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Online representations of anxiety amongst adolescent users on Reddit: a qualitative Internet-mediated study protocol

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Abstract: Background: Anxiety is one of the most commonly experienced psychological states and diagnosed disorders in adolescent populations (ages 13-19). Research indicates that the prevalence of anxiety and phobic disorders is often higher than stated in epidemiologic studies of adolescent mental health. However, mental health experiences, such as anxiety, are easy to dismiss or overlook due to broader issues in mental health service needs, preference for informal sources of help, and mental health stigma. This study will seek to understand how young people convey their experiences online. Reddit, a social networking platform, is a suitable platform for this, as large-scale subreddits focus on anxiety and mental health distress specifically. **Method:** Our study will adopt an Internet-mediated research methodology entailing a retroductive analysis of adolescent user posts on Reddit. The retrieved posts will be systematically organised to extract meaningful patterns across the dataset by using qualitative thematic analysis. **Discussion:** By analysing anonymous posts about the experience of anxiety, we anticipate that our study results will shed light on help-seeking behaviours, development of coping strategies, and stigma attitudes.

Keywords: Anxiety; Phobic disorders; Social Anxiety Disorder (SAD); Reddit; Internet-mediated Research; Social Media

Introduction

Anxiety

Anxiety is one of the most commonly diagnosed disorders (Royal College of Psychiatrists, 2022). At its most basic level, the psychological state of anxiety is characterised by excessive fear, avoidance of whatever is feared (generally an object or an action), and feelings of anticipation or worry when expecting to encounter the feared object (Sieger & Dickstein, 2012). Going beyond the broad definition, anxiety disorders can be narrowed down in a more specific diagnostic manner based on the relationship developed between the individual and the source of anxiety. DSM-5 (*The Diagnostic and Statistical Manual of Mental Disorders, 5th edition*; APA, 2013) specifies several forms of anxiety: agoraphobia, generalized anxiety disorder, panic disorder, selective mutism, separation anxiety disorder, social anxiety disorder, specific phobia, substance-induced anxiety disorder, anxiety disorder due to another medical condition and other unspecified forms of anxiety.

Anxiety disorders such as agoraphobia (as well as other forms of specific phobias) are typically characterised by an excessive and irrational fear of specific objects or situations (such as fear of situations where escape might be difficult, as in agoraphobia). Research indicates that the prevalence of phobic disorders in children and adolescents is often higher than stated in epidemiologic studies, with the most common phobias observed being social phobia, agoraphobia and specific phobia (Bener et al., 2011).

Phobias and compulsive disorders are deeply intertwined. Repetitive/compulsive behaviours are often used as defence mechanisms against the feared object, resulting in high comorbidity between the two conditions (Angst, 1993). Although the latest edition of DSM (APA, 2013) moved obsessive-compulsive disorder (OCD) from Anxiety Disorders into a new category of Obsessive-Compulsive and Related Disorders, this disorder is often thought of as having a close link with anxiety through unwanted, intrusive and often distressing thoughts, which in turn may cause intense feelings of anxiety and distress. However, contemporary literature scarcely acknowledges the deep links and comorbidity between phobias and anxiety, resulting in potentially overlooked symptoms and experiences (Silverman & Viswesvaran, 2008).

Social anxiety disorder (SAD) is characterised by intense distress when faced with social interactions along with physical symptoms like blushing or trembling, and extreme avoidance behaviour concerning social interaction (National Institute of Mental Health 2022). It is predominantly experienced as a fear of being negatively evaluated by others. Social anxiety in young people can impact their social and emotional development (National Institute of Health and Care Excellent Guidance, 2019). Recent evidence indicates that anxiety amongst young people is increasing along

with a feeling of disconnection from their communities (Office of National Statistics 2020).

Since the onset of the Coronavirus (COVID-19) pandemic in early 2020, young people have also experienced major changes in their social lives. Additionally, one in five (21.7%) 17- to 22-year-olds with a mental health concern have reported that they have not sought help for their concern because of the pandemic (NHS Digital, 2020). There is also increasing evidence to suggest that social anxiety disorder is often experienced by individuals suffering from posttraumatic stress disorder (PTSD) (McMillan, Sareen & Asmundson, 2014). Individuals with traumatic experiences often face difficulties in communicating or interacting with others due to fear of coming into contact with trauma-related reminders as well as high levels of shame and guilt. This can make help-seeking difficult, particularly when it comes to formal psychological interventions, such as psychotherapy.

Other forms of anxiety, such as separation anxiety (which involves feelings of fear and abandonment experienced in relation to an attachment figure) and generalized anxiety disorder (GAD; a chronic, excessive and irrational worry, often described as a form of anxiety where fear is more intense than the situation warrants), are also commonly experienced by young people, yet often overlooked or seen as a 'less serious' mental health issue (Denizet-Lewis, 2017). There is some evidence indicating that the causes behind such anxiety disorders are often complex, and include a variety of psychosocial factors (e.g., sex, socioeconomic status, other psychological issues, substance abuse) as well as a high degree of comorbidity with trauma and panic attacks (Mondin et al., 2013).

Using social media to research mental health

Denizet-Lewis (2017) has argued that anxiety is easy to dismiss or overlook, particularly because a certain degree of anxiety is experienced by everyone, thus making the condition seem more 'normalised' or 'acceptable'. Anxiety, as well as other forms of mental health issues, are particularly difficult to identify in youth demographics (Kaluzeviciute et al., 2021). This is partly because there are persisting issues in existing mental health systems that offer help psychological assistance and assessment for young people.

Even economically wealthy societies (e.g., the UK, USA, Australia, Switzerland) are not able to meet the mental health service needs of young demographics (Kieling et al., 2011). For instance, in the UK, there are ongoing barriers to accessing mental health support as well as a lack of mental health staff, preference for informal sources of help, and mental health stigma (Salaheddin & Mason, 2016). In a recent freedom of information request from the *Health Services Journal* (HSJ) (Moore & Gammie, 2018), covering years 2017 and 2018, indicated that within the current UK Child and Adolescent Mental Health Service (CAMHS) referrals rate and length of waits, 11,482 children and young people needed

an intervention in this year, and half of these waited over 18 weeks for treatment; 500 children had to wait over a year for their first appointment. This clearly demonstrates that CAMHS services are struggling to meet the demand. Therefore, there is a need to not only improve the aforementioned issues in mental health services, but also to find alternate ways to identify and understand the experiences of mental health issues, such as anxiety, in the young populations.

One such alternate way is social media, which is becoming significantly important in understanding adolescent mental health experiences (Dixon-Ward & Chan, 2021). One of the most visited websites in the world, Reddit, attracts approximately 52 million daily active users and has a significant adolescent user population (users aged 13-19) (Lea, Amada & Jungaberle, 2020). Reddit is based on individual communities (called 'subreddits') focusing on specific topics, such as mental health conditions (e.g., depression, anxiety) and experiences (e.g., phobias). Under the guise of non-identifiable pseudonyms, Reddit users are able to express their views and experiences and interact with other anonymous strangers, with designated community moderator support. This makes Reddit a suitable space to convey sensitive information pertaining to mental health and psychological wellbeing (Choudhury & De, 2014).

Recent research studies investigating mental health representations online show that at times young people are more likely to self-disclose mental health experiences and seek out support in anonymised online spaces rather than disclosing this in formal mental health support settings or face-to-face interactions with close relatives and friends (Park & Conway, 2018; De Choudhury & De, 2014; Park, Conway & Chen, 2018; Dixon-Ward & Chan, 2021). Indeed, adolescents may seek support online from strangers and weak ties, referring to peripheral members of our social network, due to more objective support uninhibited by the dynamics of closer relationships, offering unique information, and reducing the potential for role conflict (Northouse, 1988; Wright & Miller, 2010; Wright, Rains & Banas, 2010).

Anxiety, and mental health in general, are sensitive topics adolescents may struggle to communicate with, especially with strong network ties such as parents. Where adolescents may feel unable to express themselves to their strong ties, for example, due to feelings of stigma, adolescents may turn to strangers and weak ties within social media groups to fulfill their need for support (Wright & Rains, 2013). As such, when support from close members of our social network fails to provide adequate support, we are likely to pursue wider members of our network despite not being closely related or intimate (Granovetter, 1982, 1983; Lockenhoff & Carstensen, 2004; Rook, 1995; Walther & Boyd, 2002; Wright & Bell, 2003). Indeed, with the rise of social media usage in the last decade, online support groups have been preferential for those seeking emotional support for difficulties such as miscarriage (Alqassim, Kresnye, Siek & Wolters,

2019). Moreover, such online mental health disclosures have increased in frequency during the COVID-19 pandemic (Kotera et al., 2021).

Given the high prevalence of anxiety disorders, this study will seek to understand how young people convey their experiences online. Reddit is a suitable platform for this, as large-scale subreddits focus on anxiety and mental health distress specifically. By analysing anonymous posts about the experience of anxiety (including various forms of anxiety disorders), we anticipate that our study results will shed light on help-seeking behaviours, development of coping strategies, and stigma attitudes (particularly around perceptions of ‘legitimate’ or ‘authentic’ anxiety and ‘inauthentic’ or ‘fraudulent’ mental health experiences). These findings will provide important insight into young populations that are experiencing mental health distress but, for various reasons, are not seeking (or are not able to seek) formal mental health interventions and are therefore underrepresented in psychological research.

Outline of study design

The study adopts an Internet-mediated research methodology to enable the investigation of underrepresented groups which often exists in traditional qualitative research. Internet-mediated research uses Internet as a medium through which information is gathered in a systematic manner and analysed (Hewson, 2008). In the context of our study, we will be conducting secondary Internet research by assessing already existing data (user posts) on Reddit (a virtual platform). As such, this research study will not directly involve participants. However, there are some ethical challenges common to Internet-mediated research, particularly when it comes to ambiguities of what constitutes public or private domain in disembodied spaces such as the Internet.

Reddit is a public domain discussion form that has a policy of no personal or identifiable data and pseudonymous accounts, which makes it suitable for our research study (Pappa et al., 2017). The adolescent subreddits are anonymous moderated forums and will only be selected if they clearly state in their guidelines that they allow for academic research. Moderators will be provided with information about the study and asked for permission as an additional safeguard.

For this research study, we intend to select three subreddits focusing on anxiety or mental health issues that involve experiences of anxiety (e.g., trauma or depression). The subreddits will only be selected if they have over 1000 members. In these larger forums, there is a reasonable expectation that posts created by the users are not private. Additional measures to protect anonymity include: 1) refraining from using the name of the subreddit, and 2) refraining from using direct quotes in any publications as a result of this investigation. Paraphrasing will be used to avoid any traceability to the original post.

Outline of study methods

Data collection

The data collection process will use the Baumgartner Reddit Corpus, a free, publicly available API, which has a track record of use in academic research (Medvedev, Lamboitte, & Delvenne, 2019). Baumgartner's search engine will be used to search posts within specific timelines. This will be supplemented by direct (manual) searches of the relevant subreddits to reduce missing data (Gaffney & Matias, 2018). Data will be 'cleaned' to remove any identifiable information; we will follow guidance provided by Mcdermott et al. (2015) with regards to anonymising online data (e.g., removing pseudonyms, avatars and other digital identifiers).

Analysis

The study will take a qualitative inductive approach in the form of a thematic analysis. The retrieved online posts will be systematically organised to extract meaningful patterns across the dataset (Braun & Clarke, 2012). Since our study seeks to identify divergent idiosyncratic experiences pertaining to expressions of anxiety online, this method of analysis was deemed appropriate and has been used in similar studies (Dixon-Ward & Chan, 2021). Thematic analysis will be carried out in the following order to identify the relevant themes: *i) Familiarisation, ii) Generating initial codes, iii) Searching for themes, iv) Reviewing themes, and v) Defining and naming themes* (Braun & Clarke, 2006).

It is important to acknowledge the role played by researchers' ideas, thoughts, and feelings in thematic analysis (Braun & Clarke, 2006). Our study will approach the research process from a critical realist standpoint (Sayer, 1992). Although critical realism acknowledges that our world is largely socially constructed (i.e., we cannot think about the world independently of our beliefs), it also nurtures the idea of developing realistic and causally meaningful interpretations for complex social phenomena. According to Sayer (1992), one way to arrive at a realistic interpretation is immediately acknowledging the researcher's vehicular social and epistemic role in the research process (reflexivity). Therefore, tracing how our social and linguistic practises influence and change research findings and analytic procedures is part of a critical realist analysis. Our study will be conducted by a health and social care researcher (JJ), a psychotherapy researcher (GK), and a social psychology researcher (JM). The complementarity of different fields will enable a 'cut and come again' disposition (Easton, 2010), ensuring that no single causal account, theme or interpretation is accepted uncritically and that researchers were able to assess and compare contrasting research findings.

Data triangulation will be conducted in order to compare retrieved codes and themes as well as the quality of extracted passages. Data triangulation is a commonly used process in qualitative research, by which different researchers compare their findings, perspectives and methodological process (Carter et al., 2014). We anticipate that the quality

and material of extracted passages will be similar across all researcher datasets, given that researchers will be extracting posts from the same subreddits. However, the emerging codes and themes may differ due to differences in theoretical perspectives as well as the different timelines attributed to each researcher.

Study sample

Data will be extracted from posts and comments written in English on moderated adolescent-based subreddits. We will analyse approximately 100 posts between January 2021 and March 2023, one month prior to this project's ending (this is to ensure that any personal information in the original post has been removed by subreddit moderators - this can take up to a month). Each researcher will analyse posts from a specific timeline (periods have been split in the following manner: January 2021 - May 2021; June 2021 - October 2021; November 2021 - January 2022).

The researchers will search for comments with the words '*anxiety*', '*social anxiety*', '*agitation*', '*anxiousness*', '*social-phobias*' or '*panic attacks*', etc. Other mental health conditions that are often associated with anxiety may also be searched, e.g., '*depression*', but they would need to be associated specifically with a form of anxiety (e.g., social anxiety or generalised anxiety) to be extracted. The study will target posts authored by individuals aged 12-18. Only posts that clearly indicate author age will be selected. All comments on these posts will be included; comments that directly respond to the original post (OP) and/or offer interesting qualitative data (e.g., mental health advice, insight, shared experiences, reassurance, reaction to a mental health condition or symptom) will be included as additional data in our qualitative analysis.

Discussion

This study is based on qualitative methodology that puts subjective experiences at the heart of the research process. Although we intend to analyse approximately 100 posts on various subreddits, we anticipate that many of these posts will share similar experiences, symptoms, and feelings that will resonate with both existing clinical descriptions of anxiety (Möller et al., 2016) as well as with ongoing world events, such as the COVID-19 pandemic, which led to a sharp increase in mental distress (Holingue et al., 2020). In particular, we anticipate that our study will help shed light on the following experiences associated with anxiety:

- *Health-related anxiety*. This appears to be a particularly significant component of post-lockdown life during the COVID-19 pandemic. The re-emergence of physical and social contact has introduced new forms of anxiety pertaining to both avoidance of social interactions and fear of contracting COVID-19 or becoming physically ill generally.

- *Social anxiety.* We anticipate that this will be the most common form of anxiety described in the posts. Adolescent Reddit users often turn to anonymous virtual platforms to discuss their experiences because they are finding it difficult to share such information with strong social ties, such as parents and family members. Exploring this behaviour further could help understand how mental health interventions (especially at public level) may be further tailored to support young populations.
- *Treatment experiences.* Several subreddits offer users a space to describe not only mental health experiences, but also experiences pertaining to psychological or medical interventions, such as psychotherapy and the use of medications. We anticipate that our findings will shed some light on how adolescents feel about the process of diagnosis, as well as the effectiveness of prescribed treatments for anxiety.
- *Mental health support.* It is expected that Reddit users will respond to posts about mental health experiences, particularly if they can relate to descriptions of anxiety, panic attacks or depression. We anticipate that such comments will include advice, reassurance, possibly criticism and/or stigma. Comments offering helpful advice are also likely to normalise mental health experiences, which can make young people feel isolated and alone.

The study will therefore provide a closer look at how adolescents perceive their own mental health at a more general as well as clinical (for those with a formal diagnosis) level. This will be particularly important for healthcare professionals working both privately and publicly. However, we anticipate that our findings will also be of relevance to school staff (teachers, pastoral support) as well researchers and clinicians seeking to provide treatment interventions for young populations diagnosed with a specific form of anxiety disorders.

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