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How is Mental Illness Discursively Constructed and Conceptualized in a Corpus of Online Blogs?

A Corpus-Linguistics Case-Study of Discourses on Mental Illness

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RÉSUMÉ

À travers une série d'analyses quantitatives et qualitatives fondées sur des outils de linguistique de corpus, cet article vise à déterminer si la métaphore conceptuelle THE MIND / MENTAL SELF IS A BRITTLE OBJECT est utilisée pour conceptualiser la maladie mentale dans un corpus de blogs américains en ligne dédiés à ce sujet et, le cas échéant, si les patients et les professionnels et aidants la conceptualisent de façon similaire. Les analyses quantitatives portent sur les mots-clés et leurs fréquences relatives et les analyses qualitatives sur les collocations, les concordances, la prosodie sémantique et les domaines sémantiques les plus fréquemment utilisés pour conceptualiser la maladie mentale. L'étude se conclut par une analyse des métaphores conceptuelles les plus récurrentes dans les discours des patients et des professionnels et aidants et indique que la métaphore conceptuelle THE MIND / MENTAL SELF IS A BRITTLE OBJECT est relativement peu fréquente dans notre corpus pour construire discursivement et conceptualiser la maladie mentale.

ABSTRACT

Through a combination of quantitative and qualitative analyses based on corpus linguistics software tools, this article investigates whether THE MIND / MENTAL SELF IS A BRITTLE OBJECT conceptual metaphor enables to conceptualize mental illness in a corpus of American online blogs dedicated to this very topic and, if so, whether the conceptualization is similar for the patients and the professionals and helpers. The quantitative analyses will focus on keywords and relative frequencies and the qualitative analyses on collocations, concordances, semantic prosody and the semantic domains most frequently used to conceptualize mental illness. The study will conclude on the most recurrent conceptual metaphors in the discourses of patients and professionals and helpers and show that, in our corpus, THE MIND / MENTAL SELF IS A BRITTLE OBJECT conceptual metaphor is not frequently used to discursively construct and conceptualize mental illness.

Mots-clés

maladie mentale, analyse du discours, linguistique de corpus, linguistique cognitive, prosodie sémantique, analyse quantitative, analyse qualitative

Key words

mental illness, discourse analysis, corpus linguistics, cognitive linguistics, semantic prosody, quantitative analysis, qualitative analysis

[D]ue to its commitment to authentic, naturally occurring language data, corpus linguistics is ideally suited to the examination of individuals' subjective descriptions of their health experiences, producing findings that offer an important counterweight to much mainstream positivist research that has rarely considered the discourse of people expressing their lived illness experiences, particularly in relation to mental health (Brookes & Harvey 2017: 229-230)

0. Introduction

“I’m shattered”, “I broke down”, “a nervous breakdown”, “he cracked up”, “her mind snapped”... Several figurative expressions can be applied to mental illness in contemporary English. Following two studies carried out in Jamet (2018) and (2022) on the euphemisms used to refer to mental illness, as well as previous studies on the discourse of mental illness (Atkins & Harvey (2010), Brookes & Harvey (2016), Coll-Florit, Oliver & Climent (2021), Harvey (2012), Hunt & Brookes (2020), Karp (1996), Li, Lin & Ding (2019), McMullen & Conway (2002), etc.), we use corpus linguistics techniques and software tools to offer quantitative and qualitative analyses of the way patients discursively construct and conceptualize (their) mental illness, and compare this conceptualization with that of health professionals and helpers (close family members and relations, friends, etc.). We investigate whether mental illness is framed differently depending on the two categories. The study intends to show “how corpus linguistics techniques are useful for undertaking in-depth, quantitative and qualitative examinations of large collections of health-related language data” (Brookes & Harvey 2016: 228) and seeks to identify patterns and commonalities of discourse through which patients, professionals and helpers talk about mental illness.

After briefly going through the literature review and the research questions, we describe the corpus selection and design, the methodology used to analyze the corpus, as well as the different corpus linguistics software tools used. By resorting to textometric analyses, we study the notions of “flaws”, “cracks”, “fractures”, “breaks”, etc. that are (supposedly and intuitively) often used to refer to mental illness, as the aforementioned expressions seem to imply. The relative frequencies, as well as the collocations found in the patients’ and professionals’ discourses, are analyzed, in combination with the notion of “semantic prosody” a.k.a. “discourse prosody”, in order to show that a given concept is very often discursively constructed not only by its dictionary meaning(s), but more generally by its combination(s) with other words in context. We finally offer a more qualitative view of the notions under study by resorting to a semantic analysis of the corpus, thanks to WMatrix 5 (Rayson 2009), and more particularly the USAS semantic tagger (Rayson, Archer & Wilson (2002)) to highlight which conceptual domains are mostly resorted to in the conceptualization of the “flaws”, “cracks”, “fractures”, “breaks”, “dislocations”... of mental illness. The final part focuses on the main conceptual metaphors used to conceptualize mental illness in our corpus of American blogs, comparing the findings with those of a previous study conducted on a corpus of British English (Jamet 2022).

1. Literature review and research questions

Various studies have been conducted on the language of mental health, and more particularly on how patients talk about their psychological distress: Atkins & Harvey (2010), Brookes & Harvey (2016), Harvey Kevin (2012), Hunt & Brookes (2020), Jamet (2018), (2022), Karp (1996), Li, Lin, Ding, *et al.* (2019), Shaban-Nejad & Michalowski (2019), Yang & Li (2020), etc. One of the key elements in most studies reminded by Brookes & Harvey (2017: 201), following Fox (1993), is the crucial part played by language in the conceptualization of mental illness:

Language is a central activity within this and other health-care contexts, an activity that not only reflects but also shapes the ways we think about and experience health and illness.

This vision of language is closely related to the tenets of cognitive linguistics: language reflects our conceptual system and the way we perceive the world. According to cognitive linguists¹, metaphor is not only a way of conveying meaning, but also a reflection of our thoughts and reasoning: “Metaphor is not just a matter of language, but of thought and reason.” (Lakoff 1993: 208). This assumption led to the Conceptual Metaphor Theory (CMT from now on), developed by Lakoff and Johnson in the beginning of the 1980s. According to CMT, metaphor operates not only at the level of language, but also structures our conceptual system (see Lakoff & Johnson 1980: 6) – the use of linguistic metaphorical expressions is proof that we do think metaphorically though conceptual metaphors (indicated in small capital letters). Yet, even if language plays a major role in our mental conceptualization, and more particularly of mental illness in this context, “a surprisingly small amount of research has considered the ways in which sufferers actually talk about depression (Lewis 1995) or attempted to learn about depression through individuals’ subjective experiences of the condition (Karp 1996, p. 10).” (Brookes & Harvey 2017: 212). Harvey (2012: 350) also notes the following:

Yet for all the large body of clinical research into depression, relatively little consideration within this mainstream psychiatric approach has been given to how sufferers themselves discuss depression and what their experiences of emotional disorder mean to them.

Following Skelton and colleagues (1999a; 1999b; 2002), Harvey (2012), Brookes & Harvey (2017: 210) claim that “the combination of quantitative corpus methods and qualitative discourse analysis can powerfully elucidate linguistic patterns and commonalities in this communicative context, generating insights which can greatly enrich our understanding of the ways both patients and practitioners communicate about mental health”.

Our study is centered on three main research questions:

RQ1: Mental illness is very often perceived and talked of in terms of “flaws”, “cracks”, “fractures”, “breaks”, “dislocations”... Is this popular conception, illustrated in Figure 1 and Figure 2, found in a corpus of blogs on and of mental illness? Can the occurrences found in our corpus be classified under THE MIND / MENTAL SELF IS A BRITTLE OBJECTⁱⁱ conceptual metaphor and if not, are there other conceptual metaphors for mental illness?



Figure 1. Illustration from NAMI website



Figure 2. Illustration from NAMI website

RQ2: Is this conceptualization similar in the speeches of patients and in the speeches of health professionals and helpers?

RQ3: If this is not the case, how is mental illness mostly discursively constructed and conceptualized in our corpus?

2. Methodology

This section focuses on the selection of the data, the information on the corpus and describe the corpus linguistics software tools used for the analyses. The corpus we built is composed of various personal stories found on blogs dealing with mental health. To compile the corpus, we used the NAMI (National Alliance on Mental Illness) website.ⁱⁱⁱ We deemed it appropriate to provide us with a variety of resources for examining the ways patients subjectively conceptualize mental illness, and health

professionals and helpers objectively conceptualize mental illness. The website comprises a “Blog” section on which many patients, health professionals and helpers (doctors, nurses, caregivers, close family members, relations, etc.) share stories related to mental illness. The first story dates back to August 1st, 2008, and the blog is still active nowadays. The stories deal with a variety of topics: depression, eating disorders, schizophrenia, panic attacks, bipolar mood episodes, PTSD, suicide, psychosis, as well as the stigma of mental illness, the effects of the Covid-19 pandemic on people with mental illness, discrimination, therapy, etc.

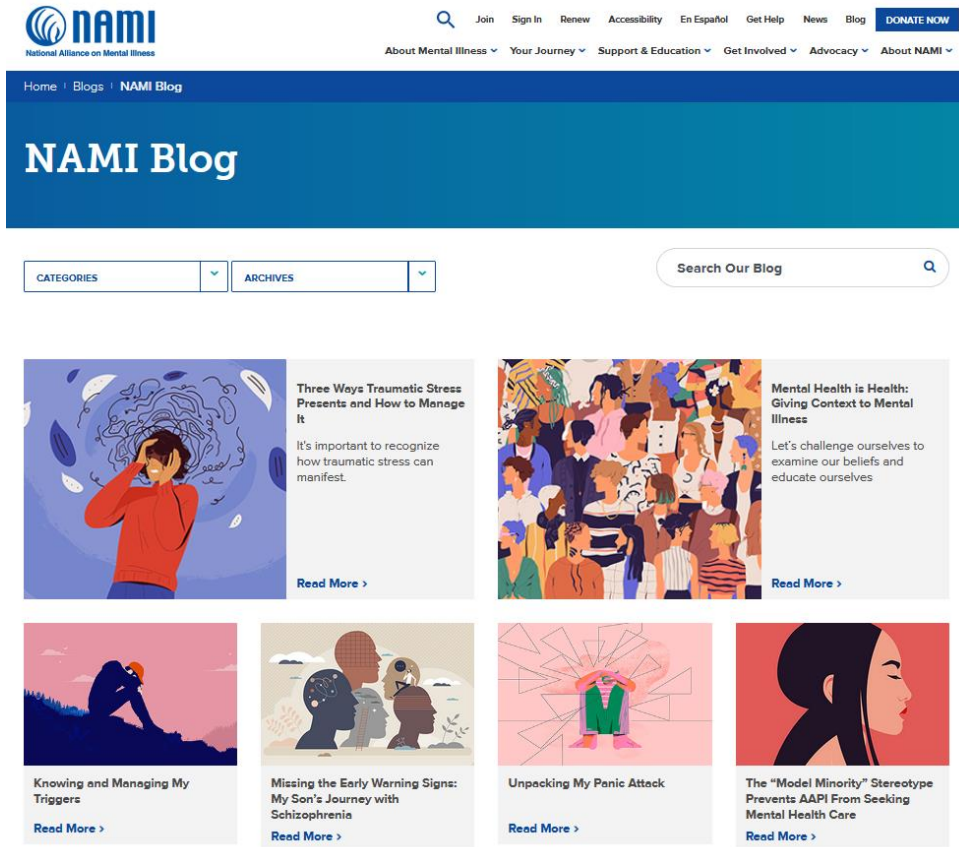


Figure 3. Screenshot of the NAMI Blog

We retrieved the stories from April 1st, 2018, to March 31st, 2022 (amounting to a total of 4 years of stories), which we considered a sufficiently large and balanced sample of the language of and on mental illness. Note that the content of the messages was not edited in any way, which means that the corpus reflects the actual original word choices and syntactic constructions. We nonetheless removed any potential information (such as identity, workplace, gender, etc.) that could help identify speakers. The corpus we selected is composed of 561 stories. We then decided to subdivide the stories into two categories, which correspond to the two sub-corpora: the first sub-corpus (NAMI_PAT, from now on) is composed of stories whose authors were patients who suffered or are suffering from mental illness (depression, psychosis, bipolar disorders, etc.^{iv}), while the second sub-corpus (NAMI_PRO, from now on) is composed of the stories from health professionals (PhD, MD, etc.) and helpers. In several cases, we had to decide which category to select for a given story. Indeed, some authors were former mental illness patients who became health professionals, such as the following author, a frequent blogger on the NAMI website:

Katherine Ponte, B.A., J.D., MBA, CPRP, is a mental health advocate, writer, entrepreneur and lawyer. She has been living with severe bipolar I disorder with psychosis and extended periods of suicidal depression for 20 years and is now happily in recovery. Katherine is the Founder of [ForLikeMinds](#), an online mental illness peer support community. She is a Faculty Member of the [Program for Recovery and Community Health](#) in the Department of Psychiatry at Yale University's School of Medicine. Katherine is also the Founder of [BipolarThriving](#), which provides bipolar recovery coaching, and the Creator of [Psych Ward Greeting Cards](#), which visits and distributes greeting cards to patients in psychiatric units. She is a

member of the Board of NAMI New York City and Fountain House. Katherine is the author of [ForLikeMinds: Mental Illness Recovery Insights](https://www.nami.org/Blogs/NAMI-Blog/July-2021/Navigating-My-Relationship-with-Religion-While-Living-with-Mental-Illness).
<https://www.nami.org/Blogs/NAMI-Blog/July-2021/Navigating-My-Relationship-with-Religion-While-Living-with-Mental-Illness>

We decided to classify those stories into the “Patients” category, even if they eventually became health professionals, as the stories were always based on their experiences as patients suffering from mental illness. The sub-corpora we came up with are rather balanced in terms of size, as there are 276 stories in the “Health Professionals and Helpers” category and 285 in the “Patients” category. The NAMI corpus therefore holds a total of 561 stories from 427 women and 134 men divided according to their status as either health professionals or patients. Among the 276 stories from health professionals and helpers, 197 were written by women and 79 were written by men. Among the 285 stories from patients, 230 were written by women and 55 were written by men. The overall distribution shows a balanced distribution between professionals/helpers and patients. However, women appear to be more inclined to post on the NAMI platform than men (judging from our corpus spanning over four years). Table 1 summarizes the distribution of health professionals, helpers and patients according to gender:

Gender	Professionals and Helpers	Patients	TOTAL
Women	197	230	427
Men	79	55	134
TOTAL	276	285	561

Table 1. Distribution of health professionals, helpers and patients according to gender

We also organized and sub-classified the stories according to the gender of the authors, as well as the dates, for example:

NAMI_PAT_F_2020_03_11: story by a female speaker, dated 03/11/2020, in the “Patients” section (NAMI_PAT);

NAMI_PAT_M_2021_09_10: story by a male speaker, dated 09/10/2021, in the “Patients” section (NAMI_PAT);

NAMI_PRO_F_2018_04_25: story by a female speaker, dated 04/25/2018, in the “Professionals and Helpers” section (NAMI_PRO);

NAMI_PRO_M_2019_11_08: story by a male speaker, dated 11/08/2019, in the “Professionals and Helpers” section (NAMI_PRO).

The data was finally saved as .txt and .csv files to prepare the corpus for concordance analysis and visual modelling. Recognizing that “health communication research that harnesses computer-aided tools is still in its relative infancy, and the efficacy of the corpus approach to health language analysis has yet to be evaluated” (Harvey 2012: 354), we conducted this study with the use of corpus tools and corpus linguistics methods to interrogate patient-professional discourse on mental illness, so as to accurately identify patterns and commonalities in their discourse. We decided to resort to various corpus linguistics software tools, such as AntConc, #LancsBox, Wmatrix5 and Sketch Engine. RStudio was used to model the results and conduct various statistical analyses.

Following McCarthy & Handford (2004: 172), who claim that “[p]erhaps the most fruitful types of analyses are those which combine quantitative and qualitative data”, the present study aims to combine quantitative corpus tools (such as frequency counts and keyword lists) and qualitative corpus tools (collocations, concordances, semantic prosody, semantic tagging, and metaphor analysis with the insights of discourse analysis) to “undertake theory-informed, fine-grained qualitative analysis of extended samples of the corpus” (Brookes & Harvey 2017: 211). This is in keeping with recent studies undertaken on the language of mental health, as noted by Harvey (2012: 352):

[T]here has been a steady increase in health communication studies that employ corpus linguistics tools as their primary methodology, supplementing these techniques with a range of theoretical and analytical perspectives. [...] Broadly, corpus studies of health communication have all sought to combine quantitative and qualitative methods, allowing a complementary and novel approach to linguistic analysis.

4. Results, interpretation and discussion

4.1. Quantitative results: keywords, frequencies, etc.

Keyword analysis was used to identify key themes, salient (i.e. frequent) conceptual domains related to mental illness conceptualized as a broken object by looking for the following KWIC, words of interest, or “nodes”: “flaw”, “break”, “crack”, etc. Generating keywords is aimed at providing a thematic characterization, definition and delimitation of the themes, and the “advantage of using statistical keywords is that they remove the *a priori* biases of the analyst from the identification of themes of significance and interest (Baker 2004, Seale *et al.* 2006) since they are generated by purely computational measures” (Baker 2012: 356). According to McCarthy & Hanford (2004), keywords are words that “best define” a text or texts (2004: 174), and more precisely, for Baker (2010: 134), “a keyword is a word which occurs statistically more frequently in a single text or corpus than in another text or corpus”. Keywords are one the most efficient ways to reveal the “aboutness” of a corpus, i.e. what the corpus is about.

We first used AntConc to retrieve the most frequent lexemes in the two sub-corpora, by adding a lemma list and a stop list.^v To see potential variations between the two sub-corpora NAMI_PAT and NAMI_PRO, we used a standardized type-token ratio to normalize the sizes of the two corpora. Figures 4 and 5 represent the most frequent keywords in each sub-corpus:

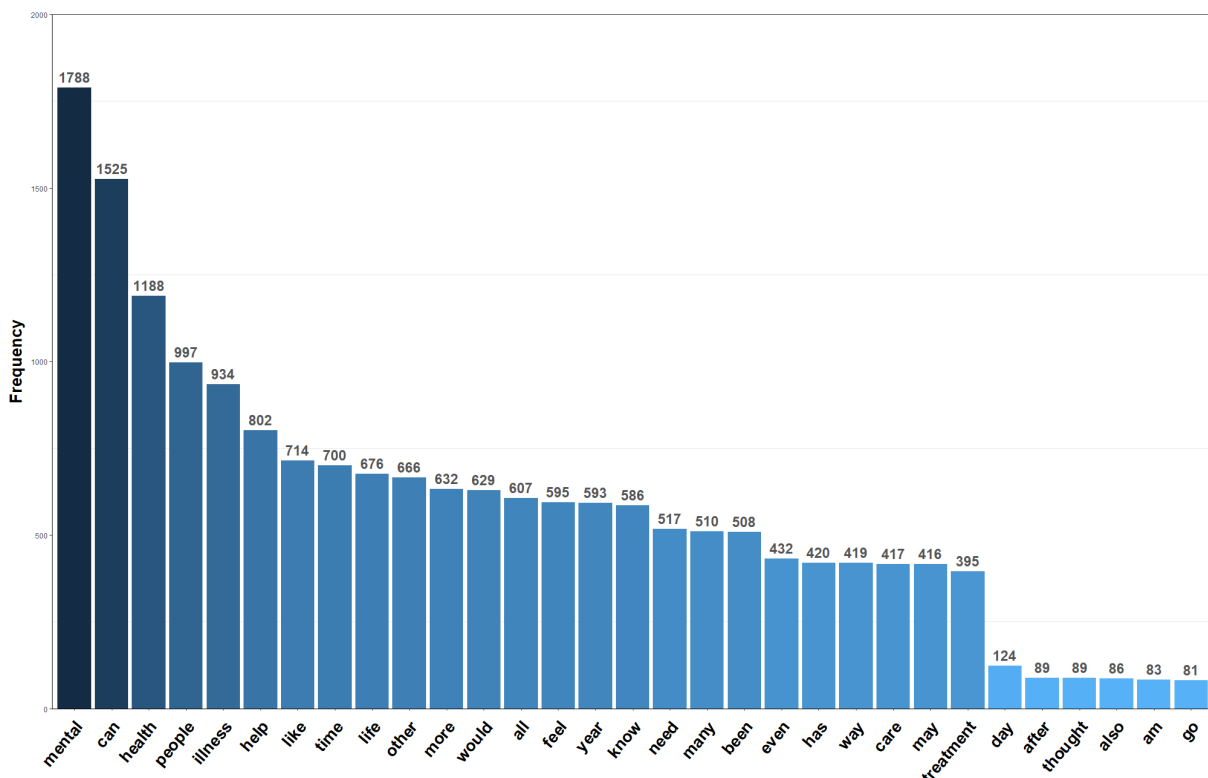


Figure 4. Most salient keywords in NAMI_PAT (AntConc)

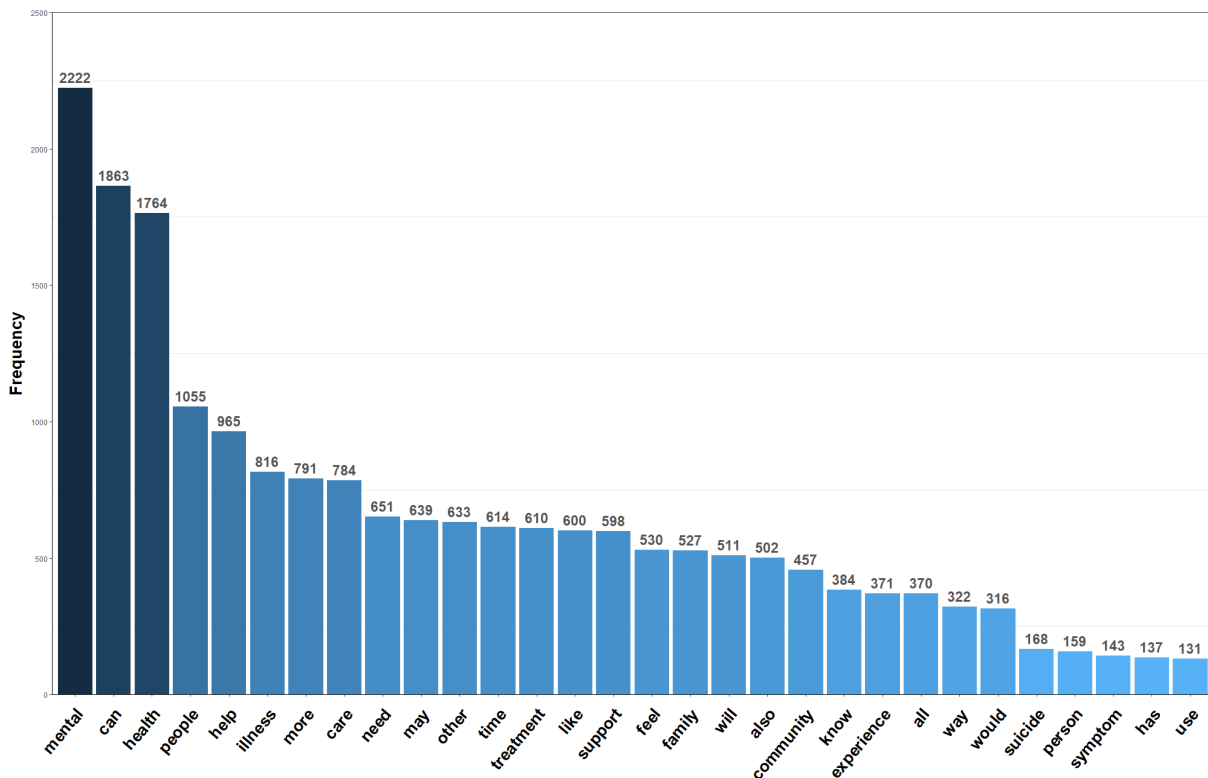


Figure 5. Most salient keywords in NAMI_PRO (AntConc)

Some noteworthy differences can be drawn from the two figures in terms of the keywords found in NAMI_PAT and NAMI_PRO. Unsurprisingly, the words *mental* and *health* are the most salient in the two sub-corpora given that the blogs are about mental health. As for the modal auxiliary *can*, it is widely known that it is the most recurrent modal in American English in positions where other modals would be more frequently used in, say, British English. Interestingly, the order of saliency of some of the keywords seems to insist on the people's positions as either patients or professionals. For instance, *illness* appears in 5th position in the NAMI_PAT, while *help* is the 5th most salient keyword in NAMI_PRO (and is followed by *illness*). This could be proof that patients *experience* mental illness while professionals help patients *fight* mental illness. Another interesting example is the keyword *care* (8th position) in NAMI_PRO. It highlights the agentive position of Professionals as caregivers. Besides, words such as *support* (15th position), *family* (17th position) and *community* (20th position) only appear in NAMI_PRO, thus showing that professionals and helpers deem it important that patients be supported by their family and friends through their hardship. The absence of such words in NAMI_PAT could be interpreted as the fact that patients tend to see their illness as a battle they can only fight on their own (see section 4.2). In addition, the word *life* (9th position) only appears in NAMI_PAT, which seems to highlight their will to survive mental illness and/or the threat their illnesses represent for their own lives.

To complement this keyword approach, we conducted a semantic analysis. To give a general overview of the salient themes in the two sub-corpora, we first used WMatrix5® to analyze the key semantic domains related to mental illness in each set of data. WMatrix5® is a software tool developed by a group of researchers at Lancaster University. It features a semantic tagger, labelled USAS (UCREL Semantic Analysis System), which groups together words belonging to the same semantic field into pre-existing semantic categories as shown in the chart in Figure 6:

A general and abstract terms	B the body and the individual	C arts and crafts	E emotion
F food and farming	G government and public	H architecture, housing and the home	I money and commerce in industry
K entertainment, sports and games	L life and living things	M movement, location, travel and transport	N numbers and measurement
O substances, materials, objects and equipment	P education	Q language and communication	S social actions, states and processes
T Time	W world and environment	X psychological actions, states and processes	Y science and technology
Z names and grammar			

Figure 6. UCREL Semantic Analysis System^{vi}

The semantic tagging option in WMatrix is useful to highlight the most salient semantic domains found in a given corpus. We used the BNC Sampler Written corpus as a reference corpus to retrieve the most frequent semantic domains, as exemplified in Figure 7 and 8; larger items are the most significant in the corpus under study:

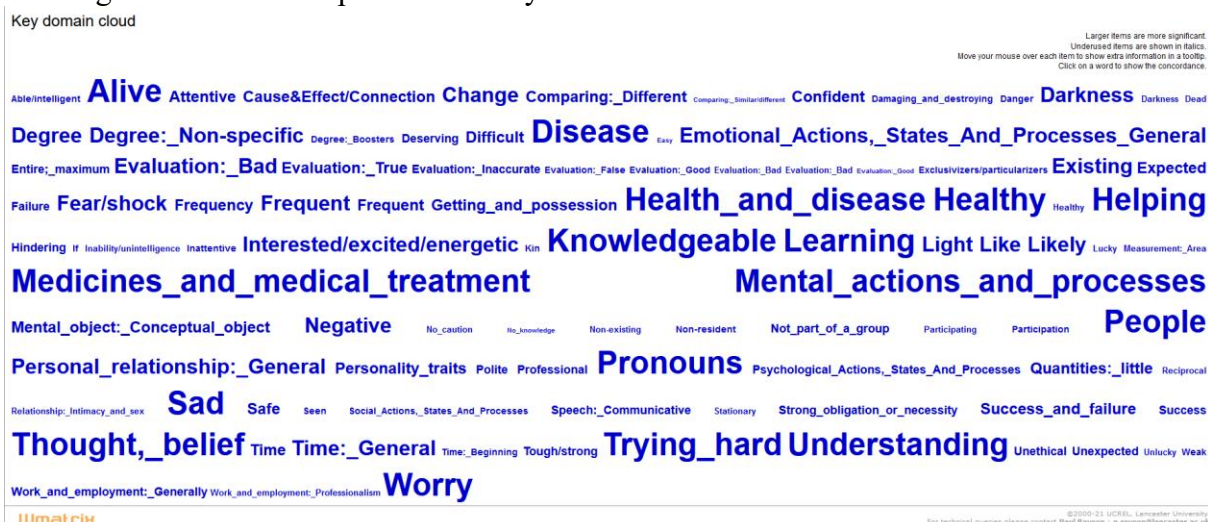


Figure 7. Salient semantic domains in NAMI_PAT (WMatrix)



Figure 8. Salient semantic domains in NAMI_PRO (WMatrix)

Table 2 provides a categorization of the most frequent themes in NAMI_PAT, via the semantic tagging option in WMatrix5; Table 3 provides similar information for NAMI_PRO:

Themes	Examples of keywords
Disease (3109 occ.)	<i>ache, addiction, agoraphobia, crazy, depressive disorder, discomfort, disorder, exhausting, fatigue, hallucinations, hurt, illness, insomnia, mania, mental illness, pain, panic attacks, paranoia, patient, personality disorder, psychosis, scars, schizophrenia, sick, side-effect, symptoms</i>
Medicines and medical treatment (3065 occ.)	<i>antidepressant, antidote, clinical, cure, diagnosed, doctor, drugs, heal, healthcare, hospital, medical, medication, mental health care, nurse, pills, prescription, psychiatric, psychiatrist, surgeon, therapy, therapist, treatment, ward</i>
Helping (2576 occ.)	<i>assist, boost, care, comfort, counselor, encourage, guide, guidance, help, inspire, protect, protecting, rescue, services, shield, support, support group, supportive</i>
Thought, belief (2518 occ.)	<i>attitude, belief, believe, consider, creativity, feel, feeling, imagine, judgment, meditate, opinion, think, thought, trust, wonder</i>
Knowledgeable (1724 occ.)	<i>awareness, experience, expertise, flashback, know, knowledge, identify, information, look back, news, recognize, remember, warning</i>
Sad (1190 occ.)	<i>broken heart, cry, desperate, depressed, depression, depressive, despair, embarrass, grief, heartbreak, sad, sadness, sob, suffer, trauma, traumatic, unhappy, upset</i>
Health and disease (1042 occ.)	<i>health, health professionals, mental health, post-traumatic</i>
Worry (934 occ.)	<i>anxiety, anxious, bother, care, concern, distress, harassed, stress, stressful, tension, trouble, worry</i>
Trying hard (899 occ.)	<i>attempt, battle, do my/your best, effort, struggle, try</i>
Mental object: conceptual object (834 occ.)	<i>constructs, dream, idea, issue, matter, misconception, nightmare, perceive, perspective, perception, reminder, thought, topic, vision</i>
Understanding (752 occ.)	<i>compassionate, comprehension, empathy, figure out, hindsight, insight, insightful, make sense, realize, sensitivity, understand, understanding</i>
Alive (704 occ.)	<i>alive, life, live</i>
Fear, shock (583 occ.)	<i>afraid, alarming, creepy, fear, fearful, freaked out, frightened, frightening, horrifying, panic, scared, scary, shock, shocked, terrified, terrifying, terror</i>
Healthy (517 occ.)	<i>healthy, recover, recovering, recovery, well-being</i>
Emotional actions, states and processes general (449 occ.)	<i>compassion, emotion, emotional, feel, hysterical, mood, mood swings, pity, sentiment</i>

Table 2. Keyword categorization of themes in NAMI_PAT (WMatrix)

Themes	Examples of keywords
---------------	-----------------------------

Helping (3400 occ.)	<i>aid, assistance, care giver, counselor, encourage, encourage, encouragement, facilitator, guide, help, inspired, inspiring, serve, service, support, support group, take care of</i>
Medicine and medical treatments (3014 occ.)	<i>clinical, cure, diagnose, diagnosis, doctor, drugs, heal, health care, hospital, medical, medication, medicine, mental health, mental health care, nurse, painkillers, prescriptions, psychiatry, surgeon, surgery, therapeutic, therapist, therapy, treatment</i>
Disease (2875 occ.)	<i>anxiety disorder, autism, contagion, disorder, epidemic, hallucinations, hurt, illness, mental illness, pain, panic attack, paranoia, psychosis, schizophrenia, sick, stroke, symptoms, wound</i>
Thought, belief (2097 occ.)	<i>assume, assumption, attitude, belief, believe, consider, creativity, feel, feeling, guess, imagine, opinion, think, thought, trust, view, wonder,</i>
Knowledgeable (1951 occ.)	<i>aware, awareness, experience, expert, identify, information, know, knowledge, news, recognize, remember, specialist, warning, wisdom</i>
Health and diseases (1521 occ.)	<i>health, mental health, post-traumatic</i>
Sad (1139 occ.)	<i>cry, depressed, depression, depressive, despair, grief, grieve, hurt, hurtful, miserable, sad, sadness, shattered, sob, suffer, tragedy, tragic, trauma, traumatic, unhappy, upset</i>
Difficult (1005 occ.)	<i>burden, challenge, challenging, complex, crisis, difficult, difficulty, hard times, predicament, problem, struggling</i>
Worry (814 occ.)	<i>anxiety, anxious, apprehension, care, concern, desperation, distress, nervous, ordeal, stress, stressful, tense, tension, unease, worries, worry</i>
Trying hard (719 occ.)	<i>attempt, battle, do my best, effort, strive, struggle, try</i>
Understanding (606 occ.)	<i>compassionate, comprehension, empathy, figure out, hindsight, insight, make sense, realize, sensitive, sympathy, understand, understanding</i>
Emotional actions, states and processes general (573 occ.)	<i>compassion, emotion, emotional, emotionally, feel, feeling, mood, mood swing, sentiment, subjective, temper</i>
Alive (484 occ.)	<i>alive, life, live</i>
Healthy (417 occ.)	<i>healthy, recover, recovery, well-being</i>

Table 3. Keyword categorization of themes in NAMI_PRO (WMatrix)

The order of saliency of the most frequent semantic domains in the two sub-corpora shows that *Disease* is the most frequent topic discussed by patients (1st position), while it is the 3rd most salient topic for professionals and helpers. NAMI_PRO reveals that *Helping* is the most salient topic they discuss in the blogs, which, interestingly, echoes our keyword analyses which showed that words relating to *help* were more frequent in NAMI_PRO. This semantic analysis confirms our keyword analysis considering that Professionals and Helpers stress their role as caregivers, while Patients bring forward their role as experiencers of illness. The notion of *Medicine and medical treatments* appears in 2nd position in both sub-corpora. This does not seem very surprising given that the blogs are about

mental health and how patients deal with it and how professionals and helpers help patients cope with it. The notions *Thought*, *belief* and *Knowledgeable* appear respectively in 4th and 5th positions in both sub-corpora. They highlight the equal importance patients, professionals and helpers attach to the cognitive processes necessary to cure psychological distress.

Finally, it can be noted that *Mental object: conceptual object* and *Fear, shock* only appear in NAMI_PAT, which is quite telling as to the patients as experiencers of illness. The notion *Fear, shock* emphasizes the emotional implications of what going through mental illness entails, while the notion *Mental object: conceptual object* appears to highlight their endeavoring to cognitively process their illness and understand it.

The discussion initiated in this part shows that a keyword analysis and a semantic domain analysis can prove to be complementary techniques when exploring corpora. To go even further in the exploration of the sub-corpora, we decided to focus more specifically on the keywords related to the notions of “flaws”, “cracks”, “fractures”, “breaks”, etc. as mental illness is intuitively thought to be described in such terms. We selected the following lemmatized keywords: **break** (*break, breaks, breaking, broke, broken*), **shatter** (*shatter, shatters, shattering, shattered*), **dislocate** (*dislocate, dislocates, dislocated, dislocating, dislocation, dislocations*), **crack** (*crack, cracks, cracked, cracking*), **flaw** (*flaw, flaws, flawed*), **cut** (*cut, cuts, cutting*), **divide** and **division** (*divide, divides, divided, dividing, division, divisions*), **split** (*split, splitting*) and **hole** (*hole, holes*).

We carried out a search on AntConc with the following forms: br*k*, shatter*, dislocat*, crack*, flaw*, cut* and hole* the asterisk standing for any symbol(s). As there was a lot of noise, we had to clean our results before any further analysis; for instance, many occurrences of br*k* were either irrelevant (“*you look like a ton of **bricks** has been lifted off your back*”, “***Breakfast** has since become a symbol of hope*”) or did not refer to mental illness (“*I **broke** my porcelain ramen bowl*”). We also noticed that several occurrences, especially in NAMI_PRO, had a quite positive axiology, as they did not refer to mental illness: “*our biggest **breakthroughs***”, “*the more we’re able to help **break** down the stigma that keeps people silent*”, “*Use my platform to **break** the cycle of silence*”, “*receiving various treatments can be an important **piece** to one’s recovery journey*”, etc. Figure 9 sums up the results for the two sub-corpora:

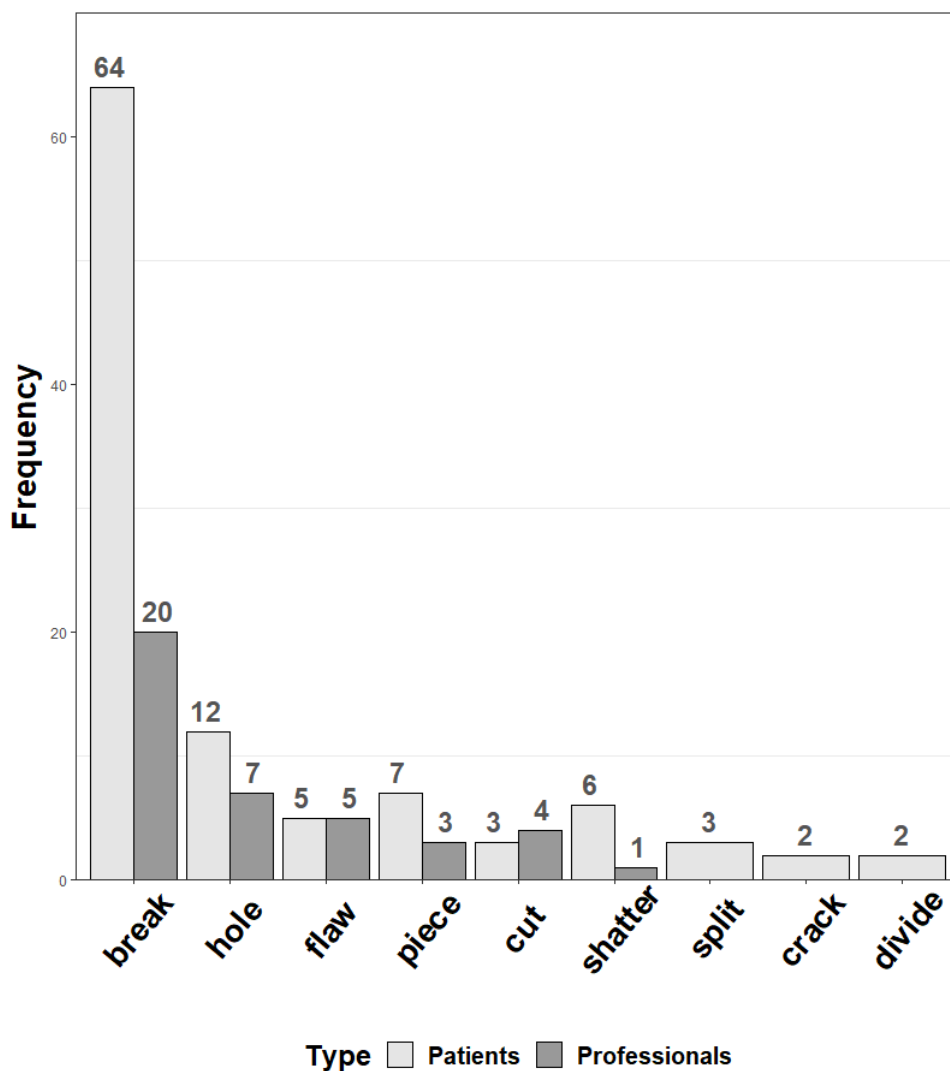


Figure 9. Frequency of BREAK-HOLE-FLAW-PIECE-CUT-SHATTER-CRACK-DIVIDE-SPLIT lemmas in the 2 sub-corpora (AntConc)

The results show that words related to the notions of “flaws”, “cracks”, “fractures”, “breaks”, etc. are, with the exception of the BREAK lemma, seldom used to refer to mental illness: 64 occurrences in NAMI_PAT, and 20 in NAMI_PRO; CRACK is only found twice only in NAMI_PAT; FLAW is found 5 times in each corpus; SHATTER is found 6 times in NAMI_PAT, and only once in NAMI_PRO; PIECE is found 11 times in NAMI_PAT, and only 3 times in NAMI_PRO; CUT is found only 3 times in NAMI_PAT, and 4 times in NAMI_PRO; finally HOLE is found 12 times in NAMI_PAT, and 7 times in NAMI_PRO. In terms of relative frequencies, or frequencies per million, the NAMI_PAT corpus contains more than twice as many occurrences (0,037% / 36,81 per million) as the NAMI_PRO corpus (0,015% / 15,09 per million). This tends to show that patients are more likely to conceptualize mental illness as something broken, shattered, cracked, etc. than professionals and helpers.

Interestingly, this very notion of “mental illness” (677 occurrences in NAMI_PRO, and 769 occurrences in NAMI_PAT) is often referred to as “mental health” (1443 occurrences in NAMI_PRO, and 955 occurrences in NAMI_PAT). Jamet (2022) studied the frequent euphemistic use of “mental health” for “mental illness”; his results confirm the relatively low frequency of the words “flaw”, “break”, “shatter”, “crack”, “piece”, cut” and “hole” in the two sub-corpora, as they would be perceived dysphemistic. We then decided to examine the larger context and focus on their antonyms, i.e. on the actions people can perform to fight or repair mental illness: “repair”, “fix”, “mend”. If THE MIND / MENTAL SELF IS A BRITTLE OBJECT, when it is broken, it needs fixing. Figure 10 sums up the results for the two sub-corpora:

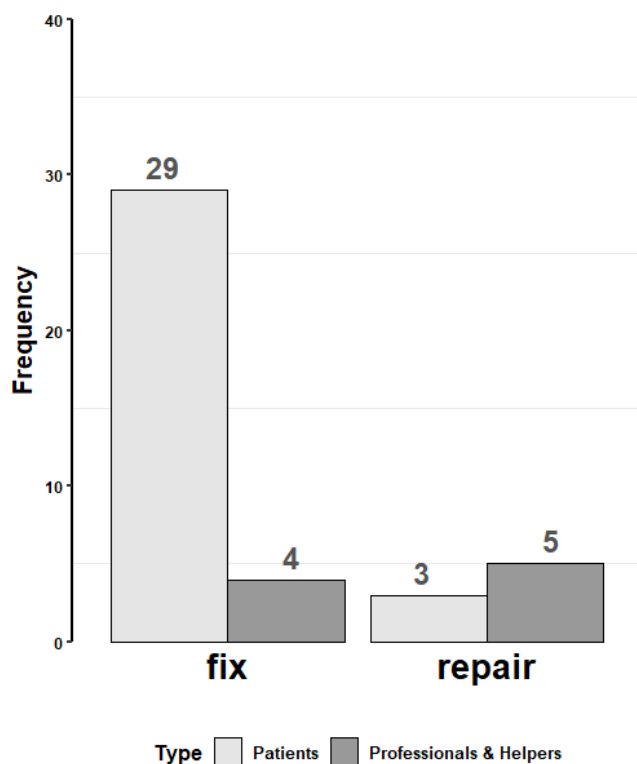


Figure 10. Frequency of FIX-REPAIR lemmas in the 2 sub-corpora (AntConc)

The difference in terms of relative frequency between the two sub-corpora is even more significant for this category, as the NAMI_PAT corpus exhibits the following relative frequency: 0.0113% / 11.32 per million, almost three times as much as in the NAMI_PRO corpus: 0.004% / 3.39 per million. The results are in keeping with the previous ones: even if patients tend to conceptualize mental illness more frequently as something that can be fixed than professionals and helpers, there are relatively few occurrences of the FIX-REPAIR lemmas in the two corpora. The overwhelming use of FIX instead of REPAIR by patients may be explained by the fact that FIX can have negative, positive or neutral connotations (you can fix something to eat, something can be securely fixed, etc.), while REPAIR is mostly used negatively (you repair something broken). Will a qualitative analysis confirm this trend?

4.2. Qualitative results: collocates, concordances, semantic prosody and semantic domains

After a quantitative analysis, we felt the need to carry out a more qualitative analysis of the two sub-corpora, and we then studied the larger discursive context through a close examination of the **collocates** and **concordance lines** on the left and on the right of the corresponding keywords, following Brookes & Harvey (2017: 221):

In corpus-aided discourse studies, the generation of keywords is typically followed by a collocation analysis [...] since examining keywords in isolation contributes little to a situational understanding of language use. (Baker 2012: 359)

If a keyword in isolation may be worth examining, the analysis of the collocates surrounding particular salient keywords in contextual detail, i.e. their lexical surroundings, may reveal further insights and offer a better understanding of how words are used in context, as stated by Brookes & Harvey (2017: 225): “a list of keywords alone contributes little to our understanding of how language is used *in situ*”.

This section mostly focuses on collocates, concordances and semantic prosody via corpus linguistics software tools, and finally on the recurrent semantic domains used to conceptualize mental illness figuratively. The mutual information (MI) statistical measure was used to calculate the strength of the collocation or/and the extent to which words can appear side by side compared with mere chance (Hunston 2002). The aim was to analyze “high-frequency collocates”, i.e. the words that tend to appear frequently with the node, together with the notion of “semantic prosody”.

If we have a closer look at the context surrounding the lemmatized keywords related to the notions of “flaws”, “cracks”, “fractures”, “breaks”, etc., some interesting remarks can be made. A noticeable trend found in many occurrences is negative semantic prosody. Semantic prosody, the coloration taken by the node depending on the surrounding collocates (see Sinclair (1991), Louw (1993), (1997), Stubbs (1996), Hunston (1995), Channel (2000)), is defined as follows by Channel (2000, *editor’s introduction*):

The notion of semantic prosody (or pragmatic meaning) is that a given word or phrase may occur most frequently in the context of other words or phrases which are predominantly positive or negative in their evaluative orientation [...]. As a result, the given word takes on an association with the positive or, more usually, the negative, and this association can be exploited by speakers to express evaluative meaning covertly.

Interestingly, the negative connotations of the keywords (in bold) are somehow reinforced by other negatively connoted keywords (underlined), as exemplified in occurrences (1) to (4) from NAMI_PAT:

- (1) **NAMI_PAT_F_2022_01_14** *I felt unloved. Trying to make sense of my dad’s volatility, I often blamed myself. I thought if I could just be the perfect daughter, then he’d love me. I felt **broken** and needy. I would go on to suffer from unexplainable mood swings of my own. I was frenetic and unbalanced. My mind would race a mile a minute. I jumped between jobs, apartments, relationships and even sexual identities. By the time I was in my twenties, I was delusional and hearing voices.*
- (2) **NAMI_PAT_F_2019_04_01** *For four years I believed that my rape was my fault. I believed that I was unworthy of love and happiness. I believed that I was **broken** and worthless, and that my life had no value. I believed that suicide was the only logical answer to my problems. But, in the past four years, I have learned that my life has value. I know now that my rape was in no way my fault. I don’t hate myself. Learning to love myself has been perhaps the greatest gift that therapy has given me.*
- (3) **NAMI_PAT_F_2019_12_03** *You are overwhelmed by how you will manage to live and cope with life if this is the way you are. You can’t bear another minute of this horror. You feel you have lost the ability to be strong. You feel **broken** and lost. Trapped. Hopeless. Too scared to hope. Fearful of life. But I want you to know you are going through an illness. All that you are feeling is valid.*
- (4) **NAMI_PAT_F_2019_06_05** *Little by little, I pushed myself beyond limits over which I no longer had any control. I felt utterly **broken**. Here was yet another letdown. Another glaring example that I was no longer fit to pursue my dearly prized dreams. I felt frustrated and hopeless.*

Another trend is the frequent combination of the keywords under scrutiny, as shown in examples (5) to (8), still from NAMI_PAT:

- (5) **NAMI_PAT_F_2022_02_18** *Some of the same people who offer compassion and support to those grappling with anorexia may view binge eating as a character **flaw** that can be “**fixed**” with enough self-control and effort.*
- (6) **NAMI_PAT_F_2020_10_02** *However, I began to find myself again and put my **shattered pieces** back together as the years passed. In time, I was able to accomplish meaningful goals and live a full life with loving relationships and authentic happiness. I have learned a lot along the way over the past 15 years. I share daily about the fact that I have bipolar disorder, and it is now my mission to educate others about this condition and mental illness in general.*
- (7) **NAMI_PAT_F_2021_07_21** *As we’ve continued to work together, I’ve come to see therapy like a compass, the center from which I can chart my course. Each week, we venture forward toward a better self. All of the bits and **pieces** of me that are **scattered** across continents can finally settle into place.*
- (8) **NAMI_PAT_F_2020_08_24** *At age five, the child of my heart spoke of dying by suicide. I shouldn’t have been surprised because he’d heard it from his birth mom daily, but it **broke** my heart in a million tiny **pieces**.*

After an overnight observation at a behavioral health facility, the threat was brushed off as bullying at school. This incident told me that the observation psychiatrist did not read a word of his file.

Even if this trend is mostly found in NAMI_PAT, NAMI_PRO exhibits a few examples of such combinations:

- (9) **NAMI_PRO_M_2021_09_20** *Part of this history may be due to the availability of the clinician. If there was no available contact outside of appointments (that is, no on-call care), they will most likely miss any chances for “hole-fixing”. Often, this is a missed opportunity to make dose adjustments for side effects or inadequate dosing. As a result, a patient will stop a medication due to a side effect or lack of improvement, when either of these could have been taken care of with a phone call.*

The keywords under scrutiny are also frequently conceptualized metaphorically, as exemplified in occurrences (10) and (11):

- (10) **NAMI_PAT_M_2020_02_21** *One night, I dreamed I was walking on a dock, pushing a cart piled so high with items I couldn't see past it — like a wall blocking my view. I was surrounded by bad weather with wind, darkness and rain everywhere I looked. Then I met a man who told me something about being positive, and the next thing I knew, just to the right of the cart in the distance, a beautiful ocean appeared beneath a shining sun. I cried because I was so happy and relieved. In those moments, I find hope because I know the bright and sunny parts of me can still surface, even within the darkness of the hole. Before I was diagnosed with bipolar disorder, I was struggling to function.*
- (11) **NAMI_PAT_F_2019_01_28** *I have good times and bad, but the heavy weight I carry has never gone away, and I don't think it ever will. However, one of my mantras is that there is always a way out. With that said, here are a few things that might help you creep out of the hole of loneliness. Talk to other people with mental illness through apps or social media support groups.*

This frequent combination is a trend already mentioned by Jamet (2022), who came up with a list of conceptual metaphors used to talk about mental illness in a corpus of British blogs. As THE MIND / MENTAL SELF IS A BRITTLE OBJECT conceptual metaphor does not seem to be very productive, we decided to look for other conceptual metaphors used to discursively construct mental illness (see McMullen & Conway (2002) for English, and Coll-Florit, Oliver & Climent (2021) for Spanish^{vii}). We used WMatrix and had a look at the semantic domains which seem unrelated to the topic of mental health, following Millot (2019) and Domenec & Millot (2020)'s works on the extraction of specializedness in professional discourse. As metaphor is an analogical transfer between two allotopic domains of experience, looking at unexpected, apparently unrelated Semtags retrieved by WMatrix may give a clue regarding the conceptual metaphors used in the construction of mental health. For lack of space, we only provide the reader with a couple of examples from NAMI_PAT.

The W4 Semtag (Weather) seemed unrelated to mental ill health, and a close inspection of the context indicates that this semantic domain is often used metaphorically to conceptualize mental illness through the MENTAL ILLNESS IS NATURAL EVENTS conceptual metaphor, such as in the following examples:

- (12) **NAMI_PAT_F_2020_02_14** *In the depths of depression, my world falls apart around me. Everything is **shrouded in a dark fog**, and I know I need to find my way out, but I don't understand how I got there in the first place.*
- (13) **NAMI_PAT_F_2019_02_19** *For mindfulness, I practice deep breathing. This practice is what truly helps me in the midst of an attack. It helps me center myself and focus on my breath, so I am no longer focusing on the overwhelming burden of thoughts that overtake my mind during an anxiety attack. In years past, when my anxiety set in, so would the **avalanche of harsh thoughts**. My mind would take me to scary, cruel places that I felt like I couldn't escape. Now, I use deep breathing as a way to escape the **avalanche**. Yes, I still have anxiety, but it's no longer the center of my world.*

The N3.5 Semtag (Measurement: Weight) is seemingly unrelated to the topic of mental health, and is consequently used to conceptualize it metaphorically through the MENTAL ILLNESS IS WEIGHT conceptual metaphor:

- (14) **NAMI_PAT_F_2019_04_25** *It still feels like an indulgence every day to take time for myself, but I can feel the difference. I can tell my mental health is improving. Making big lifestyle changes for our mental health can feel scary and overwhelming. But if you make a change intentionally, you will feel like a **weight** has been lifted off your chest.*
- (15) **NAMI_PAT_F_2019_05_31** *When my depression hits, my body feels restricted, as though a **weight** I cannot see has made a home on my chest. Dark thoughts replay at an invasive volume. I become a stranger to myself, and life feels absolutely meaningless.*

The M1 Semtag (Moving, coming and going) enables us to retrieve metaphorical occurrences of the frequent (FIGHTING) MENTAL ILLNESS IS A JOURNEY conceptual metaphor:

- (16) **NAMI_PAT_F_2021_11_01** *During the first few years of my husband's **journey navigating** mental illness, people often told me that I needed to take care of my own health. When they offered this advice, I thought, "Sure, eventually. But we need to devote all our energy to getting him through this, and then we can focus on my health again."*
- (17) **NAMI_PAT_F_2018_07_18** *Well I'm here to tell you, that's a lie. Our culture needs to wake up and realize that mental illness and suicide do not discriminate; it's happening more in our community, and we really need to take notice. After my brother's death, I **went into a very deep depression**. For the next 17 years, I was alive, but it felt as though I wasn't really living.*

The comparative analysis we conducted between the British corpus and the current American corpus revealed close similarities in the list of conceptual metaphors, with a similar trend, i.e. a frequent combination of conceptual metaphors within a discursive occurrence (the following examples from (18) to (27) are also from NAMI_PAT):

- (18) (FIGHTING) MENTAL ILLNESS IS A JOURNEY: **NAMI_PAT_F_2018_04_11** *In the future, I hope to do more fundraising for NAMI through their DIY program and to continue sharing my story to help others. I'm not ashamed of **my journey**. I'm proud of how long and hard I've fought to survive. No one, including family and close friends, has ever asked me about the first time I heard a voice. I think it's a tough topic to talk about.*
- (19) MENTAL GOOD HEALTH IS GOING FORWARD VS. MENTAL ILL HEALTH IS GOING BACKWARD: **NAMI_PAT_F_2021_02_24** *The constant fight to feel heard and understood can be triggering for many. The Summer of 2020 was very mentally hard on me as a Black person in America. We would take one step forward, something would shoot us (pun intended) **10 steps backward**. One day, our voices were heard, and the next, this was all in our heads.*
- (20) MENTAL GOOD HEALTH IS UP VS. MENTAL ILL HEALTH IS DOWN: **NAMI_PAT_F_2020_10_08bis** *Much like every other mental illness, bipolar disorder cannot be "cured." Even with treatment, people with depression will still **feel down**, people with anxiety will still have anxious moments and people with bipolar disorder will still have swings from time to time.*
- (21) MENTAL ILLNESS IS A TRAP / A PRISON: **NAMI_PAT_F_2020_12_09** *The patients, or clients as they were called, were sometimes surrounded by caring family members or friends who felt their pain, tried to help and faced frustrations in the journey they were on. There were varying degrees of concern and, sadly, some who cared for them dropped out, gave up and quit. Some just abandoned the person in pain. I found disdain for those who couldn't face the challenge. It may be hard for them, but it paled by comparison to those who were **trapped** in the jaws of mental illness.*
- (22) MENTAL ILLNESS IS A MONSTER / A DEMON / A BEAST / PRESSURE / WEIGHT / POISON EATING YOU INSIDE THE BODY: **NAMI_PAT_F_2021_04_02** *Every day is a day I choose to be powerful in my own mind. Sometimes I may **collapse** and give in to him, but I will never surrender to the hideous **beast** that is schizophrenia. I am a champion of my own **demons**. I don't for a moment give up on myself. I have learned I am my biggest advocate.*
- (23) RECOVERING FROM MENTAL ILLNESS IS LIFTING A WEIGHT/BURDEN / UNLOCKING A DOOR / OPENING UP: **NAMI_PAT_F_2019_01_28** *And it's incredibly hard to get the courage to speak to people and meet new friends when you're struggling. I have good times and bad, but the **heavy weight** I carry has never gone away, and I don't think it ever will. However, one of my mantras is that there is always a way out. With that said, here are a few things that might help you creep out of the hole of loneliness.*
- (24) RECOVERING FROM MENTAL ILLNESS IS FIXING SOMETHING BROKEN / A MACHINE: **NAMI_PAT_F_2020_09_14** *Lessons I've Learned in Supporting Others. On my way to becoming a trauma and emotion-centered psychotherapist, I learned to just be with sadness rather than trying to **fix** it.*
- (25) MENTAL ILLNESS IS WAR >> FIGHTING MENTAL ILLNESS IS FIGHTING A WAR: **NAMI_PAT_F_2018_04_11** *My purpose in sharing my story is to give a face to that famous quote: "Everybody you meet **is fighting a battle** you know nothing about... be kind." People with mental illness are not "crazy," they are sick and trying to live a full life with real health conditions.*

- (26) MENTAL ILLNESS IS NATURAL EVENTS: **NAMI_PAT_F_2021_03_01** *Years passed, and I thought with voices, I would just have to manage. I had no insight into the framework of my disorder. I didn't know the components of the **storm**. I fought each day to not be the hushed secret that is mental illness. I thought peace was a thing of the past. Joy and salvation were things I had to fight for, harder to see in the ill dense fog.*
- (27) MENTAL GOOD HEALTH IS LIGHT VS. MENTAL ILL HEALTH IS DARKNESS: **NAMI_PAT_F_2019_04_01** *I've now been in therapy for four years. I talk about four years a lot. It's an important number in my life. After I was raped in 2011, I suffered in silence for just under four years. It happened at college in Chicago by a fellow student on the third weekend of my freshman year. I tried to get justice, but after months of meetings and hearings, my rapist never had any consequences. I experienced four years of **dark** depression, overwhelming anxiety, self-blame, self-harm and self-hatred.*

The frequent combination of different conceptual metaphors already noticed in Jamet (2022: 42-43) is also found in our corpus, as exemplified by occurrences (28) and (29):

- (28) **NAMI_PAT_F_2019_01_28** *Reminders like this are so important to read when you're **struggling** (WAR) because without them it's easy to get **trapped** (TRAP) in the feeling of **loneliness with no end in sight** (TRAP). When I have felt **stuck in a hole** (TRAP), having reminders from family and friends that I'm loved has given me **a ladder to climb** (TRAP >> UP) out of the **darkness** (DARKNESS).*
- (29) **NAMI_PAT_M_2020_07_22** *Other people seemed to be **battling** (WAR) the same thing, but they were too proud to even discuss it. This sense of pride is a flimsy shield that eventually starts to **crack** (BRITTLE OBJECT) as people can no longer bear the **weight** (WEIGHT).*

This tends to show that mental illness is not predominantly discursively constructed and conceptualized through THE MIND / MENTAL SELF IS A BRITTLE OBJECT conceptual metaphor, but though a variety of other conceptual metaphors, often used in combination. Even if one of those conceptual metaphors (RECOVERING FROM MENTAL ILLNESS IS FIXING SOMETHING BROKEN / A MACHINE) is related to THE MIND / MENTAL SELF IS A BRITTLE OBJECT conceptual metaphor, it is not the most productive.

Concluding remarks and further research

This article attempted to show how a combination of corpus linguistics tools and techniques can help linguists investigate a rather large set of data. The findings of our quantitative and qualitative analyses show that if mental illness is discursively constructed and conceptualized in terms of “flaws”, “cracks”, “fractures”, “breaks”, etc., this is relatively infrequent; THE MIND / MENTAL SELF IS A BRITTLE OBJECT conceptual metaphor is therefore not the most productive conceptual metaphor to talk about mental illness, even if it is more often used by patients (NAMI_PAT corpus) than by professionals and helpers (NAMI_PRO corpus), as health professionals mostly focus on their primary role as caregivers. When mental illness is conceptualized in terms of “flaws”, “cracks”, “fractures”, “breaks”, etc., it is also through specific concordances and collocations, as well as in combination with several conceptual domains. Other conceptual metaphors are more widely used to conceptualize mental illness, such as MENTAL ILLNESS IS NATURAL EVENTS, MENTAL ILLNESS IS WEIGHT, (FIGHTING) MENTAL ILLNESS IS A JOURNEY, MENTAL ILLNESS IS A TRAP / A PRISON, MENTAL ILLNESS IS A MONSTER / A DEMON / A BEAST / PRESSURE / WEIGHT / POISON EATING YOU INSIDE THE BODY, etc. Those complex cognitive descriptions show how difficult it is for patients to talk about their illness in single, simple terms, and account for the use of metaphorical discourse, highlighting the heuristic role of metaphor.

Finally, we would like to point out the limits of this study induced by the necessarily limited format of this paper, and for which further research is needed: for instance, it would be interesting to see if there is any evolution from the 2008 stories to the present stories, and if so, why; the impact of the Covid pandemic on the conceptualization of mental illness could also be investigated, by comparing the pre-Covid and the post-Covid periods; the question of the potential quantitative differences in terms of conceptualization between the British corpus and the American corpus could also be examined; finally, the main limit, and probably the most fruitful research track, would be

to probe the possible differences in terms of conceptualization of mental illness between women and men.

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Corpora

NAMI: National Alliance on Mental Illness: <https://www.nami.org/Blogs>

Corpus linguistics software tools

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i See Lakoff & Johnson (2003), Langacker (1987), among others.

ii [http://www.lang.osaka-u.ac.jp/~sugimoto/MasterMetaphorList/metaphors/Mind, Or Mental Self Is A Brittle Object.html](http://www.lang.osaka-u.ac.jp/~sugimoto/MasterMetaphorList/metaphors/Mind,OrMentalSelfIsABrittleObject.html)

iii <https://www.nami.org/Blogs/>.

iv It would be interesting to investigate whether the notions of “cracks”, “flaws”, “fractures”, “breaks” are also relevant for mental illnesses such as eating disorders, metabolic disorders, etc.

v A lemma list enables the researcher to lemmatize the occurrences in the corpus, i.e. to classify all occurrences under the lemmatized, i.e. base form of the word: for example, the occurrences *break*, *breaks*, *breaking*, *broke* and *broken* are all classified under the lemma BREAK. A stop list is an exclusion list used to remove some words the researcher deems not relevant for their study; in our case, we used a stop list excluding grammatical morphemes, as we wanted to focus exclusively on lexical words.

vi Rayson, P., Archer, D., Wilson, A., *Introduction to the USAS category system*, 2002: 2.

vii McMullen & Conway (2002) came up with a list of four conceptual metaphors for depression in English: DEPRESSION IS DARKNESS, DEPRESSION IS WEIGHT, DEPRESSION IS CAPTOR, and mostly DEPRESSION IS DESCENT, which accounts for more than 90% of the depression-related metaphors in their corpus. Coll-Florit, Oliver and Climent (2021) came up with two main conceptual metaphors for depression in Spanish: JOURNEY and WAR metaphors.