



Research paper

Adolescent mental health problems, suicidality and seeking help from general practice: A cross-sectional study (Northern Ireland Schools and Wellbeing study)

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ABSTRACT

Background: Adolescent mental health problems and suicidality appear to be increasing in Western countries but contact with health services remains stubbornly low. While social disadvantage is often implicated in aetiology and help-seeking, evidence on the relative contribution of school and family life factors is limited. We sought (a) to examine the prevalence and factors associated with mental health problems in adolescent boys and girls; and (b) to examine factors associated with trust and contact with GPs for mental health problems.

Method: Cross-sectional study of adolescent pupils in Northern Ireland

Results: High rates of mental health problems and suicidality were recorded, especially among females. While social circumstances do not influence mental health outcomes, factors of interest were atheist/agnostic beliefs and having a bedroom to oneself. While overall trust in GPs was high, more than 36% of the sample reported low trust. GP Trust was associated with positive home life factors. Importantly, adolescents with mental health problems including suicidality were much less likely to seek help.

Limitations: Cross-sectional data

Conclusions: This study confirms the high rates of mental health problems and suicidality among adolescents in Northern Ireland, particularly among young women. Those most in need of professional help appear least prepared to seek it. The influence of home life and environment on both poor mental health and trust and help-seeking from family doctors, is considerable and there is a need to find interventions that nurture appropriate levels of trust and help-seeking guidance for adolescents.

1. Introduction

Rates of mental illness among children and adolescents in the United Kingdom (UK) and elsewhere are increasing, particularly among girls (Lessof et al., 2016; Kessler et al., 2005; Merikangas et al., 2010). In England a countrywide National Health Service (NHS) survey found that 14.4% of 11–16 year olds had a mental disorder; with girls more likely to have an emotional disorder (10.9% compared to 7% in boys) and higher rates of self-harm; and, finally of adolescents with an emotional disorder 25% had self-harmed or attempted suicide (Department of Health, 2018). Worryingly, few adolescents seek or

receive help (Meltzer et al., 2003) and only a minority trust their family doctor to provide appropriate mental health care (Leavey et al., 2011; Biddle et al., 2007).

Thus, evidence suggests that young people's attitudes and help-seeking behaviour for mental health problems is complex. Stigma may be a deterrent, regardless of age, and seeking help more problematic for young people due to heightened fears of labelling or bullying by peers. Moreover, adolescents who are at a point of relative independence in their lives, have never sought help without parents and may be confused as to their rights (Leavey et al., 2011). Other evidence suggests that adolescents are ignorant of general practitioner (GP) expertise and

Abbreviations: NISAW, (Northern Ireland Schools and Wellbeing); GP, (General Practitioner); NIMDM, (Northern Ireland Multiple Deprivation Measures); WEMWEB, (Warwick and Edinburgh Mental Wellbeing Scale); FAS, (Family Affluence Scale); SDQ, (Strengths and Difficulties Questionnaire); PBB, (Parental Bonding Instrument)

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willingness to treat psychological problems (Leavey et al., 2011). Erikson (1950) and attachment theorists (Bowlby, 1988) proposed that basic trust, developed during childhood, affects social functioning throughout the life-course. In this study we were interested in the role of family-related factors and socio-economic circumstances in seeking professional help. Our previous work indicated adolescent mistrust of GPs as a determinant, itself linked to a general anxiety about *weakness* being revealed (Corry and Leavey, 2016). However, while adolescent mistrust is often generalised to include most adult professionals (e.g. teachers, school counsellors), families - predominantly mothers - were more likely to be accorded higher levels of confidence in help-seeking (Leavey et al., 2011). Family factors affect psychological health and also influence decision-making and preferences through parental attitudes and beliefs (e.g. parenting style, explanatory models of mental illness, regard for health professionals), and the conditioning of adolescent disposition towards disclosure or concealment of psychological distress. It is therefore surprising that the influence of adolescent family contexts on help-seeking for psychological distress is seldom examined.

In this study we sought to examine the relationship between adolescent mental health, social and economic circumstances and family life, and how these factors influence willingness to seek help from GPs. This study was undertaken in Northern Ireland where suicide rates have increased over the past twenty years, particularly among young people and the age standardised suicide rates in 2018 were twice that of England (Leavey et al., 2016). Other commentators have pointed to possibility of a continuing transgenerational impact of the Northern Ireland conflict on adolescents although better evidence for this linkage is needed (O'Connor et al., 2014).

2. Method

This was a cross-sectional study (2014–2016) of pupils in Northern Ireland aged 13–17 years (Corry and Leavey, 2016) which included linked data from school administrative records which included records of attendance, academic performance, free school meals. Post code data were recorded to provide area deprivation codes (Data collection. We selected eight schools from a database of post-primary schools based on locale (urban/rural) and school type (e.g. Grammar or Secondary Modern – entrance to the former is based on selection through examination and considered to have a strong middle-class bias (Cribb et al., 2013). Parents were given a letter explaining the study, with an opt-out form for non-participation. All pupils provided written informed consent. Pupils completed the questionnaires in class groups following procedures used previously (Leavey et al., 2011).

2.1. Measures

2.1.1. Outcome measures

Mental health: The Strengths & Difficulties Questionnaire (SDQ) is a well-validated tool for assessing probable mental health problems in school-age children (Goodman, Meltzer, & Bailey, 1998). We used the total difficulties score only (i.e. excluded the prosocial component), accumulating it to derive a score between 0 and 40 representing psychological difficulties; and subsequently dichotomised as *normal* (0–20) and *abnormal* high (21–40) SDQ scores. Additionally, we asked individual questions on actual self-harm, thoughts about suicide and actual suicide attempts over the previous twelve months.

Adolescent Trust in seeking help from GPs: there are no validated measures of adolescent confidence in General Practitioners as a source of help for mental health problems. Based on our previous research in this area (Divin, 2020) we developed a seventeen-item, seven-point Likert scale self-report questionnaire (from 1 = *strongly agree* to 7 = *strongly disagree*). Positively worded items (e.g. “My doctor/GP is very approachable and friendly”) were reverse-coded for analysis - thus a high score indicates a positive relationship with GPs. This scale demonstrated strong internal consistency ($\alpha = 0.860$). Two items - “I

usually see the same doctor” and “I am able to see the doctor on my own” - correlated weakly with other factors and were removed.

2.2. Socio-demographic and explanatory factors

Demographic measures included age (categorised as 13/14/15/16/17+).

Neighbourhood Deprivation: using postcode we obtained a measure of ward-level deprivation using the Northern Ireland Multiple Deprivation Measures (NISRA, 2017). This comprises fifty-two indicators grouped in seven domains of deprivation: Income; Employment; Health and Disability; Proximity to Services; Living Environment; Crime and Disorder; with a summary measure derived using weighted contributions from each. For the analysis this was further summarised into quintiles (from high to low deprivation).

Information on religious denomination and importance of religion were requested, and summarised as: (a) Roman Catholic, Protestant, Other faith group, and Atheist/Agnostic; and (b) its importance in the family home (very important, somewhat important, not important). School type was recorded (Grammar or Non-Grammar); Locale of residence (city, town, village, rural).

Home life: a twelve-item scale drawn from the UK Understanding Society study (McFall, 2012), containing questions on home life and relationships, including items adolescent ease in accessing parental advice and support.

Family life: we used two scales to assess family life and quality of parental relationships. The Family Activities (Harding et al., 2015) scale is a six-item, five-point Likert scale self-report questionnaire (1 = “Never” to 5 = “Every day”). Items are summed so that a high score indicates an integrated family life. Additionally, we used a brief form of the Parental Bonding Instrument, specifically designed for use in adolescent populations (Klimidis et al., 1992). The 8-item scale measures parental care (vs. rejection) and parental control (vs. autonomy) with four items measuring each dimension. Summed scores are used to derive dimensional measures of care and control respectively.

Family Affluence Scale (FAS): examines socioeconomic inequalities, it has shown good reliability, sensitivity in differentiating levels of affluence and is validated against other standard measures of socioeconomic circumstance (Currie, 1997). FAS scores were re-categorised as low (scores 0–3), medium (4–6) and high wealth (7–9). Additionally, we explored the effect of having one's own bedroom. Entitlement to free school meals was used as a broad indicator of deprivation (yes/no).

The Warwick and Edinburgh Mental Wellbeing Scale (WEMWBS) is a fourteen-item, five-point Likert scale questionnaire capturing aspects of both eudemonic and hedonic wellbeing (Tennant, 2007). High scores indicate positive self-perception and healthy emotional wellbeing. The WEMWBS has excellent reliability in the current sample ($\alpha = 0.903$).

2.3. Analysis

Descriptive statistics and univariate analyses were derived for socioeconomic factors, contextual factors (home life, religion), school type and demographic variables in relation to normal/abnormal levels on the SDQ. However, we were interested in the influence of adolescent isolation or withdrawal. Thus, we explored the use of a single FAS item – *sharing a bedroom* - and this was included. We used multiple logistic regression analysis to examine correlates of likely SDQ case-ness, self-harm and suicidality. We generated quartiles for the total WEMWBS, Family Life and Home Life scales. For the whole sample, variables were grouped (e.g. socio-demographic, educational, home situation and family life) and then minimally adjusted. In the gender-stratified analysis, factors found not to be significantly associated were dropped from the fully adjusted models, unless of borderline significance ($p < 0.05$) and/or justified for theoretical reasons.

We did a confirmatory factor analysis on the *Trust in GP* scale to

Table 1
sociodemographic, school life and family characteristics of adolescent respondents.

	N (%)	SDQ Caseness	Self-harm Thoughts	Actual self-harm	Suicidal thoughts	
age	13	199 (11.9)	34 (17.9)	24 (12.1)	12 (6.0)	20 (10.1)
	14	505 (30.2)	87 (17.6)	105 (20.9)	51 (10.1)	76 (15.1)
	15	432 (25.8)	94 (21.87)	123 (28.7)	68 (15.9)	75 (17.3)
	16	407 (24.3)	84 (20.6)	81 (19.9)	38 (9.3)	57 (14.0)
	17 plus	130 (7.8)	18 (13.9)	21 (16.2) ***	11 (8.5) ***	19 (14.6)
gender	male	623 (37.3)	70 (11.2)	69 (11.1)	29 (4.7)	44 (7.1)
	female	1039 (62.1)	243 (23.9)	282 (27.1)	149 (14.3)	200 (19.3)
	undisclosed	11 (0.7)	4 (36.4) ***	3 (27.3) ***	2 (18.1) ***	3 (27.3) ***
Religious denomination	Catholic	996 (60.0)	175 (17.6)	202 (20.3)	85 (8.6)	128 (12.9)
	Protestant other religions	464 (27.9)	84 (18.1)	86 (18.7)	45 (9.8)	64 (13.9)
		32 (1.3)	6 (18.6)	10 (31.3)	8 (25.0)	8 (25.0)
	Atheist/Agnostic	170 (10.2)	52 (30.1) ***	56 (32.9) ***	41 (24.1) ***	47 (27.7) ***
locale of residence	urban	424 (25.5)	84 (19.8)	101 (23.9)	51 (12.1)	81 (19.2)
	towns	611 (36.7)	118 (19.3)	129 (21.2)	75 (12.3)	81 (13.3)
	village	263 (15.8)	58 (22.1)	61 (23.3)	25 (9.5)	42 (16.0)
	rural	368 (22.1)	57 (15.5)	63 (17.2)	29 (7.9)	43 (11.7) *
School	Grammar	697 (41.7)	154 (22.1)	173 (24.8)	85 (12.2)	122 (17.5)
	Non-Grammar	976 (58.3)	163 (16.7) **	181 (18.7) **	95 (9.8)	125 (12.9) **
Academic achievement	good	1229 (87.6)	225 (18.3)	250 (20.4)	127 (10.4)	172 (14.0)
	poor	157 (12.4)	42 (24.1)	54 (31.4) ***	31 (18.0) ***	38 (22.1) **
School Attendance	good	1147 (76.3)	193 (16.9)	223 (19.5)	108 (9.4)	143 (12.5)
	poor	357 (23.7)	87 (24.4) **	90 (25.4) *	54 (15.3) **	72 (20.3) ***
Sharing a bedroom	no	1341 (80.2)	262 (19.6)	301 (22.5) **	157 (11.8) *	212 (15.9) *
	yes	332 (19.8)	55 (16.6)	53 (16.1)	23 (7.0)	35 (10.6)
living with both parents	yes	1187 (71.2)	210 (17.7)	244 (20.6)	115 (9.7)	159 (13.4)
	no	480 (28.8)	106 (22.1) *	110 (23.0)	65 (13.6) *	88 (18.4) *

examine its factor structure. Although we noted three subscales (mental health stigma, GP trust and GP role) we derived a single factor score for the regression analyses ($\alpha=0.88$). **A mean score on GP Trust was generated for all participants.** We produced odds ratios (OR) with 95% Confidence Intervals (CI) for the relevant variables in incrementally adjusted models by computing the exponential of the *b* coefficient of the single factor solution.

3. Results

We obtained data from 1673 pupils aged 13–18 years, of whom 37.3% (*n* = 623) were males and 62.1% females (*n* = 1039); eleven participants did not disclose their gender (Table 1). Only five parents or children declined to participate. We are unable to provide information on non-attendees during data collection. Twenty-one percent of children were on free school meals (11% Grammar; 29% non-grammar). Twenty-three percent were considered by the school to be poor attenders and 12% recorded as low academic achievers (42% average and 45% good).

3.1. Mental health: SDQ scores

We examined the association between socio-economic circumstances and mental health outcomes (partially adjusted for age and sex and fully-adjusted for other variables), but these consistently showed no effect (Table 2). For example, in the minimally adjusted and fully adjusted models for caseness on the SDQ Family Affluence, Free School Meals or the Multiple Deprivation Measures (MDM) had no effect on the mental health outcomes and were excluded from analysis (data available on request).

Among females, 23.9% recorded a mental health problem (SDQ case-ness), more than twice that for males (11%, OR=2.68, 95% CI=1.88–3.81). In the fully adjusted models stratified by gender, there was a protective effect for girls aged seventeen years only and those from non-grammar schools. Increased female risks of mental illness were found for atheists/agnostics (OR=1.94, 1.09–3.45), and residence in small towns (OR=2.12, 1.23–3.68). Increased risk for mental illness was noted for low satisfaction with family life and home-life for both

males and females.

3.2. Self-harm and suicidal thoughts

In the previous twelve months, 354 pupils (21.2%) had thought seriously about harming themselves (females, 27.1%; males, 11.1%; OR= 3.72; 95% CI=2.37–5.82) (Table 1). Of these, 180 pupils (10.2%) had harmed themselves (females, 14.4%; males 4.7%; adjusted OR=4.19, 2.56–6.83). In the fully adjusted and stratified models (Table 4), risk of self-harm in the past twelve months was strongest among fifteen-year olds, those from minority religions (OR=6.58, 1.61–26.98), atheist/agnostic (OR=2.72, 1.48–4.96); own bedroom (OR=1.99, 1.09–3.63). In the stratified analyses, higher risk of self-harm for both males and females was associated with lower scores on the Family Life and Home Life scales. Joint family activities were protective for females, less so for males. Poor school attendance increased risk of self-harm for males (OR=2.68, 1.15–7.04) but not females (Table 3).

Additionally, 247 pupils (14.7%) had seriously thought about taking their own lives. These were much more likely to be female (19.3%) than male (7.1%) - OR=3.72, 95%CI=2.37–5.82 (Table 2). In the fully adjusted models (Table 3) stratified by gender, the factors that remained independently associated with suicidal thoughts in females were minority religion (OR=4.86, 2.06–22.25) atheist/agnostic beliefs (OR=2.56; CI=2.06–4.61). Poor school attendance increased the risk of self-harming thoughts for females (OR=1.61, CI=1.05–2.47) and males (OR=2.45, 1.05–5.72). Lower scores on the Family Life, and Home Life scales increased the likelihood of self-harm thoughts, again more strongly among females. The significantly protective factors included living in a larger town and higher levels of joint family activity.

3.3. Suicide attempts

Forty pupils stated that they had attempted suicide in the previous twelve months (29 females, 2.85%; 11 males, 1.8%; *P* = 0.19). These were much more likely to be from either minority religious groups (4/31, 11%) or those stating atheist/agnostic beliefs (10/160, 6%) than pupils from mainstream faith backgrounds ($\chi^2=23.57$, *p*<0.001).

Table 2
Factors associated with *caseness on the Strengths and Difficulties questionnaire*. Data represents Odds Ratios (OR) and 95% CIs from logistic regression analysis.

	All	Male	Female	
	Minimally adjusted ^a	Fully adjusted	Minimally adjusted ^a	Fully adjusted
Age 14 (ref = 13)	1.09 (0.70, 1.70)	0.71 (0.42, 1.21)	1.01 (0.39, 2.64)	1.17 (0.29, 4.66)
15	1.48 (0.95, 2.30)	0.88 (0.52, 1.49)	1.08 (0.41, 2.84)	0.86 (0.20, 3.59)
16	1.28 (0.82, 2.01)	0.69 (0.39, 1.22)	1.42 (0.54, 3.75)	1.47 (0.34, 6.40)
17	0.73 (0.39, 1.37)	0.25 (0.10, 0.60) ^{**}	0.95 (0.22, 4.07)	0.43 (0.04, 5.43)
Female (ref = male)	2.49 (1.87, 3.33) ^{***}	2.68 (1.88, 3.81) ^{***}		0.70 (0.35, 1.40)
Protestant (ref = Catholic)	1.20 (0.88, 1.62)	1.51 (0.98, 2.31)	0.96 (0.54, 1.71)	2.12 (0.62, 7.18)
Other religions	1.36 (0.54, 3.42)	1.19 (0.41, 3.42)	0.97 (0.21, 4.45)	1.55 (0.73, 5.87)
Atheist/agnostic	2.41 (1.64, 3.54) ^{***}	1.81 (1.13, 2.89) [*]	1.49 (0.72, 3.09)	2.07 (1.87, 4.78) ^{***}
Large towns (ref = urban)	1.05 (0.76, 1.44)	1.15 (0.75, 1.79)	0.96 (0.49, 1.87)	1.15 (0.38, 3.48)
Small towns	1.18 (0.80, 1.75)	1.69 (1.04, 2.72) [*]	0.47 (0.17, 1.26)	0.51 (0.14, 1.82)
Rural	0.87 (0.59, 1.27)	1.38 (0.83, 2.29)	0.92 (0.45, 1.88)	2.10 (0.75, 5.89)
Non-Grammar (ref = grammar)	0.79 (0.60, 1.05)	0.59 (0.38, 0.93) [*]	0.85 (0.48, 1.50)	0.45 (0.12, 1.68)
Poor Academic achievement (ref = good achievement)	1.50 (1.02, 2.22) [*]		1.95 (0.92, 4.18)	2.16 (0.82, 5.54)
Poor School Attendance (ref = good attendance)	1.67 (1.24, 2.24) ^{**}	1.61 (1.15, 2.25) [*]	2.12 (1.19, 3.80) [*]	1.55 (1.10, 2.19) [*]
own bedroom	1.21 (0.87, 1.68)	2.37 (1.10, 5.09) [*]	2.37 (1.10, 5.09) [*]	0.98 (0.67, 1.43)
Living with both parents: no	1.35 (1.03, 1.76) [*]	1.07 (0.62, 1.85)		1.45 (1.06, 1.98) [*]
family activity (ref = low levels) ^a				
2:	0.59 (0.41, 0.85) ^{**}	1.04 (0.48, 2.27)		0.49 (0.32, 0.75) ^{**}
3:	0.33 (0.23, 0.48) ^{***}	0.66 (0.30, 1.45)		0.26 (0.17, 0.41) ^{***}
4:	0.37 (0.25, 0.56) ^{***}	0.95 (0.42, 2.12)		0.27 (0.17, 0.43) ^{***}
High	0.20 (0.11, 0.37) ^{***}	0.63 (0.22, 1.81)		0.12 (0.06, 0.27) ^{**}
Family life (ref = high levels) ^a				
2:	1.51 (1.88, 2.62)	2.14 (1.10, 4.14) [*]	1.18 (0.41, 3.34)	1.35 (0.34, 5.37)
3:	2.70 (1.57, 4.64) ^{***}	3.22 (1.65, 6.28) ^{**}	3.04 (1.25, 7.39) [*]	4.46 (1.31, 15.25) [*]
4:	5.37 (3.26, 8.36) ^{***}	5.73 (3.05, 10.77) ^{***}	3.01 (1.26, 7.18) [*]	2.51 (0.73, 8.59)
Low	11.16 (6.88, 18.10) ^{***}	9.13 (4.83, 17.26) ^{***}	5.20 (2.19, 12.31) ^{***}	4.47 (1.28, 15.67) ^{**}
Home life (ref = high levels) ^a				
2:	2.23 (1.26, 3.95) ^{**}	2.16 (1.12, 4.20) [*]	4.39 (1.23, 15.70) [*]	5.89 (1.17, 29.53) [*]
3:	3.03 (1.71, 5.35) ^{***}	2.08 (1.06, 4.10) [*]	4.40 (1.22, 15.90) [*]	4.38 (0.86, 22.35)
4:	4.78 (2.83, 8.07) ^{***}	2.55 (1.34, 4.82) ^{**}	5.33 (1.53, 18.53) ^{**}	3.79 (0.74, 19.49)
Low	12.36 (7.31, 20.90) ^{***}	5.33 (2.75, 10.34) ^{***}	12.55 (3.59, 43.84) ^{***}	9.94 (1.91, 51.81) ^{**}
				12.67 (7.07, 22.71) ^{***}

&: derived as index from activities engaged in together as a family – watching television; playing games; eating meals; walking; playing sports; visiting others; going out.

%: derived from indicators of parental relations – their helpfulness; affection levels; or understanding of personal problems; personal decision-making; & whether controlling.

%: derived from indicators of relations within family – arguments with brothers, sisters, mother, father or others within family.

*** = $p < 0.001$

** = $p < 0.005$

* = $p < 0.05$ &: minimal adjustment – models age and sex mutually adjusted; all other variables adjusted for age and sex only.

Table 3
Factors associated with *suicidal thoughts*. Data represents Odds Ratios (OR) and 95% CIs from logistic regression analysis.

	All	Male	Female	fully adjusted	Minimally adjusted [§]	fully adjusted	Minimally adjusted [§]	fully adjusted
Age 14 (ref = 13)								
15	1.77 (1.04, 3.00) *	1.25 (0.68, 2.29)	0.79 (0.24, 2.57)	0.27 (0.06, 1.15)	2.11 (1.18, 3.82) *	0.27 (0.06, 1.15)	2.11 (1.18, 3.82) *	1.59 (0.80, 3.15)
16	2.16 (1.27, 3.68) **	1.35 (0.73, 2.50)	1.53 (0.50, 4.71)	0.47 (0.11, 1.93)	2.27 (1.25, 4.14) *	0.47 (0.11, 1.93)	2.27 (1.25, 4.14) *	1.53 (0.76, 3.08)
17	1.44 (0.73, 2.84)	0.91 (0.47, 1.75)	0.81 (0.23, 2.80)	0.24 (0.05, 1.31)	1.67 (0.91, 3.08)	0.24 (0.05, 1.31)	1.67 (0.91, 3.08)	1.09 (0.52, 2.27)
Female (ref = male)								
Protestant (ref = catholic)	3.25 (2.30, 4.59) ***	0.31 (0.10, 0.95) *	1.47 (0.31, 7.04)	na	1.47 (0.70, 3.10)	na	1.47 (0.70, 3.10)	0.38 (0.12, 1.23)
Other religions	1.32 (0.94, 1.86)	1.34 (0.86, 2.10)	3.72 (2.37, 5.82) ***	1.10 (0.26, 4.72)	1.16 (0.79, 1.72)	1.10 (0.26, 4.72)	1.16 (0.79, 1.72)	1.33 (0.81, 2.21)
Atheist/agnostic	3.28 (1.39, 7.76) **	3.81 (1.26, 11.51) *	2.73 (0.56, 13.41)	2.17 (0.30, 15.94)	4.01 (1.36, 11.90) *	2.17 (0.30, 15.94)	4.01 (1.36, 11.90) *	4.86 (2.06, 22.25) *
Large towns (ref = urban)								
Small towns	3.17 (2.10, 4.79) ***	2.25 (1.36, 3.72) **	3.48 (1.45, 8.35) **	1.43 (0.37, 5.53)	3.24 (2.00, 5.25) ***	1.43 (0.37, 5.53)	3.24 (2.00, 5.25) ***	2.56 (1.42, 4.61) **
Rural	0.71 (0.50, 1.01)	0.66 (0.43, 1.02)	1.23 (0.52, 2.92)	2.65 (0.64, 11.08)	0.63 (0.43, 0.93) *	2.65 (0.64, 11.08)	0.63 (0.43, 0.93) *	0.56 (0.34, 0.90) *
Non-Grammar (ref = Grammar)								
Poor Academic achievement (ref = good achievement)	0.88 (0.57, 1.34)	0.95 (0.57, 1.57)	0.76 (0.24, 2.42)	1.74 (0.39, 7.76)	0.93 (0.58, 1.47)	1.74 (0.39, 7.76)	0.93 (0.58, 1.47)	0.92 (0.53, 1.61)
Poor School Attendance (ref = good attendance)								
own bedroom (ref = sharing a bedroom)	0.67 (0.44, 1.01)	0.79 (0.47, 1.34)	0.97 (0.37, 2.52)	2.03 (0.48, 8.60)	0.62 (0.39, 1.00)	2.03 (0.48, 8.60)	0.62 (0.39, 1.00)	0.69 (0.38, 1.25)
living with both parents: no (ref = yes)	0.83 (0.61, 1.12)	1.44 (0.90, 2.30)	1.22 (0.57, 2.63)	0.54 (0.11, 2.58)	0.76 (0.54, 1.03)	0.54 (0.11, 2.58)	0.76 (0.54, 1.03)	1.36 (0.78, 2.36)
family activity (ref = low levels) [§]	1.76 (1.17, 2.66) **	1.69 (1.17, 2.45) **	1.62 (1.01, 2.60) *	1.80 (0.64, 5.08)	1.62 (1.01, 2.59) *	1.80 (0.64, 5.08)	1.62 (1.01, 2.59) *	1.61 (1.05, 2.47) *
2:	1.81 (1.31, 2.50) ***	1.78 (1.10, 2.89) *	2.23 (1.09, 4.97) *	2.45 (1.05, 5.72) *	1.71 (1.19, 2.46) **	2.45 (1.05, 5.72) *	1.71 (1.19, 2.46) **	1.70 (0.99, 2.93)
3:	1.51 (1.02, 2.23) *		1.62 (0.70, 3.73)	2.45 (0.76, 7.89)	1.46 (0.94, 2.27)	2.45 (0.76, 7.89)	1.46 (0.94, 2.27)	
4:	1.43 (1.07, 1.92) *		1.13 (0.58, 2.20)		1.52 (1.09, 2.11) *		1.52 (1.09, 2.11) *	
High								
Family life (ref = high levels) [§]								
2:	0.84 (0.57, 1.24)		0.91 (0.39, 2.14)		0.81 (0.52, 1.27)		0.81 (0.52, 1.27)	
3:	0.34 (0.23, 0.52) ***		0.43 (0.17, 1.09)		0.32 (0.20, 0.52) ***		0.32 (0.20, 0.52) ***	
4:	0.29 (0.18, 0.46) ***		0.19 (0.05, 0.72) *		0.30 (0.18, 0.51) ***		0.30 (0.18, 0.51) ***	
Low								
Family life (ref = high levels) [§]								
2:	0.36 (0.20, 0.66) **		0.77 (0.26, 2.26)		0.28 (0.13, 0.57) ***		0.28 (0.13, 0.57) ***	
3:	2.83 (1.53, 5.21) **	3.28 (1.56, 6.90) **	1.42 (0.45, 4.96)	2.59 (0.58, 11.54)	3.84 (1.81, 8.17) ***	2.59 (0.58, 11.54)	3.84 (1.81, 8.17) ***	3.81 (1.59, 9.15) ***
4:	2.12 (1.07, 4.19) *	2.27 (0.99, 5.19)	1.61 (0.52, 4.95)	1.56 (0.28, 8.64)	2.41 (1.03, 5.67) *	1.56 (0.28, 8.64)	2.41 (1.03, 5.67) *	2.75 (1.05, 7.24) *
Home life (ref = high levels) [§]								
2:	4.84 (2.65, 8.84) ***	4.33 (2.03, 9.24) ***	2.21 (0.79, 6.18)	2.12 (0.50, 9.93)	6.60 (3.11, 14.04) ***	2.12 (0.50, 9.93)	6.60 (3.11, 14.04) ***	5.38 (2.19, 13.25) ***
3:	13.10 (7.39, 23.22) ***	10.83 (5.12, 22.90) ***	4.24 (1.56, 11.50) **	4.14 (0.97, 17.74)	19.76 (9.60, 40.67) ***	4.14 (0.97, 17.74)	19.76 (9.60, 40.67) ***	14.59 (5.95, 35.76) ***
4:								
Low								
Home life (ref = high levels) [§]								
2:	1.28 (0.60, 2.40)	1.15 (0.55, 2.40)	1.42 (0.45, 4.96)	4.27 (0.45, 40.67)	1.09 (0.55, 2.15)	4.27 (0.45, 40.67)	1.09 (0.55, 2.15)	0.91 (0.41, 2.03)
3:	2.05 (1.13, 3.75) **	1.54 (0.74, 3.20)	1.61 (0.52, 4.95)	3.10 (0.31, 30.53)	1.79 (0.93, 3.42)	3.10 (0.31, 30.53)	1.79 (0.93, 3.42)	1.44 (0.65, 3.18)
4:	4.14 (2.44, 7.02) ***	2.13 (1.10, 4.14) *	2.21 (0.79, 6.18)	7.48 (1.13, 79.33) *	3.34 (1.90, 5.88) ***	7.48 (1.13, 79.33) *	3.34 (1.90, 5.88) ***	1.60 (0.78, 3.31)
Low	7.29 (4.28, 12.43) ***	2.87 (1.36, 5.63) **	4.24 (1.56, 11.50) **	9.13 (0.98, 85.37)	6.93 (3.94, 12.17) ***	9.13 (0.98, 85.37)	6.93 (3.94, 12.17) ***	2.42 (1.12, 5.20) *

&: derived as index from activities engaged in together as a family – watching television; playing games; eating meals; walking; playing sports; visiting others; going out.

§: derived from indicators of parental relations – their helpfulness; affection levels; or understanding of personal problems; personal decision-making; & whether controlling.

%; derived from indicators of relations within family – arguments with brothers, sisters, mother, father or others within family.

*** = $p < 0.001$.

** = $p < 0.005$.

* = $p < 0.05$ &: minimal adjustment – models age and sex mutually adjusted; all other variables adjusted for age and sex only.

Table 4
Factors associated with self-harming behaviour. Data represents Odds Ratios (OR) and 95% CIs from logistic regression analysis.

	All	Male	Female	Fully adjusted	Minimally adjusted [§]	Fully adjusted	Minimally adjusted [§]	Fully adjusted
age 14: (ref = 13)								
15	1.97 (1.02, 3.79) *	1.38 (0.68, 2.80)	0.46 (0.11, 1.96)	0.24 (0.05, 1.19)	2.34 (1.10, 4.97) *	0.24 (0.05, 1.19)	2.34 (1.10, 4.97) *	1.70 (0.76, 3.77)
16	3.46 (1.81, 6.60) ***	2.35 (1.16, 4.75) *	1.22 (0.33, 4.53)	0.64 (0.15, 2.78)	3.59 (1.70, 7.61) **	0.64 (0.15, 2.78)	3.59 (1.70, 7.61) **	2.73 (1.23, 6.06)
17	1.63 (0.83, 3.23)	0.89 (0.41, 1.92)	0.47 (0.10, 2.24)	0.15 (0.02, 1.10)	1.65 (0.75, 3.63)	0.15 (0.02, 1.10)	1.65 (0.75, 3.63)	1.08 (0.46, 2.56)
	1.35 (0.57, 3.17)	0.55 (0.18, 1.64)	0.78 (0.11, 5.43)	0.59 (0.05, 7.41)	1.25 (0.47, 3.33)	0.59 (0.05, 7.41)	1.25 (0.47, 3.33)	0.62 (0.17, 2.23)
Female (ref = male)								
Protestant	3.72 (2.46, 5.64) ***	4.19 (2.56, 6.83) ***	1.66 (0.61, 4.50)	0.87 (0.26, 2.93)	1.25 (0.80, 1.94)	0.87 (0.26, 2.93)	1.25 (0.80, 1.94)	1.20 (0.70, 2.05)
Other religions	1.31 (0.88, 1.95)	1.20 (0.74, 1.93)	4.60 (0.86, 24.53)	4.20 (0.64, 27.39)	6.71 (2.22, 20.29) **	4.20 (0.64, 27.39)	6.71 (2.22, 20.29) **	6.58 (1.61, 26.98) *
Atheist/agnostic (ref = Catholic)	5.51 (2.28, 13.31) ***	6.04 (2.14, 17.02) **	5.43 (1.95, 15.12) **	3.04 (0.95, 9.66)	4.09 (2.45, 6.84) ***	3.04 (0.95, 9.66)	4.09 (2.45, 6.84) ***	2.72 (1.48, 4.96) **
Large towns (ref = urban)	4.32 (2.76, 6.74) ***	2.92 (1.74, 4.90) ***	1.58 (0.56, 4.49)	1.23 (0.36, 4.25)	1.08 (0.70, 1.67)	1.23 (0.36, 4.25)	1.08 (0.70, 1.67)	0.98 (0.58, 1.64)
Small towns	1.17 (0.78, 1.73)	1.04 (0.65, 1.67)	na	na	0.98 (0.57, 1.68)	na	0.98 (0.57, 1.68)	1.01 (0.55, 1.88)
Rural	0.81 (0.48, 1.36)	0.87 (0.48, 1.57)	na	0.97 (0.25, 3.84)	0.74 (0.42, 1.29)	0.97 (0.25, 3.84)	0.74 (0.42, 1.29)	0.87 (0.46, 1.66)
	0.77 (0.47, 1.27)	0.96 (0.54, 1.71)	0.93 (0.29, 3.09)		0.92 (0.63, 1.35)		0.92 (0.63, 1.35)	
Non-Grammar (ref = Grammar)								
Poor Academic achievement (ref = good achievement)	0.89 (0.63, 1.27)	0.80 (0.33, 1.93)	1.79 (0.65, 4.97)		1.89 (1.14, 3.14) *		1.89 (1.14, 3.14) *	1.68 (0.95, 2.96)
Poor School attendance (ref = good)	1.85 (1.18, 2.89) **				1.58 (1.05, 2.37) *		1.58 (1.05, 2.37) *	1.45 (0.92, 2.30)
own bedroom = yes (ref = sharing a bedroom)	1.72 (1.19, 2.48) **	1.51 (1.01, 2.26) *	2.27 (1.15, 6.20) *	2.68 (1.02, 7.04) *	1.59 (0.96, 2.65)	2.68 (1.02, 7.04) *	1.59 (0.96, 2.65)	1.99 (1.09, 3.63) *
living with both parents: no (ref = yes)	1.78 (1.11, 2.82) *	2.03 (1.18, 3.47) *	2.74 (0.81, 9.25)	2.41 (0.63, 9.17)	1.43 (0.99, 2.08)	2.41 (0.63, 9.17)	1.43 (0.99, 2.08)	
family activity (ref = low levels) [§]	1.45 (1.04, 2.03) *		1.52 (0.69, 3.31)					
2	0.84 (0.57, 1.24)		0.91 (0.39, 2.14)		0.81 (0.52, 1.27)		0.81 (0.52, 1.27)	
3:	0.34 (0.23, 0.52) ***		0.43 (0.17, 1.09)		0.32 (0.20, 0.52) ***		0.32 (0.20, 0.52) ***	
4:	0.29 (0.18, 0.46) ***		0.19 (0.05, 0.72) *		0.30 (0.18, 0.51) ***		0.30 (0.18, 0.51) ***	
High levels	0.36 (0.20, 0.66) **		0.77 (0.26, 2.26)		0.28 (0.13, 0.57) ***		0.28 (0.13, 0.57) ***	
Family life (ref = high): [§]								
2	2.83 (1.53, 5.21) **	2.46 (1.09, 5.54) *	1.42 (0.45, 4.96)	2.59 (0.22, 29.89)	3.84 (1.81, 8.17) ***	2.59 (0.22, 29.89)	3.84 (1.81, 8.17) ***	2.57 (1.09, 6.08) *
3:	2.12 (1.07, 4.19) *	1.66 (0.66, 4.15)	1.61 (0.52, 4.95)	5.53 (0.58, 52.34)	2.41 (1.03, 5.67) *	5.53 (0.58, 52.34)	2.41 (1.03, 5.67) *	1.51 (0.54, 4.21)
4:	4.84 (2.65, 8.84) ***	4.66 (2.10, 10.31) ***	2.21 (0.79, 6.18)	4.41 (0.49, 40.01)	6.60 (3.11, 14.04) ***	4.41 (0.49, 40.01)	6.60 (3.11, 14.04) ***	6.32 (2.77, 14.38) ***
Low	13.10 (7.39, 23.22) ***	7.33 (3.31, 16.23) ***	4.24 (1.56, 11.50) **	20.84 (2.56, 169.45) **	19.76 (9.60, 40.67) ***	20.84 (2.56, 169.45) **	19.76 (9.60, 40.67) ***	9.29 (4.48, 21.95) ***
Home life (ref = high): [§]								
2:	1.28 (0.60, 2.40)	1.10 (0.49, 2.50)	1.42 (0.45, 4.96)		1.09 (0.55, 2.15)		1.09 (0.55, 2.15)	
3:	2.05 (1.13, 3.75) **	1.34 (0.59, 3.06)	1.61 (0.52, 4.95)		1.79 (0.93, 3.42)		1.79 (0.93, 3.42)	
4:	4.14 (2.44, 7.02) ***	1.91 (0.91, 4.01)	2.21 (0.79, 6.18)		3.34 (1.90, 5.88) ***		3.34 (1.90, 5.88) ***	
Low	7.29 (4.28, 12.43) ***	2.58 (1.18, 5.62) *	4.24 (1.56, 11.50) **		6.93 (3.94, 12.17) ***		6.93 (3.94, 12.17) ***	

&: derived as index from activities engaged in together as a family – watching television; playing games; eating meals; walking; playing sports; visiting others; going out.

§: derived from indicators of parental relations – their helpfulness; affection levels; or understanding of personal problems; personal decision-making; & whether controlling.

%; derived from indicators of relations within family – arguments with brothers, sisters, mother, father or others within family.

** = $p < 0.001$.

*** = $p < 0.005$.

* = $p < 0.05$ &: Minimal adjustment – models age and sex mutually adjusted; all other variables adjusted for age and sex only.

Table 5

Factors associated with pupil trust in General Practitioners. Data represents ORs and 95% CIs from logistic regression analysis.

	males			females		
	M1	M2	M3	M1	M2	M3
Non-Grammar (ref = Grammar)	1.29 (1.08–1.53) ***	1.08 (0.92–1.26)	1.06 (0.90–1.23)	0.65 (0.52–0.83) ***	0.68 (0.54–0.85) ***	0.66 (0.55–0.85) **
large towns (ref = urban)	0.96 (0.8–1.53)	0.98 (0.84–1.14)	1.00 (0.87–1.17)	1.20 (0.92–1.57)	1.16 (0.91–1.47)	1.18 (0.93–1.49)
small towns	0.90 (0.73–1.10)	0.89 (0.74–1.06)	0.91 (0.77–1.08)	1.25 (0.94–1.67)	1.32 (1.03–1.71) *	1.35 (1.04–1.73) *
rural	0.88 (0.71–1.10)	0.83 (0.69–1.00)	0.83 (0.70–1.00)	1.32 (1.01–1.73) *	1.24 (0.97–1.58)	1.26 (0.99–1.61)
age 14: (ref = 13)	0.84 (0.68–1.03)	0.88 (0.73–1.06)	0.92 (0.77–1.14)	0.87 (0.64–1.18)	0.90 (0.70–1.17)	0.90 (0.69–1.16)
15	0.82 (0.67–1.02)	0.90 (0.74–1.09)	0.99 (0.82–1.19)	0.85 (0.63–1.15)	0.90 (0.73–1.23)	0.93 (0.72–1.21)
16	1.00 (0.79–1.27)	1.02 (0.84–1.25)	1.07 (0.88–1.30)	0.79 (0.57–1.10)	0.85 (0.65–1.12)	0.85 (0.65–1.12)
17	1.27 (0.94–1.71)	1.10 (0.867–1.40)	1.18 (0.93–1.49)	0.62 (0.36–1.06)	0.79 (0.53–1.18)	0.79 (0.53–1.18)
Family Affluence (continuous)	1.01 (0.97–0.95)			1.03 (0.98–1.08)		
Free school meals = yes (ref = no)	1.07 (0.91–0.26)			0.90 (0.75–1.10)		
Living with both parents: yes (ref = no)		1.07 (1.01, 1.13) *	1.06 (1.00–1.12) *		(0.93–1.08)	1.00 (0.94–1.08)
own bedroom = yes (ref = sharing a bedroom)		0.90 (0.78–1.03)	0.91 (0.79–1.04)		0.82 (0.70–0.97) *	0.82 (0.70–0.98) *
Home Life (continuous)		1.03 (1.01–1.05) ***	1.02 (1.01–1.04) ***		1.02 (1.00–1.04) *	1.02 (0.99–1.04)
Family activities (continuous)		1.02 (1.00–1.03) *	1.01 (0.99–1.02)		1.01 (0.99–1.03)	1.01 (0.99–1.03)
Family Life (continuous)		1.06 (1.04–1.08) ***	1.03 (1.01–1.05) ***		1.05 (1.03–1.07) ***	1.04 (1.02–1.07) ***
Protestant (ref = Catholic) Other Atheist		1.05 (0.89–1.23)			0.90 (0.75–1.07)	
		0.79 (0.52–1.22)			0.81 (0.54–1.22)	
		1.03 (0.83–1.27)			1.09 (0.86–1.38)	
Importance of religion (ref = very moderate not important)		1.05 (0.89–1.23)	1.06 (0.93–1.22)		0.79 (0.66–0.95) *	0.80 (0.66–0.96) *
Social Wellbeing = 2 (ref = lowest)		0.93 (0.78–1.10)	0.99 (0.84–1.16)		0.77 (0.63–0.95) *	0.79 (0.64–0.98) *
			1.05 (0.84–1.32)			1.39 (0.75–2.58)
			1.54 (1.21–1.96) ***			1.35 (0.72–2.51)
3			2.45 (1.78–3.37) ***			1.70 (0.89–3.27)
Highest						
Self-harm: Yes (ref = no)			0.79 (0.70–0.90) ***			0.98 (0.77–1.23)

* $P < 0.05$.** $p < 0.005$.*** $p < 0.001$.

3.4. Trust in seeking help from GPs

While the complete sample had a mean help-seeking Trust in GP score of 4.20 (SD = 1.2), indicating a relatively high overall trust, 36% of the scores were under 3.7, indicating low trust. Females were less likely than males to seek help (OR = 0.77, 95% CI = 0.67–0.75), controlling for other socio-demographic variables (age, free school meals, urban/rural residence, religion and own-bedroom) (Table 5). However, the effect of gender disappeared when we added either SDQ or WEMWEB to the model ($P = 0.44$). In fully-adjusted sex-specific models, females (Table 4) reporting higher GP trust, were more likely to live with both parents (compared to single-parent and other family configurations) and scored more highly on the Family Life (FLS) and Home Life (HLS) scales - every point rise on the FLS and HLS increased the likelihood of trust-in-GP by 3% and 2% respectively. At the higher levels of the WEMWBS females were much more likely than low-scoring pupils to trust their GP (OR = 1.54, 1.21–1.96; OR = 2.45, 1.78–3.37). Conversely, reported female self-harm decreased trust in GPs (OR = 0.79, 0.70–0.90). Family Activities and school type lost significance following adjustment, while age and locale of residence were non-significant.

In contrast to girls, non-grammar school males were less likely to trust GPs than their grammar school counterparts (OR = 0.66, 95% = 0.55–0.85), as were boys who didn't share a bedroom vs those who shared; reported lesser family importance of religion (OR = 0.82, 0.70–0.98); and those from rural areas. Positive Family Life scores produced greater likelihood of trust in GPs, with a 4% increase in trust for every point on the Family Life Scale. Unlike girls, Home Life, Wellbeing (WEMWBS) and thoughts of self-harm had no influence on

male's GP trust. As among girls, age has little impact. Common to both males and females, age and family affluence did not influence confidence in seeking help from GPs.

4. Discussion

To our knowledge this study is the first to examine both adolescent mental health in a school sample and their trust and help-seeking attitudes towards General Practitioners. We found that one in four girls were likely to have mental health problems and 21% of all pupils have had thoughts of self-harming. Actual self-harm was recorded for 10% of pupils (girls 14.3%). These figures compare unfavourably than those of recent studies elsewhere (NHS Digital, 2018) which identified 14.4% and 17% of English 11–16 year olds and 17–19 year olds, respectively, as having a mental disorder. The RELACHS study in East London found 10.1% of males and 12.9% of females reporting psychological distress (Clark et al., 2007). However, the UK Millennium Cohort Study found 24% of girls and 9% of boys experienced (self-reported) high symptoms of depression (Lai et al., 2019).

The prevalence of self-reported lifetime non-suicidal self-harm in the UK was 6.4% in 2014, a three-fold increase since 2000 and greatest among women aged 16–24. However, the increase in use of medical or psychological services was much less pronounced. More than 40% of those who self-harmed had no such contact (McManus et al., 2018). This resonates with our own findings which indicated that many young people lack trust in seeking help from their GP for mental or emotional health problems, and those most in need, less likely to seek it.

4.1. Mental health problems, suicidal thoughts and behaviour

Compared to males, females were more than twice as likely to have mental health problems and a four-fold increased risk of self-harming behaviour, with such risks more pronounced in 14–15 year olds, but lessening by age seventeen. Surprisingly, neighbourhood and family socioeconomic indicators (deprivation, family affluence, free school meals) appear to have had little influence on either mental health outcomes or trust in GPs. This contrasts with previous evidence (Lemstra et al., 2008; Reiss, 2013; Lodebo et al., 2017).

Analysis of the UK Millennium Cohort Study (Lai and Wickham et al., 2019) indicated that mental health problems were more strongly associated with current experience of poverty in late childhood, compared to early childhood experience with a clear dose-response relationship between poverty exposure and risk of mental health problems at age 14. However, findings of socio-economic differences in adolescent mental illness are inconclusive (Wirback et al., 2018), with socio-economic heterogeneity representing a significant challenge (Reiss, 2013). In the current study, only school type, which may represent an indirect social class division, has some influence on outcomes. Indeed, the schools selected were stratified in order to represent a working class/middle class divide, albeit somewhat crude. However, the absence of a clear social class effect may be explained by a less pronounced social gradient than in other UK countries (Bunting et al., 2018).

The relationship between poor school attendance and suicidal thoughts for both genders was notable, as are the excess risks for suicidality recorded among children from minority religions and those who report being atheist or agnostic. Poor attendance is a strong indicator of difficulties, perhaps a challenging home environment or school-related stressors (Finning et al., 2019) and should be carefully monitored. Increased risk of self-harm and suicidality among children from non-mainstream religions may be related to either marginalisation and bullying - for those who self-report as atheists/agnostics, this may indicate problems of identity and belonging (Roberts and Burleson, 2013). Certainly, in Northern Ireland there are sensitivities about religious affiliation and identity and where religious and ethnic/cultural identity are intertwined, not belonging to either of the dominant groupings may pose challenges. Unfortunately, there is scant research on atheism/agnosticism and how this may be associated with psychological distress.

4.2. Family factors

Living in a household with both parents is protective for mental health and so too is perceived family harmony where the risk of self-harm and suicidal thoughts are lowered - here we found a strong and graded protective effect associated with Family Life and Home Life, both for the whole sample, but moreso for girls. Moreover, we noted a consistent protective effect associated with joint family activities in girls, but less prominently among males. It may be that girls are culturally influenced and sensitive to home atmosphere and activities than boys who, have, historically, been given more independence and freedom within the external environment (Basow, 1986; Soori and Bhopal, 2002).

4.3. Adolescent trust in general practitioners

As with mental ill-health and suicidality we found no relationship between the socio-economic indicators and GP trust, suggesting no bearing on help-seeking, at least in adolescence, while peer attitudes may be more persuasive. A recent review of help-seeking for mental health problems (albeit mostly in adults) found no relationship between income and help-seeking behaviour for depression, suggesting that income as an indicator may be too crude to detect socioeconomic deficits in health service use (Magaard et al., 2017).

However, we found that adolescent assessment of home life was positively associated with trust GP help-seeking. Although these appear less influential for males, this may be due to the relatively smaller male sample. Nevertheless, in line with theory and research on attachment (Bowlby, 1988), a secure and harmonious family base appears to increase the level of generalised trust extended to GPs by adolescents. Disentangling relative influences of family milieu or family socio-economic status on youth help-seeking is problematic. Certainly, while deprivation damages quality of home-life (Skinner et al., 2019) and may be detrimental to parental ability to recognise childhood emotional problems, the influence of social class was unclear: non-grammar school males were less likely to trust their GP, perhaps reflecting more subtle intersectional social class and gender differences in attitudes to authority - with feedback loops linking adolescent expectations and professional responses. Thus, findings from focus groups in the NISAW study (in press) highlight relatively negative attitudes and low confidence in help-seeking from GPs among comprehensive school pupils, resonating with evidence elsewhere (Calarco, 2011).

Various psychological models have attempted to explain differences in help-seeking behaviour (Rosenstock, 1974; Leventhal et al., 1984; Greenley et al., 1987; Ajzen, 1991; Mechanic, 1995). The Cycle of Avoidance model (Biddle et al., 2007) posits that individuals are disinclined towards a diagnosis of *real distress* and so seek external and internal confirmation or disconfirmation observations prior to seeking help. However, in this study, pupils with thoughts of self-harm and suicide, which we take to be indicators of self-assessed *real distress*, were still much less likely to trust their GPs.

The *Behavioural Model of Health Services Use* (Andersen, 2008), provided a model for contextual and individual characteristics that influence health service use and outcomes, noting individual needs and various predisposing and enabling factors, for example, demographic factors, family support, beliefs about health and health services and availability and access to care. However, help-seeking models tend to focus on adults and may neglect the potentially more nuanced and vicarious nature of child and adolescent help-seeking. Adolescent problem assessment and recognition, service access, support and engagement tend to be mediated through family, potentially elevating family-related factors as relatively more important than individual characteristics (Wahlin and Deane, 2012). In the context of growing concerns about adolescent electronic communication and social media (Shakya and Christakis, 2017), these findings should underline the importance of family connectedness and activities. Moreover, the increased risk of self-harm and suicidality among young people with their own-bedroom raises questions related to isolation and loneliness. Thus, the reduction in face-to-face communication may be particularly relevant for suicide and suicide-related outcomes (Van Orden et al., 2010).

4.4. Strengths and limitations

Previous research has mainly been limited to national prevalence studies, themselves often limited in explanatory and contextual data (Sawyer et al., 2001; Zachrisson et al., 2006), or smaller scale and qualitative samples (Gould, 2004; Rothi and Leavey, 2006). The DASH study on ethnicity and health is an exception (Harding et al., 2015). Importantly too, comparison with other UK countries are problematic, given the considerable variation in measures of mental health problems and survey methods.

However, to our knowledge NISAW is the first large cross-sectional study using well-validated instruments to determine (a) personal and social factors associated with gender-specific adolescent mental ill-health; and (b) adolescent confidence in GP help-seeking. Nevertheless, there are limitations: it is cross-sectional and cannot demonstrate causality; and although the overall sample is large enough to fulfil the requirements for regression analysis, the greater proportion of females to males is likely to influence confidence intervals related to gender

differences. While social equalization theory (Spencer, 2005; Chen et al., 2006) suggests that the transition to adolescence is accompanied by a reduction of health inequalities - that is, peer or youth culture pressures have a levelling effect and may neutralise early cumulative social disadvantage (Spencer, 2005) testing this theory will require a longitudinal design.

Ethical approval

The study was accorded a favourable opinion by the Ulster University Research Ethics Committee.

Authorship

Design and principal investigator: (GL); data collection: (DC, ND); data analysis (GL & MR); writing (GL, MR, SH, GB, DC & ND).

All authors have agreed this manuscript and can confirm that there are no past, current or potential conflicts of interest.

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Limitation

(1) The main limitation of the current study is that it is cross-sectional, thus rendering problematic any discussion of causality. However, the study is strengthened by data linkage to schools' administrative data. (2) Most of the measures used are self-report and for item data on self-harm and suicidality, there is a likely underreporting. (3) There are no validated measures of adolescent trust in GP help-seeking and we were obliged to develop our own tool. However, this was piloted and has a strong internal consistency available.

Declaration of Competing Interest

All authors confirm that there are no conflicts of interest, perceived, real or potential.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.jad.2020.05.083](https://doi.org/10.1016/j.jad.2020.05.083).

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