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ORIGINAL ARTICLE

Media representation of depression in young people: a corpus-based analysis of Irish newspaper coverage

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Objectives. Newspaper media are an important source of information regarding mental health and have a significant influence on people's awareness of, and decision making around, mental health issues. Depression in young people has seen increasing media attention in recent years, but few studies have examined media representation of mental health, specifically in young people. The current study used a quantitative approach to examine the words used in reports concerning depression in young people, in Irish broadsheets, published between 2007 and 2011.

Method. A sample of 269 texts, containing 176 223 words, was collected from three Irish broadsheet newspapers, using the search terms 'depression' or 'depressed' or 'mental health' and 'youth' or 'young people'. A corpus-based approach was used to examine word frequencies, clusters and keywords.

Results. The analysis identified textual patterns, suggesting recurring associations between youth depression and suicide, and, to a lesser extent, alcohol use and bullying. Keywords relating to emotional distress and symptoms of depression were less frequent and sometimes associated with constructions inferring lack of agency (such as 'suffering from'). A focus on the role of the parents was also evident. Of the professions mentioned, psychiatrists were referred to most often.

Conclusions. The analysis suggests that media coverage of depression in young people accurately reflects concerns reported in surveys by young people, but provides less information that might help in recognising depression in a young person.

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Key words: Depression, media, mental health, newspapers, young people.

Introduction

Depression in young people is of growing concern in Ireland, with an estimated 5% of young people experiencing depression and 20% experiencing some degree of emotional distress at any given time (Costello *et al*. 2004; Lynch *et al*. 2006). Depression in young people is associated with poor mental health outcomes in adulthood and risk for suicide (Brent *et al*. 1993; Rao *et al*. 1995; Carr, 2003). A recent large-scale survey of 14 306 young people in Ireland (aged 12–25 years) conducted by Headstrong, the National Centre for Youth Mental Health, found that 30% of adolescents fell outside the normal range for depressive symptoms, with depression increasing with age (Headstrong, 2012). The adolescent respondents in the survey reported that school, family and friends were the three biggest stressors affecting their lives. For the young adults surveyed, university/studies, money, work and family were key stressors. Alcohol misuse was identified as a concern, increasing through the school years, with just 52% of school-leaving respondents falling within the normal drinking category. Bullying also formed a significant theme, with 41% of adolescents reporting to have been bullied at some point; those who reported being bullied were more likely to report depressive symptoms. Of the young adult respondents, 7% reported having made a suicide attempt at some point in their lives, and 51% reported suicidal ideation (these questions were not included in the survey for respondents under 18 years of age).

As Carr (2008) notes, children and adolescents are diagnosed using almost the same criteria that are used with adults, which does not take account of developmental aspects of depressive symptoms. Depression in young people is characterised by low mood or irritability as well as particular cognitive and behavioural features (Carr, 2008). Low self worth and rejection sensitivity have been identified as cognitive vulnerabilities in adolescents (McCarty *et al*. 2007). Behavioural features such as

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disturbances of psychomotor function, sleep and appetite are often reported; irritability may be more apparent than low mood in adolescents (Carr, 2008). Fatigue and problems with executive function affecting attention, concentration and decision making are also common (Fava, 2003; McCarty *et al*. 2007).

These features are not a normal part of development, yet there is a tendency, even among health professionals, to think of depressed mood as in some sense 'normal' in adolescents and young adults (Iliffe *et al*. 2008). Lilienfeld *et al.* outline a number of surveys, suggesting that there is a widespread misconception of adolescence as a time of emotional turmoil, and that this misconception is shared by students, parents and health professionals (Lilienfeld *et al*. 2010). For example, in one survey, 62% of medical students and 58% of nurses agreed that 'the majority of adolescents show neurotic or antisocial behaviour sometime during adolescence'. As Lilienfeld *et al.* note, such misconceptions can prevent or delay help-seeking: 'dismissing some adolescents' genuine problems as merely a 'passing phase' or a manifestation of a normal period of turmoil may result in deeply troubled teens not receiving the psychological assistance they sorely need' (p. 52). If mental health literacy is to improve, it is important that such misconceptions are identified and challenged; the mass media can play an important role in this process.

Mental health literacy and the media

The term 'mental health literacy' is used to describe people's understanding of mental health issues and their management, and has been defined by Jorm *et al*. (1997) as 'knowledge and beliefs about mental disorders which aid their recognition, management or prevention' (p. 182). Jorm (2000) notes several components of mental health literacy, including: the ability to recognise specific disorders; knowledge and beliefs about risk factors, causes and interventions; attitudes that promote help-seeking; and the ability to seek out mental health information.

Information about mental health is now often accessed outside the patient–clinician setting, with most of the information provided by the media. Grilli *et al.* (2002) cite the mass media as 'the leading source of information about important health issues' (p. 2) and suggest that health services 'should consider mass media as one of the tools that may encourage the use of effective services and discourage those of unproved effectiveness' (p. 7). Francis *et al*. (2004) found that media reporting of mental health in Australia was generally of good quality, with a focus on policy/programme initiatives and issues related to causes, symptoms and treatment. Although much useful information on mental health is provided by the media, with increasing collaboration between the media and mental health organisations (Anderson, 2003), misinformation and bias are also evident. Exaggerated associations between violence and mental ill health have sometimes (Foster, 2006), though not always (Kalucy, 2011), been noted in the media, for example, and reductionistic portrayals of depression have been documented (Clarke & Gawley, 2009; Clarke, 2011). Age biases are also evident. Henson *et al*. (2009) found that the television news portrayed young people with mental illness in a more negative light than was the case for adults, for example. Aside from the way mental health issues are framed, language choices are telling. Use of labels such as 'patients' and 'cases' or descriptors such as 'afflicted by', 'suffering from', and 'victim of' infer a lack of agency and reduce individual responsibility (Olstead, 2002; Galvin, 2003).

The accuracy of media representations of depression is particularly important, given that mental health literacy among members of the public is sub-optimal. An Australian study by Jorm *et al*. (1997) found that many members of the public could not identify conditions such as depression when given unambiguous descriptions. Jorm *et al.* presented participants with vignettes of a person with symptoms of major depression or schizophrenia and found that 39% of participants correctly identified depression and 27% correctly identified schizophrenia (Jorm *et al*. 1997). More recently, Reavley and Jorm (2012), using a similar methodology, found evidence of improved mental health literacy, with 74% of participants accurately identifying depression, and fewer people labelling depression as a 'nervous breakdown', a 'psychological problem' or 'stress'. However, a quarter of participants could not correctly label the description of depression. An Irish study produced similar findings [Health Service Executive (HSE), 2007], with 74% of respondents accurately identifying depression from a vignette (see also Lawlor *et al*. 2008). However, 13% labelled the same description a 'nervous breakdown', and 30% incorrectly labelled a vignette describing schizophrenia as depression. Furthermore, only 5% of respondents accurately estimated the lifetime prevalence of mental health problems.

Despite great accessibility to information through the media, many people report difficulties finding relevant information on mental health. Data from the European Health Literacy Survey showed that 31% of respondents from Ireland reported difficulties in finding information on mental health issues such as depression, with lower income and education level associated with poorer mental health literacy (Doyle *et al*. 2012). There is significant public investment in research on mental health issues, but biases in reporting by the media means that potentially informative research does not always come to the public's attention. For example, a

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study in the UK by Lewison *et al*. (2012) found that media reporting of research on mental health tended to under-represent research on depression and alcohol-related issues, and focus on biological research rather than psychological interventions. Therefore, it would seem that there is still progress to be made in improving access to information about symptoms, treatments and others' experiences of depression, as well as information about ongoing research. Being able to identify and label the problem has been shown to predict effective help-seeking behaviours (Wright *et al*. 2012), and it is important that the symptoms of depression are recognised and that appropriate supports are identified at an early stage. Wilson *et al*. (2007) found that intention to seek help decreased as depressive symptoms increased, in a sample of children and adolescents. It would seem that the media have a key role to play in improving mental health literacy and it is important to study how mental health issues are portrayed and how relevant information is presented to the public.

In the current study, we explored the portrayal of depression in young people and youth mental health in the Irish newspaper media. We used a quantitative approach to examine recurring words and word patterns used in newspaper reports on young people's mental health, applying a corpus-based approach to a large set of media reports.

Corpus-based approaches to media texts

In the current study, we used a corpus-based approach to examine word frequency and word patterns across 269 texts. The 'texts', here, are machine-readable files, in this case newspaper reports concerned with youth mental health. These make up the corpus, or collection of texts, which is then analysed with a computer using the tools of corpus linguistics. Corpus linguistics is a heterogenous field involving a number of distinct approaches and methods, which have in common the use of computerised tools to analyse large data sets. Such methods have been applied to many topics, including health-related issues, and are often used to examine large sets of media data because, as noted by McEnery and Hardie (2011), they can deal with a data set 'of a size which defies analysis by hand and eye alone within any reasonable timeframe' (p. 2). A computer program is used to search through large amounts of text and to identify frequent words, word patterns and other textual features, including keyword frequencies, clusters and concordances of keywords (see McEnery & Hardie, 2011 for an overview). Frequency data provide a quantitative overview of word use in the data set – what words are used, how often and how many distinct words are used, for example. Keywords are statistical abstractions from frequency lists (McEnery & Hardie, 2011); they are identified by comparing the frequency of a word in the data set with its frequency in a reference corpus, which allows us to determine whether the word occurs with statistically higher or lower frequency than might be expected. Clusters allow us to see what other words co-occur with the high frequency words. Concordances provide a more qualitative analysis; using concordancer software, we can search a set of texts for a target term (word or phrase) and these will be extracted as lines of text so that the context before and after the appearance of the target word can be examined (McEnery & Hardie, 2011).

One advantage of the corpus linguistics approach is its objectivity, and it may be particularly useful when approaching a topic such as media coverage of mental health, where the researcher will inevitably have preconceived ideas about biases in media portrayal. As Bondi and Scott (2010) note, the researcher 'cannot switch off his or her intelligence, we cannot see a constellation of stars merely as blobs of light… we cannot see text without seeing meaning' (p. 45). The computerised keyword analyses will identify words that are statistically more frequent in the newspaper reports compared with a reference corpus, whereas the patterns of clusters of words and concordances can be examined to see what lexical choices are made and how language is used (Gabrielatos & Baker, 2008; Jaworska & Krishnamurthy, 2012). The analysis can produce words and word combinations that are expected, but it will also find words and combinations of words that may not have been anticipated. The broad frequency-based analysis provides an overview of recurring words in the newspaper reports, which may reflect recurring themes; a detailed analysis can be used to examine the dominant representations in the reports and the language used to shape them (Tognini-Bonelli, 2001). Of course, the compilation of the corpus is key here; the data set must comprise texts that are representative and that have been selected using appropriate search terms. A biased data set will not generate an objective analysis.

The current study

The current study examined Irish newspaper accounts of depression in young people, focusing on broadsheet publications between the years 2007 and 2011. The aims of the study were to identify, via frequencies and keyword analysis, the recurring themes in Irish newspaper reports on depression in young people, and to examine the textual patterns that repeat in reporting on these themes. We focused here on a quantitative approach to the data set. We also considered whether media reporting around depression and young people mirrors concerns reported in surveys (such as from the My

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World survey (Headstrong, 2012) by young people in Ireland.

Method

Newspaper articles concerning depression in young people were located online using the LexisNexis News & Business database, ProQuest and the Irish News Archives databases. The search query was limited to the three traditional broadsheet newspapers that have the largest circulations nationally (based on data from the Audit Bureau of Circulations): The Irish Times, The Irish Independent and The Examiner. The search was limited to a 5-year period from January 2007 to December 2011. The search terms were 'depression' or 'depressed' or 'mental health' and 'youth' or 'young people'. The term 'mental health' was included in the search because in an initial inspection of newspaper articles we noted that sometimes the word depression was not used; an article might refer instead to mental health and low mood, for example. We limited our search to a 5-year period for two reasons. First, we wanted to compile texts that were representative of current reporting on youth depression and mental health. Second, we aimed to limit texts to several hundred reports, as all would be read to screen out non-relevant reports; for example, a small number of reports referring to 'depression' in the economic sense were excluded. All the articles were read and any article found not to be primarily about depression, specifically in young people, was excluded.

The resulting 269 newspaper articles, containing 176 223 words, were analysed using WordSmith™ Tools (Scott, 2008), a program used for counting word frequencies, finding word patterns and identifying keywords (words that occur with greater or less frequency than would be expected in comparison with a reference corpus). WordSmith™ was initially used to compile a word list on the basis of frequency. This stage is useful to examine the vocabulary used in the texts and the extent to which word choices recur. The frequency lists generated can be used to examine the proportion of texts using the word, and well as the word's overall frequency in the corpus. The type–token ratio is also computed here. This provides an estimate of the proportion of distinct words in a sample of text and can be thought of as an approximate measure of richness of vocabulary, or lexical variation; a higher type–token ratio indicates a greater variety of words in the texts. However, smaller text samples will give rise to larger type–token ratios, and thus to compare type–token ratios across different sized text samples, a standardised type–token ratio is computed. Here, WordSmith™ calculates the average type–token ratio based on iterations across 1000 word text samples; the figure returned is a percentage of new types for every *n* (here 1000) tokens.

In the second stage of the analysis, keywords were identified by analysing the content in comparison with a reference corpus. The significance of the difference in frequency between the word in the wordlist and in the reference corpus is calculated statistically using log-likelihood tests (Dunning, 1993). The log-likelihood score allows a comparison to be made across corpora that will typically be of very different sizes and, according to Leech *et al*. (2001, p. 16), shows 'how significantly characteristic or distinctive of a given variety of language a word is, when its usage in that variety is compared with its usage in another'. Keywords can then be grouped according to specific topics. Baker (2006) suggests using a large reference corpus, which is representative of language in general and can act as 'a good benchmark of what is 'normal' in language' (p. 43). Here, we used the British National Corpus (BNC), a 100 million word collection of samples of mainly (90%) written language taken from a wide variety of sources, which is representative of British English from the later 20th century. The written BNC sources include regional and national newspapers, periodicals and journals, school and university essays, academic books and popular fiction.

Finally, textual patterns were explored in the context of word clusters (such as patterns of repeated phraseology) and collocates (i.e. other words that tend to occur in the neighbourhood of the search word).

Results

Table 1 presents summary statistics for each year sampled. The average word length of the reports was 644.2 words (S.D. = 431.4). There were 11 267 distinct words (types) in the corpus, with a standardised type–token ratio of 42.3. This type–token ratio is around the average for written texts (Baker, 2006) and is consistent with higher type–token ratios found for informational styles of press reporting (Biber, 1988) and is similar to other specialist reporting (Musacchio, 2006). A lower ratio might have been expected if, for example, similar reports were simply repeated again and again in the media.

Word frequency

Table 2 shows the 25 most frequent words used in the corpus, omitting function words (e.g. the, a, to) and gives a sense of the topic under discussion. We use the term 'content word' here to refer to any noun, verb, adjective or adverb; content words, in the linguistic sense, are a more restricted category of word, excluding some verbs, for example.

While most of the frequent words shown in Table 2 simply reflect the topic that was searched (e.g. young

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Table 1. *Summary statistics for the newspaper reports of depression in young people over the 5-year period*

	2007	2008	2009	2010	2011	Total
Number of reports	56	52	46	53	62	269
Number of running words	36 276	31 928	30 234	38 107	39 678	176 223
Number of types	5122	4933	4426	4923	4659	11 267[a]
Standardised type–token ratio	43.44	45.75	49.23	52.88	40.64	42.3[a]
Average number of words (S.D.)	638.18 (445.22)	604.27 (318.46)	647.43 (430.37)	706.68 (501.08)	627.1 (445.46)	644.2 (431.4)[a]

[a] Computed across the complete data set (2007–2011).

Table 2. *The 25 most frequent content words*

Words	Frequency	Number of texts	% of texts
Is	2077	243	90.33
Are	1324	234	86.99
People	1166	227	84.39
Be	1123	233	86.62
Have	902	212	78.81
Said	866	190	70.63
Young	845	209	77.70
Were	674	188	69.89
Suicide	662	121	44.98
Had	661	181	67.29
Health	652	189	70.26
Mental	599	168	62.45
Depression	589	232	86.25
Children	572	142	52.79
Year	490	180	66.91
Says	354	65	24.16
Life	351	136	50.56
Time	322	153	56.88
Services	320	101	37.55
Would	313	134	49.81
School	311	94	34.94
Years	309	147	54.65
Being	307	157	58.36
Help	297	119	44.24
Parents	293	102	37.92

Table 3. *The content words featured in most of the texts*

Words	Frequency	Number of reports	% of reports using the word
Are	1324	234	86.99
Be	1123	233	86.62
Depression	589	232	86.25
Was	1438	228	84.76
People	1166	227	84.39
Have	902	212	78.81
Young	845	209	77.70
Has	546	194	72.12
More	578	192	71.38
Said	866	190	70.63
Health	652	189	70.26
Were	674	188	69.88
Year	490	180	66.91
Mental	599	168	62.45
Being	307	157	58.36
Been	387	154	57.24
Time	322	153	56.51
Years	309	147	54.64
Children	572	142	52.79
Life	351	136	50.56

people, mental health), the inclusion of the word 'suicide' among the most frequent items suggests that reporting of depression in young people and reporting of suicide are associated. In fact, the word suicide occurred more often than the search term depression, at 662 mentions *versus* 589 (see Table 2), and was mentioned in almost half of the newspaper reports (45%), whereas the word depression appeared less often overall, but occurred in 86% of reports. The word 'children' also occurs with high frequency. Table 3 shows the content words that appeared in the majority of the reports sampled (i.e. above 50% of texts).

The high frequency of words such as 'depression', 'young', 'people', 'mental' and 'health' reflect the search terms used to compile the data set. Other words also occur in a majority of texts. The words 'year' and 'years', for example, tended to occur, describing ages and school years (e.g., 'in 5th year', '16 year old', etc.), and also time markers such as 'earlier this year', 'previous year', 'in the past year', phrases often used when reporting statistics. The word 'time' tended to occur in phrases such as 'at the time', 'the first time', 'all the time' and 'at a time when…'. The word 'children' occurred most frequently in the cluster 'children and adolescents', with 'children and young people' and 'children and teenagers' also used.

Words relating to symptoms and emotional terms were less frequent in the data set. Of these, 'anxiety'

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was the most frequent term used, with 125 mentions across the corpus. Terms related to sadness, loneliness and unhappiness were less frequently found, and references to other characteristics of depression (e.g. anhedonia, problems with concentration, sleeping, appetite, etc.) were infrequent. For example, sadness (as 'sad' or 'sadness') occurred 41 times, with 'unhappy' and 'unhappiness' mentioned 23 times. Sleep (including 'insomnia') is mentioned 37 times. The extent to which words occurred with greater than expected frequency is explored in the next section, by analysing keywords.

Keywords

Measuring keyness allows a more focused analysis than a simple frequency count. Keyness compares the frequency of a search word in the corpus with its frequency in a large reference corpus and involves computing the statistical probability that the frequency of the word deviates from the estimated frequency. Therefore, a high keyness value acts as a good thematic indicator and gives a sense of 'aboutness' (Scott, 2000) Keywords, in this context, are words that occur with greater or less frequency than would be expected on the basis of a large reference corpus. The significance of the difference in frequency between the word in the wordlist and in the reference corpus is calculated statistically using log-likelihood tests (Dunning, 1993).

Using the BNC as the reference corpus, we found that a total of 890 keywords (or 8% of the tokens) occurred more (791), or less (99), frequently than would be expected on the basis of the reference corpus, at $p < 0.00001$. Table 4 shows the 25 most salient (i.e. highest keyness scores) keywords. The keywords identified include many words that might be expected, given our search terms: depression, mental health and young people/youth. Also included are some predictably unusual words when comparing our data set with a reference corpus: HSE (the authority that delivers health and social services in Ireland), Dublin and Ireland, for example, as well as 'psychiatric' and 'disorder'.

The term 'psychiatric' occurred most often along with 'unit', 'services' or 'hospitals'. 'Disorder' appeared in a range of contexts, but the term 'illness' was used twice as often. The appearance of the term 'psychiatric' in the list also reflects the prominence of the profession in reports on depression in young people. The term 'psychiatrist(s)' ($n = 78$) was used more often than as 'psychologist/(s)' ($n = 43$), 'counsellor/(s)' ($n = 36$), and was also more frequent than the terms 'doctor/(s)' ($n = 66$) and 'GP/(s)' ($n = 42$).

The frequency of the word 'children' (572 mentions, in 53% of articles) is noteworthy, considering that the search was more generally targeted at reports concerning 'young people'. Reference to 'parents' was made in 38% of the articles and often occurred in the context of parents as potential supports.

Table 4. *Most salient keywords in the youth depression corpus*

Rank	Keyword	Frequency	Keyness score
1	Suicide	662	5584.10
2	Depression	589	4583.90
3	Mental	599	3650.41
4	Young	845	2963.80
5	Health	652	2306.04
6	People	1166	2121.02
7	Children	572	1349.44
8	Self	243	1261.60
9	Teenagers	155	1077.82
10	Alcohol	203	1068.50
11	Suicidal	113	993.68
12	Ireland	247	882.31
13	Psychiatric	134	859.60
14	Parents	293	836.25
15	HSE	92	832.38
16	Depressed	138	792.81
17	Adolescents	97	779.36
18	Bullying	95	765.12
19	Adolescent	102	743.24
20	Disorders	112	734.50
21	Services	320	714.53
22	Child	287	668.76
23	Dublin	130	650.99
24	Youth	166	638.47
25	Harm	137	635.76

HSE, Health Service Executive. All are statistically significant at $p < 0.00001$.

Three key terms may be useful thematic indicators, in so far as they emerge as key, even though they are not directly related to the original search terms used to collect the text samples: suicide/suicidal, alcohol and bullying. The word 'suicide' appeared 662 times and was found in 45% of the newspaper reports over the 5-year period (see Tables 2 and 3), suggesting a strong association between reporting on depression in young people and mention of suicide. 'Alcohol' was also strongly associated with the discussion on depression in young people, with 203 mentions across 23% of articles sampled, referring to the misuse of alcohol. The term 'bullying' also emerged as key, although less frequent, appearing 95 times in 14% of the newspaper articles. Analysis of the word clusters showed that bullying was generally portrayed as having a causal role in the onset of depression in a young person.

Word patterns

Tables 2 and 3 highlight the frequent use of the words 'depression' and 'suicide' in the corpus, but to examine

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Table 5. *Clusters of the search terms 'depression' and 'suicide' with collocates for clusters that reoccurred 15 times or more*

Target words	Frequency	Frequency including related forms	% of texts	Number of clusters	Most frequent collocates
Depression	589	824	86	30	Suffering from depression; suffer from depression
Suicide	662	827	45	47	of suicide and; died by suicide; for suicide prevention; risk of suicide

how these words are used we must consider their use in context. To examine patterns beyond the single word, frequency lists of word clusters were derived using WordSmith™ for words found in the corpus related to 'depression' and 'suicide'. For example, 'depression' was grouped with 'depressed', 'depressive', 'depressant', and 'suicide' with 'suicidal' and 'suicidology'. Collocates (that is sequences of words that occur in proximity together) were computed by searching five words to the left and five words to the right of each target word, with a cluster size of three word sequences. Clusters that occurred at least 15 times are shown in Table 5. The most common collocates of depression and related terms (e.g. depressed) were variations of the verb 'suffer' ('suffering with', 'suffer from', etc.), with 68 mentions of depression terms in the immediate context of 'suffering', and 174 uses of the stem 'suffer' in total. (The term 'sufferer' was rare, however, with nine mentions in total.)

The collocates for 'suicide' showed few distinct patterns (see Table 5), but concordances were informative. A concordance is a list of occurrences for the search term presented within its context, typically presented as 'key words in context' by concordancing software. Concordances introduce a qualitative element to the analysis and can form the basis of a critical discourse analysis (Gabrielatos & Baker, 2008). The search terms were examined in their context, showing eight words before and after the search term. The concordances for terms related to 'suffering from/with depression' showed that this terminology was often used when presenting statistics, particularly prevalence rates, with 38% of the 68 mentions providing numerical information about mental health. The concordances for 'suicide' showed that the word often occurred in the context of 'attempt', with 44 mentions of 'suicide attempts' or 'attempted suicides' in the data set. The term 'commit suicide' was also evident, although less frequent, with 15 mentions across its various types ('committed suicide', 'commit suicide', etc.), showing that this term continues to be used in newspaper reporting, albeit infrequently, 20 years after the decriminalisation of suicide in Ireland.

Discussion

The themes of suicide, alcohol use and, to a lesser extent, bullying noted in the analysis of newspaper reports mirror some of the concerns noted in surveys of young people in Ireland (Headstrong, 2012). The inclusion of the term 'suicide' among the most frequent items is noteworthy and shows how reporting on depression in young people and suicide often co-occur. The word 'suicide' occurred more often than the search term 'depression', with just under half of the newspaper reports on youth depression explicitly mentioning the term 'suicide' or a related term (e.g. suicidal). The regular discussion of suicide in the context of depression in young people, although important, could reinforce the misconception that only people who are depressed will try to take their own lives (Cullen, 2006) or that all individuals with depression are at risk for suicide. Further investigation of the ways in which suicide and depression are reported would seem to be warranted.

The frequency of use of the word 'children' is also noteworthy, considering that the search was more generally targeted at reports concerning 'young people'. This suggests that children are increasingly being considered in discourse on depression and young people. Reference to 'parents' was made in a substantial proportion of the articles (38%), and generally occurred in the context of parents as potential supports. Many reports seemed to be aimed at parents in particular, consistent with the demographic of the newspapers sampled.

Although other studies internationally have noted a focus on biological and medical themes in media reporting on depression in young people (Clarke, 2011), this focus is less apparent here. Results suggest less emphasis in these Irish newspapers on the various symptoms (e.g. mentions of sadness, sleep problems, appetite issues) and treatment options available, which might make it difficult for parents to identify whether their child is depressed. Instead, the Irish newspapers that we sampled frequently mention factors associated with depression for the young person (e.g. bullying and alcohol use) and the potential consequences of

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untreated depression (e.g. suicide). Perhaps more emphasis on symptoms and treatment might encourage help-seeking and improve mental health literacy in young people and the parents of young people. The relative lack of emphasis, based on frequency, on symptomology contrasts with the analyses of North American media coverage (Clarke, 2011), but may have emerged using a qualitative approach. Our results must be interpreted in the context of the frequency-based methodology, a limitation that is discussed in more detail below.

The most common collocates of depression and related terms (e.g. depressed) were variations of the verb 'suffer' ('suffering with', 'suffer from', etc.). The recurrent use of the verb 'suffer' ('suffering with', 'suffer from', etc.) in reporting on depression suggests a lack of agency in recovery from depression and reinforces the notion of the passive role of a young person experiencing depression (Olstead, 2002; Galvin, 2003). The ready association of 'suffer' with depression also conveys a medical condition, reinforcing discourse patterns associated with illness. The relative infrequency of terms relating to signs of depression, or emotional distress, seems at odds with this focus. The prominence of the psychiatrist among other professions (e.g. GPs, psychologists) is also relevant here and could be taken as suggesting that depression always requires intervention from a psychiatrist; future research might examine the context in which expert voices are reported, and the textual patterns that occur in such cases.

One advantage of the corpus linguistics approach lies in its objectivity. Word frequencies and keywords are computed by the software programs and researcher biases are reduced; this is particularly useful when approaching a topic such as media coverage of mental health, where the researcher will inevitably bring preconceived ideas to the analysis. The analysis is data driven and largely quantitative; it is inductive and directs the researcher's attention towards recurring textual patterns that might otherwise have gone unnoticed (Gabrielatos & Baker, 2008). However, the method used in the current study has limitations that must be considered.

First, because we used a purely quantitative approach here, we were focused solely on the numbers of mentions. The extent to which the frequency of word use and salience (or focus in an article) is linked is debatable, however, and our method of analysis will have been better suited to constructs with few synonyms. There are many ways to describe low mood, for example, and these various descriptions will not be captured within a single count of frequency. Perhaps this is why emotion-based terms appeared with lower frequency than might be expected; there may be greater variety used in describing emotions, which would lead to their being underestimated in a frequency count.

Second, the choice of reference corpus must be considered. Keywords emerge in comparison with a large-scale reference corpus and therefore many health-related words, which will occur across a wider variety of written texts, will not surface among the most salient keywords in the analysis of depression. The choice of the reference corpus is important; ideally, a health-related corpus would have been used as the norm corpus, but as none were available, the more general BNC was used here, and the data must be interpreted with this in mind. It is therefore important to consider frequency data alongside keywords.

Third, frequencies do not take into account the social, cultural or discursive context of the data (Wilson *et al*. 2007). Sometimes words that are *not* used more, or less, than might be expected are also of interest, as are the reasons for their use or omission. Frequencies do not tell us *why* certain textual patterns are, or are not, found (Gabrielatos & Baker, 2008). The method, as used here, does not tell us anything about the directionality of associations between words. For example, in the press coverage of depression in young people, alcohol is among the factors mentioned with greater average frequency than expected. But what kind of discussion around alcohol is presented? Is alcohol presented as a cause or as a consequence of depression? Similarly, parenting or issues related to parents are mentioned, often in the context of supports but sometimes in other contexts. These differences in use need to be examined.

Finally, a report might be written about a topic without using a particular word. 'Suicide', for example, might be written about without use of that term; a purely quantitative analysis may exclude such reports. While collocation profiles can be used to examine discourse patterns and salient ideas associated with the search term or topic of interest, an approach focusing on the use of language would allow a more contextualised analysis. Discourse analytic approaches have been used effectively to address a range of issues in health care and it has been argued that a corpus-based approach can be used alongside a critical discourse analysis to identify linguistic patterns and also address why they might have occurred in the way they did (Gabrielatos & Baker, 2008).

Notwithstanding these limitations, the method used here would seem to have potential as the basis for a quantitative audit of reporting around youth depression and the potential impact of reporting styles on readers. This quantitative approach could be supplemented with a more qualitative method, allowing the data to be examined in a broader context, an approach that might be used in future research.

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References

Anderson M (2003). 'One flew over the psychiatric unit': mental illness and the media. *Journal of Psychiatric and Mental Health Nursing* **10**, 297–306.

Baker P (2006). *Using Corpora in Discourse Analysis*. Continuum: London.

Biber D (1988). *Variation across Speech and Writing*. Cambridge University Press: Cambridge.

Bondi M, Scott M (2010). *Keyness in Texts*. Benjamins: Amsterdam.

Brent DA, Perper JA, Moritz G, Allman CJ, Friend A, Roth C, Schweers J, Balach L, Baugher M (1993). Psychiatric risk factors for adolescent suicide: A case control study. *Journal of the American Academy of Child and Adolescent Psychiatry* **32**, 521–529.

Carr A (2003). *Depression and Attempted Suicide in Adolescence*. Blackwell: Oxford.

Carr A (2008). Depression in young people: description, assessment and evidence-based treatment. *Developmental Neurorehabilitation* **11**, 3–15.

Clarke J, Gawley A (2009). The triumph of pharmaceuticals: the portrayal of depression from 1980 to 2005. *Administration and Policy in Mental Health and Mental Health Services Research* **36**, 91–101.

Clarke JN (2011). Childhood depression and mass print magazines in the USA and Canada: 1983–2008. *Child & Family Social Work* **16**, 52–60.

Costello E, Mustillo S, Keeler G, Angold A (2004). Prevalence of psychiatric disorders in childhood and adolescence. In *Mental Health Services: A Public Health Perspective* (ed. B. L. Levin, J. Petrila and K. Hennessy), pp. 111–128. Oxford University Press: New York.

Cullen J (2006). *Meanings, Messages and Myths: The Coverage and Treatment of Suicide in the Irish Print Media*. Health Service Executive: Dublin.

Doyle G, Cafferkey K, Fullam J (2012). The European Health Literacy Survey: Results from Ireland (http://healthliteracy.ie/wp-content/uploads/2010/11/EU-Health-Literacy-Survey-Full-Report.pdf). Accessed 5 November 2012.

Dunning T (1993). Accurate methods for the statistics of surprise and coincidence. *Computational Linguistics* **19**, 61–74.

Fava M (2003). Symptoms of fatigue and cognitive/executive dysfunction in major depressive disorder before and after antidepressant treatment. *Journal of Clinical Psychiatry* **64** (Suppl. 14), 30–34.

Foster JLH (2006). Media presentation of the mental health bill and representations of mental health problems. *Journal of Community and Applied Social Psychology* **16**, 285–300.

Francis C, Pirkis J, Blood RW, Dunt D, Burgess P, Morley B, Stewart A, Putnis P (2004). The portrayal of mental health and illness in Australian non-fiction media. *Australian and New Zealand Journal of Psychiatry* **38**, 541–546.

Gabrielatos C, Baker P (2008). Fleeing, sneaking, flooding: a corpus analysis of discursive constructions of refugees and asylum seekers in the UK Press 1996–2005. *Journal of English Linguistics* **36**, 5–38.

Galvin R (2003). The making of the disabled identity: a linguistic analysis of marginalisation. *Disability Studies Quarterly* **23**, 149–178.

Grilli R, Ramsay C, Minozzi S (2002). Mass media interventions: effects on health services utilisation. *Cochrane Database of Systematic Reviews* Issue 1. Art. No.: CD000389. doi:10.1002/14651858.CD000389.

Headstrong (2012). *My World Survey*. Headstrong: Dublin.

Health Service Executive (HSE) (2007). Mental Health in Ireland: Awareness and Attitudes (http://www.healthpromotion.ie/hp-files/docs/HSP00612.pdf). Accessed 11 October 2012.

Henson C, Chapman S, McLeod L, Johnson N, McGeechan K, Hickie I (2009). More us than them: positive depictions of mental illness on Australian television news. *Australian and New Zealand Journal of Psychiatry* **43**, 554–560.

Iliffe S, Williams G, Fernandez V, Kramer T, Gledhill J, Miller L. (2008). General practitioners' understanding of depression in young people: qualitative study. *Primary Health Care Research & Development* **9**, 269–279.

Jaworska S, Krishnamurthy R (2012). On the F word: a corpus-based analysis of the media representation of feminism in British and German press discourse, 1990–2009. *Discourse & Society* **23**, 401–431.

Jorm AF (2000). Mental health literacy. Public knowledge and beliefs about mental disorders. *British Journal of Psychiatry* **177**, 396–401.

Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, Pollitt P (1997). Mental health literacy: a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia* **166**, 182–186.

Kalucy M (2011). Comparison of British National Newspaper coverage of homicide committed by perpetrators with and without mental illness. *Australian and New Zealand Journal of Psychiatry* **45**, 539–548.

Lawlor E, Breslin JG, Renwick L, Foley S, Mulkerrin U, Kinsella A, Turner N, O'Callaghan E (2008). Mental health literacy among Internet users. *Early Intervention in Psychiatry* **2**, 247–255.

Leech G, Rayson P, Wilson A (2001). *Word Frequencies in Written and Spoken English: Based on the British National Corpus*. Longman: London.

Lewison G, Roe P, Wentworth A, Szmukler G (2012). The reporting of mental disorders research in the British media. *Psychological Medicine* **42**, 435–441.

Lilienfeld SO, Lynn SJ, Ruscio J, Beyerstein BL (2010). *50 great myths of popular psychology*. Wiley-Blackwell: New York.

Lynch F, Mills C, Daly I, Fitzpatrick C (2006). Challenging times: prevalence of psychiatric disorders and suicidal

behaviours in Irish adolescents. *Journal of Adolescence* **29**, 555–573.

McCarty CA, Vander Stoep A, McCauley E (2007). Cognitive features associated with depressive symptoms in adolescence: directionality and specificity. *Journal of Clinical Child and Adolescent Psychology* **36**, 147–158.

McEnery T, Hardie A (2012). *Corpus Linguistics: Method, Theory and Practice*. Cambridge University Press: Cambridge.

Musacchio MT (2006). Quality in published Italian specialised translations. In *Insights into Specialized Translation* (ed. M. Gotti and S. Sarcevic), pp. 173–192. Peter Lang: Bern.

Olstead R (2002). Contesting the text: Canadian media depictions of the conflation of mental illness and criminality. *Sociology of Health & Illness* **24**, 621–643.

Rao U, Ryan ND, Birmaher B, Dahl RE, Williamson DE, Kaufman J, Rao R, Nelson B (1995). Unipolar depression in adolescents: clinical outcomes in adulthood. *Journal of the American Academy of Child Adolescent Psychiatry* **34**, 566–578.

Reavley NJ, Jorm AF (2012). Public recognition of mental disorders and beliefs about treatment: changes in Australia over 16 years. *British Journal of Psychiatry* **200**, 419–425.

Scott M (2000). Focusing on the text and its key words. In *Rethinking Language Pedagogy from a Corpus Perspective, vol. 2* (ed. L. Burnard and T. McEnery), pp. 103–122. Peter Lang: Frankfurt.

Scott M (2008). *WordSmith Tools version 5*. Lexical Analysis Software: Liverpool.

Tognini-Bonelli E (2001). *Corpus Linguistics at Work*. John Benjamins Publishing Company: Amsterdam.

Wilson CJ, Rickwood D, Deane FP (2007). Depressive symptoms and help-seeking intentions in young people. *Clinical Psychologist* **11**, 98–107.

Wright A, Jorm AF, Mackinnon AJ (2012). Labels used by young people to describe mental disorders: which ones predict effective help-seeking choices? *Social Psychiatry and Psychiatric Epidemiology* **47**, 917–926.

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