

## **e-Psychonauts: Conducting research in online drug forum communities**

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### **Abstract**

**Background:** “Legal highs” are becoming increasingly common features of the recreational drug market. The Internet has emerged as an important resource for technical and pharmacological knowledge in the absence of evidence-based literature, and for identifying emerging trends. Self-established drug-related Internet forums have emerged as particularly useful sources of information.

**Aims:** It was the aim of this study to explore the key features of drug-related Internet forums and the drug forum communities.

**Methods:** Within the framework of the larger Psychonaut Web Mapping project, eight English-language drug forums were assessed, and key features, categories, themes and attributions were identified.

**Results:** The results are reported taking into account ethical issues, such as anonymity and confidentiality, associated with research in online communities.

**Conclusions:** This study identified strong, unified and unique communities of recreational drug users that can provide an insight into the growing market in new drugs and drug compounds, and may be key components in future research, harm reduction and prevention strategies.

**Keywords:** *online communities, drug forums, novel psychoactive substances, Psychonaut project*

Over the past decade, the recreational drug market including legal herbal and synthetic “highs”, research chemicals and online pharmaceuticals has expanded rapidly (EMCDDA, 2010). This can be attributed to developments in the manufacture, distribution, administration and communication of new substances of abuse (Butler et al., 2007; Cone, 2006; Hoover et al., 2008; Schifano et al., 2005, 2009). The rapidity with which this recreational drug market evolves means that the information available from evidence-based literature or street level seizures data can be outdated or ill-informed by the time it is published. Research has examined drug-related websites, vendor and manufacturer sites, online headshops as

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source of information for new drugs and related phenomena (Butler et al., 2007; Deluca & Schifano, 2007; Halpern & Pope, 2001; Montagne, 2008; Wax, 2002). The Psychonaut 2002 study found 1633 drug-related websites that adopted either pro-drug, harm reduction or anti-drug positions, and 92 novel compounds for which there was limited evidenced-based information available (Schifano et al., 2006).

In this growing field of research, the understanding of drug-related Internet forums is crucial. However, while there have been a number of studies in online communities in other fields (Feldman, 2000; Gavin et al., 2008; Sharf, 1997; White & Dorman, 2000), research on drug-related forums and chatrooms is underrepresented. The topic of illicit and legal drug abuse and misuse is well suited to Internet-based discussion with its relative anonymity and potential for identity recreation, and apparent freedom from real-world constraints, including geographic and legal boundaries. It has been observed that these self-constructed virtual communities that are established constitute a place where individuals sharing interests in similar albeit unconventional topics can establish a broad, self-renewing and up-to-date network, which might not otherwise have been possible (Giles, 2006; Mautner, 2005). Moreover, online forums allow direct access to a community commonly characterised as hard-to-reach (Stetina et al., 2008).

Online research of user-generated content inevitably raises issues of authenticity, validity and reliability. Issues such as hoax, inaccurate and misleading information all need to be considered when assessing the quality of online content, including drug-related content. However, in online drug forum communities there are some educated and informed users who can provide reliable information about previously unknown compounds and combinations. These “e-Psychonauts” general technical knowledge, and pharmacological knowledge in particular, of compounds can be of an extremely high standard (Schifano et al., 2006). Conversely, with 64% of 15–24 year olds citing the Internet as a potential source of information on illicit drugs and drug use (Eurobarometer, 2011), the communities also function as a destination for new and uneducated individuals.

This assessment formed part of the larger 2-year European Commission funded Psychonaut Web Mapping Project (<http://www.psychonautproject.eu>), aimed at developing a web monitoring system to identify and categorise novel recreational drugs, psychoactive compounds and drug trends based on information available on the Internet. Online drug forums were used as primary sources of information throughout the Psychonaut Web Mapping Project. The present paper aims to identify the central features of a selection of drug-related Internet forum websites and communities monitored throughout the project.

## Methods

### *Psychonaut Web Mapping project*

The details of the Psychonaut Web Mapping project methodology have been outlined elsewhere (Psychonaut Web Mapping Research Group, 2010). At the time of writing, a database of 414 novel compounds and combinations has been developed using this methodology. In addition, 30 more detailed technical folders have been prepared using available evidence-based literature, conducting exploratory online searches, and analysing forum discussions and Internet-based chatter.

*Internet forums*

The Internet forums assessed here include eight drug-related Internet forums, all of which had at least some if not all of their content in English.

If required, forum membership was obtained via registration. If upon obtaining membership, the researcher was banned from the forum by the moderator or an administrator, no reapplications for membership were made. An unobtrusive observational approach was taken, and forum posts and threads were viewed only. No posts or other contributions to private or public forum discussions were made, and no information or clarification of content was sought by any members of the research team.

*Data collection and assessment*

As the data collection formed part of the larger Psychonaut Web Mapping project, the threads and posts accessed were initially selected based on their relevance to the qualitative exploratory searches or specific technical folder searches conducted. In addition, relevant links or threads of interest were selected on a weekly basis. Data were collected from November 2008 to November 2009. However, the threads include archived posts, so content also dated back from the assessment period.

Data were collected by taking screenshots of specific website pages, posts or threads, and archiving using specific software. In addition to the general URLs for the site, the specific URLs of pages were also recorded.

Descriptive data for each of the forums were collected, including the forum name, URL, user numbers, membership status and forum features. Some of the themes, categories and attributions associated with the forums were identified and explored.

*Reporting methods*

A standard practice for the reporting of the results from research in drug-related forums and online communities has not yet been established. There are various ethical issues, particularly with regard to informed consent, confidentiality, anonymity and privacy that need to be taken into account when conducting research in online communities, and have already been explored with regard to research conducted in pro-anorexia online communities and patient support groups (Eysenbach & Till, 2001; Gavin et al., 2008; Giles, 2006; Kraut et al., 2004; Rodham & Gavin, 2006).

There are strong arguments for the anonymisation of certain details of both the forum groups and the forum users (Eysenbach & Till, 2001; Kraut et al., 2004). Here, we have not reported the usernames of forum contributors. Although these are often pseudonyms, they may still be considered personally identifiable. It is possible, even with the provision of false or misleading information, to discover a range of personal and biographic details via the use of simple Internet and IP address search techniques. Moreover, forum users are not able to give informed consent, and while the Internet is a public space there may be an expectation of privacy, particularly given the often sensitive nature of the issues being discussed. The publication of these details may also compromise the principle of free and open discussion present in the forums or hinder future research, harm reduction and prevention activities carried out in these communities.

For the same reasons, we have not included many large verbatim user quotes from forum posts. By entering the quote into an Internet search engine, it is sometimes possible to identify the source text and username. Where quotes have been included, the visibility of

these has been checked. In addition, forum names and URLs have been anonymised for the purposes of reporting in this paper. However, there is an argument to be made that anonymisation only need to be applied to private forums, as these explicitly imply an expectation of privacy by having strict membership policies and not accepting unknown members.

The Psychonaut Web Mapping project was cleared for ethical approval by the Wandsworth Local Research Ethics Committee, which formally approves the research activities of St George's University of London, St George's Hospital Medical School, the St George's Healthcare NHS Trust and the South West London NHS Trust.

## Results

### *Descriptive data*

A description of the forum sample including member numbers, membership status, active status and forum features is found in Table I. Some data were not available due to issues of accessibility and stability.

### *Accessibility*

Forums could be classified as either open or closed. Open forums are those for which membership or subscription is not required to view messages, posts or threads. In some

Table I. Forum sample.

Forum No.	Member Nos.	Membership status	Active	Features		
				Additional materials	Synchronous chat availability	Other
1	53 322	Open	Active	Wiki, documents, images, audio, video, blog, groups news	Chat, private message	Dutch and German language sections
2	113 957	Open	Active	Blog, news	Private message, Internet Relay Chat (IRC)	Region specific forums (Australia and Asia, Europe and North Africa, North America and South America)
3	11 122	Open	Active	Article archive, image, news, vendor directory, RSS		
4	16 718	Open	Active	"Trip" reports		
5	NK <sup>†</sup>	Open	Inactive	Links to vendor site	Private message	
6	3733	Closed (part)	Active		Private message, IRC	
7	6656	Closed (part)	Active		Private message	
8	NK <sup>†</sup>	Closed	Active	NK <sup>†</sup>		

<sup>†</sup>Not known: details could not be accessed.

cases, membership may be required to post messages but content remains publicly accessible. The open drug forums tended to be sites aimed at information provision and education with a focus on harm reduction.

In the closed forums, some or all of the pages were hidden from public view. This included restriction of access to the entire site or open access to general content and restriction to either all or some of the drug-related content on the site. In all cases, membership was required for unrestricted access to both view and post messages on the site. Registration processes and conditions varied but in all cases required a username and valid e-mail address. In addition, some forums found ways of limiting the site visibility. For example, by blocking Internet search engines from searching the site or including the site in their results lists.

Membership to one forum became progressively more limited following increased media and political attention surrounding certain legal highs, in particular the stimulant research chemical Mephedrone (Schifano et al., 2011). Unwanted interest in what had been a largely underground phenomenon led many forum users to be more conscious about who may be accessing particular discussions and threads.

...have a lot of posts ... to back yourself up ... you could be a reporter or someone and that is the last thing we want, someone to make a report and turn everything into a big lie

### *Stability*

Unlike scientific publications, journals and books, websites do not have a guaranteed stability over time. Just as new websites appear on regular basis, others are shut down for various reasons. In most cases, this renders the site inaccessible. Over the duration of the study, well-known forums closed down, and specific threads from otherwise active forums were also removed. In two cases, forums observed were closed down that were connected with vendor websites selling various research chemicals and synthetic compounds online, perhaps as a result of potential legal problems that may have arisen out of the association.

### *In- and out-group dynamics*

Despite the geographical and social spread of forum members, a strong identity and group cohesion within these virtual communities were identified. This was observed in the mass migration of members between forums following the opening of new forums, the temporary or permanent closure of sites, or technical problems with existing forums, which showed a commitment to protecting the community and keeping the members unified.

In addition, there appeared to be a strong sense of shared experience. There were examples of forum users engaging in and arranging synced or group trips (whereby a time is decided at which every poster will consume a particular substance with the aim of sharing the experience and exploring a different “space”), live trips (where users comment on their experiences as they occur) and real-world social meetings and events for forum sub-groups.

The communities also functioned as social support and advice mechanisms for crises, overdose and the deaths, drug-related or not, of other forum members, who are also mourned on the sites. Advice was offered via open forum post, private messages or dedicated threads. General warnings were also issued when certain vendors or compounds were found to be associated with negative consequences, demonstrating elements of both self-protection as well as an attempt by the communities to offer a wider harm-reduction message.

The idea of reversing negative public opinion and the importance of this for the community was also observed. In this instance, forum users raised concern about unknown and potentially harmful products being sold without warning. Posters put forward the idea of being,

“...seen, as a community”, to be “against these products ... of unknown content or quality” and “as the potential harm they really are”, and to approach, “the relevant drug bodies with the information” that they as a community can gather “to [garner] their respect and, maybe, their ear”.

### Membership

Membership levels were built into all of the forums assessed. *Moderators* and *administrators* and experienced members who posted on a regular basis were given certain privileges and/or access to other forums, private chats or specific content. Their advice, validation, recommendations and warnings were trusted, and helped to inform newer and lower ranked members. For example, there was scepticism about whether or not certain commercial products, such as herbal blends and pills, were actually psychoactive. When discussing a particular product that was under question one poster commented,

Did you notice the posts from moderators and other prominent members? Swim was sceptical as well, but....

While there were instances of incorrect, false or hoax information being posted, some experienced members and moderators displayed a high calibre of knowledge, particularly with regard to the technical and pharmacological properties of novel compounds and in identifying unknown active ingredients of new products.

Experienced members were often the first to report experimenting with new compounds but also often reported stopping using a compound if they judged the risks associated with using it as outweighing the psychoactive effects, or if they classified the substance as impure or “dirty”. Moreover, some members were also members of more than one forum giving their influence quite a wide reach, and making them recognisable sources on the various sites.

A clear divide was observed between forum members and outsider groups (*narcs* and *lurkers*), including unreliable vendors, journalists suspected of misinterpreting content, police suspected of trying to criminalise forum users and researchers suspected of conducting biased research. Members did not want the community to be threatened or misrepresented.

### Language

Forum-generated and forum-specific language was observed. In some forums, self-incrimination was seen as an important issue. The labels SWIM (Someone Who Isn't Me), SWIY (Someone Who Isn't You) and other similar variations were used. Alternatively, posts were written as a third person narrative, beginning with phrases such as *my monkey tried substance A* or *my goldfish tried substance B*.

In addition to the terms used to identify other users and outsiders, such as *newbies*, *narcs* and *lurkers*, terms for identifying other forums and vendors without explicitly stating the

name were also used. These included abbreviations, the use of symbols and the use of nicknames or pseudonyms.

Lastly, the forums contained drug-related slang for new and existing substances, as well as slang terms for routes of administration and other drug-related behaviour. The compilation of a slang thesaurus has been a secondary output of the Psychonaut Web Mapping project.

## Discussion

The compounds being consumed, methods of administration, terms of reference, knowledge, information sources and social networks of drug users are evolving, and drug-related Internet forums occupy an important role within this changing drug scenario. The current assessment has explored some of the key features of drug-related Internet forums, and the online forum community. While further, more in-depth research of the issues explored is required, this assessment has identified strong, unified and unique communities of recreational drug users that can provide an insight into the growing market in new drugs and drug compounds, and may be key components in future research, harm reduction and prevention strategies.

The issues explored will inform a methodology to appropriately and most effectively use drug forums in research. With regard to accessibility and stability, information about the website, threads and posts beyond a generic URL needs to be appropriately recorded, including complete URLs for specific pages, taking screen shots and using specific archiving software. Furthermore, regular monitoring is needed to keep up-to-date with changes in the content and features of existing forums, and the emergence of new forums and sites. Verifying the quality of the information obtained, even though there is often very little available, is also important. Given that the forums are an unregulated, user-led source, information can be inaccurate or intentionally misleading. In the case that information cannot be confirmed by evidenced-based literature, checking the posters credentials, evaluating the posts within a wider context and finding the same experiences or assertions reiterated in other threads or forums can help to determine whether or not the information is valid.

In terms of public health, there are potential uses for drug-related Internet forums to inform research, policy, clinical knowledge, treatment, education and prevention approaches, particularly when for many of these novel compounds and combinations there is an absence of other more traditional primary sources of information. Incorporating the forums and the information that they provide into a targeted harm-reduction prevention approach is a particular, but worthwhile, challenge. This would involve exploring ways of effectively compiling, translating and communicating the information available for specific purposes and target groups, critically analysing the content of information for quality, reliability and accuracy, and developing relationships within the forum community in an attempt to involve them in the delivery of balanced, informed prevention messages. Although there is research to suggest that the provision of information on an unknown drug does not have counterproductive effects (Whittingham et al., 2009), a harm-reduction approach would need to be balanced with the potential risk of iatrogenic or negative effects associated with the provision of information on relatively unknown psychoactive substances, particularly to naïve or uninitiated users. However, given the absence of information on a large number of novel psychoactive compounds available and the paucity of research on the possible short- and long-term harms associated with their use, the delivery of relevant, targeted, harm reduction information to different target groups is an important part of the public health response to this phenomenon.

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