



ANALYSIS OF ONLINE DEPRESSION FORUMS AND QUESTIONNAIRES

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Abstract. This article investigates the analysis of online depression forums and questionnaires. The article analyses seven depression forums, two Hungarian and five international forum. Depression forum posts were analyzed based on keyword searches and readings from forum posts. 37 keywords were analyzed, the results of which are illustrated with diagrams. The most commonly used keyword is 'help'. In addition, frequently used keywords include 'depressed', 'depression', 'anxiety', 'sleep', 'help', 'doctor', 'psychiatrist', 'sorry', 'thanks', 'advice', 'work', 'anxiety'. Of the depressed questionnaires, 6 questionnaires were analyzed. Finally, some ontological models are presented that model the depression and its effects.

Keywords: depression, online forum, questionnaire, ontology

1. Introduction

One of the popular diseases of our time is depression [1], which is the most common response to stressful emotional situations. During depression the patients followings syndromes can feel: lethargy, loss of pleasure, loss of appetite, weight loss, fatigue, excessive sleep or lack of sleep, inability to think, and inability to make decisions. An even more severe symptom of depression is the onset of physical illness and the thought of suicide. Depressed people may also have difficulty with everyday activities such as activities related to their survival, such as preparing food for themselves or shopping. It is important to be able to recognize the signs of depression, and depression questionnaires can help with this. It is also important for depressed people to be able to seek help, a good way to do this is through online forums. Such online forums require only a computer or mobile phone and an internet connection. It is not necessary to enter our real name in the online forums, we can also enter a nickname, so we can describe our problem anonymously, we can ask our peers for help. It

can be very helpful to get help from people who are currently depressed or already overwhelmed with depression. Depression has been studied by numbers over the years. Figure 1 shows the annual breakdown of publications based on google scholar where the keyword is ‘depression’.

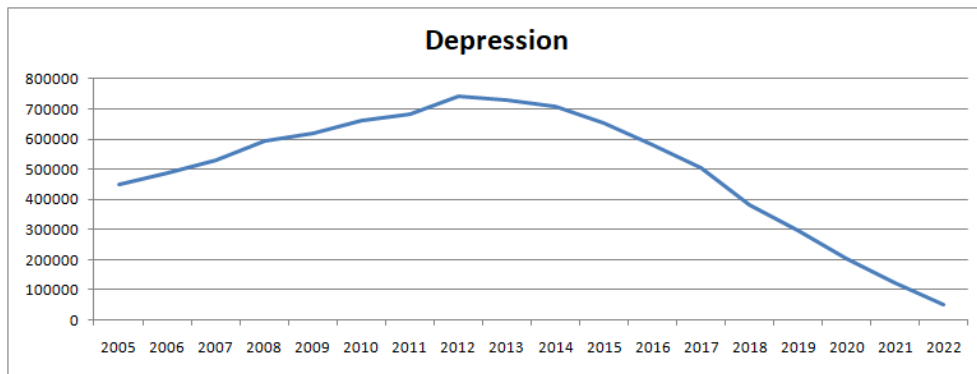


Figure 1. Google scholar results for the keyword ‘Depression’

In Figure 1, I performed the search for the date between 2005 and 2022. The figure presents that publications on depression continued to increase until 2012, but a drastic decline can be observed from then on. In 2021, the number of publications was close to 100,000, in 2012 is more than 700,000. The next keyword was the ‘Depression forum’, the results of which are illustrated in Figure 2.

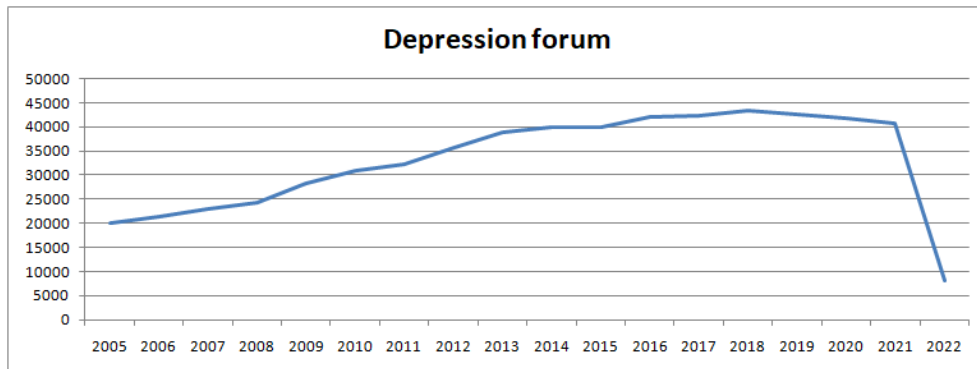


Figure 2. Google scholar results for the keyword ‘Depression forum’

For the Depression Forum, we can see that the number of articles increased from 2005 to 2018, and decreased from 2018 to 2021. 20,000 articles were

published in connection with this topic in 2005 and almost 45,000 in 2018. Figure 3 presents google scholar results for depression questionnaires for the period 2005-2020.

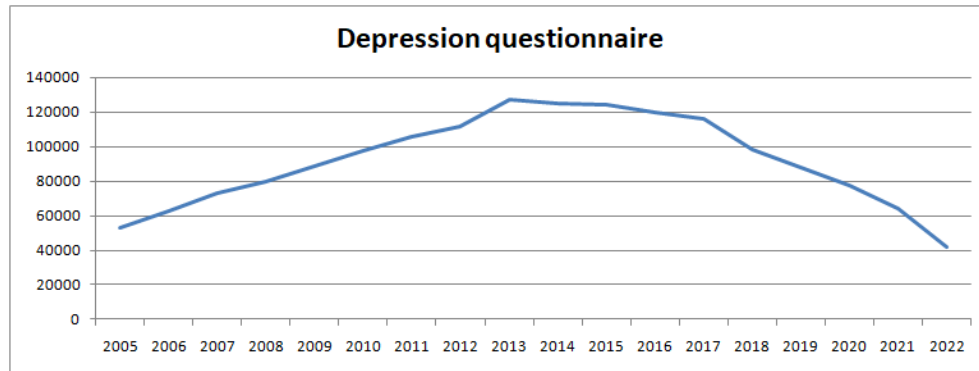


Figure 3. Google scholar results for the keyword 'Depression questionnaire'

According to Figure 3, the number of publications increased between 2005 and 2013, while it started to decrease from 2013 onwards. In 2013, more than 120,000 publications were published, while in 2021, more than 60,000.

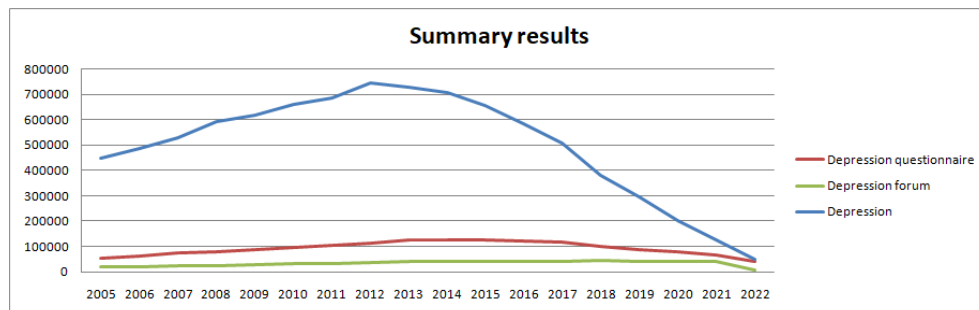


Figure 4. Summary results

Figure 4 shows the summary results. Based on the figure, there are many articles in connection with the keyword 'Depression'. The number of papers related to the keyword 'Depression questionnaire' is higher than the number of papers related to the keyword 'Depression forum'.

In the rest of the article, I discuss depression questionnaires and depression forums.

2. Depression questionnaires

In this chapter, I will introduce depression questionnaires. A total of 6 questionnaires were evaluated during the research. Questionnaires try to determine if a person is depressed or prone to depression. Most questionnaires ask the person to answer on a scale of 1 to 5. The questionnaires include the following questions:

- Feeling nervous or trembling [2]
- Self-accusations, guilt [2]
- Lack of energy [2, 4, 6]
- Loss of interest in ordinary things or people [2, 4]
- Difficulty falling asleep [2, 4, 6]
- Loss of sexual interest [2]
- Inability to get rid of excruciating thoughts [2]
- Unable to perform or complete certain jobs [2, 5]
- Feels sad or depressed [2]
- I almost always feel empty [3]
- Extreme mood, alternating even within a few hours or days. [3]
- Self-harm, suicidal ideation, unsuccessful suicide [3, 4, 6]
- Anorexia [2, 4, 6, 7]
- Unreasonable weight loss [4, 7]
- Indifference [4, 6, 7]
- Too much sleep [4]
- Poor appetite [4]
- Pessimism [5, 7]
- Dull thinking, difficulty concentrating [5, 6, 7]
- Dry mouth, excessive sweating, heavy heartbeat [7]
- Hypersensitivity [7]

But certain questionnaires also ask about a person's gender [3, 5] and age [3, 5]. If most of these symptoms are true, the person is more likely to be depressed.

3. Depression forums

In this chapter, depression forums are analyzed. Among the forums, I also analyzed hungarian and english forums. First, I read some of the posts of the forums. I have come to the following conclusions: most of the comments are helpful and describe my own experience. The other part of the forum readers are just depressed and asking for help. Forum posters describe their age, what treatments they use for depression (alternative therapies, and medications), and provide lifestyle advice. They describe their experiences of depression,

what symptoms they experienced. Some forum posters have also reported on the causes of depression. Among the forum posts, the following refer to advice and cures:

- frontin, scippa, medazepam, betagen [8]
- rose root, St. John's wort [8]
- psychologists, psychiatrists, and antidepressants [9]
- "Until there is an intention to commit suicide, you don't have to be really scared." [9]

The following forum posts describe experiences:

- "I felt very, very tense, nervous, sad, and very anxious". [8]
- "I had constant seizures. I'm very exhausted. Panic disorder. " [8]
- "my stomach cramped, my head hurt and I have nausea, my stomach burns, it stabbed my stomach." [8]
- "I'm tense" [8]
- "I have a very hard time sleeping" [8]
- "I wake up in the morning with a shaky stomach, everything is shaking. I have severe nausea and feel dizzy. " [8]
- "You are constantly depressed, you are not in the mood for anything, you are sad, you have no vision, thoughts of suicide are swirling in your head, you are dizzy and you would not like to leave home. There are those who do not eat properly, there are those who become greedy. " [8]
- "I didn't sleep at night when I was still dozing off, waking up startled, short of breath, trembling and sweating, constantly tormented by nightmares, and during the day I just stumbled like a zombie. My own friends, family members, were annoyed, I could barely stay with people. " [9]
- "I have been undergoing regular psychiatric treatment for two years due to depression and personality disorder. I was also in the hospital for three weeks this spring in psychiatry. So far no matter what medication was given, none of it was effective. I have exhausted my sick pay and my employment has ended. " [10]
- "There is no purpose in my life. I'm looking for my place. I have no idea what kind of job I would be suitable for. I miss people, the company, but I quickly realize that working with people is not for me. " [10]
- Depression due to COVID [10]
- "I'm not in the mood for anything, just tangles, wandering if I don't sleep all day." [10]
- "I'm depressed and I can't get out of it. I had an open heart surgery 4 months ago, and I'm recovering from it. That's why I can't play sports, even though that would pull me out of this lethargy. There's no reason, no one to get up and go, and I don't really know because of my physical

condition. I get tired soon and I can't stand the heat. I don't have company, I'm alone all day and I'm really bored of this wrestling already. Don't recommend a psychiatrist, I hate it all, I've been successfully accustomed to sedatives that I can't put down. Unfortunately, I also have suicidal thoughts, but I don't want to die, I want to be good. I don't take antidepressants, I tried, none of them helped. " [10]

- "I fled to sleep if there was such a bigger problem. There was an example that for 2 days I did nothing but sleep on medicine, when I woke up I went to the toilet and then went to sleep again. I just couldn't process things vigilantly, and if it's bad I have headaches, nausea, stomach upset, etc. I could only stand sleep. " [10]

The following causes have been reported:

- "causes of death, family conflicts and school exclusion" [8]
- "The number of depressed people is growing at an alarming rate, young people don't know what to do with their lives, most people are frustrated and anxious." [9]
- "Schwartz says the root of the problem is the choice itself. In every area of our lives - every minute - we have to choose between things without the right knowledge to make good decisions. Even just 100-200 years ago, people's lives were generally determined from birth. Orders, social conventions, religion, etc. they settled on life to such an extent that only a small slice of it remained free to choose. Now that the situation has changed, it seems that an unlimited expansion of freedom of choice is actually an inhumane thing and could be worse than even a limited choice. Every decision is also a responsibility that few can cope with. The world cuts in the face of people every day that they made mistakes, they made bad decisions. They went to the wrong school, bought the wrong car, moved to the wrong place, prescribed the wrong medicine, watched the wrong movie, used the wrong device, simply lived a bad life. " [9]
- "I felt very, very bad, tense, nervous, sad and very anxious. I went to the emergency room with heart complaints, but they didn't tell me where to go from here. It turned out that I should have gone to the psychiatric clinic. So I went home. I had constant seizures. I'm totally exhausted." [8]
- "Lately, I've been quite tense, I've noticed that I'm scratching or chewing on my finger, which is probably due to nervousness and stress. The evenings are the worst because I have a hard time falling asleep even though I drink relaxing tea. I try to keep myself busy many times, but nothing really gets me down. "[8]

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- "I would like to talk and get advice because I suspect I may be depressed. A few weeks ago, I felt that the waves crashed over my head, and I couldn't get out of it on my own. This was triggered by a short acquaintance (failure) in a relationship, but putting the picture together, several stressful things happened to me recently, which I think led to this. I have an appointment with a psychologist next week. Thank you very much for all the answers! "[8]
 - "Probably in serious situations, you are needed and you won't let there be a problem with you, because the other is more important! Seizures mostly occur in situations when a person feels alone or doesn't feel loved enough! Have you ever been so sick when you were soaring with happiness? A true panic patient calms down in the presence of a doctor, he does not panic! In fact, this is how you can really tell if you are dealing with a panic patient! "[8]
 - "You're constantly depressed, you don't feel like doing anything, you're sad, you have no vision for the future, thoughts of suicide swirl in your head, you feel dizzy and you'd rather not leave the house. Some people don't eat properly, some become gluttons. .I have an acquaintance, he didn't move from the dark room, he didn't do anything, he simply ceased to exist. The problem is not a day or two, but when this gloom becomes permanent. At the beginning, I described it as sleepy, tired, nervous. This sometimes - it was sometimes, then more frequently, it increased and became my companion. And when my eldest daughter was born, it suddenly turned into something amazing. Approx. I didn't leave the baby alone for two months. Then I went to the toilet, to clean myself, to eat, if someone was with my daughter. And I started abusing her. She was more than a year old when I went to the doctor. Why do you ask what it manifests itself in? I think it's basic very similar, only from there the range is very wide." [8]
 - "I never believed in the depi, nor in the doctor!! Until I had my first nervous breakdown last year! I went to a psychologist regularly, although I didn't believe in him, and I was right, mentally, he was at the point where the shore broke!!! I finished the therapy! NOW, ABOUT 3 months ago, I got sick one night in my sleep!! My chest hurt, my left side was numb, it didn't come out of my mouth, it was very bad! I WENT TO THE DISTRICT DOCTOR, who sent me on to another doctor!! He prescribed very cute pills! I VERY rarely take medicine, but he managed to make me addicted to medicine!! The name of my feeling sick in the evening is anxiety depression." [8]
 - "I think I can't take it anymore. I was very sick all day, but the last approx. in two hours I couldn't even sit, nausea, dizziness, headache (I

don't understand why it doesn't stop), I was so weak, I couldn't even eat a little, first I ate a slice of bread, a slice of ham, and a slice of cake. Until now, only not eating gave me energy. I have to leave home tomorrow because I have two plans, I'll be lying down all day, but if I get this bad again, I don't know if I'll be able to get up. Oh well, at least I didn't have to eat the cake. I've already become weak for this." [8]

- "In May, the very first major one was after my thrombosis, when I read on the internet that you can die if the clot gets in the wrong place. I read it, and then 3 hours later, while watching TV, I had a panic attack. I had a heart attack, we went to the emergency room. Of course, all my finds are perfect. After that, there were 5 more like this that week. M this day, but this was the week when there was a storm and a cold front every afternoon. With those, I already knew it was panic, and they were milder, because I concentrated with my brain that there would be no problem. They were milder, but I was trembling, my chest was tight...and it lasted much longer. Some of them lasted an hour and a half. I tried to read, do crossword puzzles ...but I couldn't pay attention to any of them, my mind always wandered. Now the antidepressant is working, so the attacks are quite mild, but I don't know what will happen if I stop." [8]

Then I searched for keywords: how many times each keyword is listed on each forum. I summarized the results in diagrams. Here I analyzed not only hungarian but also english forums. At the sg.hu forum you can see that the

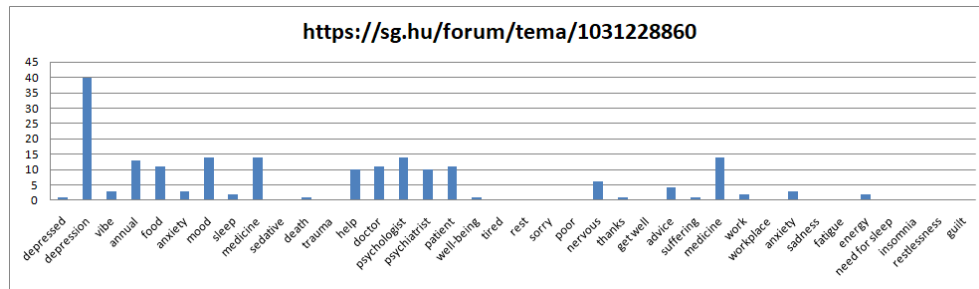


Figure 5. The results of the keyword analysis for the sg.hu depression forum

depression keyword is the most in the keyword list, it is approx. listed 40 times. The following words are also often used in the entries: annual, food, mood, medicine, help, doctor, psychologist, psychiatrist, patient, nervous, medicine.

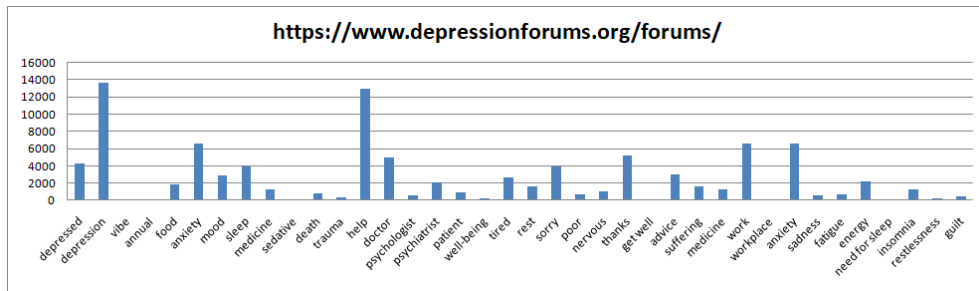


Figure 6. Results of keyword analysis for the depressionforums.org depression forum

The depression and help keywords appear most often on the depressionforums.org forum, occurring more than 12,000 times. The words anxiety, doctor, tired, sorry, thanks, work, mood, sleep are often included.

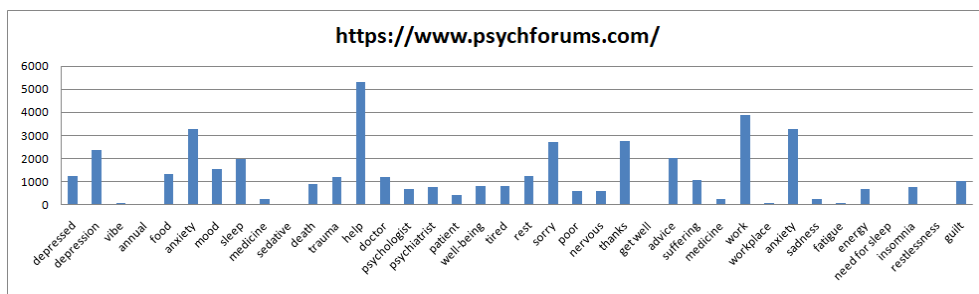


Figure 7. Results of keyword analysis for the psychoforums.com depression forum

The most used keywords in the psychoforums.com forum are help, which is found more than 5,000 times in the forum. The following words are also common: depression, anxiety, mood, sleep, sorry, thanks, advice, work.

The most used keyword from the collection in the mentalhealthforum.net forum is help. In addition, commonly used keywords are depression, anxiety, doctor, psychiatrist, sorry, thanks, advice, work, anxiety.

The most used word on the depression-understood.org forum is depression, which has been used more than 120 times. Also commonly used words are: anxiety, help, get well, work, sorry.

On the dealingwithdepression.co.uk depression forum, depression was the most used keyword, used more than 70 times. In addition, the following words

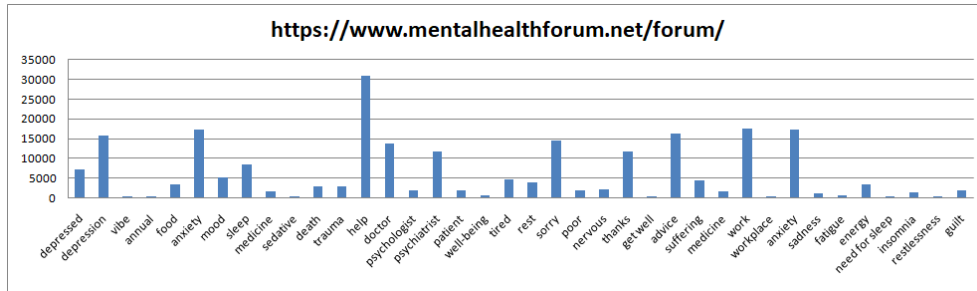


Figure 8. Results of keyword analysis for the mentalhealthforum.net depression forum

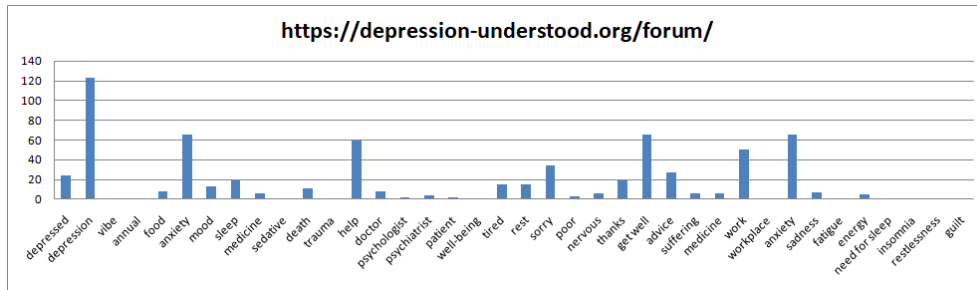


Figure 9. Results of keyword analysis for the depression-understood.org depression forum

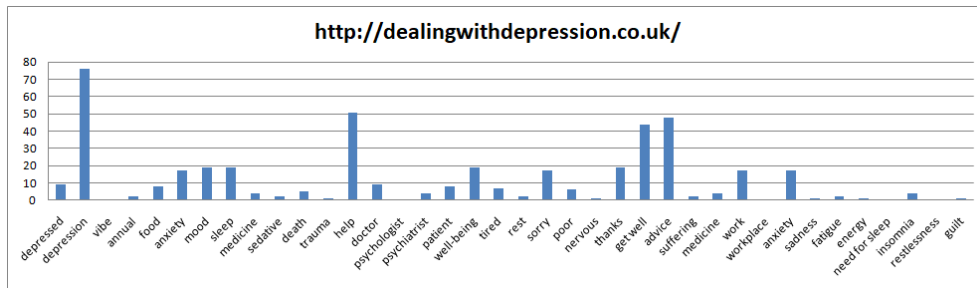


Figure 10. Results of keyword analysis for dealingwithdepression.co.uk depression forum

were often used in posts: anxiety, mood, sleep, help, well-being, sorry, thanks, get well, advice.

The hoxa.hu forum shows that only a few words were used in the posts from the keywords, and these were only used once.

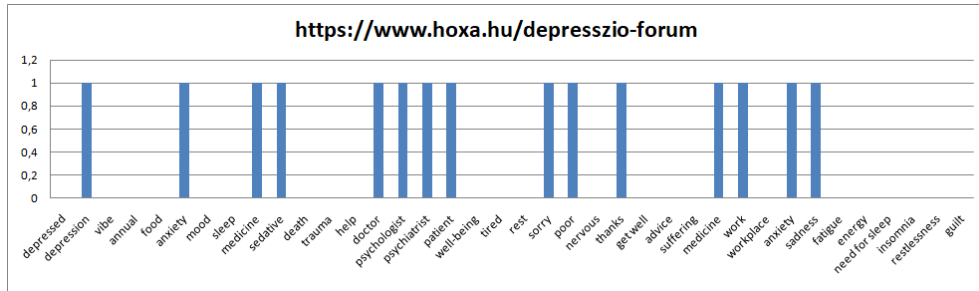


Figure 11. Analysis of keyword results for the hoxa.hu depression forum

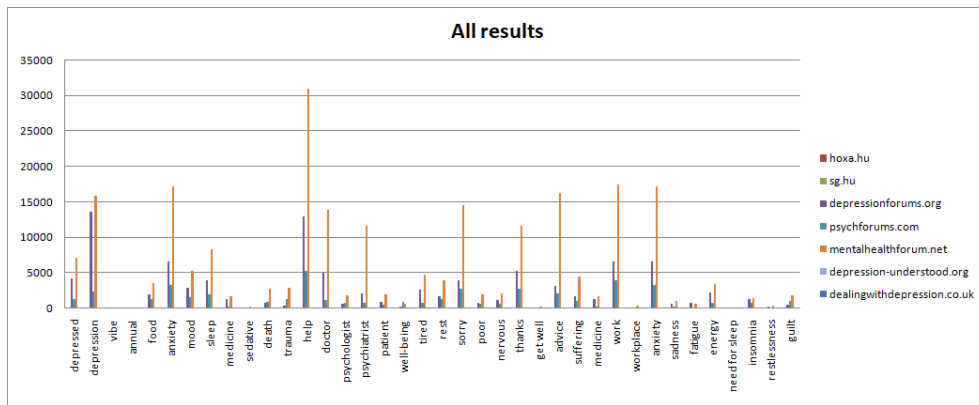


Figure 12. Analysis of keyword results for the depression forums (summary results)

The figure above is a summary diagram that summarizes the results presented above in a single figure. The figure shows that the most commonly used keyword is 'help'. In addition, frequently used keywords include 'depressed', 'depression', 'anxiety', 'sleep', 'help', 'doctor', 'psychiatrist', 'sorry', 'thanks', 'advice', 'work', 'anxiety'.

4. Ontological model

In this chapter, I present depression ontologies. Ontology [14] is a means of representing knowledge that is understandable not only to the computer but also to humans. The ontology represents classes and their properties. Classes can be in a class-subclass relationship, but 2 classes can also be linked by an

object property. An individual is a specific occurrence of a class. We distinguish three types of properties: datatype property, object property, annotation property.

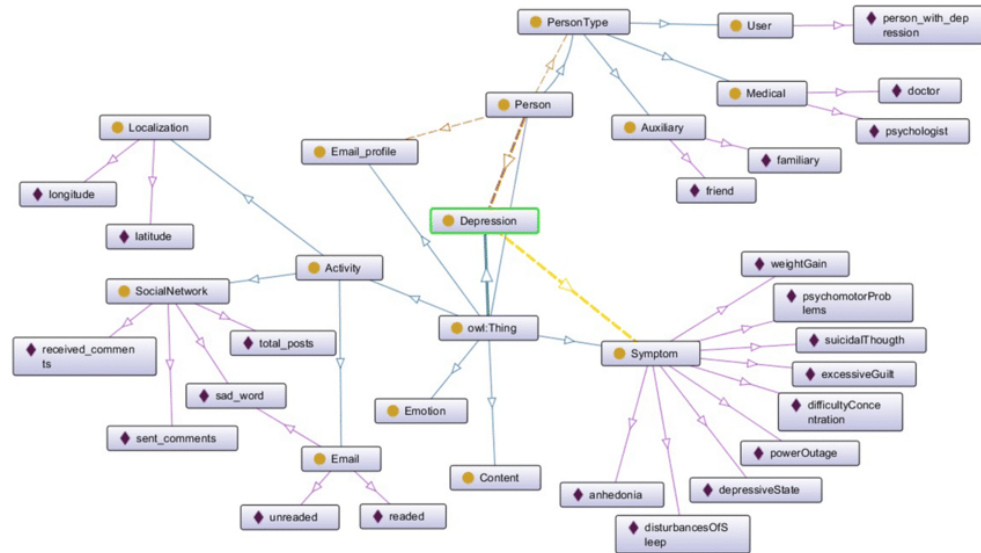


Figure 13. Ontological model of Petry, M. M., Barbosa, J. L. V., Rigo, S. J., Dias, L. P. S., & Büttendener, P. C. [11]

The ontology model shown in the figure above contains classes such as ‘PersonType’, whose subclasses are ‘User’ and ‘Medical’. ‘Medical’ can also be ‘psychologist’ or ‘doctor’. Both ‘Auxiliary’ and ‘Depression’ are associated with ‘Person’. In addition, personal information such as email-related information, ‘SocialNetwork’ information, and the person’s location are stored. One of the most important things, ‘Symptom’ is also stored, which can be ‘weightGain’, ‘psychomotorProblems’, ‘suicidalThought’, ‘excessiveGuilt’, ‘difficultyConcentration’.

The above ontological model contains only classes based on the figure. Contains symptoms of depression. The main classes are written in capital letters, the subclasses (comments) in lower case.

The figure above categorizes the mental illnesses of depression by classes. Subtypes of each type of mental illness represent subclasses of classes.

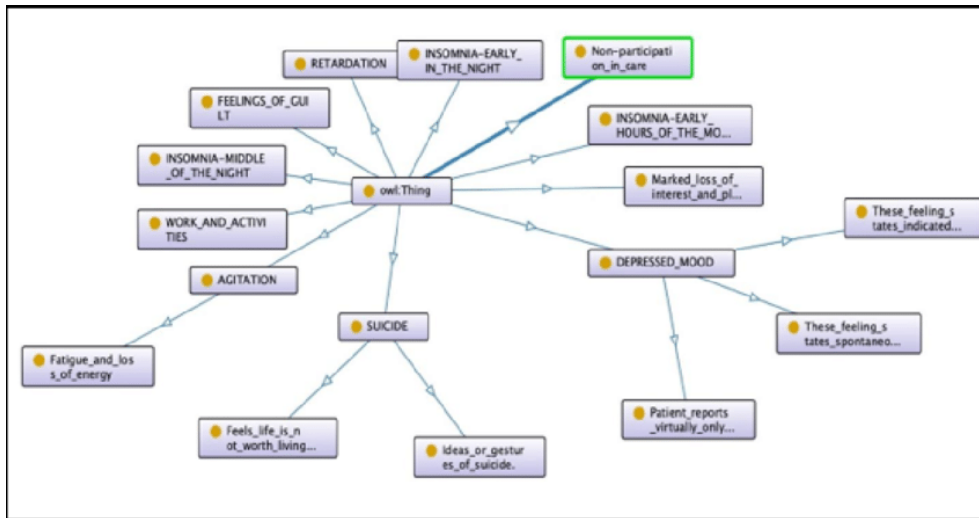


Figure 14. Ontological model of Benfares, C., Akhrif, O., El Idrissi, Y. E. B., & Hamid, K. [12]

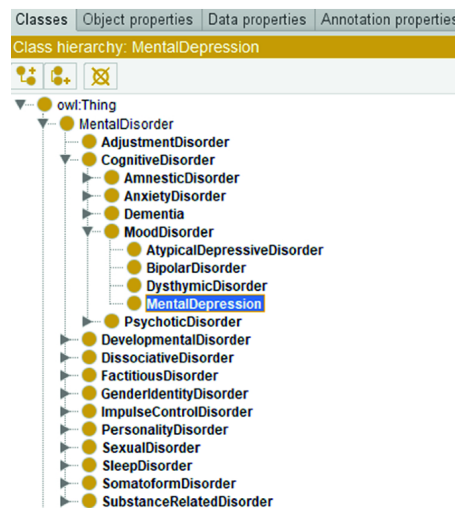


Figure 15. Ontological model of Yamada, D. B., Bernardi, F. A., Miyoshi, N. S. B., Lima, I. B. D., Vinci, A. L. T., Yoshiura, V. T., & Alves, D. [13]

5. Summary

In this article, depression questionnaires and forums are presented. In the article, I used the google scholar search engine to search for the following keywords: 'Depression', 'Depression forum', 'Depression questionnaire'. Then I organized the questionnaires, presented what questions they contain. I then analyzed the posts of the depression forums. I then analyzed a set of keywords to see if and how many times those keywords were included in each forum. Based on these, I found that the most commonly used keyword is 'help'. In addition, frequently used keywords include 'depressed', 'depression', 'anxiety', 'sleep', 'help', 'doctor', 'psychiatrist', 'sorry', 'thanks', 'advice', 'work'. This was followed by a presentation of existing ontological depression systems. My future research is the development of my own depression ontology system.

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