We analyzed over 12 million conversations to understand how mental health is discussed online.
Introduction

The link between bullying and mental health is indisputable. Recent data from The Annual Bullying Survey 2017 shows us that 1-in-4 of those subjected to bullying have self-harmed, 37% felt socially anxious and 36% became depressed. Bullying leads to the development of eating disorders, body dysmorphia and anti-social behaviors and we know that it can, and does often, have a long-term impact by undermining the self-esteem and confidence of those who experience it.

Mental health is inevitably an issue that we at Ditch the Label are incredibly passionate about. Young people tell us every single day about some of the struggles they face and about the unique challenges posed by modern society and culture. One young person previously told us that living with the stigma of depression was often harder than living with the symptoms.

Mental health is a topic that connects us all. We all have it, yet the public narrative is often negative and fear-mongering. We believe that mental health should be spoken about as we do physical health and this research, we hope, will contribute towards the existing movement that addresses mental health stigma and educates people about their own health.

Working with Brandwatch has given us a unique opportunity to analyze over 12-million conversations surrounding mental health in the United Kingdom across a period of four years. We are jointly passionate about understanding the current climate and narrative of mental health and collectively will be using this research to influence culture – not just internally within our own organizations, but globally.

Find out more about Ditch the Label and how we currently support thousands of young people each week at www.DitchtheLabel.org.

Background and Methodology

This study uses a corpus of public online discussion to address the following four research questions:
This study analyzes public online discussion from social networks (including Twitter, Facebook and Instagram), blogs, forums and online news. The combined corpus totals 12.9 million mentions. While the majority of this data was collected from the UK only, discussion of perceived causes and treatments (12-29) includes combined UK and US data.

Historical data was collected across various date ranges spanning July 2014 – June 2017. Data was collected and segmented using Brandwatch Analytics and Brandwatch Audiences.

The study begins by assessing how mental health is discussed overall in public discourse, before filtering down to specific mental health issues. Each of these (including anxiety disorders and depression) contain a broad range of conditions and are treated as umbrella terms. The research then focuses on authors describing specific symptom types associated with mental health issues, before assessing whether those with multiple or chronic symptoms access care.

Throughout the report we have preserved author anonymity and made micro-changes to verbatims to prevent source tracing. Hyperlinks are provided only for content by well-known public figures and media/organizational handles.

Key Findings.

1. **Bullying is a measurable catalyst for mental health symptoms.** Bullying is most strongly associated with eating disorders, anxiety and body image. For those with mental health conditions, bullying increases references of self-harm by more than 600%.

2. **Lack of emotional openness may be a barrier to accessing help.** UK authors have more negative attitudes towards crying than their US counterparts, and some demographics are particularly prone to pejorative mental health language. Mental health insults were more common in Wales and among students and sports fans. Negative attitudes towards mental health and emotional expression may prevent those experiencing bullying and MH (mental health) symptoms from accessing treatment.

3. **77% of authors with multiple/recurring risk symptoms do not describe accessing treatment.** Barriers to access were particularly high for body image (80%) and chronic fatigue (76%). Overall access to care was lower in the UK than in the US (23% compared with 33% in the US).

4. **For those who do not access treatment, symptoms escalate at a faster rate.** Post treatment, authors showed greater understanding and worked constructively toward symptom management. Among those without treatment, tone grew more severely negative over time, highlighting need for early access to treatment.

5. **Online channels supplement offline treatment.** Authors who accessed treatment were more likely to share and seek advice online. Among those experiencing body dysmorphia, online sharing was the second most-mentioned treatment (10%) behind therapy (12%). Patients use online networks to better understand their conditions and gain peer support.


7. **Anxiety and Depression disorders are more often considered the result of environment than biological/neurological.** Co-symptoms and lifestyle factors were each at least twice as prominent as ‘biological’ causes. Despite this, medication was mentioned twice as often as therapy. The data shows a discrepancy between perceived causes (environmental rather than chemical) and treatments (chemical rather than environment).

8. **Demand outweighs supply for eating disorder advice.** Eating disorders was the only category for which more authors sought advice (9%) than gave advice (7%). This shortage suggests demand for more tailored online advice allowing one-to-one, rather than one-to-many, interactions.
9. Lack of awareness causes heightened BDD negativity. Body dysmorphia saw the largest shares of ‘anger’, ‘stress’, ‘struggling’ and ‘sad’ tones. Sufferers felt the condition was misunderstood and misrepresented in the media. Educators, health practitioners and journalists were all under-represented, suggesting need for further education.

10. Political events cause widespread sleep disruption. The EU referendum and the general election correlated significantly with sleep disruption in the UK. The impact was comparable with seasonal shifts in sleep patterns – sleep disruption due to summer heat, for example – but occurred much more suddenly. This disruption may cause ‘trigger events’, negatively impacting those with underlying symptoms.

How are people discussing mental health overall?

The chart above displays mental health discussion over time, to show an increase in the rate of discussion.

Volume: 4,557,734.

What is influencing the rate of online discussion?

We compared the volume of conversation with real-life events to measure the impact that they had on public discourse. The following four events were isolated as having the largest degree of influence over online discussion.

1. A group of photos illustrating the difference in how physical and mental illness is treated gained virality in October 2015, with authors engaging in the debate, stating that the drawings ‘spoke’ to them.

2. In the last week of January, organization Bell Let’s Talk also drove a peak in the UK, as British authors helped amplify the message about donating $0.05 per retweet to Canadian Mental Health Programs.

3. During May 2017 in the UK, users included the hashtag #MHAW17 when discussing Mental Health Awareness Week (20,685 mentions). Authors such as @BritishVogue, @VICEUK, and @HelpforHeroes used the hashtag in content to provide insight into mental health.

4. In June 2017, news of footballer Aaron Lennon being “detained under the Mental Health Act for suffering a stress-related illness” provided mentions (2.1k). Authors shared feelings of support for the
Celebrities as thought leaders

Twitter saw a high proportion of the mental health mentions, with news sites contributing second most to the data set.

Celebrities Stephen Fry and Richard Branson were vocal in wanting to increase mental health awareness and frequently shared petitions and encouraged giving to charities.

Piers Morgan stated that the term mental illness was being overused, sparking debates regarding the definition of mental health issues. The TV personality also stated that some celebrities were "using ‘mental illness’ to promote [themselves]", which also sparked debate.

UK Page Type Breakdown: Mental Health Discussion

Please note, Facebook is not included in the chart above due to lack of location classification, but does feature in the research more broadly. Market: UK / Volume: 4,543,451

Links between bullying and mental health

Bullying linked with EDs, Anxiety and body dysmorphia.
Anxiety and body image were the symptoms most commonly tied to bullying. Parents in forums blamed social media for cyberbullying and online content for adding pressure and concerns about appearance. Sufferers described bullying causing lasting anxiety, which then hindered some from forming new social relationships.

Eating disorders was most common condition category. Sufferers described internalizing negative self-images when bullied and not identifying it as a mental health issue.
One author explained: “Bullying comes in various forms and has a lasting impact. As a teen I suffered from E.D.s, but without understanding my condition I wasn’t able to get help”.

Data from ‘The Annual Bullying Survey’ consistently shows a direct relationship between bullying and adverse mental health.

The charts above show mentions of bullying within each symptom and condition data set.

**Bullying tied to seven-fold increase in self-harm references.**

The chart below shows relative increases in shares of self-harm discussion when bullying is also cited for each condition type. Percentages are shown in the table below.

For those in one of the three MH condition categories, bullying increased the rate of self-harm reference by more than 600%. This was consistent across condition types, and highlights bullying as a potential catalyst toward self-harm.

Those experiencing bullying described an accumulative effect of this with their mental health symptoms. However, there was also a sub-group of authors using social networks to relate their past experiences of mental health. These included stories of bullying leading to self-harm, but also of progress and recovery.

| SH Prevalence %: Overall condition | 3.64 | 1.77 | 3.42 |
| SH Prevalence %: Condition plus bullying | 17.18 | 12.07 | 18.60 |

**UK attitudes to crying are more negative than in the US.**

UK authors were 31% more critical/pejorative when discussing crying online; US authors were more sympathetic overall.

The average share of negativity was 50.6% in the UK, compared with only 38.6% in the US. The share of UK negativity also grew slightly over time, meaning that online attitudes towards this type of emotional display are not improving in the UK.

Negativity was particularly common on Twitter (where 64% of discussion was pejorative) and much lower on Instagram (39%), where authors tended to use a more constructive tone on average.

Attitudes to crying, when viewed as an indicator of emotional openness, may mean that those experiencing mental health symptoms and those experiencing bullying are deterred from seeking help.
The line graph above shows the relative shares of pejorative crying discussion out of combined pejorative and sympathetic references to crying. The higher the percentage, the more negative/critical the overall tone.

Emotional openness is lowest among students and sports fans.

In the map below, darker shades reflect regions with more pejorative attitudes toward crying. Areas with lighter shades were more sympathetic on average. Grey areas reflect insufficient data volumes.

Students and sports enthusiasts ranked highest for negative attitudes towards crying. Among these author groups, almost two thirds of crying conversation was critical or pejorative in tone. By contrast, authors with an interest in the environment and animals used a significantly more compassionate tone.

Emotional openness was lower in Wales, Scotland and NI. Negativity was particularly high in Welsh regions: Torfaen, Blaenau Gwent, Flintshire and Merthyr Tydfil. Among urban centres, Stoke-on-Trent, Newport, Plymouth and Southampton all ranked highly for pejorative conversation.

Pejorative mental health language most common among gamers, sports fans and developers.

In the chart below, bar height corresponds with the share of pejorative mental health terms/insults. The zero line represents mean average across the data set.
Pejorative terms were common among key interest groups. Gamers, sports and music fans all over-indexed for pejorative terms relating to mental health. Male authors were also more likely than females to use this type of language.

Professional voices, including executives, researchers, politicians and healthcare practitioners were more likely to discuss mental health in neutral or constructive ways.

Measuring attitudes across demographics sheds light on groups who may face higher barriers to treatment when experiencing bullying and mental health symptoms.

Demographic Attitudes toward Mental Health

Market: UK. Total corpus: 7,608,459. Comparison of neutral mental health discussion and 'pejorative' MH language, such as "lunatic", "deranged" and flippant or facetious use of condition names such as "such a bipolar" or "don’t be so OCD".
Public perceptions towards mental health

Share of public conversation.

Our analysis finds that people predominantly talk about anxiety and depression online and seldomly discuss eating disorders and body dysmorphia (BDD).

Body dysmorphia (BDD) received the lowest overall conversation levels, totalling 74.5K mentions across the three year period in the UK and US combined. This was followed by eating disorders, which generated 177.4K mentions in the UK and US. However, anxiety and depression was the most discussed condition by some measure, generating around 3.9 million mentions across both audiences.
The chart above shows overall volumes for UK and US online discussion about each condition across the period 1st July 2014 to 30th June 2017.

**Anxiety and depression**

**Conversation trends.**

We compared the volume of conversation with real life events to measure the impact that they had on public discourse. The following three events were isolated as having the largest degree of influence over online discussion.

1. The UK saw its largest peak in anxiety and depression conversation in relation to the death of actor Robin Williams in 2014.
2. The second largest peak was driven by conversation about World Mental Health Day in 2015.
3. The third largest peak in 2015 was driven by conversation about the suicide of Germanwings co-pilot Andreas Lubitz, which killed 150 people. Media sources reported the co-pilot was suffering from depression. Conversation contained references to the implications of suffering from the condition and suggested a strong interest in the case from both traditional media and social media authors.
Other illnesses were most often sited as a cause.

The chart below shows the main causes of anxiety and depression, as discussed in the general public's online conversation in the UK & US.

Authors frequently spoke of co-symptoms, indicating an awareness that other conditions may be linked to depression and anxiety symptoms.

One author shared: “I suffer from an anxiety disorder, borderline ADHD, depression, and a ton of other things.”

This listing style of conversation was twice as prominent as authors speaking about a specific illness triggering anxiety and depression, such as an author who was diagnosed with internal cystitis and who said they did not suffer from anxiety beforehand.

Both of these themes in conversation demonstrate an awareness from the general public that anxiety and depression may be linked to suffering from other illnesses/disorders (either chronic or acute), concurrent with research from Guy M. Goodwin, who asserted “physical illness increases the risk of developing severe depressive illness.”

3% of conversation referenced biological factors, such as one Twitter author who explained: “it’s important to remember depression is a medical disorder. A diabetic cannot choose not to be one,” demonstrating an awareness form the public that, in line with findings from Harvard Medical School, “nerve cell connections, nerve cell growth, and the functioning of nerve circuits have a major impact on depression.”

The data also aligns with treatment discussion, which focused on drugs more heavily than lifestyle or environmental factors.
Drugs were by far the most discussed treatment.

The chart below shows the main treatments of anxiety and depression, as discussed in the general public’s online conversation, in the UK and US.

Drugs emerged as a treatment option in one in five mentions, and were generally mentioned in non-specific terms such as “prescribed medication to treat my anxiety”.

However, there were instances, generally on forum posts, where authors spoke about their specific medications and side effects, such as an author who stated “I’ve been on latuda for 20 days, I tried lamictal once but it made me sick. I haven’t seen much of a difference with the latuda”.

The prevalence of drug related conversation is reflective of an upward trend in the prescription of antidepressants, with research in the UK claiming that there was a 108.5% increase in the dispensation of antidepressants from 2006 to 2017, and data published by the 2013 Medical Expenditure Panel Survey (MEPS) which claimed 1 in 6 US adults took a psychiatric drug.

The next most discussed treatment option was therapy, with authors mostly speaking in general terms (“having help from early intervention team”) with some more pointed conversation, such as talking about the specifics of cognitive behavioral therapy.

Alternative therapies were discussed almost as often, with marijuana, meditation, essential oils and alternative diet – featuring ingredients such as turmeric – all mentioned. The finding suggests an established group of authors open to holistic approaches to care.
Who talks about anxiety and depression online?

The charts below show the breakdown of identifiable authors, left, with the most prominent two authors’ conversation broken down by emotion, right.

Current sufferers were the most vocal author group online, accounting for around 1/3 of all conversations. The most dominant emotion in this group’s conversation was honesty/openness, further suggestive of the internet’s use as a tool for peer to peer sharing, a topic which was also covered in relation to research published by NCBI which claimed that “peer support interventions were superior to usual care in reducing depressive symptoms.”

Individual authors, whose link to the condition was not clearly identifiable, formed the next most dominant author group. Notably, their most dominant emotional state was that of giving advice, further indication of the peer to peer relationship which exists online.
Eating disorders

Conversation trends.
We compared the volume of conversation with real life events to measure the impact that they had on public discourse. The following three events were isolated as having the largest degree of influence over online discussion.

1. The UK saw its largest peak in eating disorders conversation in 2017 driven by the appearance of the Olsen twins at the Met Gala. A tweet claiming that “Mary Kate suffers from anorexia and cocaine addiction” generated 60,000 RT’s globally, 2,100 of which were UK based.

2. The second largest peak was driven by the disappearance of 14-year old Alice Gross who suffered from anorexia, with media reports describing how the police feared the illness may have caused her to faint “and drown in a canal”.

3. The third largest peak related to conversation around media reports of claims, by eating disorder charity Beat, that some people with eating disorders feel they are “forced to lose weight […] to qualify for treatment”.

### Media influences were tied to eating disorders.

The chart below shows the main causes of eating disorders, as discussed in the general public’s online conversation in the UK and US.

The media was referenced as a cause in 8% of mentions, with authors referencing the “presence of airbrushed and ‘perfect women’ in magazines.” Lifestyle factors, such as diet and nutrition, recreational or prescription drug taking (such as laxatives) or exercise contributing to an unhealthy mental attitude appeared in 7% of mentions. This finding is supportive of research into the relationship between the media and eating disorders by NCBI which stated “body image was significantly more negative after viewing thin media images.”

Developmental factors, such as “children do have a problem with food that is different to problems they had before” were discussed in 5% of mentions, indicative of statistics released by HSCIC stating that in the UK,
admissions for 0-19 year old females increased from 840 in 2010-11 to 1,656 in 2013-14.

The prevalence of external factors (media, lifestyle, life event, co-symptoms, cultural, abuse, specific illness, comments from others) in 26% of all conversation indicates that the general public see eating disorders as having external causes; there was little evidence of authors perceiving sufferers as responsible for their own conditions or the result of biological factors (as was often the case for depression and anxiety).

Perceived Causes: Eating Disorders

Market: UK & US / Sample size: 390 mentions, Total volume: 177,416

Therapy was the most discussed treatment.

The chart below shows the main treatments of eating disorders, as discussed in the general public’s online conversation, in the UK and US.

Therapy was the most discussed treatment by far, appearing in almost three times as many mentions as the next most discussed treatment option: drugs. The conversation around therapy generally revolved around authors describing their experiences, or the experiences of sufferers known to them: “we took her to see her doctor and a therapist” or “for someone who had been sceptical of the very idea of therapy […] it was a mind-blowing experience”.

The clear focus on therapy as a treatment within the general public’s conversation, as opposed to drugs, indicates the public’s perception of eating disorders as psychological conditions, concurrent with research by NCBI which concluded that participants with eating disorders most frequently attributed symptoms to psychological/emotional and social problems rather than biological factors.

An emergent theme within eating disorder treatment conversation was that of care being inadequate or needing investment, with either or both themes appearing in 9% of conversation. Conversation looked at the themes of medical professionals not having adequate training, pleas to approve the drug sudol or debate about NHS funding in the UK, indicating the general public does place some emphasis in concerns about eating disorder care.
Who talks about eating disorders online?

The charts below show the breakdown of identifiable authors, left, with the most prominent two authors’ conversation broken down by emotion, right.

Almost 10% of mentions featured authors seeking support or asking questions. One male author asked for help and advice on how to support his girlfriend, who suffers from bulimia, and a patient experiencing binge eating episodes used a forum to seek advice on entering a rehab facility.

There was slightly less conversation from authors giving advice than from those seeking support, suggesting a potential need for further online support. However, when including discussion which is supportive in tone (“Choose life, always choose life” or “I pray things are better for you soon”), 12% of conversation is supportive/advice giving. The data reflects an opportunity to cultivate and strengthen existing online support networks.

There was limited evidence of pro-eating disorder conversation, despite research in 2011 by Dr Helen Sharpe at the Institute of Psychiatry at King’s College London naming pro websites “very common”. This indicates that viewing content on such sites may be more prevalent than authors actively posting, or that the conversations take place in closed forums.

Individuals whose link to the condition was not identifiable were the most prevalent author group online, accounting for around one third of all conversations, followed closely by news authors, indicative of media interest in eating disorders.

The most dominant emotional state of individual authors was supportive, followed by a tone defensive of those suffering from an eating disorder, followed by advice giving, indicating that individuals talking about eating disorders online are most likely to offer a supportive voice.
Though sufferer voice was lower for eating disorders relative to other conditions, the prevalence of ‘struggling’ discussion among current sufferers (11%) shows social media as an established means for expressing and sharing symptom experiences.

Current sufferers were less vocal than individuals. The charts below show the breakdown of identifiable authors, left, with prominent individual authors’ conversation broken down by emotion, right.

Individuals whose link to the condition was not identifiable were the most prevalent author group online, accounting for around one third of all conversations, followed closely by news authors, indicative of media interest in eating disorders.

The most dominant emotional state of individual authors was supportive, followed by a tone defensive of those suffering from an eating disorder, followed by advice giving, indicating that individuals talking about eating disorders online are most likely to offer a supportive voice.

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Body Dysmorphia

Conversation trends.

We compared the volume of conversation with real life events to measure the impact that they had on public discourse. The following five events were isolated as having the largest degree of influence over online discussion.

1. The UK saw its largest peak in BDD conversation in 2015 due to Modern Family actor Reid Ewing penning an essay about his cosmetic surgery experiences for the Huffington Post. The actor also gave an interview to BBC News, which added: “having body dysmorphia does not mean the person is vain or self-obsessed.”

2. The second largest peak, in 2015, was also TV related, due to conversation about actress/singer Miley Cyrus who stated that appearing on “Hannah Montana” gave her “some” body dysmorphia.

3. The third largest peak was driven by conversation around a BBC News article about BDD, which explained the condition as “a disabling preoccupation with an imagined, or slight, flaw in appearance.” and stated “around 15% of people seeking plastic surgery are thought to have BDD” and explored issues around surgeons operating on individuals who may be suffering from the disorder.

4. The fourth largest peak was contributed to by a feature on BDD on BBC Breakfast.

5. The fifth largest peak was caused by conversation about the launch of the Body Dysmorphic Disorder Foundation.
Appearance was often discussed as a cause.

The chart below shows the main causes of BDD, as discussed in the general public’s online conversation in the UK and US.

Appearance, which was classified as an initial desire to look good, was the main cause of BDD, with the words “good”, “feel”, “appearance” and “mirror” commonly used within this discussion.

Authors explained how “I can’t even recognize myself in the mirror”, “I can’t pass a mirror without staring at my stomach” or “I look in the mirror and see a body not worthy”. These mentions are indicative of social media’s ability to provide insight into sufferers’ thought processes. The prevalence of mirror based conversation could form the basis of future awareness campaigns focussing on condition early warning signs.

Media was also discussed as a cause, with one author calling for the Miss Universe competition to “show the girls eating!”, and an author stating BDD is on the rise due to girls “comparing themselves with the images of perfect woman seen in the media.”

An obsession with exercise emerged as the third most dominant cause, with “bigorexia” appearing as a term in this conversation. This is indicative of claims that, in the UK, 1 in 10 male gym goers may see themselves as small, despite being muscular and that “the condition is a growing problem,” according to Rob Wilson, chair of the Body Dysmorphic Disorder Foundation.
Therapy was the most discussed treatment.
The chart below shows the main treatments of BDD, as discussed in the general public’s online conversation, in the UK and US.

Therapy was the most discussed form of treatment, appearing in 12% of mentions. Authors spoke about the treatment of others: “he’s been to psychologists and we are trying desperately to get him the help that he needs” or their own treatment: “I see a therapist but do not take meds”.

The next most prevalent theme featured authors sharing online as a form of treatment, such as posting a photo a day to Instagram as a way to motivate themselves to continue treatment or posting to a blog to share their emotions. This suggests some patients use social media to facilitate treatment.

Researchers for the Journal of Medical Internet Research said a social media network aimed at calming anxiety, formerly called Panoply, produced “significant benefits, particularly for depressed individuals,” suggesting that charities or mental health organisations should continue to investigate online forms of communication in order to reach sufferers, or allow sufferers to share their recovery journeys.

Although cosmetic surgery was often discussed in terms of a treatment, this was not in positive terms, with authors often affirming that surgery will not “solve” BDD.
Who talks about body dysmorphia online?

The charts below show the breakdown of identifiable authors, left, with prominent individual authors’ conversation broken down by emotion, right.

Individual authors with no identifiable link to the condition were the most prominent author group, followed by current sufferers.

Individuals’ dominant emotion was anger, which over-indexed within this author group threefold compared to all conversation, and over eight times when compared to the conversation of current sufferers – further demonstrating that conversation about BDD can generate strong emotions.

The theme of negativity towards BDD rose to 16% within mentions from individuals, compared to 5% in overall conversation.
What symptoms are people experiencing?

Key Findings

- Across central/north England and Northern Ireland, body image over-indexed, while in the south of England, a variety of symptoms such as fatigue over-indexed. The relatively clear distinction of the
When do people talk about mental health?

The charts below represent the share of mentions posted on days of the week and time of day for each symptom.

Sleep disruption stood out as an outlier in terms of time of day distribution, peaking in the early morning and late at night. Men and women followed largely the same trend across an average day, however, sleep deprivation conversation peaked one hour earlier for women (midnight) than for men (1am) suggesting that men were falling asleep/going offline one hour later than women on average.

In the night, authors complained about work stress and TV keeping them up. The symptom was also most commonly expressed on Monday, further suggesting that the pattern of the working week could be an important factor in sleep disruption. Authors also complained on weekends about waking up early.

Methodology

- To analyze how external factors may be linked to online authors describing symptoms of psychological conditions, four multiple regression models were created, with separate models analyzing potential correlations for anxiety and sleep disruption in the UK and USA. Of these, the models considering sleep disruption were selected for their greater predictive power.
- External factors selected for inclusion in the models were the four seasons of the year, the country’s broad economic performance, as measured by the FTSE 250 Index, and conversation volumes around political events, in particular the EU referendum and British general election.

- For every 1% increase in online discussion volumes around the EU referendum, sleep disruption volumes rose by 0.1%, controlling for other factors. Opponents of Brexit described stress or surprise around the EU referendum result, as well as staying up due to worry.
- Sleep deprivation conversation peaked one hour earlier for women (midnight) than for men (1am) suggesting that men were falling asleep/going offline one hour later than women on average.

symptoms whose conversation over-indexed from south to north may be indicative of trends within regional symptom conversation.
Symptoms by UK region

The map below shows the most overindexed* symptom for each UK region.

Sleep disruption overindexed in Scotland. 'Time' and 'hate' emerged as the most common words, underlining the strong emotions that the inability to sleep may cause.

Across central/north England and Northern Ireland, body image overindexed. Authors stated they hate features such as their face, skin, eyebrows and teeth, or described them as 'awful' or 'disgusting', underlining that this was a highly emotive symptom category.

In London, appetite change overindexed with morning and lunch emerging as the most common topics; suggesting appetite change affects authors at different times throughout the day. Work was also a common theme, with authors describing how their appetite change affects their routine.

Chronic pain overindexed in the East of England, with back pain emerging as a prominent theme. In the South of England, fatigue overindexed, with 'tonight' and 'F*cking tired' emerging as dominant, followed by 'life'.

The relatively clear distinction of the symptoms whose conversation overindexed from south to north may be indicative of trends within regional symptomatic conversation.
The degree to which a symptom is overindexed was calculated by dividing the share of voice for each symptom and dividing that by the average share of voice for the symptom for general UK conversation.

Country: UK, Mentions: 1100912, Authors: 1413901

**UK: Sleep disruption model**

The chart below represents how strongly correlated other factors were with sleep disruption volumes in the UK. Figures were derived from a statistical model.

Each figure represents how much sleep disruption volumes changed on average with a 1% increase in the variable. For seasonal variables, the figure represents how much greater sleep disruption volumes were in that season, controlling for other factors.

On average, sleep disruption volumes were 0.15% higher in summer than in other seasons. This can be attributed to authors complaining about heat, with around 8,000 mentions seen around this theme across the period analyzed. Authors also complained about being too cold (around 3,000 mentions), which can be linked to winter, also seeing higher sleep disruption volumes.

For every 1% increase in online discussion volumes around the EU referendum, sleep disruption volumes rose by 0.1%, controlling for other factors. General election conversation was also linked to an increase in sleep disruption volumes, albeit not as strongly as the Brexit referendum. Together, these findings suggest that political events have the potential to disrupt sleep patterns. Opponents of Brexit described stress or surprise around the EU referendum result, as well as staying up due to worry, and in particular what the result of the referendum could mean for politics and society more broadly.

Controlling for other factors, no statistically significant relationship was found between the performance of the FTSE 250 Index and sleep disruption volumes.
Factors Correlating with Sleep Disruption

Are people accessing symptom treatment/support?

Key Findings

- 23% of all at-risk authors sought treatment, with medication emerging as driving more treatment discussion than talking therapies. Authors with appetite change and chronic pain were the most likely to describe seeking medical help.

- Those who sought medical help were more inclined to share or ask for advice online, suggesting the presence of a group of authors unlikely to seek advice from either medical professionals or online sources.

- Authors who did not receive treatment, as well as those who did, saw symptoms becoming more frequent with time, suggesting an escalation of their condition. Those who did not receive treatment showed a steeper trend towards more frequent symptoms. This suggests that seeking help may slow the progression of the condition.

- Among at risk authors, a recurring trend was seen for symptom discussion to become more severe over time, with the first symptom sometimes being expressed in a light-hearted fashion, but later symptoms suggesting the author was under increased stress.

Time-related terms, such as ‘still’ and ‘years’, emerged in 33% of treatment discussion. They were used in mentions around using medication or suffering symptoms long term.

This was part of a recurring theme for authors to discuss the length of their symptom journey, and learning to live with their conditions as well as recover from them. Authors were particularly inclined to discuss talking therapy in the context of long term conditions.

Methodology
For section 3.4, two scripts were written to identify at risk authors through data from the Brandwatch API:

One script identified authors who appeared in more than one symptom query, while a second script identified authors who discussed the same condition at least once within specific time frames (Jul 1 2014 to Sep 20 2014, and Jan 1 2015 to Feb 28 2015).

A sample of 2,500 UK authors was taken and all their public mentions were collected regardless of the topic. Authors were not limited to a specific page type.

Mentions from the sampled authors were segmented into categories corresponding to mental health symptoms and whether they sought help.

**Treatment by symptom category: UK**

The chart below shows, for each symptom category, the percentage of authors who sought treatment.

Authors with appetite changes and chronic pain were the most likely to describe seeking medical help (62% and 60%, respectively), while 23% of all at-risk authors sought treatment*. A recurring theme from authors who sought help was to vent about differences of opinion with medical professionals, and about how visiting them could contribute to their anxiety and stress.

Generally, those who sought medical help were also more inclined to share or ask for advice online – suggesting the presence of a group of authors unlikely to seek advice from either medical professionals or online sources. Authors who did not seek help from medical professionals, but did ask for advice online, tended to thank their friends and followers on a one-to-one basis.

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*This figure is lower than the average of the most common conditions due to a number of authors suffering from more than one symptom. Market: UK, Number of authors: 2493
Syptom Journey: UK

The chart to the left plots the symptom instance (for example being the first time the author described a symptom) against the average number of days since the last time they mentioned a symptom. Smaller values on the y-axis represent symptoms occurring closer together.

Authors who did not receive treatment, as well as those who did, saw symptoms becoming more frequent with time, suggesting an escalation of their condition. Those who did not receive treatment showed a steeper trend towards more frequent symptoms, with the time between each instance being 0.4 days sooner than the last. This suggests that seeking help may slow the progression of the condition.

Additionally, authors who sought treatment appeared to have more severe conditions, with 24 symptom occurrences on average, compared to nine for those who did not seek treatment. This further underlines the potential for treatment to slow the progress of symptoms, given that those who sought help showed more severe conditions.

Authors who mentioned symptoms the most appeared to become increasingly frustrated towards the later stages of their journey. One author, towards the end of the analysis time frame, posted twice about not being able to continue with his life due to the severity of the condition, reflecting a need for accessible care at earlier stages of development.
Treatment Journey: Non-seeking help example

The example mentions below represent the typical symptom journey of an individual author.

The first mention of a symptom by this author appeared light-hearted and described being stressed and excited by a TV show advert.

However, as time progressed, the symptoms described became more severe and the tone more negative. Additionally, as observed for other authors, he began to use more medical terminology, potentially suggesting higher awareness of having a condition. Furthermore, this may suggest that authors with severe symptoms might identify themselves as having a condition and still not seek medical help.

Non-seeking help example

<table>
<thead>
<tr>
<th>FIRST OCCURRENCE: DAY 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>”That trailer really stressed me out but I’m so excited!!!”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FOURTH OCCURRENCE: DAY 77 n</th>
</tr>
</thead>
<tbody>
<tr>
<td>”That bloody dog keeping me awake at night is so stressful.”</td>
</tr>
</tbody>
</table>

Treatment Journey: Seeking help example

The example mentions below represent a typical individual author seeking help on their symptom journey.
In a trend seen elsewhere, when this author described her first symptom it was less serious than towards the end of her tracked symptom journey.

This patient also appeared to become increasingly aware of her condition as time progressed. While some authors did not necessarily see recovery, they did improve their understanding and work towards either symptom management or tackling the limitations imposed by their symptoms.

<table>
<thead>
<tr>
<th>Seeking help example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST OCCURANCE: DAY 0</strong></td>
</tr>
<tr>
<td>“I can’t sleep and have resorted to playing smart phone games – but so tired.”</td>
</tr>
</tbody>
</table>

**Implications**
<table>
<thead>
<tr>
<th>Research implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risks</strong></td>
</tr>
<tr>
<td>Media Coverage</td>
</tr>
<tr>
<td>Indicative symptoms</td>
</tr>
<tr>
<td>Access to care</td>
</tr>
<tr>
<td>Anxiety and depression</td>
</tr>
<tr>
<td>Eating disorders</td>
</tr>
</tbody>
</table>
**About**

**About Brandwatch**

Brandwatch is the world's leading social intelligence company. Our flagship products, Brandwatch Analytics, Brandwatch Audiences and Vizia 2, fuel smarter decision making around the world.

Brandwatch products gather millions of online conversations every day. Our in-house research experts analyze the data and help our clients bridge the gap from data to insight to action.

**About Ditch The Label**

Ditch The Label is one of the largest anti-bullying non-profits in the world.

DTL's award-winning work spans across the USA, UK and Mexico; empowering people aged 12-25 to overcome bullying. DTL is a digital non-profit with a focus on providing online support and resources.

It is estimated that every 3 minutes somebody will benefit from Ditch The Label support.

<table>
<thead>
<tr>
<th>Risks</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body dysmorphia</td>
<td>While BDD discussion was less common, celebrity narratives did help drive peaks in awareness. Plastic surgery was often cited as an outcome, or 'temporary fix' for sufferers which ultimately escalated the condition. The data suggests that stronger education and thorough application process for cosmetic procedures could go some way to protect those at risk.</td>
</tr>
<tr>
<td>There is less conversation about BDD overall and a less advanced understanding among the public. 'Appearance' was identified as a common cause, showing potential confusion between causes and symptoms. 'Anger', 'sadness' and 'struggling' were prominent emotions within online discussion. Muscle dysmorphia, or 'Bigorexia', was identified as a growing condition among males.</td>
<td></td>
</tr>
</tbody>
</table>
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Brandwatch Research Services is a team of dedicated analysts based in Brighton, Berlin and New York, helping our customers better understand and use social data. For more research examples visit our report library www.brandwatch.com/reports

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