Magpie Summary

Forum design features

Magpie is a social networking platform that facilitates health-related discussions. There are over 700 communities covering a wide variety of topics across physical and mental health. Non-profit organisations can create a forum via an online application form. Individuals and for-profit services providers are not allowed to create forums.

Users without an account are encouraged to search the site, with a search bar asking, "What are you looking for?". The search will show communities and posts from across the website that include the search term. Users without an account can also view posts in a forum, which can be ordered either by "popular" or "latest". Post popularity is measured by the number of likes and replies. To join a community, create posts, like posts, follow others, or use the private chat function, users are required to make an account. To create an account, users must be over 18, have an email address, and create an anonymous username. Users can then opt to complete a questionnaire about why they are using Magpie, what interests they have, and their sociodemographic information. This information can be displayed on their profile and is used to recommend communities and other users to follow. Users can consent to share their anonymized data with research partners.

When logging onto their account, users will see their "Home Feed" which shows recent posts from all the communities they have joined and users they follow. Users can also click on "Explore", which will show recommended communities and users to follow based on their interests and the communities and users they already follow.

The iPOF study focused on four Magpie forums, detailed below in Table 1:

Table 1			
Forum Code	**Community focus**	**Target group**	**N moderators**
Magpie.1	General mental Health Support	Anyone experiencing mental health difficulties.	1
Magpie.2	Eating disorders	Anyone who suffers from an eating disorder as well as parents, friends, families, and professionals.	1
Magpie.3	Post-natal illness	Those who suffer/have suffered with post-natal health conditions including mental health problems.	2
Magpie.4	Postpartum psychosis	Those suffering with postpartum psychosis as well as partners, family members and friend.	9

Moderation

Magpie forums are moderated by the organisation that created them. Moderators are trained through videos, which give an overview of site functions and key moderation features. Moderators have access to various moderation features. They can delete or edit posts, turn off replies, and pin posts to the top of the forum page. Moderators can also restrict members by blocking them from sharing content in their forum. They can also privately message users if needed. Magpie has automated spam detection and filtering which blocks most spammers from sharing content on the platform. All moderators can contact Magpie directly via their email to flag any issues and request support. Both moderators and users can also use the "report" function. Report categories include "Self-harm", "Potentially dangerous advice", "Inappropriate behaviour" and "Underage User". The report is received by Magpie's customer support manager, who can then escalate it for further assessment and action, such as banning an account. Moderators may be paid as part of their role with their charity organisation running the forum.

Language Data

All data was downloaded from the Magpie forums on 01/03/23 with posts dating back to 01/03/16. The data was sent from the Magpie team to the iPOF team, which included all users who had consented to their data being used for research purposes. Across the whole dataset, 1,167 posts were removed due to the users not consenting to posts being used for research purposes, and 8,584 posts were removed because the users had deleted them. This resulted in a total of 99,527 posts included in our dataset, with 9,801,121 words. Table 2 below summarises the number of users registered on each subforum, and the number of users and posts in our dataset. The keywords and topics in each subforum are explored below.

Table 2			
Forum	Number of registered users (as of March 2023)	Number of users in our dataset	Number of posts in dataset
Magpie.1	30,294	6,124	71,227
Magpie.2	3,458	535	4,781
Magpie.3	1,045	79	1,560
Magpie.4	3,313	779	21,959

The Magpie data source did not include any time data with each post; rather each post was logged against a given day, so we are unable to analyse usage patterns at different times of day.

Magpie.1

The magpie.1 data set includes 6124 users, with 71,227 posts across 12,256 threads. This results in a total word count of 6,373,575 words across the whole data set.

The most popular topics discussed in threads are displayed in Figure 1. We see strong indicators for "anxiety" in topic 1, as well as medication-related discussions in topic 2. Topic 5 relates to sleep struggles, while topic 3 seems specifically about bipolar disorders. Topics 0, 4 and 6 seem to focus on personal and social relationships with family and friends.
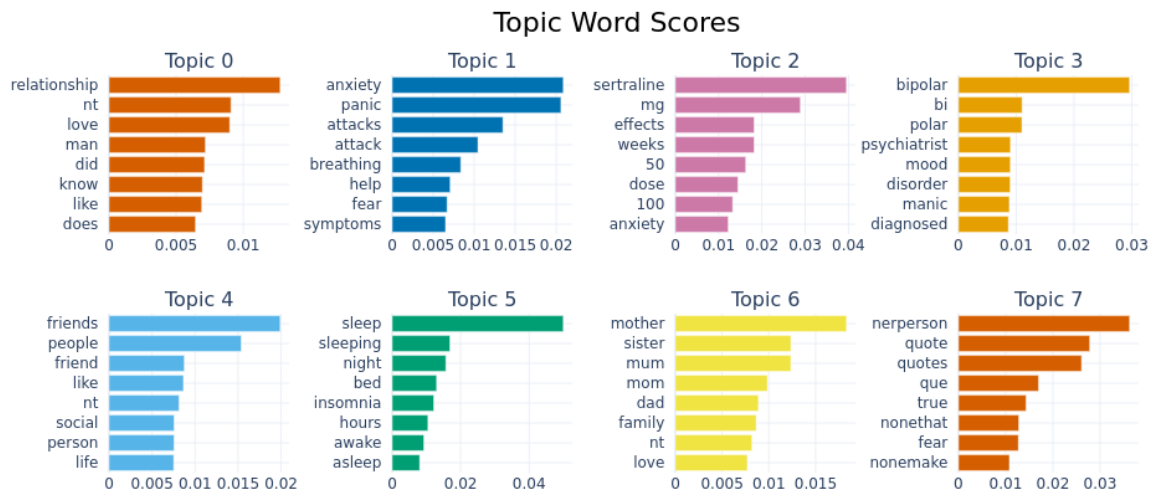
Figure 1 – Topic word scores for Magpie.1, generated by BertTopic

Figure 2 shows the most relevant keywords when compared to the BNC (British National Corpus).

A strong indication for medication-based discussions is shown, with "mg" (milligram) and "medication" featuring strongly. Associated terms such as "diagnosis" and "referral" also appear, although not as highly ranked.

Figure 2 – Keywords in Magpie.1 based on log-ratio score

Magpie.2

The magpie.2 dataset includes 535 users, with 4781 posts over 1071 threads. This results in a total word count of 510,363.
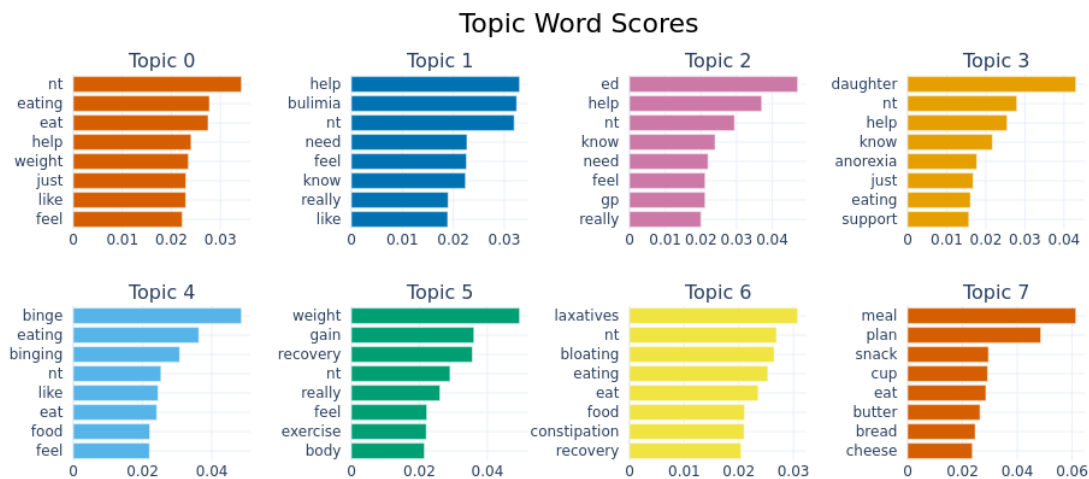

Topic Word Scores

Figure 3 – Topic word scores for Magpie.2, generated by BertTopic

Figure 3 shows the most popular topics discussed in Magpie.2. Topics cover different aspects of eating disorder recovery, including meal plans and food in topic 7, weight gain in topic 5 and binging in topic 4. Topic 3 includes "daughter" and "help" which may indicate carers are using the forum too.

Figure 4 shows the most relevant keywords when compared to the BNC (British National Corpus). Many of the terms here are ones that we would expect from a forum focused on eating disorders: "calories", "disorder", and "eating" occur strongly. Terms relating to weight such as "kg" (kilogram) and "overweight" also appear.

Figure 4 – Keywords in Magpie. 2 based on log-ratio score

Magpie.3

The magpie.3 dataset includes posts from 1560 posts from 79 users over 82 threads. This results in a total of 125,587 words. Figure 5 shows the most popular topics discussed in Magpie.3. Limited topics are generated due to the limited size of the dataset. Topic 1 indicates discussions around symptoms and anxiety.
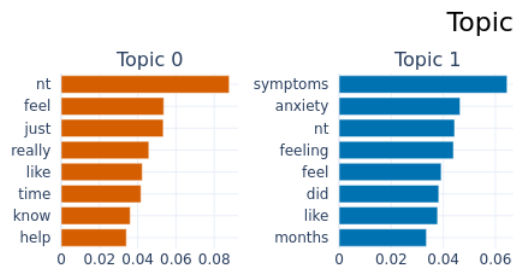

Figure 5 – Topic word scores for Magpie.3, generated by BertTopic

Figure 6 shows the most relevant keywords when compared to the BNC (British National Corpus). Some strongly occurring terms could be expected such as "pregnancy". "Symptoms" occurs strongly which suggests users are discussing their experiences, along with the adjectives "horrendous" and "debilitating".
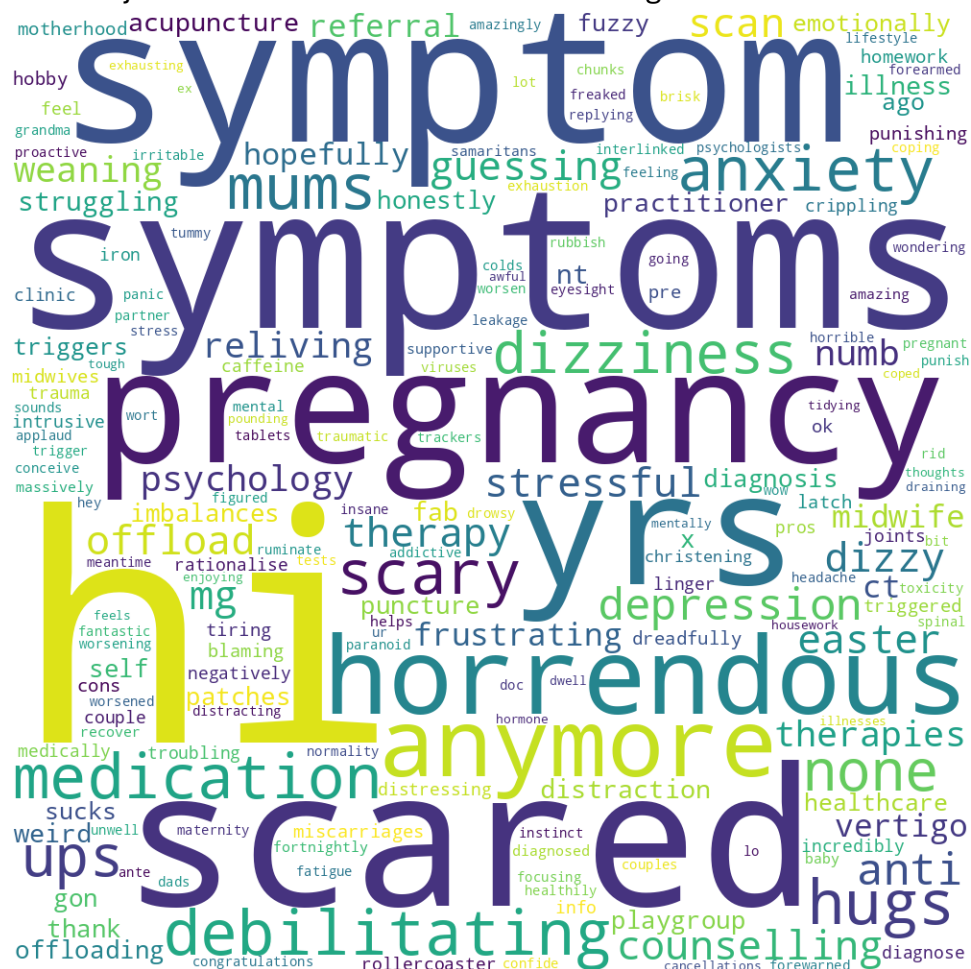

Figure 6 – Keywords in Magpie.3 based on log-ratio score

Magpie.4

The Magpie.4 dataset includes 21,959 posts from 779 users, across 1945 threads. This resulted in a total of 2,791,596 words.

The most popular topics discussed in threads are displayed in Figure 7. Topics 3 and 5 seem focussed on pregnancy-related conversations, while topics 6 and 7 are focused on family members and possibly supporting others. Topic 1 is strongly medication focussed, with "olanzapine" mentioned often.
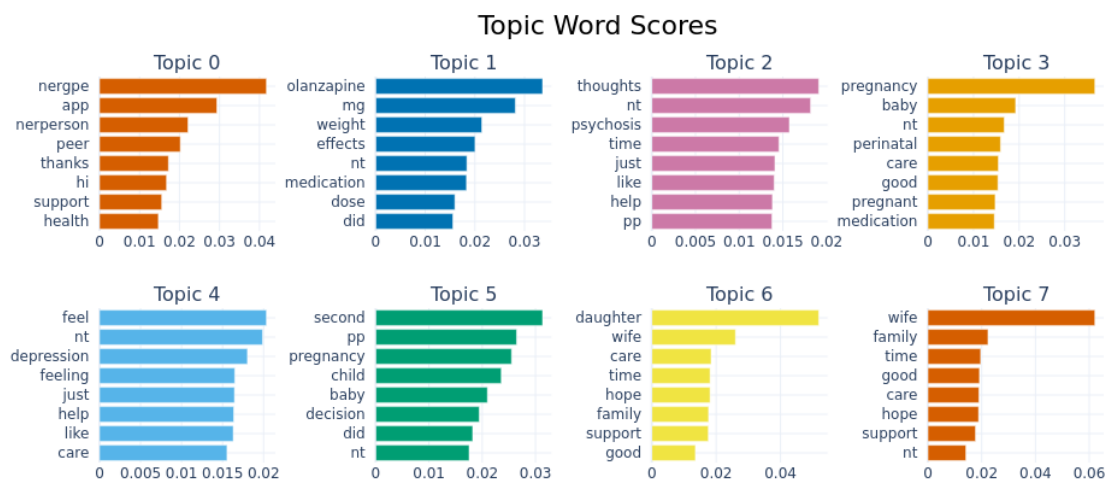

Figure 7 – Topic word scores for Magpie.4, generated by BertTopic

Figure 8 shows the most relevant keywords when compared to the BNC (British National Corpus). This forum focuses mainly on medication and pregnancy terms, with "medication", "lithium" and "pregnancy" featuring strongly. It seems that users talk about their issues around pregnancy and becoming a mother, however there are also frequently occurring support keywords such as "hugs" and "congratulations".

Figure 8 – Keywords in Magpie.4, based on log-ratio score