



Mood matters: a national survey on attitudes to depression

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Abstract

Background Depression is the leading contributor to the burden of disease worldwide. Stigma and negative attitudes to depression can act as barriers to treatment and to social inclusion. Understanding attitudes to depression and treatment has implications for individual outcomes and societal mental health.

Aims To explore public attitudes to, and management of depression, including lifestyle factors, medication, and psychotherapy.

Methods A nationally representative online population survey of Irish adults was conducted by RED C.

Results Nine hundred ninety-one people completed the survey. The majority thought that depression was a medical illness (90%), was different to sadness or stress (89%), and that awareness of depression was increasing (89%), while stigma was reducing (69%). Self-reported lifetime depression rates were high and were significantly higher in younger people (18–34 yrs) (63% vs 55%, $p = 0.017$), and in urban areas (60% vs 44%, $p < 0.0001$). Younger people were less likely to contact their GP (46% vs 61%, $p = 0.034$) and reported more stigma around antidepressants (ADTs) compared to older people (> 55 years) (74% vs 58%, $p < 0.0001$). There were negative attitudes to ADTs and a preference for talking therapies and lifestyle changes. Males were more likely to hold negative attitudes to ADTs.

Conclusions Stigma around depression is reducing and public awareness is improving. However, the very high self-reported lifetime rates of depression may reflect milder forms or emotional/psychological distress, rather than clinical depression. Negative attitudes and stigma towards ADTs remains high. A collaborative, sustained effort is required to advance public appreciation of mood and its management, across the severity spectrum, in tandem with destigmatising the targeted use of ADTs.

Keywords Antidepressants · Awareness · Depression · Mood · Precision-personalized psychiatry · Public attitudes · Stigma

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Introduction

Depression is a common, usually recurrent, heterogeneous disorder, resulting in significant levels of disability and cost worldwide [1, 2]. Although depression symptom domains exist on a spectrum [3], clinical depression is categorically defined by the DSM-5 to include the presence of at least five characteristic features from a list of nine, at least one of which must be low mood or anhedonia [4]. Depression is associated with suicide, personal suffering, reduced quality of life, and an increased risk of medical comorbidities [5]. The complex etiology involves the bidirectional interplay of biological vulnerabilities, developmental adversity, and environmental stressors. Stressful life events, especially early life traumatic events, are strongly linked to depression, and the trajectory is shaped by socio-economic and psychological factors.

According to the latest estimates from the Institute for Health Metrics and Evaluation, 18.5% of Irish people currently have a mental health disorder, including 5% with a depressive disorder [6, 7]. Depression is more common in females and those in lower socio-economic groups [6, 8–11]. Lifetime prevalence of depression, a metric known to be prone to recall bias and probable underestimation, is approximately 20% [12, 13]. The estimated cost of mental health problems to the Irish economy is €8.2 billion per year, equivalent to 3.2% of gross domestic product [6]. Currently, 6% of the Irish health budget is spent on mental health, short of international standards, and the 10% recommended by the Mental Health Reform think tank [14, 15].

There are no established biological markers to guide treatment. Both medication and psychological treatments are effective in the management of clinical depression, and probably act best in synergy [16–18]. Medications for mental illness are generally as efficacious as in other areas of medicine and can benefit up to 70% of those with depression [19–23]. Despite this, ADTs continue to be a divisive topic in popular culture.

Mental health stigma is a persistent problem and can negatively impact health outcomes [24]. Stigma consists of five interconnected components: labeling, stereotyping, separation, status loss, and discrimination [25]. A European survey ($n = 4011$), conducted in 2009, showed that 21% of Irish respondents held stigmatizing attitudes to depression [26]. An Irish survey of 1000 people in 2007 revealed that 85% of people thought that “anyone can experience a mental health problem”, but 62% would not want others knowing if they themselves had a mental health problem [27].

Stigma has a powerful adverse effect at an individual level in those who suffer from depression. In an international multisite survey of 1082 participants with a diagnosis of depression, 79% reported experiencing discrimination in at least one life domain, while 25% of participants had stopped themselves from applying for work, and 20% from applying for education or training, because of their depression [28].

In Ireland, 30 years ago, a population survey of a representative sample of 1403 people reported that 16% of people thought “people who suffer from depression are only feeling sorry for themselves,” whereas 25% of respondents thought that “people who are of weak character are likely to suffer from depression” [29]. Additionally, 30 years ago, 22% of those over the age of 65 years considered depression to be untreatable, and overall, only 17% mentioned consulting their GP as the starting point for the treatment of depression [29].

Public awareness campaigns can lead to improved attitudes and knowledge about aspects of depression [30, 31]. For example, in Ireland, the most recent Green Ribbon impact report (2018) stated 79% of people feel more

comfortable in having a conversation about mental health, up from 72% in 2016 [32]. In the UK, a series of public surveys conducted in 1991, 1995, and 1997 showed that the “Defeat Depression” campaign positively changed attitudes to depression, particularly to talking therapies [31]. However, treatment with ADTs continue to be regarded as less effective, and also to be addictive [33].

Given the immense impact of depression on the individual and on society, and the detrimental impact of stigma and negative attitudes, we sought to examine public attitudes to, and management of depression, across Ireland, using a private research-based consultancy service provider.

Methods

RED C is a commercial research company that is used heavily in the evaluation of political attitudes in Ireland (<https://www.redcresearch.ie/about-red-c-research/>). Research was conducted using RED C’s online omnibus service (RED Line), an online panel of over 40,000 members. Quota controls are used to ensure a nationally representative sample of adults aged over 18 years, across the Republic of Ireland. Specifically, data were weighted across gender, age, region, and social class to ensure a nationally representative sample based on latest Central Statistics Office (CSO) projections. The survey was conducted between the 11th and 16th of October 2018. The survey was prefaced with an explanation that the subject matter was depression and offered respondents the opportunity to opt-out should they wish. One percent of the sample decided to opt-out, resulting in a final sample of 991.

Questions

Six questions were asked in the survey. Questions (1, 2, 3, 5) had a stem and respondents were asked to state the extent to which they agree or disagree on a 5-point Likert scale; 1 = agree strongly, 2 = Agree Slightly, 3 = Disagree Slightly, 4 = Disagree Strongly, 5 = do not know. Question 3 was a yes/no option. Question 6 had 15 options, and respondents could choose as many or few as they liked. Question 6 also provided the option of “Other Specify” to capture any potential options not on the pre-coded list. The questions were clustered into three themes: attitudes to depression, to treatment, and to actions taken when depressed and these are outlined in Tables 2, 3, and 4.

Statistical analysis

The number of people who responded “agree strongly” and “agree slightly” was summed. Two-tailed chi-square tests, using GraphPad, were carried out on the net agree proportions, to determine statistical significance and presented as a net agree percentage. See supplementary Table 1 and 2 for raw data.

Results

Demographics

See Table 1 for demographic characteristics.

Improving attitudes and reducing stigma to depression

The majority of respondents thought that depression was a medical illness (90%), different to sadness or stress (89%) and thought that national conversations about mental health have made people more aware of depression (89%) and more aware of emotional distress (87%). Most respondents agreed that stigma around having depression (69%) and emotional distress (67%) is reducing, though 82% thought that there are more people experiencing depression than ever before (Fig. 1a; Table 1).

Attitudes to treatment, medication and suicide

Stigma around antidepressants (ADTs)

Sixty-seven percent of the total sample thought that there was stigma around taking ADTs (Fig. 1B). More young people compared to older people (> 55 years) reported stigma around taking ADTs (74% vs 58%, $p < 0.0001$).

ADT attitudes in those with ADT experience

Among those with experience of ADTs, 71% thought that there was stigma around taking ADTs, and this group was significantly less likely to believe, compared to the total sample that ADTs were addictive (53% vs 60%, $p = 0.042$) and less likely to believe that lifestyle factors (58% vs 67%, $p = 0.007$) and talking therapies (56% vs 63%, $p = 0.044$) alone were better than ADTs for the treatment of depression (Fig. 1B (b–d)). Those with ADT experience, compared to others, were also more likely to think that ADTs reduce suicidal thoughts (47% vs 37%, $p = 0.003$) (Fig. 1B (e, f)).

Males vs females

More males than females viewed ADTs as a “crutch” (51% vs 39%, $p = 0.0001$) and thought that depression could be treated by counseling alone (68% Vs 58%, $p = 0.0011$) (Fig. 1B (g, h)).

Experiencing depression

Fifty-five percent of the total sample reported having experienced depression in their life. In those aged between 18 and 34 years, the rate was significantly higher compared to total sample (63% vs 55%, $p = 0.017$). The rate of self-reported depression in older groups (aged > 55 years) was significantly lower (41% vs 55%, $p < 0.0001$) compared to the total sample. There were higher rates of self-reported depression in urban compared to rural areas (60% vs 44%, $p < 0.0001$), and there were no significant differences between males and females (54% vs 57%), or between higher and lower socio-economic groups (55% vs 58%) (Fig. 2).

Personal experience of treatment of depression

Thirty-two percent of the total sample had attended a GP with depression: 26% were either taking or had taken ADTs, 24% had attended a counselor for depression, and 16% had attended a psychiatrist for depression. More people from urban areas had attended a counselor (27% vs 18%, $p = 0.0026$) or a psychiatrist (18% vs 11%, $p = 0.0055$) compared to rural areas (Table 2).

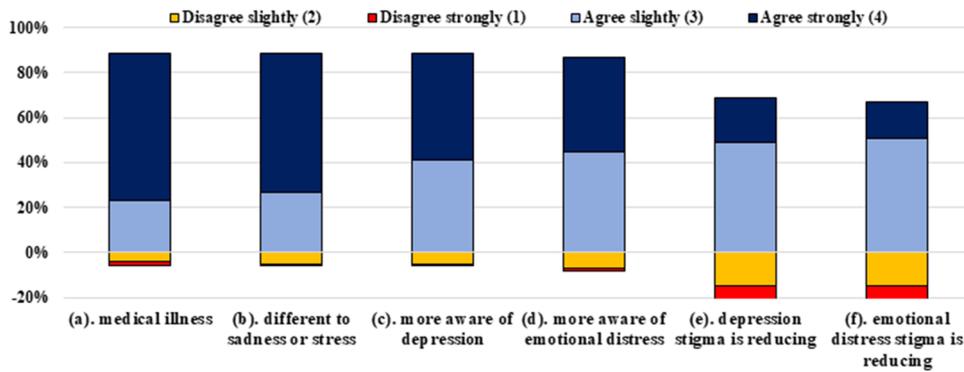
Attitudes to suicide

The clear majority of people agreed that a person experiencing suicidal thoughts for the first time should always go to see a doctor (90%). This decreased to 84% in those aged 18–34 years (90% vs 84%, $p = 0.0056$). 56% of all respondents thought that the stigma around suicide is reducing and 56% of respondents agreed that people who choose to end their life are clinically depressed (Table 2).

Table 1 Demographic characteristics of participants in depression survey

Total	Gender		Age						Social Class		Region
<i>n</i> = 991	Male	Female	18–24	25–34	35–44	45–54	55–64	>65	ABC1	C2DE	Connacht/Ulster (18%)
	<i>n</i> = 468	<i>n</i> = 523	<i>n</i> = 99	<i>n</i> = 188	<i>n</i> = 208	<i>n</i> = 178	<i>n</i> = 139	<i>n</i> = 178	<i>n</i> = 460	<i>n</i> = 501	Munster (28%)
	(49%)	(51%)	(10%)	(19%)	(21%)	(18%)	(14%)	(18%)	(42%)	(52%)	Dublin (28%)
											Leinster, excluding Dublin (26%)

(A). Depression attitudes



(B). Antidepressant attitudes

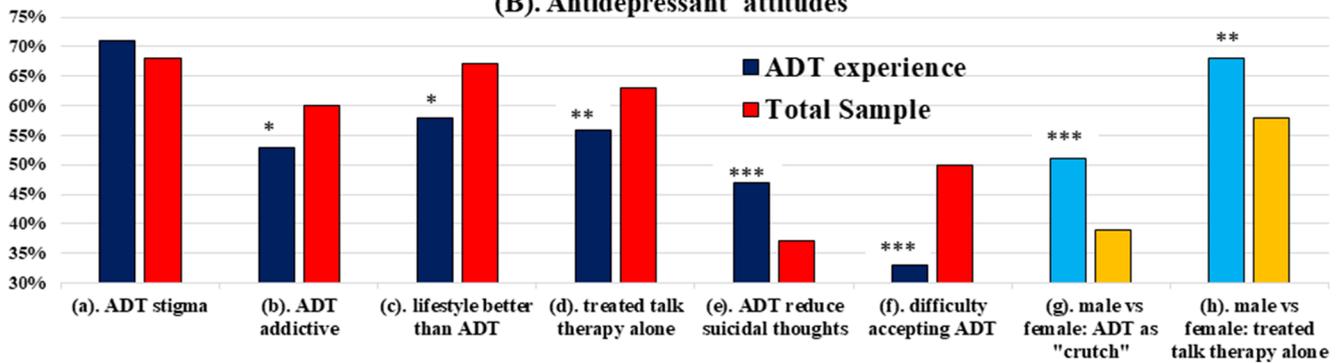


Fig. 1 Improving public attitudes to depression. The vast majority of respondents indicated that depression is a (a) medical illness (90%) and (b) different to sadness or stress (89%). Similarly, a large majority thought that National conversations have made people more aware of (c) depression (89%) and (d) emotional distress (87%). In accordance, most respondents agreed that stigma around (e) depression (69%) and (f) emotional distress is reducing (67%). (b) Attenuated, but persistent negative ADT attitudes in those with experience of ADTs. While most respondents agreed that there is (a) stigma around taking ADTs, those with experience of ADTs were less

likely to view ADTs as (b) addictive, less likely to agree that (c) lifestyle factors and (d) talking therapies alone are better than ADTs. Respondents with ADT experience were more likely to agree that ADTs (e) reduce suicidal thoughts and would be (f) more accepting of ADT treatment if advised by a doctor. Males were more likely to view antidepressants as a (g) crutch and more likely to think (h) depression can be treated by talk therapy alone. Percentages represent net agree (sum of agree strongly and agree slightly).

Actions taken to self-manage depression

When asked what, if anything, do you think you might do, or possibly have done if you were feeling emotions of depression for a month or more; 62% of the total sample

said they would talk to someone they trust and 61% of the total sample said they would talk to their GP (Fig. 3A).

Younger people (18–34 years) were significantly less likely to talk to their GP compared to both the total sample (46% vs 61%, $p = 0.034$) and older people (> 55 years) (46% vs 75%,

Fig. 2 Self-reported lifetime depression. Fifty-five of the total sample reported having experienced depression in their life. (a) In those aged between 18 and 34 years the rate was significantly higher (63% vs 55%, $p = 0.017$). (b) People in urban areas reported higher levels of depression compared to rural areas. There were no significant differences in self-reported depression between (c) males and females or between (d) lower and higher socio-economic groups

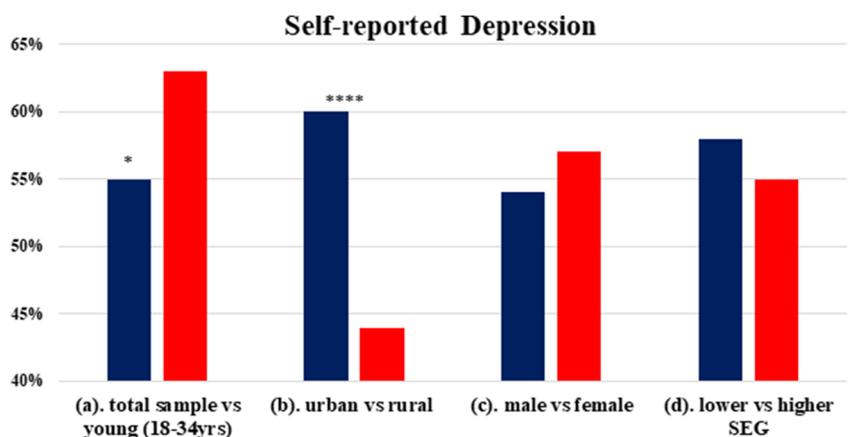


Table 2 Public attitudes to depression

	Net agree (%) Total n = 991	Gender		Age			Social class		Area	
		Male n = 468	Female n = 523	18–34 n = 283	35–54 n = 389	55+ n = 319	ABC1 n = 460	C2DE n = 501	Urban n = 705	Rural n = 285
Attitudes towards depression										
Depression is a medical illness	90%	88%	91%	88%	91%	89%	90%	90%	90%	89%
Depression is a different experience to sadness or to stress	88%	86%	90%	90%	87%	89%	90%	88%	87%	91%
Everybody gets depressed at some stage in their life	72%	76%	68%	68%	72%	74%	70%	74%	74%	66%
Depression is a response to the external environment	51%	54%	49%	58%*	52%	44%*	53%	51%	52%	48%
National conversations have made us more aware of depression	89%	87%	90%	87%	85%	95%*	93%	87%	89%	88%
National conversations have made us more aware of emotional distress	87%	85%	89%	83%	83%	94%*	89%	85%	87%	88%
Stigma around having depression is reducing	69%	69%	68%	70%	62%	75%*	75%	64%	69%	67%
Stigma around experiencing emotional distress is reducing	67%	67%	67%	68%	59%	75%*	73%	64%	68%	64%
There are more people experiencing depression than ever before	82%	83%	82%	77%	86%	83%	81%	85%	84%	79%

*Indicates significant difference versus total population ($p < 0.05$)

$p < 0.0001$). Younger people were more likely to seek help online compared to the total sample (25% vs 15%, $p < 0.0001$) and older people (> 55 years) (25% vs 8%, $p < 0.0001$); were more likely to throw themselves into work compared to the total sample (21% vs 14%, $p < 0.0034$) and older people (> 55 years) (21% vs 9%, $p < 0.0001$); and were more likely to avoid people they know compared to the total sample (23% vs 14%, $p = 0.0003$) and older people (> 55 years) (23% vs 5%, $p < 0.0001$). Younger people were significantly more likely to try to get more exercise (57% vs 50%, $p = 0.0393$), try to get more sleep (53% vs 41%, $p = 0.0003$), and drink less alcohol (35% vs 28%, $p = 0.022$) compared to the total sample (Fig. 3B).

More males than females responded that, if depressed, they would drink less alcohol (32% vs 23%, $p = 0.0013$), whereas more females than males would avoid people they know (17% vs 10%, $p = 0.0014$).

If depressed, people from higher SEGs (ABC1) would be more likely to try to eat more healthily compared to the total sample (46% vs 40%, $p = 0.033$) (Tables 3 and 4).

Discussion

This population survey of a nationally representative sample of approximately 1000 individuals examined attitudes to depression. The findings suggest that the public is becoming more aware of depression, view it as a medical illness, and think that stigma around depression is reducing. A surprising finding was

the very high rates of self-reported depression, especially in the younger cohort. However, it is important to emphasize that this online survey could not differentiate self-reported depression from clinical depression. There was a clear preference for talking therapies and lifestyle modification over ADTs in the management of depression. Both the total sample and people with experience of taking ADTs reported high levels of stigma around taking ADTs, with higher rates of stigma reported by younger people and by males.

There were considerable levels of self-reported depression. Fifty-five percent of respondents said that they had experienced depression in their life, with a significantly higher proportion (63%) of those aged 18–34 years saying they had experienced depression or had sought treatment for depression. A recent meta-analysis ($n = 1,112,573$) highlighted the trend for higher rates of depression using self-report (17.3%) compared to the more stringent clinician rated interviews (15.4%) [34]. Similarly, 20% of participants in an Italian public survey ($n = 1001$) self-reported depression [33]. The Healthy Ireland Survey (2016), conducted 7498 face-to-face interviews, and reported that 20% of people said they either have or had a mental health problem [35]. We acknowledge the inability of our survey to differentiate self-reported depression from clinical depression diagnosed by mental health professionals. In this context, the unexpectedly high rate of self-reported lifetime depression in our study, especially in the younger cohort and those in urban environments, may reflect milder forms of depression, adjustment disorders, acute stress reactions, or emotional/psychological distress. Given that

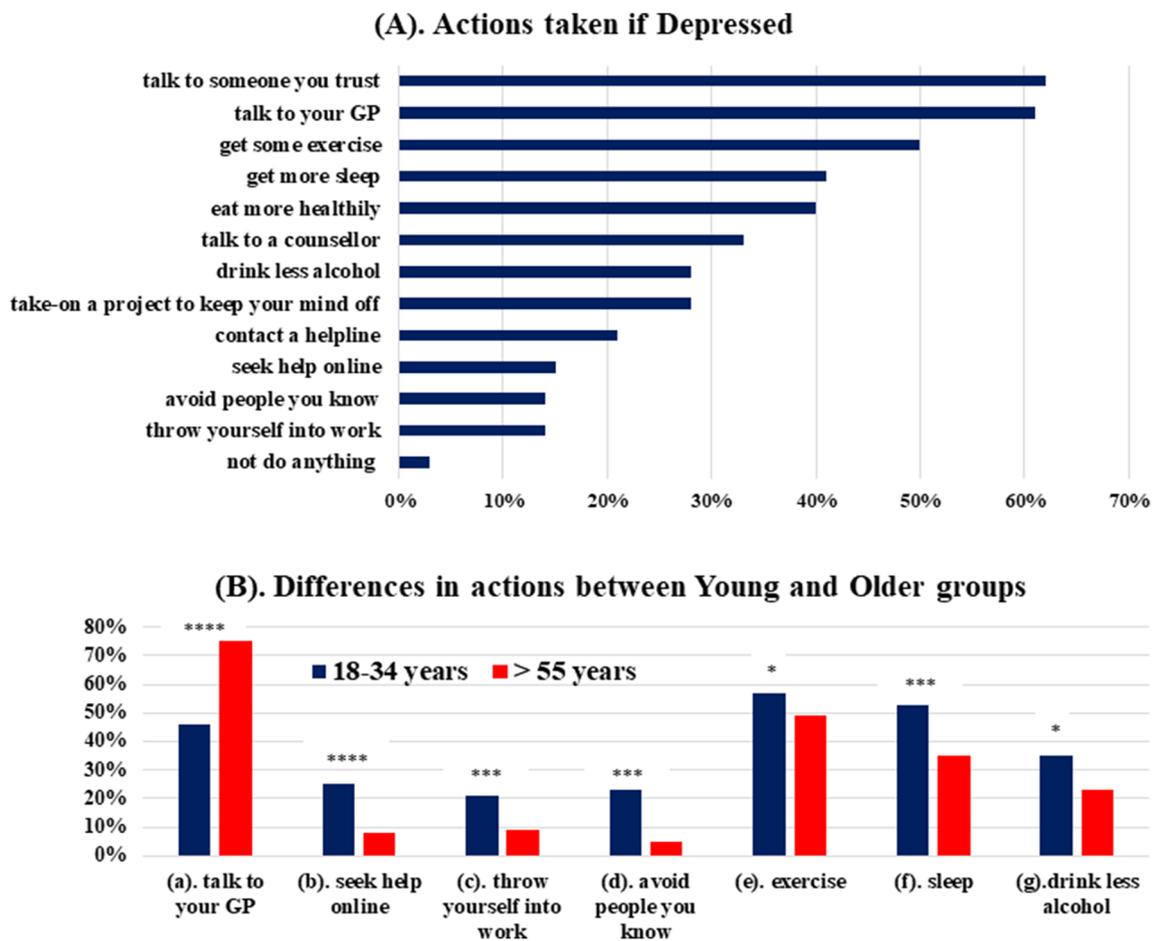


Fig. 3 (A) Actions taken to manage self-reported depression. While most people would engage in positive actions if feeling emotions of depression for a month or more, 14% would avoid people and 14% would throw themselves into work. (B) Younger people (18–34 years) were significantly less likely to (a) talk to their GP compared and more likely to (b)

seek help online, (c) throw themselves into work and (d) avoid people they know compared to older people (> 55 years). Younger people were significantly more likely to (e) try to get more exercise, (f) get more sleep, and (g) drink less alcohol if depressed, compared to older groups

72% of the total sample, and 68% of the younger cohort reported that, “everyone gets depressed at some stage in their life”, it is not in keeping with clinical depression. Furthermore, it is not in concordance with the above mentioned prevalence rates of depression, nor an Irish study ($n = 1131$) that reported 14.9% of young adolescents met diagnostic criteria for a lifetime experience of any mood disorder [36]. Nonetheless, this signal of psychological/emotional distress, especially in the younger cohort, requires careful consideration by Irish society and policy makers. Our data does not permit further exploration of the factors associated with this psychological/emotional distress signal and is thus a limitation of the study.

There were significant differences in self-management strategies between younger and older cohorts. In contrast to the 75% of the older cohort (> 55 years) that would attend their GP if depressed, only 46% of the younger respondents expressed a preference for this approach. Instead, the younger group was more likely to seek help

online and to engage in negative strategies such as working more and avoiding people, compared to older groups. Interestingly, younger people (58%) were more likely to view depression as a “response to the external environment” compared to older people (44%). Notwithstanding the lower preference for GP contact in the younger cohort in our survey, compared to a similar survey conducted almost 30 years ago, there has been a significant overall shift in the percentage of people who would contact their GP as a means of getting help [29]. Comparing our findings to those of McKeown and Carrick (1991) indicates an increase from 17% in 1989 to 61% in 2018 in those who would seek help from their GP. Our survey mirrors another Irish survey of 1000 Irish people in 2007, showing that 74% would contact their GP if they had a mental health problem, increasing to 85% in those with a pre-existing mental health problem, while only 13% in that study would seek help from a psychiatrist [27]. The Health Research Board’s National

Table 3 Public attitudes to treatment of depression

	Net agree (%) Total n = 991	Gender		Age			Social class		Area	
		Male n = 468	Female n = 523	18–34 n = 283	35–54 n = 389	55+ n = 319	ABC1 n = 460	C2DE n = 501	Urban n = 705	Rural n = 285
Antidepressant (ADT) attitudes										
There is a stigma around taking ADT	68%	66%	69%	74%*	71%	58%*	69%	69%	69%	65%
ADT are addictive	60%	62%	58%	51%*	62%	66%	58%	62%	61%	59%
If a doctor advised me to take ADTs, I would have difficulty accepting this advice	50%	50%	51%	54%	44%*	54%	54%	47%	51%	49%
I see ADTs as being a “crutch”	45%	51%*	39%*	42%	44%	49%	51%*	42%	45%	44%
Suicidal thoughts can be diminished through ADT	37%	41%	34%	38%	38%	37%	39%	36%	39%	35%
Depression can usually be treated through talking/counseling/psychotherapy alone	63%	68%	58%*	64%	61%	64%	64%	62%	64%	61%
ADTs are a temporary solution and counseling/psychotherapy is the more permanent solution	74%	77%	71%	68%*	71%	82%*	75%	74%	74%	73%
Lifestyle changes are better treatments for depression than ADT	67%	71%	63%	67%	63%	72%	68%	66%	67%	67%
Suicide attitudes										
The stigma around suicide is reducing	56%	55%	56%	60%	48%*	61%	61%	52%	55%	58%
A person experiencing suicidal thoughts for the first time should always go to see a doctor	90%	88%	91%	84%*	91%	92%	89%	91%	89%	90%
Suicide rates in Ireland are higher than the EU average	63%	65%	62%	63%	65%	62%	63%	64%	64%	61%
Most people who choose to end their life are clinically depressed	56%	56%	57%	56%	59%	55%	56%	58%	57%	56%
Personal experience										
I have experienced depression in my life	55%	54%	57%	63%*	61%*	41%*	55%	58%	60%*	44%*
I have attended my GP with depression	32%	31%	33%	32%	38%*	26%	31%	36%	35%	25%
I am taking or have taken ADTs	26%	24%	28%	27%	29%	21%	26%	29%	29%	20%
I have attended a counselor for help with depression	24%	22%	26%	32%*	22%	19%	27%	23%	27%	18%*
I have attended a psychiatrist with depression	16%	15%	17%	20%	16%	11%	16%	16%	18%	11%*

*Indicates significant difference versus total population ($p < 0.05$)

Psychological Well-being and Distress survey found that almost 90% of respondents were willing to contact a GP about a mental health issue, while only 48% were willing to contact a psychiatrist [37]. Indeed, approximately 25–30% of GP visits are related to difficulties with mental health [27, 38]. The rate is even higher in clinics that are outside of regular working hours. A study conducted in a large out of hours primary care service in the South East of Ireland showed that depression was noted in 54.7% of consultations, whereas anxiety accounted for 36.8% [39].

The younger cohort (18–34 years) in our survey was significantly less likely to agree with the statement that “someone experiencing suicidal thoughts for the first time should go to see a doctor” compared to the total sample (90% Vs 84%). The difference between advising “someone” rather than oneself, or the “first time” rather than repeated, may have lowered the threshold for responding “yes” to consulting a GP. Cannon and colleagues reported that 6.8% of 11–13 year olds will

have experienced suicidal ideation at some time in their lives, whereas the rate among 19–24 year olds increases to 19% [36]. An 18-month follow-up survey of 2404 of the adults who took part in the second National Psychiatric Morbidity Survey showed that the annual incidence of suicidal thoughts was 2.3% overall, and also reported that fewer than 1 in 200 people (0.5%) who experience suicidal thoughts go onto complete suicide [40]. In recent years, the suicide rate in Ireland has decreased. In 2016, there were 399 suicides in Ireland, of which 80% were males, corresponding to a rate of 8.5/100,000, just below the EU average of 11/100,000 [41]. In our survey, 37% of respondents agreed that ADTs could decrease suicidal thoughts, a figure that significantly increased to 47% in those who had taken ADTs.

Exercise [42], nutrition [43, 44], social support, environmental factors [45, 46], and other healthy lifestyle modifications are vital components in mood regulation and resilience. In mild-moderate depression, psychotherapy produces effects that are mostly equivalent to pharmacotherapy [47–50]. Our

Table 4 Actions taken by members of the Public to manage self-reported depression

	Net agree (%) Total n = 991	Gender		Age			Social class		Area	
		Male n = 468	Female n = 523	18–34 n = 283	35–54 n = 389	55+ n = 319	ABC1 n = 460	C2DE n = 501	Urban n = 705	Rural n = 285
Talk to someone you trust	62%	60%	63%	57%	61%	66%	66%	59%	62%	60%
Talk to your GP	61%	62%	60%	46%*	61%	75%*	63%	62%	62%	60%
Try to get some exercise	50%	51%	49%	57%*	46%	49%	54%	46%	50%	51%
Try to get more sleep	41%	40%	43%	53%*	39%	35%	46%	39%	43%	37%
Try to eat more healthily	40%	42%	38%	48%	39%	33%	46%*	35%	40%	38%
Talk to a counselor	33%	32%	33%	38%	30%	32%	38%	30%	35%	28%
Try to take-on a project to keep your mind off things	28%	28%	29%	31%	21%*	35%*	30%	27%	28%	30%
Drink less alcohol	28%	32%	23%*	35%*	26%	23%	31%	25%	28%	27%
Contact a helpline, such as Samaritans, Pieta House etc.	21%	21%	21%	20%	22%	21%	23%	20%	22%	18%
Seek help online	15%	12%	18%	25%*	13%	8%*	16%	14%	15%	16%
Throw yourself into work	14%	17%	11%	21%*	13%	9%*	17%	13%	15%	12%
Avoid people you know	14%	10%*	17%	23%*	14%	5%*	12%	15%	14%	13%
Other	2%	2%	3%	3%	1%	2%	2%	2%	2%	3%
do not know	3%	4%	2%	2%	4%	2%	2%	3%	2%	5%
Not do anything and wait for it to go away	3%	2%	3%	3%	3%	2%	2%	2%	2%	5%

*Indicates significant difference versus total population ($p < 0.05$)

survey revealed a strong predilection for talking therapies and lifestyle modification in the management of depression. Indeed, 67% of respondents thought that lifestyle changes were more effective than ADTs, and a similar proportion (63%) thought that depression could usually be treated through talking therapy alone. Again, this should be interpreted in the context of self-reported depression rather than clinical depression. Interestingly, those with experience of medication were significantly less likely to agree that talking therapies and lifestyle modification were better than ADTs.

ADT use has increased over the last 20 years [51]. In Ireland in 2014, a study of 7005 people over the age of 15 years showed that 11.4% had used ADTs in their lifetime, though in females aged between 45 and 54 years, the rate was 18.8% [52]. Approximately, 24% (390,000 out of approximately 1.6 million) of people covered by the medical card scheme in Ireland were prescribed ADTs, a similar figure to the 26% of respondents who had taken ADTs in our survey (24% males and 28% females). It is well established that an integrated treatment approach, involving medication, talking therapy, and lifestyle modification, is likely to be the most efficacious in the management of clinical depression. The potential for more targeted prescribing will evolve as psychiatry advances towards a more precise and personalized framework [3].

The high levels of perceived stigma around taking ADTs in both the total group and those with ADT experience in our study (68% vs 71%) implies that people who

benefit from ADT feel stigmatized. This reinforces the known finding that stigma is an important barrier to receiving help for mental health problems and for those suffering with psychiatric disorders and illnesses [53]. This stigma is particularly unconstructive for those that benefit or may potentially benefit from medication.

Sixty percent of respondents in our survey viewed ADTs as addictive, echoing a similar finding of 64% in a survey of Italian public attitudes to ADTs [33]. In our survey, those with ADT experience were significantly less likely to view ADTs as addictive, but the rate within this group remained considerable (53% vs 60%). The topic of ADT “addiction” has led to vigorous discussion in the UK, including provocative headlines in the media, spurred most recently by a systematic review [54] on the topic of ADT withdrawal effects [55].

In summary, this population survey of a nationally representative sample in Ireland showed that the public have a high level of awareness of depression, view it as a treatable medical illness, and think that stigma around depression is reducing. Although this online survey cannot differentiate clinical depression diagnosed by mental health professionals from self-reported depression, there were noteworthy high rates of self-reported lifetime depression, especially in the younger cohort, signifying at least high levels of milder forms of depression, or emotional/psychological distress. There was a marked preference for talking therapies and lifestyle modifications over ADTs. The finding of

high rates of perceived stigma around taking ADTs indicate persistent high rates of negative attitudes and misinformation in relation to ADTs. This was more marked in younger respondents and in males. This stigma and the negative attitudes to ADTs may make people less likely to seek medical help and presents an obstacle to treatment. The stigma is particularly unhelpful for those seeking medical help and for those who have derived benefit from ADTs. A collaborative and sustained effort to reduce stigma and advance mental health education and public appreciation of mood and its management across the severity spectrum, while destigmatizing the strategic and targeted use of ADTs is required. In parallel, progressing prevention, early detection, and precision-personalized strategies, all in the context of support from society and policy makers, is essential.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

Ethical standards The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The authors assert that ethical approval for publication of this paper was not required by their local Ethics Committee.

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