

Beyond the Coded Gaze: Analyzing Expression of Mental Health and Illness on Instagram

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In CSCW and HCI, work examining expression of mental health and illness on social media frequently aims to classify content, quantify visual trends, and predict user states. This approach to analysis is a form of the *coded gaze*, a type of algorithmic ‘way of seeing’ coined with respect to artificial intelligence techniques. The coded gaze classifies content through researcher- and machine-labeled categories, relying on a series of theoretical assumptions that influence how values pertaining to mental health and illness become inscribed in data. In this paper, we build upon this research to support alternative methods of data interpretation. We join manual collection of Instagram posts with semi-structured interviews and digital ethnography over six months to understand how Instagram users express their experiences with mental health and illness. We argue that individuals negotiate claims to mental health and illness through visibility and signaling, the boundaries between mental health and illness are porous and blurred, and reposting and remix are a form of participation. We discuss practical and ethical implications for studying the expression of mental health and illness online.

CCS Concepts: • **Human-centered computing~Human computer interaction (HCI)**

KEYWORDS

Mental health; mental illness; critical analysis; Instagram; social media.

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1 INTRODUCTION

Representations of mental health and, particularly, mental illness have long contributed to the cultures of Western societies. In art and literature, these artifacts come to us through religious paintings and accounts of demonic possession and divine punishment, as well as secular interpretations of and responses to suicide¹ and depression². Traditionally conveying a grander message of cultural values (e.g., morality), representations of mental health and illness have come, in recent centuries, to depict personal and deeply emotional experiences. Art and religion are neither alone in representing mental health and illness nor influencing perceptions of particular disorders and those living with them. News and advertisement media, as well as certain medical

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¹ The Suicide of Dorothy Hale (Frida Kahlo, 1938).

² Portrait of Dr. Gachet (Vincent van Gogh, 1890).

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disciplines, including neurology and psychiatry, have impacted the ways mental health and illness are represented [43,88]. Across domains, technology plays an increasingly influential role. From the camera to the phone application, technological developments shape how mental health and illness are portrayed, as well as who has the opportunity to portray them.

In CSCW and HCI, scholars have also contributed to representations of mental health and illness, such as through graphs and charts generated through mental health and mood applications [8,79] and analysis of mental health and illness-related posts on social media platforms [7,24,85]. On platforms such as Instagram and Tumblr [20,65,72], scholars have attended to understanding content and style of mental *illness* [65], particularly eating disorders [20,72] and self-harm [73,78], as well as content moderation [16,20], behavioral intervention [73], disclosure [7], and predictive modeling [21,23]. Though this research provides insight into the representation of mental illness on social media, it's built on a foundation of descriptive statistics and generalizable trends, which prioritize population-level practices and rigid classification that may disguise uncommon, albeit meaningful, practices and attitudes.

Although we know social media provide an opportunity for self-expression, sharing personal experiences with mental health and illness [7], and empowerment [2,6,13], we have a limited understanding of how and why people craft, share, and disseminate representations of mental health and illness on these platforms. In this domain, social media posts are often analyzed in absence of interviews with community members, which implicitly emphasizes the significance of observable artifacts (e.g., posts), or representations, rather than broader expressive processes [28], such as practices associated with posting (e.g., selecting an image). Though an element of expression, representation offers a narrow, captured view. By incorporating first-person narratives in our data, we expand our analysis to consider produced artifacts and surrounding processes, which we refer to as expression.

In this paper, we build upon prior work by joining manual collection of Instagram posts with digital ethnography, semi-structured interviews, and photo elicitation to understand how users on Instagram express attitudes and share experiences related to mental health and illness. In contrast to prior work, we argue that content on social media benefits from an analytic approach that recognizes all methods of interpretation are situated and partial [46]. We turn to Buolamwini's concept of the coded gaze [19] to address theoretical assumptions underpinning current practices in data analysis and how these assumptions are supported by related activities, such as data collection. The coded gaze refers to algorithmic bias present in artificial intelligence due to human values and priorities [19]. Though coined to address individual and collective values, we employ the coded gaze through its capacity as a systematic practice or analytic lens. Given similarities between machine methods of analysis and other methods (i.e., content analysis [9]) employed in social media analyses of mental health and illness, we extend the coded gaze to address methods that share similar theoretical assumptions. We argue that the coded gaze restricts our ability to understand how individuals negotiate claims to mental health and illness, such as through visibility and signaling, and participate in community practices, such as remix. We also discuss how assumptions underlying the coded gaze dehumanize users through the application of population-level technological solutions that neglect individual experience.

We make four primary contributions. First, our analysis, which combines manual data collection with digital ethnography and semi-structured interviews, extends prior work by placing the user's experience at the center of analysis. First-person accounts of mental health and illness on social media are rare in the literature. Second, our work attends to mental health and mental illness as co-existing, flexible, and interrelated; offering a richer view than previous attempts to classify user behavior. Our findings challenge the dichotomy applied to mental health and illness by providing an analysis of visual and textual content, as well as user accounts. Third, our method involves an interdisciplinary approach to social media analysis that incorporates techniques and theoretical perspectives from visual sociology, cultural studies, and multimodal discourse analysis.

Finally, we discuss how our approach and findings highlight broader ethical concerns for research in this space.

2 BACKGROUND

In this paper, we confront the relationship between mental health and illness. This relationship has, at times, been described as a spectrum [74] and at others a strict dichotomy [14]. We, instead, approach this relationship through a modified version of the Dual Continuum Model of Mental Health and Mental Illness [54]. This model demonstrates how “mental health and mental illness belong to two separate but correlated dimensions in the population” [54]. Instead of adopting the definitions of mental health and mental illness used in the standard version of this model, we adopt the framings described below.

Current paradigms of mental health [64] position the concept as more than the absence of mental illness; situating it, instead, within a continuum of wellbeing and mental functioning. Mental health is associated with ‘flourishing’ (e.g., positive mood and unimpaired functioning) and its absence is associated with ‘languishing’ (i.e., negative mood and impaired functioning) [53]. Galderisi et al. [40] contend that this continuum restricts and excludes a “variety of emotional states”, as well as “imperfect functioning”. By contextualizing functioning and emotions within specific situations and experiences, Galderisi et al. reposition mental health as “close as possible to human life experience, which is sometimes joyful, and at other times sad or disgusting or frightening” [40]. We adopt this framing to acknowledge that flourishing and languishing mental health are situational and dependent on context.

Mental health and related concepts, such as mental illness, are deeply entangled with cultural values and priorities. In CSCW and HCI, the disciplines of clinical psychology and psychiatry are dominantly influential. These approaches to mental illness presume a biological (e.g., neurological) or biopsychosocial etiology for illnesses [81], which manifest through symptoms of behavioral deviance from an implicit social norm. Writing in critical dissent, Szasz reframes mental illnesses as ‘problems with living’ rather than actual diseases, which have biological markers [82]. This theoretical approach to mental illness promotes flexible interpretation and change over time. For these reasons, our own understanding of mental illness is grounded in Szasz’s seminal work [82], where mental illnesses are reflective of deviance from a narrow window of societal standards. To maintain inclusivity of the various ways individuals with mental illnesses conceptualize their conditions, we extend our definition to include clinically diagnosable mental illnesses, as well as self-identified mental illnesses.

3 RELATED WORK

Scholars from multiple communities, including human-computer interaction, sociology, communications, and medicine, have studied representations of mental health and illness. The present analysis brings together these diverse perspectives applied to analyzing expression on Instagram.

3.1 Institutional Representations of Mental Illness

Absent personal experience, many Americans receive information about mental illness through the news media [68]. Mass media representations of mental illness are particularly vital due to the potential reach of their messaging. Individuals with mental illnesses are frequently portrayed by the media as dangerous, violent, criminal, and “fundamentally different from others” [68,80,88], though anyone may experience mental illness. These unfavorable and inaccurate representations of psychiatric disorder contribute “to the stigma and discrimination that represent formidable barriers to treatment and recovery” [88]. Representations of mental illness produced by the news

media often exclude points of view emphasizing how individuals live with mental illness, navigate recovery, and manage challenges that arise from stigma.

In addition to the media, other institutions have shaped public attitudes toward mental health and illness. Traditional medical techniques as well as the development of modern technologies have impacted representations of mental health and illness. For example, mental illness may be represented by the countenance [11], diaries produced by patients [3], and images of the brain [26,35]. Drawing from psychological practices, in particular, researchers within HCI have contributed to representations of mental health and illness. Contributions largely take the form of health applications utilizing self-report or unobtrusive monitoring to track medication adherence, sleep, mood, steps, and location [21,56,89,90] in order to produce graphs, charts, and avatars [8,66,67]. These previous examples demonstrate how mental health and illness may be represented, as well as *who* may represent them. Often, representations are crafted by particular institutions (e.g., media, medicine) acting within a set of rules, practices, and values, rather than individuals living with mental illnesses.

Art presents an opportunity for individuals with mental illnesses to participate in personal practices of expression and representation. Art brut, more commonly known as ‘outsider art’, provides additional context to the analysis presented in this paper. This genre of art is often created by individuals considered within or beyond the margins of traditionally trained artists [63]. Underlying this genre is the implication of the artist as ‘the other’, individuals unable or unwilling to abide by societal norms [71] (e.g., institutionalized individuals [12,77,91]). The value of art brut comes, in part, from the juxtaposition of art producers and consumers. Consumers from the mainstream populace may fetishize artists due to their identities. This can perpetuate stigma surrounding mental illness, disability, and marginalized communities. We draw parallels between outsider art and social media, which changes the nature of who can participate in creating these representations as well as how they are crafted, shared, and interpreted.

3.2 Interdisciplinary Approaches to Social Media Analysis

Social media platforms present a shift in how content is produced, consumed, and circulated. Specifically, these platforms provide flexibility in the modes, such as still images, music, video, and writing, through which users are able to represent and communicate various content [50,58]. Nevertheless, traditional methods of social media analysis foreground written modes above all others [51], thus privileging aspects of written representation and users employing this specific mode, as well as distorting analysis through a conceptual lens that views content as monomodal rather than multimodal [57]. By expanding “beyond linguistic structures” [51], the context for analysis begins to encompass other modes frequently incorporated within posts on social media sites, such as layout [49,76] and images. These modes are not restricted to the digital or physical reality surrounding online content [51]. They are also inclusive of private online and offline interactions, as well as the personal and cultural lenses through which individuals inevitably operate [27], and may, at times, contradict one another [86].

To understand identity within this multimodal context, we draw from media and cultural studies [61]. Though not always explicitly multimodal, scholars from this discipline incorporate various modes in data collection and analysis. In doing so, they consider how expressive (i.e., “those that take place as we live” [61]) and representational (i.e., those aimed at producing artifacts) practices intersect and articulate identity. A particular benefit to this approach is the notion that identity is unfixed and fluid. Further, identity is established through intertextuality [86], as well as multiple modes of representation and expression. In this work, these modes include, but are not limited to, captions, comments, usernames, liking a post, hashtags, profiles, private messages, offline discussion, and images. By joining our analysis of Instagram posts with participant interviews, we combine several modes of expression to understand the richness surrounding mental health and illness on Instagram.

3.3 Expression of Mental Illness on Social Media

Research examining digital representations of mental health and illness is nascent [50,83,84]. Nevertheless, the scope of work conducted within this domain is broad, addressing content moderation [22,24], disclosure [7,33], support [7], detection and prediction of mental illness severity and likelihood of recovery [21,23,32,85], lexical variations of hashtags [24], and visual imagery [20,65,72,78]. We observe several trends that describe how scholars tend to view representations of mental health and illness on social media.

In the existing literature, elements of mental illness, such as deviant or disordered behavior, are prioritized over others (e.g., recovery) and many scholars incorporate mental health as a foil to illness rather than as a distinct, albeit related, concept. Prior work does little to address mental health and, instead, has addressed mental illness in a general capacity [33,65,70], as well as more specifically (e.g., depression [7,31,48,85], eating disorders [20,22,24,30,42,72]). Though researchers have noted the complexity of mental illness in the context of co-occurring disorders [72], the emphasis on specific disorders demonstrates priorities to select “prominent mental health challenges in populations” [65], as well as analyze topics within a particular, often clinically-bounded [4] silo. In data collection, this translates to reliance on a strict selection of hashtags through which to collect, organize, and examine specific practices. Researchers who categorize hashtags within clinically defined categories [65] may also verify post content with mental health practitioners, such as clinical psychiatrists [7,65], or ‘filter’ hashtags deemed out of scope or too general [22]. Restricting and filtering content for analysis inherently maps the territory of specific illnesses, can neglect the holistic experience of having or having had a mental illness, and may further marginalize the perspective of those we aim to understand.

While many articles leverage textual content on social media platforms, such as Instagram, few within CSCW robustly incorporate other modes of expression. A noteworthy exception is work by [72], which reports on visual content (e.g., bodies, self-harm), as well as visual composition and style. Similarly, [65] describes stylization of images associated with mental illness on Instagram. Despite these studies, we know relatively little about how various, entangled modes of expression are situated within a social, cultural, and historical context of mental health and illness, how and why they are created, and what this content means to individuals.

4 METHOD

This research draws on posts and user information collected manually from Instagram, as well as semi-structured interviews conducted with Instagram users who share posts related to mental health, illness, and related topics (e.g., self-care, awareness, recovery). Our analysis incorporates visual methodologies [46,75] and semiotics [47,87] to examine how individuals express experiences with mental health and illness on Instagram.

4.1 Instagram Post Corpus

We assembled an initial dataset over a period of seven days in November 2017, in which we used Instagram’s search feature to collect more than 3,000 Top Posts and Most Recent posts from five mental illness-related hashtags (i.e., #depression, #anorexia, #anxiety, #bipolar, #mentalillness) on Instagram. These hashtags were selected due to their prevalence or association with hashtags used in related literature [7,22,24]. After accounting for duplicates, our dataset comprised of 2,102 unique posts. We did not remove any posts from this dataset and we also did not seek, for example, to validate these posts with mental healthcare practitioners, as others have done [7,65]. Instead, we viewed all posts in our corpus as potentially relevant to mental illness in a certain context. All non-English posts were translated approximately using Google Translate.

Due to the impact of circadian rhythms associated with certain mental illnesses [1,41], we collected data at four points throughout the day: early morning (12AM to 5:59AM), morning (6AM to 11:59AM), afternoon (12PM to 5:59 PM), and evening (6PM to 11:59PM). To capture the

variability of posts, we randomized each data collection period within these time ranges. During each data collection period, we collected nine Top Posts, as well as the 15 Most Recent. At the time of data collection, all Instagram posts included an approximate timestamp as part of the post (e.g., 33 seconds ago; April 24; July 21, 2017). Given the popularity of all hashtags incorporated in our data collection, Recent Posts were collected 5 minutes within our collection time, and often less. Instagram's Top Posts for each hashtag are determined by a proprietary algorithm. As such, we cannot determine what a 'Top Post' truly entails, aside from a rough approximation of popularity, and, instead, used these posts as an opportunity to collect additional data. Though these posts were collected within specific time ranges, Top Posts, unlike Most Recent posts, may remain for several days and were, therefore, potentially posted by users prior to our week of collection. Posts were collected manually, in line with Instagram's Terms of Service, as well as their platform API's policy at the time of data collection. Manual collection provided an opportunity to review each individual post in the data set. This meant that data collection and initial memo-ing occurred simultaneously, with the identification of themes beginning the first day of data collection. We iterated on these themes throughout data collection and when revisiting posts.

Our corpus provided an initial area of inquiry for our digital ethnography on the presentation of mental illness and related topics on Instagram. Over six months, we expanded upon these collected posts by examining co-occurring hashtags (e.g., #prorecovery, #secretsociety123, #mentalhealthawareness) and accounts of users in our dataset, including those who shared posts, as well as those who commented on and liked posts. We continued in this way, traversing through user accounts, posts, and comments that were not necessarily collected during the initial data collection period. We decided during this time, as well, to include hashtags, posts, and users who actively promoted mental health and wellbeing to broaden our scope from mental illness alone. Collection was not intended to be exhaustive or comprehensive. Themes identified during this process (e.g., remix and recycling of images, similarity of visual styles between mental health and illness, perceptions of support) guided our participant interviews, which in turn guided further data collection and iterative development of the findings discussed in this paper.

4.2 Interviews and Photo Elicitation

After beginning analysis of our corpus, we conducted semi-structured interviews with 14 adults who share experiences related to their mental health and illness on Instagram (ages 22 - 36; $M = 27$ years; 11 female). During the time of the interview, several participants were attending counseling sessions with a mental health practitioner or taking prescribed medication. Others had, in the past, received care from a physician to address aspects of mental health or illness. Still others described experiencing a mental illness (i.e., depression) without seeking care. Participants indicated experiences with anxiety, including panic attacks, depression, and eating disorders. At the time of the interview, no participants self-reported practicing self-harm or experiencing suicidal ideation. Per our human subjects protocol, we did not interview individuals who self-reported currently practicing self-harm or experiencing suicidal ideation, though posts and user accounts related to these topics were analyzed as part of our larger Instagram dataset. Our team included a mental health consultant (i.e., art therapist and licensed counselor by training). This team member's information was included on the consent documentation and participants were informed they could contact her at any time. Were any of our participants to start discussing present practices around suicidal ideation or self-harm, the interview would have promptly ended, and our mental health consultant would have reached out to them in accordance with her own set of practices and our IRB protocol. Additionally, per our IRB, we sent a document of mental health resources (e.g., hotlines, practitioner locators) and the study's consent documentation to participants prior to the interview.

Following the identification of themes of interest from our post dataset and subsequent digital ethnography, we recruited participants through websites, such as Instagram, Craigslist, and word of mouth. Though we recruited from Instagram, to our knowledge, none of our participants came

from posts or users in our dataset. Like many qualitative studies, self-selection was a limitation to our sample. However, we do not believe this reduces the importance of this work. It has provided an opportunity to understand Instagram and mental health and illness from an angle that has yet to be explored. Though our corpus contains content from users around the world, we only interviewed individuals currently living in the United States. Participants received a \$20 Amazon gift card following the interview.

We conducted semi-structured interviews through phone calls and text-based mediums (e.g., email). Though not preferable, interviews through text allowed us to reach people who were otherwise put off by in-person interviews and phone calls about a topic deemed highly personal. Prior to the start of the interview, the researcher clarified their role as a human-computer interaction professional and not a mental health practitioner. During the interview, we focused on how participants used Instagram to express experiences with mental health and illness. We did not delve into specific experiences with mental illness or reasons for those experiences; instead, we asked participants to provide us with context regarding their relationship with mental health. Our interview protocol was tailored to Instagram posts, including images, captions, hashtags, and comments, as well as Stories, a feature on Instagram that allows users to share content for up to 24 hours. When possible, participants shared their Instagram accounts prior to the interview. Barring this, due to concerns of privacy and feelings of anxiety or discomfort, participants shared screenshots of specific posts or simply described mental health and illness related posts during the interview. We used photo elicitation to review individual posts (3-7 per participant) and asked questions in the context of each post. We asked participants about the types of mental health and illness expression they engaged with, including mediums, modes, and processes (i.e., how posts were produced), and audience. Interviews lasted approximately 30 minutes and were audio recorded and transcribed for data analysis.

All participants used Instagram regularly, though some preferred to share their experiences through Instagram Stories, rather than traditional posts. None of the participants interviewed had an Instagram account dedicated solely to mental health or illness. Most maintained personal accounts that included posts about events (e.g., concerts), scenery, and family, as well as topics related to mental health and illness. When participants did share about their experiences with mental health and illness, they represented their experiences in a multitude of ways, including sketches, memes, inspirational quotes, and music. Our participants maintained public and private accounts. When the account was public, the participant would typically share the name, so, during the interview, both researcher and participant could review content at once. Several participants gave consent for the researcher to temporarily follow a private account. The researcher stopped following the account immediately after the interview to maintain the participant's privacy.

4.3 Data Analysis

Data analysis followed a constructivist grounded theory approach [25], where we developed emergent themes through iterative coding, memo writing, and constant comparison of data to emerging concepts. Themes were first identified through Instagram posts and user accounts acquired during data collection in November and subsequent digital ethnography. These themes were used to inform interviews, which, in turn, informed additional digital ethnography and Instagram data collection. The research team met frequently to discuss emergent concepts in Instagram and interview data. The interview protocol was also iteratively revised to guide sampling, as well as refine particular concepts of interest. Our analysis incorporates practices within critical visual methodologies [75], semiotics [46,87], and multimodal discourse analysis [58] to examine how modes of expression (e.g., visual, textual, and oral), as well as social interactions, context, and practices of content production, affect and are affected by community norms and attitudes surrounding mental health, illness, and related experiences.

4.4 Ethical Considerations

From building a research team to disseminating results, every decision made by researchers is an ethical consideration. In our work, we decided to collect Instagram posts manually, rather than through a web scraper, involve community members in semi-structured interviews, and incorporate a mental health consultant as a participant resource rather than a conduit for validating posts or interpreting data.

To date, few studies within CSCW and HCI elicit first-person accounts of mental illness [18,56,66,70]. Obtaining access to populations with mental illnesses can prove difficult and ethically ambiguous. We faced hurdles to recruitment, with only one out of every 10 respondents following through for an arranged interview. Prior to recruitment, we worked extensively with our human subjects board to identify individuals that we could include in interviews. Ultimately, we decided not to include participants who described actively practicing self-harm or experiencing suicidal ideation. While this constrains our potential sample and restricts these individuals from speaking for themselves, we felt, as HCI researchers untrained in mental healthcare, that this was the most ethical approach. For this reason, we also included a mental health practitioner on our study team. This practitioner was strictly a resource for participants, rather than a filter for analysis or post validation. Additionally, by explicitly interviewing individuals able to consent for themselves, we excluded adolescents from participation in our interview cohort. As others have noted, adolescents heavily contribute to mental health and illness-related content on Instagram and other social media platforms [7]. Although we did not interview these individuals in our current study, we believe it is important to engage with these populations, so as to not neglect or misrepresent the expressions of these groups. Research in this space often lacks diverse representation. Our sample, not uncommon in this type of work, was predominantly female and white. This should *not* be interpreted as a propensity for white women to have mental illnesses, or as an absence of mental illness in other populations. Instead, we should consider how cultural values and norms shape how mental health and illness are conceptualized, shared, and expressed, and impact participant self-section. It is our responsibility to reach out to communities and work toward building trust and reciprocal relationships.

All captions and hashtags below are paraphrased to preserve the identity of users who, though posting publicly, did not consent to participate in this study. Further, we also paraphrased text information from posts that participants in our interview study did not agree to share with the greater public. The text and images described below are phrased to best maintain the integrity of the post and the users' language. Not wishing to sensationalize images of harm or illness, or otherwise capitalize off of other's experiences, we do not include images in this article. While other researchers have taken this stance, they have also found creative ways to display visual content within a paper, such as through their own form of remix [7]. We opt, instead, to describe visual content and style with text, and paraphrase from captions and comments [20].

5 FINDINGS

Our analysis reveals that individuals use a variety of practices and the features of Instagram to make experiences with mental health and illness visible to others. We find that mental health and illness are interrelated and have flexible, ill-defined boundaries. Further, we observe the emergence of practices and norms around content reposting and remix.

5.1 Visibility and Signaling of Mental Health and Illness

Central to our analysis is the question of how individuals make their experiences with or attitudes toward mental health and illness visible. Participants in our interview cohort and users within our Instagram post corpus use features associated with Instagram posts (e.g., pictures, captions) and

account pages (e.g., profile information) to make their experiences with mental health and illness visible, as well as signal these experiences to particular audiences.

We find that self-expression involves recording components of mental health and illness (e.g., digital traces of behavior, physical changes and scars, emotion) and re-instantiating these elements in new ways. While some aspects of mental health and illness are inherently visible (i.e., weight loss or gain, scars from self-harm), others are not (e.g., depression, anxiety). Users make invisible or overlooked aspects of mental health and illness visible through different modes; frequently visual and textual. Some users within our Instagram corpus, for example, post screenshots from fasting applications, such as *Vora*, to demonstrate time without eating. Other users, as well as interview informants, posted inspirational quotes and uncaptioned visual content. P2 shared an uncaptioned picture with the text, “No matter what knocks you down, get up and keep on going.” There is no explicit mention of mental health or illness within this post; even the visual content is sparse, displaying the silhouette of a hiker in gold and grey. Yet, P2’s description of the post is thoughtful and deeply personal: “I stopped talking to people. I just isolated myself, but then, you know, when I started feeling good about myself... I still keep going no matter how I feel these days... So, even if I’m feeling really sad and don’t feel like doing anything, I still get up, you know, and keep going. And just always hope for a better day.” P2 demonstrates how the visual content of this post was used to make certain invisible facets of mental health and illness visible. Similarly, P5, who discussed mental health primarily through self-care and wellbeing, shared a post in which she had just emerged from the ocean in winter, “freezing but fulfilled.” The picture was taken on the last day of a wellness retreat, where she was “trying to test the boundaries between self-care and pushing yourself out of your comfort zone a little bit.” There is no explicit link between the post itself and mental health or illness, demonstrating that these concepts cover a broad spectrum of content. However, even when individuals represent their experiences with mental health and illness, their relationship to these concepts may not be apparent to an external audience or followers on Instagram.

Interview participants reported infrequently including captions or hashtags to contextualize visual content or signal a direct relationship to mental health or illness, typically due to internalized stigma surrounding undesirable attention-seeking behaviors. Many posts within our Instagram corpus, however, did include textual content related to mental health or illness, such as captions, usernames, hashtags, and profile information. In a post intended to “build awareness of post-partum depression,” one user in our post corpus shared two images. In the first picture, she’s smiling. Her baby’s head rests on her shoulder. In the second picture, the composition is much the same. However, in this picture, the user isn’t smiling. Her face is straight, conveying, perhaps, sadness. The first picture is what she “wanted to post on Instagram...but the next pic shows how I really feel.” In this post, the user addresses the invisible nature of postpartum depression, making her experience visible through images, captions, and hashtags. Through the use of two disparate and juxtaposed images, as well as #postpartumdepression, she potentially signals to others her belonging within a specific community or association with a mental illness [5,7]. Making elements of mental health or illness visible is not necessarily dependent on any single component of a post, but, rather, the specific construction of elements.

We learned of other factors that make visible and signal elements of mental health and illness, such as offline social contacts’ personal knowledge about an individual and a user’s commenting behavior. P4, who experiences anxiety, discussed a picture of herself on the beach, commenting, “I was able to go to California, and took a picture of myself feeling completely serene at the beach. It was awesome. And I actually had people that know me that were like, ‘Oh my gosh, you look so much more relaxed.’” The picture records a specific moment showing a woman on a sunny beach. P4’s experience with anxiety relief and wellbeing was only visible to individuals who know her well. Personal experience and attitudes are also revealed through what users comment on others’ pages. For example, commenting on a post in our Instagram corpus where a user talks about their experience with overbearing parents and bipolar disorder, one user said, “Early prevention is so

important. I had to deal with helicopter parents and bipolar disorder, as well, and it was frustrating at times.” Though this user mentioned personal information in this comment, they do not make this experience with mental health or illness visible on their own account.

Across our interview data and digital ethnography, we found that users constantly negotiate the visibility of their experiences with mental health and illness in their posts (and other platform contexts, such as profile information), particularly given negative societal perceptions of mental illness and the features of this particular technical platform (e.g., ability to report or block users). These examples begin to draw out how socially held views of mental health and illness affect the ways in which individuals create and share content.

5.2 Claiming a Relationship with Mental Health and Illness

Rather than presuming a connection with mental health and illness or viewing visibility and signaling as self-disclosure [7,33], we analyze the ways users position themselves and their expressions with respect to mental health and illness, thus ‘claiming’ mental health and illness as part of their identity.

Establishing an ‘objective’ or explicit relationship to mental health and illness is not necessarily a goal of these individuals. P2 mentioned, “people can get their own interpretation. You can read the same thing. Everybody can read the same thing and get a different meaning.” This participant, like others in our sample, did not frequently caption pictures or use hashtags to contextualize or signal the relationship of a post (or visual content within a post) to mental health and illness. Another participant, P13, described her expression related to mental illness as “suggestive,” due to her tendency to err on the side of distancing her experiences with anxiety and Major Depressive Disorder from content shared. For example, in a post on her account page, P13 shared a picture of a bouquet of bright, yellow sunflowers. In addition to the picture, she wrote, “Hey I completely forgot world mental health day but here’s some flowers for all u out there struggling with annoying inner demons (fuck them). It’s okay if you’re not okay. You’re awesome and loved.” There is a connection to mental health within the caption (i.e., support for others), but P13 does not use this post to claim a personal relationship with mental illness.

Frequently, the textual content of a post may clarify a post or user’s relationship or claim to mental health or illness. However, it can also have the opposite effect [86]. In the literature, scholars discuss how visual content, captions, and hashtags may be incongruent [72]. While this is one interpretation, our data offers another: users carefully craft posts to present a particular relationship with respect to mental health or illness. P3, for example, does not make any explicit claims to mental illness in her Instagram posts despite living with anxiety and depression. She, instead, crafts her posts using humor, an upbeat tone, and nonsensical hashtags to present a relationship with mental illness that is “kind of humorous...like, not take my posts too seriously.” In one post, P3 described how she “had so many things to do, and I just did not feel good, and I wanted to do nothing at all, and just kinda be depressed all day. But I picked up my guitar and that helped me so much.” In the post’s video, P3’s sitting in front of the camera, playing her guitar, she sings, “I’m getting tired; getting the soul sucked out of me.” Though she made her experiences with mental illness visible as a way to help her “get in touch with my feelings,” her personal relationship with mental illness is presented to others within the context of a cheerful caption (i.e., “I wanted to hide in my blankets because of the amount of things that need to be done. But then i picked up my guitar. Good therapy session!”) and hashtags (i.e., #haha).

User relationships with mental health and illness are not only constructed through Instagram posts, but also the surrounding context (e.g., followers, additional posts, profile information). Previous work on Instagram and mental health tends to focus on the post as the unit of analysis, potentially missing this additional information. For example, a user in our post corpus wrote in their profile that they are “RECOVERING since” the early 2000s. Another user from our Instagram corpus, in their profile, mentions, “Don’t report, just block. I’m receiving help. Not supporting eating disorders.” Context surrounding the user, rather than just a particular post, contributes

insight to their relationship with mental health and illness. Further, many users within our Instagram post corpus and observed during our digital ethnography incorporate words related to mental health and illness, such as “bipolar,” “depressed”, and “recovery”, within their username (e.g., bipolar.pixie.dreamgirl³, depressed_daveth). This seems to directly claim mental health or illness as a part of identity or, at the very least, online persona. Understanding usernames, in addition to how users carry blocks of hashtags through posts, may aid in understanding the different ways users on Instagram claim a relationship to mental health or illness.

Although users carefully construct their posts and their relationship to mental health and illness, the presentation of their expression may be misinterpreted. One user in our Instagram corpus, for example, posted a greyscale image of an individual pulling down their shirt, their legs covered in scars. This image depicts self-harm without advocating for or claiming the activity. Accompanying the visual content is a caption that reads, “My old account was deleted. It was apparently violating terms by promoting self-harm, which I would never do. I post pictures to vent. Whenever I get sent pictures or anyone asks how to do it, I tell them to stop cutting. Then I tell them how to prevent infection. If you don’t like my posts, just block me. Don’t report me #cutting #depression #selfharm #suicidal #ana.” This example is rare; many of the posts shared by this user only include hashtags. One interpretation might be that this individual is self-harming or pro-self-harm, but that may not be the case. Bound up in the interpretation of content is an assumption that a user’s posts are indicative of current practices and thus current mental health status. Individuals who have practiced self-harm in the past, however, may post pictures of those past activities. While this might indicate current negativity in mental state, it does not necessarily indicate current physical harm. Nevertheless, in analyzing these images, there is a tendency to assume a temporal relationship between the content and an individual’s current state: what the individual is posting is a reflection of what they are experiencing in the here and now. This may or may not be the case. We see this assumption, along with the implicit classification of an illness state, at work when systems react to a user’s post with an offer of help and mental health resources, or by removing the post and, potentially, disabling the account.

5.3 Mental Health and Illness as Interrelated Concepts and Experiences

In Western thought, binary opposition refers to related concepts that, while theoretically opposed, support the context of meaning for one another [16]. For example, in colloquial dialogue as well as academic discourse, illness and health are often juxtaposed. This binary opposition further invokes others (e.g., deviant and normal, bad and good) that carry through in the way we discuss these concepts in the literature. Many studies of mental health and illness on Instagram, such as those related to eating disorders, emphasis illness. While prior work acknowledges recovery and associated facets of health [23,65], there have been few studies that fully integrate mental health and illness in a holistic analysis. Instead, a common convention is to categorize communities in ways that position one group in illness (e.g., ‘pro-harm’) and another in health. For example, prior work discusses communities in the context of ‘pro-ED’ (eating disorder) and ‘pro-recovery’, although these distinctions may be a value constructed by researcher interpretations rather than people’s lived experiences. We observed content within our Instagram corpus and from informant reports that challenge these traditional dichotomies and present, instead, blurred boundaries between health and illness, and related concepts.

As a prime example, content related to food (i.e., food diaries) has been linked to individuals with eating disorders [65,72] but also to individuals currently navigating recovery [23,65]. While some users in our post corpus provided additional context in relation to food, such as captions discussing recovery or restricted caloric intake, others simply wrote, “Breakfast.” One user, with a sparse comment of “breakfast” and no accompanying hashtags posted a picture of a bowl of sliced

³ Anonymized usernames. At the time of writing this paper, neither example username was in use on Instagram.

bananas and peaches. The bowl, tinted turquoise, but otherwise transparent, rests on a white table. Without additional context, this post may not seem related to eating disorders or recovery from eating disorders. However, other posts shared by this user offer insight. As indicated by a post shared four days following the one about breakfast, the user mentioned feeling “so mad” because they were “doing good, 600 calories a day for the past week, but I binged yesterday.” Between these two posts are not only four days, but also three other posts, all of which contain captions regarding caloric intake, although only one displays actual food. Without a deeper understanding of the user, here provided by captions on other posts, the post about breakfast seems unrelated to mental illness and difficult, when standing alone as an individual post, for even human analysts to interpret as healthy or illness-related eating practices.

Our analysis calls into question whether strict classification should be the prevailing empirical goal for research in CSCW. As illustrated by the breakfast example, mental health and illness on Instagram share a surplus of similarities. For example, body comparison posts are found within both eating disorder and recovery content. [72] notes that this “ED journey” archetype is particularly popular as a mechanism to track progress toward a goal weight. However, in our sample, we also note that this trend is visible in discussions of recovery. In addition to thematic and compositional similarities, we observed that style often carries across posts related to mental health and mental illness. For example, while [72] describes the high occurrence of black and white imagery in eating disorder communities, and [65] comments on high contrast as a visual signature of mental illness-related content, individuals discussing their experience with recovery also make use of similar visual styles. One user in our post corpus, for example, posted a black and white image of her wrist; curving, black text creating a tattoo of her children’s initials. In the caption, she discusses being “nearly recovered from postpartum depression.” Posts related to recovery portrayed in greyscale are not uncommon on this user’s page. Just as community boundaries are porous [7], so are visual aesthetics and content.

Posts may also straddle and deconstruct the conceptual line between mental illness and health. In one post, a solid stack of five pancakes rises on a white plate. Each layer of pancake is separated by an additional layer of sliced strawberries and syrup. On top of the stack, a generous heap of whipped cream, chocolate shavings, and additional strawberry compote. In the caption, the user discusses the concept of partial or half recovery. They write, “If you’re recovering within the safety of your eating disorder, you’re not actually recovering. This is a state of half-recovery. We can look like we’re recovering, even when we’re counting our calories and unwilling to eat ‘bad’ foods. #anorexiarecovery #fightingmentalillness #foodisfuel #eatingdisorder, #mentalillness.” Supporting this concept of half-recovery, another user shared a post picturing a large plate of penne pasta. While the image of the post, in conjunction with the hashtags (e.g., #recovery), underlie an assumption that the food will be eaten, the caption mentions otherwise, indicating that the hurdle overcome was ordering the food, rather than eating it. Further yet, profiles from multiple users include lines such as “attempting recovery,” and “relapsing...trying to recover.” These examples demonstrate how mental health and illness co-exist within experiences. Additionally, they demonstrate how recovery is not a straightforward, linear process. The concepts of recovery and relapse assume directionality and binary states, moving from worse to better or better to worse. In our data, we found a richer negotiation between the experiences of health and illness, recovery and relapse. As we argue throughout this section, mental health and illness can be difficult to distinguish from one another. At times, the goals of distinguishing and categorizing may also be unproductive. Instead, attending to the emergence of visual patterns and aesthetics over time provides insight into cultural norms among these communities.

5.4 Reposting and Remix as Community Participation

Prior analyses of mental health and illness on Instagram call attention to the particular attributes and aesthetics of visual content, aiming to visually distinguish and cluster content based on clinically established categories of mental illness. Yet, little is known about the emergent norms of

how people generate and share this content. Within our interview cohort, many of our participants described practices that are reminiscent of recycling and remixing, which others have studied with respect to online, creative communities [37] and plagiarism detection [45]. Understanding Instagram data as recycled and remixed has implications for how we analyze user interactions. In particular, these practices imply an information flow from one person to the next. This means we cannot simply treat an individual post as belonging to a single individual and we cannot assume the content, particularly visual content, originated with that poster. The notions of recycling and remix are also important because they are a form of community participation, in which members abide by certain social norms (e.g., content attribution, expected post novelty).

While reposting images from Instagram and other platforms was a common practice, carrying over associated hashtags and captions was not. This may be a limitation of platform sharing features or indicative of the online locations individuals tend to use for content appropriation (e.g., Google Images). Additionally, in the context of the images selected, many of our participants preferred for their reposted content to standalone (without caption or hashtags) and speak for itself, potentially due to the text embedded in many of these reposted images. In our Instagram post corpus, however, we observed ways that reposted content can acknowledge an earlier source (e.g., tagging another user in a post, linking to the user's account in the caption), though not all reposted content is clearly acknowledged as such. For example, participants in our interview sample did not tend to attribute visual content to a source. Some, such as P12, went to lengths to avoid attribution, lest they repost from a user account they did not know personally or an intimate moment with which a friend did not want to be publicly associated. Several user accounts we observed during our digital ethnography, particularly those posting thinspiration [42,59], did not attribute posts to sources. They did, however, include a blanket statement in their profile to indicate that pictures were not theirs or of them (e.g., "no pics are mine", "not mine", "not me"). One user account in our Instagram dataset reposts images of thin women, frequently in bathing suits and lingerie. While some pictures include faces, many posts feature tight shots on specific body parts, such as abdomens and thighs. The only text associated with each post is a block of hashtags (e.g., #skinny, #pretty, #anorexiarecovery, #fat, #hate, #like4like) that differs little from post to post, and does little to claim or deny personal association with or ownership of any of the visual content. However, similar to other accounts that we saw on Instagram during our digital ethnography, this user's profile mentions that "None of these pictures are mine." The phrase comes just before request to "just block" rather than report, and a goal weight of 46 kilograms (approximately 100 pounds). We noticed similar language on other accounts, as well; potentially indicating how these statements may be used by members of a community to negotiate how a relationship with mental illness is claimed by the user.

Cultural artifacts, such as advertisements and internet memes, also influence how people make their experiences visible, creating a form of remixing and appropriation of visual aesthetics and practices. Several of our participants described creating their own memes, though most tended to strictly repost this type of content, if they found it relevant. Some accounts collected with our Instagram corpus, however, subsisted entirely on memes. One user within this post corpus created many of the memes displayed on their page, as indicated by several captions, including, "I spent a few hours making mental illness memes. Here you go," and "This is one of the new memes I created today." As another practice, posts associated with eating disorders (e.g., maintenance of and recovery from) in our Instagram post corpus often include pictures showcasing side-by-side comparisons of an individual's body. Typically, these posts are done in a before and after format, where the left side of the picture incorporates a picture of a previous body, and the right side of the picture is demonstrative of the current one. Many types of advertisements, from wrinkle creams to diet plans, employ this side by side comparison. However, embedded within this structural trope in the context of bodies is not only an element of time and progress, but a value judgement, where the after portion of the image is framed as desirable. This type of format is not uncommon for individuals with eating disorders, as well as those recovering. However, a notable

difference is that eating disorder progress is marked by less weight, while recovery progress is noted by weight gains.

P01 relied on a similar facet of remix when creating one of his Instagram Stories. P01 created, “one of those lifeline, I’m not sure, medical images,” which resembled a heart-rate visualization to convey his experience across a particular morning (i.e., “But, it was inspired because I was actually having a really great morning, and, midday, I got a text from my mom that my uncle passed away”). Remix does not necessarily involve digital or physical materials. It may, instead, involve concepts, compositions, and styles [36]. For example, participants discussed using Instagram filters to imitate styles they felt were related to mental health and illness. P13 used the Instagram application to put a blue filter over a picture of herself because she associated blue with depression, and P12 talked about how the black background of one repost was stylistically reminiscent of struggle. Based on our analysis, certain visual signatures [65] do seem to exist within mental health and mental illness visual content, though these aesthetics evolve over time through community practice, draw on other cultural artifacts, and may or may not implicate a relationship to mental health or illness.

6 DISCUSSION

Interpretation of mental health and illness is shaped by lived experience and intertwining influences of traditional, current, and cross-cultural artifacts, media, and technology. Without reducing the importance of understanding how individuals express mental health and illness, we address and reflect on the theoretical underpinnings implicit in interpretation of these expressions. How we interpret content affects the research enterprise. Though themes and styles may cross domains (e.g., religion, art, medicine, media), they do not necessarily carry with them consistent meaning. A visual representation of an apple might reference certain cultural symbolism, such as ‘the fall of man’ or the apple of discord, or simply record a type of fruit. Below, we discuss insights from our analytic approach to inform mental health and illness research conducted on social media, as well as ethical considerations for this avenue of scholarship.

6.1 Beyond The Coded Gaze: Insights for Research

Berger, in *Ways of Seeing*, states: “The way we see things is affected by what we know or what we believe” [10]. For this reason, our approach to examining expression of mental health and illness on Instagram frames social media content as a site “at which many gazes or viewpoints intersect” [62]. This intersection of gazes complicates interpretation of expression. There are many ways to interpret the same post. However, this diversity of interpretation is not sufficiently addressed in the current literature. Mental health and illness scholars often study Instagram and similar platforms from a biomedical perspective, which assumes objectivity and erases the researcher as an important conduit through which analysis occurs. A similar objectivity is applied through content analysis and machine learning algorithms, which emphasize representative domains of content (i.e., classification and frequencies of values) over content meaning [87].

To revisit the approach to mental health and illness within CSCW, we turn to the notion of the coded gaze. We describe how the coded gaze takes a particular approach to interpreting mental health and illness-related content, and how this approach influences technological development and practices, such as those related to content moderation [24] and health interventions [21,32]. In our discussion of the coded gaze, we incorporate research from media and cultural studies, which recognizes “that ‘looking’ is always embodied and undertaken by someone with an identity. In this sense, there is no neutral looking” [61]. In addition to reflecting researcher and dataset biases, the code gaze, as an analytic tool, carries with it certain systematic expectations, analytic commitments, and supportive practices (i.e., data collection). Here, we call attention to three assumptions underlying the coded gaze and ways to address them.

6.1.1 The Assumption of Generalizability. Methods of data collection impact how we come to interpret data. Though these methods are not necessarily analytic, they support the analytic practices that follow. The prevalence of certain collective practices advances the agenda of machine learning techniques and content analysis through unquestioned systematic prioritization of large, and largely independent, quantities of data (i.e., millions of Instagram posts) and strictly observable attitudes and behaviors. A common practice amongst CSCW and HCI researchers, including the present study, involves relying on keywords (e.g., #depression, #secretsociety, #eatingdisorder) to collect data. Collecting data through this method assumes that hashtags, more so than any other element of a post or user, index a relationship to mental health and illness. Our findings demonstrate that expression of mental health and illness is a more nuanced practice. An individual's relationship with mental health and illness can be tenuous, ill-defined, and under active negotiation. Sampling on certain hashtags or keywords excludes individuals, such as many of our interview participants, who do not engage with certain modes of expression or signaling practices on Instagram, and inadvertently inscribes a non-relationship with mental health and illness to their online content. We must be mindful and accountable to the ways our practices of data collection imprint relationships and impact post inclusion.

Practices of data collection must consider the unit of analysis; most standardly, the post. Though this includes multiple modes of expression, it assumes independence from other data points, including those produced by the same user, and disregards the user's grander context, such as profile information and surrounding posts. Assumptions during data collection carry through to data analysis. The coded gaze frequently examines posts against a checklist of relevant codes or features. This practice neglects the idiosyncrasies of a post. Instead, a limited number of elements are absorbed into representative domains of content, which implicates a relationship between frequency of observable behavior and importance of meaning and dehumanizes individuals in favor of population-level descriptions. These population-level descriptions are then applied to entire communities of individuals online in the form of technological 'solutions', including content moderation. Data collection techniques that shift the unit of analysis from the post to the user, such as the digital ethnography employed in this work, as well as methods that prioritize a multimodal approach during data collection would provide complementary perspectives to existing literature that could support new understanding of this topic and avenues for technological development.

6.1.2 The Assumption of an Objective Record. At present, the theoretical assumptions underlying the coded gaze do not support understanding how the meaning of recorded content may change over time or differ depending on the timeline of posting or viewing. Additionally, users' relationships with mental health and illness may not be observable through recorded, public activities, such as posting, commenting, and liking. Though analytic methods drawing from the coded gaze might recognize content related to self-harm, such as pictures and associated hashtags, machine learning and content analysis are less helpful in examining meaning and significance, particularly given how these concepts shift over time and across social and cultural contexts. For example, users may post previous instances of self-harm or repost content related to the practice to manage their own impulses, rather than to indicate current practices or support for harmful behaviors. Users employ multiple and 'secret' [7] accounts to negotiate how they express and claim (e.g., signal, make visible) their relationship with mental health and illness. Whether users operate accounts in parallel or create new ones following the ban of an old one, use of these accounts merits further consideration.

The coded gaze predominantly relies on content as it has been recorded, rather than how it may be interpreted. Given the frequent discussion of health interventions as a desirable outcome of research involving social media and mental illness, there is an implicit assumption that social media content is an objective record of truth. However, a long history examining the interpretability of written texts and, in particular, images demonstrates otherwise (e.g., [44,46,87]). In our findings, we describe how posts can seem to record one thing (i.e., inspiration, motivation),

but actually represent a different concept entirely (i.e., loneliness, challenges to mental health). The coded gaze disregards that elements of a post may not represent what they seem to record and, as such, does not support interpretability of content or acknowledgement of intersecting viewpoints. By considering multiple viewpoints or gazes during data interpretation, such as those provided by users (i.e., via interviews, photo elicitation), the assumptions implicit in the coded gaze may become less central to how data in this space are analyzed and used to inform technology and platform policies.

6.1.3 The Assumption of Classification. The coded gaze assumes that data is classifiable, and that classification is a desirable empirical outcome, within a determined set of researcher- or machine-created labels. Though beneficial in certain contexts, classification reduces the holistic nature of the data being analyzed, and creates bounded, potentially artificial ways of seeing user content, behavior, and practices. In this paper, we describe ‘mental health and illness’ to equally acknowledge and emphasize the complexity and duality of human experience. Individuals move between mental health, mental illness, recovery, and relapse in parallel and with fluidity. Our findings demonstrate that individuals practicing self-care, raising awareness of mental health and illness, trying to recover, and living with mental illness share similar visual content, composition, and style, as well as captions and hashtags. Black and white filters, employed by individuals posting about self-harm, are also used by those discussing recovery from post-partum depression.

Classification is applied to certain facets of content, such as ‘deviant behavior’, user trajectories of mental illness [21,85], likelihood of recovery [23], and practices of disclosure and support [7]. Outcomes of this research have many valuable applications. However, as researchers, we must consider the ways that we exploit public data and users to demonstrate that certain people, such as those sharing mental illness-related content online, are ill or somehow deviant from the norm [55,71]. Classification of content may not align with user conceptions of identity. Individuals sharing eating disorder content online do not necessarily identify as pro-eating disorder. While group distinctions support our ability, as a community of researchers, to discuss mental health and illness, they implicitly assume categorical associations that may be inaccurate or harmful when perpetuating stereotypes. We should, instead, step back a moment to understand how individuals negotiate expressing experiences, signaling experiences to others, and claiming relationships with mental health and illness. We hope the present paper encourages CSCW researchers to do so.

6.2 Ethics and Responsibility

As other researchers have addressed, there are ethical concerns involving the use of public social media data, as well as interviewing individuals who may have mental illnesses [7,20,70]. We reflect on these issues here as a way of continuing this discussion within CSCW.

Reviewing content previously shared to Instagram can be evocative and emotional. However, this content formed an essential part of our methodology for informants and for researchers. As a research team, we were mindful of potential feelings of anxiety or discomfort, or triggering experiences, when we asked informants to review their Instagram account and recent posts. Although our participants tended to have positive discourse, some addressed feelings of anxiety and depression, as well as hesitancy to share posts or account information with the study team. In addition to participant comfort and wellbeing, we attended to how the research team managed the emotional aspects of this research. Reflexivity is central to an interpretivist approach, and through this process, researchers were attuned to their own emotional state [69,92]. The research team also discussed, reflected on, and memo-ed regarding how their own experiences and attitudes toward mental health and illness influenced their interpretation of the data. For example, when one researcher sees emotional pain in a user account, another may, instead, see objectified bodies [38]. The reflexive practice of qualitative research resonates with scholarship in critical algorithm studies [34,39], in which positionality and interpretation are central to questions of how algorithms are designed to interpret human experience.

As a research community, we must also consider the ways in which we represent the individuals who contribute to our data analysis. We should question the ethics involved in using personal content to draw conclusions about an individual's mental health or illness without their expressed knowledge or consent. By classifying individuals, we may apply incorrect and harmful labels that reinforce negative community stereotypes and introduce the potential for new risks. Drawing on the history of outsider art, which includes many artists with mental illness, we can observe how sensationalizing artifacts because the creator's experience lies outside of the mainstream can ultimately reinforce stigma and negative views of mental illness. However, the tension between communicating research and avoiding sensationalizing these individuals' experiences begs the question: what does it mean for a paper reliant on visual content and associated practices to not include images? This is an ethical and methodological question that, as a community, we have yet to resolve or standardize in terms of practice.

Finally, it is worth noting that the findings and recommendations detailed in research on mental health and illness may be put into practice by other academics, corporations, and professionals. In light of abuse and misuse of machine learning and artificial intelligence applications (e.g., facial recognition [15,17], criminal sentencing [29,52]), particularly against communities already facing systematic oppression, we must be aware of the potential for harm posed by similar applications in this domain. Though the issue of classification has implications for content moderation and user intervention [22], it could also be employed by law enforcement agencies to identify and monitor certain individuals due to the misinformed belief that individuals with mental illness have a propensity for violence [60]. Classification, in practice, only interprets a narrow slice of data and, as we describe in our findings, does not always have a clear moniker. The relationship between mental health and mental illness is thin, porous, and flexible, and not fully observable through behaviors on social media. Additionally, there are thematic and stylistic, visual and textual similarities between mental health and illness. By moderating content or intervening on user practices through a one size fits all approach, we may cause harm to certain individuals and ultimately reduce potential for self-expression, leading to a chilling effect [22]. Current practices around content moderation seem to engender system workarounds and frustration [24], rather than systemic change in behaviors. As researchers, we must rigorously consider the tradeoffs between censorship and expression, as well as the benefits and potential consequences of interpreting content through the coded gaze.

7 CONCLUSION

Expression of mental health and illness is an active negotiation of content production and circulation. Individuals on Instagram make their experiences visible through sharing original, reposted, and remixed content without necessarily making claim to a particular relationship with mental health or illness. The ways that individuals choose to make their experiences salient is influenced by platform practices and social norms, as well as broader cultural representations of mental health and illness. HCI and CSCW scholars frequently employ the coded gaze to analyze online content related to mental health and illness. Though beneficial for a variety of reasons, such as the ability to recognize depression and predict suicidal ideation, application of the coded gaze assumes generalizable findings that deemphasize individual experience; a static, objective record of content that does not explore alternative interpretations; and an implicit goal of classification. We argue that the coded gaze restricts opportunities for understanding the intricacies of how individuals claim, signal, and make visible experiences with mental health and illness. By diversifying methodological approaches in this space, we can open up new avenues for research and support complimentary ways of understanding how individuals express mental health and illness online.

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