinity. Social Sci Med 62:2246–2257