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Acceptance of the German e-mental health portal www.psychenet.de: an online survey

Lisa Tlach, Juliane Thiel, Martin Härter, Sarah Liebherz, Jörg Dirmaier

Background. Taking into account the high prevalence of mental disorders and the multiple barriers to the use of mental health services, new forms of fostering patient information, involvement, and self-management are needed to complement existing mental health services. The study aimed at investigating acceptance regarding design and content of the e-mental health portal www.psychenet.de. Methods. An online cross-sectional survey was conducted between May 2013 and May 2015 using a self-administered questionnaire including items on perceived ease of use, perceived usefulness, attitude towards using, and perceived trust. Effects of different participants’ characteristics on the portals’ acceptance were analyzed. Results. The majority of the N=252 respondents suffered from mental disorders (n=139) or were relatives from persons with mental disorders (n=65). The portal was assessed as “good” or “very good” by 71% of the respondents. High levels of agreement (89-96%) were shown for statements on the perceived ease of use, the behavioral intention to use the portal, and the trustworthiness of the portal. Lower levels of agreement were shown for some statements on the perceived usefulness of the portals’ content. There were no effects of different participants’ characteristics on the perceived ease of use, the perceived usefulness, the attitude towards using the website and the perceived trust. Discussion. This survey provides preliminary evidence that the e-mental health portal www.psychenet.de appears to be a usable, useful and trustworthy information resource for a broad target group. The behavioral usefulness of the portals’ content might be improved by integrating more activating patient decision aids.
Acceptance of the German e-mental health portal www.psychenet.de: an online survey

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Abstract

**Background.** Taking into account the high prevalence of mental disorders and the multiple barriers to the use of mental health services, new forms of fostering patient information, involvement, and self-management are needed to complement existing mental health services. The study aimed at investigating acceptance regarding design and content of the e-mental health portal www.psychenet.de.

**Methods.** An online cross-sectional survey was conducted between May 2013 and May 2015 using a self-administered questionnaire including items on perceived ease of use, perceived usefulness, attitude towards using, and perceived trust. Effects of different participants’ characteristics on the portals’ acceptance were analyzed.

**Results.** The majority of the N=252 respondents suffered from mental disorders (n=139) or were relatives from persons with mental disorders (n=65). The portal was assessed as “good” or “very good” by 71% of the respondents. High levels of agreement (89-96%) were shown for statements on the perceived ease of use, the behavioral intention to use the portal, and the trustworthiness of the portal. Lower levels of agreement were shown for some statements on the perceived usefulness of the portals’ content. There were no effects of different participants’ characteristics on the perceived ease of use, the perceived usefulness, the attitude towards using the website and the perceived trust.
**Discussion.** This survey provides preliminary evidence that the e-mental health portal www.psychenet.de appears to be a usable, useful and trustworthy information resource for a broad target group. The behavioral usefulness of the portals’ content might be improved by integrating more activating patient decision aids.
**Introduction**

Over a third of the total EU population suffers from mental disorders with anxiety and mood disorders being the most frequent mental disorders (Wittchen et al. 2011). However, mental disorders are often not detected; only about one third of patients receives adequate treatment, and access to treatment is complicated by system-related barriers (Mack et al. 2014). In most epidemiological studies, service use of mentally ill people ranges between 2% to 18% (Wang et al. 2007). Given the structural problems of the mental health care system, new forms of fostering patient information, involvement, and self-management are needed to complement existing mental health services. Therefore the development of innovative treatment approaches that are available to a large population is recommended (Christensen & Petrie 2013).

**Bridging the Gap through Web-based Health Applications**

The Internet is widely seen as an effective complementary source for addressing these issues. As it reaches a large number of people, a reduction of barriers to the use of health services is facilitated by anonymity and high accessibility. It holds the opportunity to deliver interactive content that is tailored to the needs of the target group at comparatively low cost to a large number of users at the time, place and learning speed the individual user prefers (Arnberg et al. 2014). Internationally, health services have increasingly expanded into online environments leading to the development of e-mental health services that are designed to complement, rather than replace existing mental health services. They hold the opportunity to reach people who live in remote areas or those with disabilities and without easy access to health care services (Anderson et al. 2013; Benavides-Vaello et al. 2013; Carrard et al. 2006). Furthermore, people
who refuse to seek out traditional services, especially those who wish to remain anonymous, may
utilize e-mental health services (Townsend et al. 2012). E-health services may empower patients
to participate in treatment choices and to take control and responsibility about their own health
and care by improving access to services and information (Alpay et al. 2010; Alpay et al. 2011;
Xie et al. 2013). A German national survey found that people increasingly take advantage of
these opportunities (Eichenberg et al. 2013).

However, the quality and usability of mental health information on the World Wide Web is
limited (Reavley & Jorm 2011) and the effectiveness of e-health interventions is limited by high
attrition rates (Geraghty et al. 2013); most users visit health intervention websites only once
(Brouwer et al. 2010; Verheijden et al. 2007). Additionally, reading levels of web-based patient
materials are partially too high for the average user, not taking into account the large variance of
health literacy in the population (Stossel et al. 2012). As persons with lower educational levels
and respective persons with lower literacy levels might show less beneficial effect by using
patient education materials (Goossens et al. 2014; Murphy et al. 2000), effects of educational
levels on the acceptance – among other participants’ characteristics – should be accounted for in
the interpretation of evaluation results.

The German E-mental Health Portal www.psychenet.de

A current project being part of the public-funded intersectoral research network psychenet - the
Hamburg Network for Mental Health is aimed at developing and evaluating an e-mental health
portal. With psychenet, the Federal Ministry of Education and Research contributes to
strengthening healthcare regions in Germany by establishing new trans-sectoral cooperations and
by implementing and evaluating selected health care innovations (Härter et al. 2012). The portal
www.psychenet.de is intended to increase the users’ knowledge and to empower them to be active partners in medical decisions and the management of their mental strain.

In a first step, a basic version of the portal (comprising evidence-based patient information on a wide range of mental disorders and information about local treatment services) was developed to complement a region-wide awareness campaign on mental health in the metropolitan area of Hamburg that includes an award-winning media campaign (placards, cinema ads, radio ads) and specific educational projects (Härter et al. 2012). In order to obtain first evidence about the usability of the website, common web metrics were obtained via open source web analysis tools (e.g. Google Analytics). As a following project step, various modules have been developed for six of the most common mental disorders - depression, somatoform disorders, eating disorders, alcohol use disorders, psychotic disorders and anxiety disorders (Wittchen et al. 2011); e.g. patient decision aids (PtDAs), self-help tools, and screening tools. According to the International Patient Decision Aid Standard (IPDAS) collaboration criteria (Elwyn et al. 2006), the development of the modules has been based on a comprehensive mixed-methods needs assessment (focus groups, online-survey) among patients, relatives, and health care professionals. The technical development of the website has been commissioned by a professional web-design agency. The design and content of the portal and the results of the website using web metrics are described in detail elsewhere (Dirmaier et al. 2015). While the information about treatment services refer to the metropolitan area of Hamburg and the media campaign and specific health education projects were restricted to this region, the other tools (e.g. evidence based patient information (including fact sheets on several mental disorders and other basic facts concerning mental health as well as PtDAs) and screening tools) are not targeted specifically to this region.
The present study aimed at investigating acceptance regarding design and content of the basic version of the e-mental health portal www.psychenet.de addressed at individuals with mental disorders, their relatives, service providers, and the interested public. The portal should be assessed through the following aspects of acceptance: 1) perceived ease of use, 2) perceived usefulness, 3) attitude towards using the website, 4) perceived trust, and 5) overall evaluation. A further aim was to explore effects of different participants’ characteristics (sex, age, educational level, place of residence, experience with mental disorders, first time/multiple portal users, participation before or after the integration of the first PtDA) on the portals’ acceptance.

Methods

Design and participants

The research team employed an online cross-sectional study using a self-administered survey. Online convenience sampling was conducted on our e-mental health portal www.psychenet.de. On each page of the portal, teasers were sited linking to a short invitation to participate in the survey. Users being interested were referenced to the survey that was arranged following detailed information about the studies’ aim, procedure, and data security. Adult users (18 years or over) who gave written informed consent to participate (asked at the beginning of the questionnaire) as well as consent to data use (asked when participants had finished the questionnaire) were included in the analyses. There were no additional inclusion or exclusion criteria.
Ethics Statement

Approval for the study was obtained from the ethics committee of the Hamburg Medical Association (Process number: PV4157).

Data collection

The data were collected between May 2013 and May 2015 (24 months). A short, face-validated questionnaire comprising 33 items was developed for the study. The questionnaire comprised 3 main sections: (1) baseline characteristics, (2) acceptance and usability, and (3) overall evaluation.

Baseline characteristics

Baseline characteristics were elicited using 4 items on sociodemographic variables (age, gender, education, postal code). Furthermore, 3 items were used to explore respondents’ experience with mental disorders (4 options), how they accessed the website (3 options), and how they learned about the website (8 options including the option for a free answer). Previous internet use was explored on a 3-point scale (“(almost) every day”, “at least once a week”, “at least once a month”) and frequency of use of the portal was elicited on a 4-point scale (“first time”, “< 5 times”, “> 5 times”, “> 10 times”).

Acceptance and usability

In order to assess the acceptance and the usability of the portal, respondents rated up to 22 items on a 4-point Likert scale (1=disagree, 2=somewhat disagree, 3=somewhat agree, 4=agree). Number of scale points and wording of the Likert scale were defined based on Chang (1994). According to a previous study on the acceptance of an e-health application (de Graaf et al. 2013),
participants were asked to rate statements covering 3 dimensions of the Technology Acceptance Model (TAM); see Davis (1989) and Chau & Hu (2002): perceived ease of use (8 items), perceived usefulness (10 items including 2 filter items for respondents being affected by mental disorders and 1 filter item for respondents being a relative of a person with mental disorders), and attitude towards using (2 items). The TAM dimensions were added by the dimension perceived trust (2 items) as it was shown to be a relevant quality criterion as seen by patients with long-term conditions and caregivers (Kerr et al. 2006) and it affects consumers acceptance of health technologies (Lemire et al. 2008; Wu et al. 2008).

Overall evaluation

In order to elicit an overall rating of the portal, respondents were asked to rate the portal on a 6-point scale based on the grading system used in German schools (1=very good, 2=good, 3=satisfactory, 4=sufficient, 5=deficient, 6=insufficient). Finally, a facultative open field for comments and suggestions for improvements was provided. Before the questionnaire was used, it was pilot tested among 10 student assistants and research assistants not participating in this study.

Data Analysis

Quantitative data analysis

The professional web-based online survey software EFS Survey (Questback GmbH) was used for the electronic data collection. The statistical software package PASW Statistics 18 (SPSS Inc., Chicago IL) was used to analyze the data. Data were primarily evaluated by quantitative descriptive data analysis. In order to quantify responses, means, standard deviations, and
frequency distributions were calculated for each item on acceptance. Moreover, median, range, and frequency distribution were calculated for the overall rating.

To explore effects of different participants’ characteristics (sex, age, educational level, place of residence, experience with mental disorders, first time/multiple portal users, participation before or after the integration of the first PtDA) on the acceptance and usability of the website, one-way analyses of variance (ANOVAs) were conducted for interval scaled variables (four dimensions of acceptance and usability) and Kruskal–Wallis H test for ordinal scaled variables (overall evaluation). P<0.05 was considered to be significant for all analyses. The significance level was not adjusted as the tests served to generate hypotheses.

Qualitative data analysis

Qualitative data analysis was used to analyze the open field question using an inductive approach. Responses were categorized into five main categories: 1) negative appraisals, 2) positive appraisals, 3) suggestions for improvement, 4) not related to the website 5) no comment. Responses that included a number of themes were subdivided into various units and separately categorized. The coding was carried out by three members of the research team (LT, JT, SL).

Results

During the investigation period of 24 months, 14.000 to 36.000 visitors per month were registered through web analysis software. 1030 visitors of the portal started the web-based user survey. Of these, 314 completed the questionnaire (38.3% of those who agreed to participate). Finally, 252 participants gave their consent for the use of data (see Figure 1).
Participants

Of the 252 respondents, 55.2% (n=139) were affected from mental disorders. The respondents were predominantly female (64.3%, n=162), well-educated (middle or high educational level: 75.8%, n=191) and had a mean age of 42.2 years (SD=15.0). The majority of the participants (90.5%, n=228) are using the internet (almost) every day. 57.5% of respondents (n=145) stated that they learned about the portal through online search for mental illnesses. 14.3% (n=36) learned about the portal through the projects’ media campaign (cinema adverts, poster, YouTube channel, postcards). Of the total sample, 73.4% (n=185) reported that they were visiting the portal for the first time. For detailed baseline characteristics and frequency distributions of access paths and website use see Table 1.

Acceptance of the portal

Table 2 shows the percentage of users who agreed/disagreed to statements covering several aspects of acceptance, ordered separately for each dimension by the percentage of participants who agreed.

Perceived ease of use

89 to 96% of participants agreed with the particular statements concerning the perceived ease of use.

ANOVA results yielded no significant main effects of participants’ characteristics for items associated with perceived ease of use.
Concerning the perceived usefulness, the items concerning the usefulness of the content (interesting, new, appropriate amount of information, helpful, useful) gained the highest level of approval (79-93%). Lower levels of agreement from the perspective of the respondents living with mental disorders were shown for statements concerning the improvement of the communication with relatives or health care providers (51 respectively 60%). Concerning the affected peoples’ relatives, 72% confirmed that they were now able to talk better about mental disorders with their relative being affected.

ANOVA yields no significant main effects of participants’ characteristics for items associated with perceived usefulness.

Concerning the attitude towards using the website, more than 90% of the respondents agreed that they would recommend the website to others respectively would revisit the website if needed.

ANOVA yields no significant main effects of participants’ characteristics for items associated with the attitude towards using the website.

The majority of respondents (94-96%) agreed that the information on the website was trustworthy and that the information on the website was up to date.

For items associated perceived trust, ANOVA yields no significant main effects of participants’ characteristics.
Overall evaluation

Almost three thirds of the respondents (71.4%, n=180) assessed the website as “very good” (n=60) or “good” (n=120). 21.0% of the participants (n=53) rated the website as “satisfactory” (n=39) or “sufficient” (n=14). Only 7.5% (n=19) marked the website as “deficient” (n=13) or “insufficient” (n=6). Overall, the ratings of the whole sample displayed a median of 2.0 (IQR=1-6).

Kruskal-Wallis H test revealed no significant effect of age, educational level, place of residence, frequency of portal use and the date of participation (before/after the integration of the first PtDA) on overall evaluation.

Women were more satisfied with the portal than men (p = 0.019). The experience with mental disorders was also significantly associated with the overall evaluation (p = 0.037) with the best rating in experts and the worst rating in people without experiences with mental disorders.

Qualitative analysis

The open field question was responded by 58 participants. The answers were subdivided into 64 different statements. Seven participants explicitly mentioned that they had no comment. Five statements addressed the online survey and one statement addressed the general attitude towards people with mental disorders. All other statements refer directly to the e-health portal. There were 31 suggestions for improvement (e.g. the need for additional tools or topics, more in-depth information or regional expansion). Fifteen positive appraisals addressed knowledge and empowerment, the appropriate depth of information and the usefulness for newly diagnosed people among other topics. There were five negative appraisals concerning, for example,
incomprehensible information (too many technical terms) or the insufficient suitability for adults with bipolar disorders.

Discussion

As a consequence of multiple barriers in mental health service provision and access, a considerable proportion of persons living with mental disorders do not receive adequate treatment (Wang et al. 2007). Internationally, but not yet in Germany, mental health services have increasingly expanded into online environments leading to the development of e-mental health services. Within the framework of an intersectoral research network the e-health portal www.psychenet.de addressed at individuals with mental disorders, their relatives and service providers has been developed recently. In this online study, acceptance regarding design and content of the portal was investigated.

In the present study, 252 users of the e-mental health portal www.psychenet.de were included. Overall, the portal was assessed as “good” or “very good” by a substantial percentage of respondents. Moreover, high degrees of approval were found for statements on perceived ease of use. Comparable rates of agreement were found in an evaluation study on the usability of a web-based patient information system for individuals with severe mental health problems (Kuosmanen et al. 2010). Likewise, high levels of agreement were shown for statements on the behavioral intention to use the portal or to recommend it to others and regarding the trustworthiness of the portal. Lower levels of agreement were partly shown for some statements on the perceived usefulness. Concerning the usefulness of the portal in improving communication, relatives show higher levels of agreement than the respondents living with
mental disorders. In a recent study, Berk et al. (2013) reported comparatively higher levels of agreement regarding the usefulness of a website containing guidelines for caregivers of adults with bipolar disorder. Likewise, a study on the acceptance of a web-based e-health intervention for parents of children with infantile hemangiomas showed higher agreement rates (de Graaf et al. 2013). It is assumed, that the higher acceptance was due to the fact that the respective website was aimed at one target group (caregivers) and one narrowly defined topic (bipolar disorders, infantile hemangiomas). However, in an evaluation study on the user acceptance of a website for cancer patients with a more broad range of topics, higher levels of agreements were reported for ease of use compared to usefulness as it was also shown for the current study (Wallwiener et al. 2010). Additionally, it should be noted that such comparisons are difficult to interpret as the studies probably varied substantially with respect to relevant characteristics such as ways of recruitment, response rates and users’ experience with the respective portal.

Facing the fact that there were no effects of different participants’ characteristics on the perceived ease of use, the perceived usefulness, the attitude towards using the website and the perceived trust, it can be assumed that the e-mental health portal is suitable for a broad range of users. Concerning the overall evaluation, there are some differences depending on users’ characteristics: Women are more satisfied with the portal than men. As there are no sex differences regarding the other items, the difference results maybe from a differing answering behaviour regarding overall ratings. Additionally, the overall evaluation depends on the experience with mental disorders, indicating that experts are more pleased with the portal than affected people and relatives and all these three groups are more pleased than people without experiences with mental disorders. As the portal is targeted to experts, affected people and relatives, the last-mentioned result is not surprising.
Fortunately, the educational level had no influence on the acceptance and usability of the portal, suggesting that respondents with lower educational level are also able to benefit from the information presented at the portal. However, most respondents are well-educated and we do not know if this reflects the typical users’ characteristics or if well-educated users are more likely to participate in the survey.

This analysis of acceptance offers preliminary evidence that the e-mental health portal www.psychenet.de appears to be a usable, useful and trustworthy publically available information resource for adults living with mental illness, their relatives and experts working with mental disorders. The acceptance of the portal is further resembled by the high percentage of respondents that agreed their intention to recommend and to revisit the portal in case of necessity. The results of the web-analysis reported by Dirmaier et al. (2015) confirmed that the website is usable and highly accessed. Nonetheless, lower agreement levels concerning the usefulness of the portal on a behavioral level were observed. Thus, integrating content that supports active patient behavior regarding communication with relatives and with health care providers as provided by high quality patient decision aids (PtDAs) might improve the usefulness of the e-health portal. Previous analyses do not show an influence of the availability of the first decision aid on the acceptance of the portal. However, three of the four PtDAs were only available during the last weeks of the survey period. In order to further improve acceptance of the portal by targeting the offers of the portal to the users’ needs, qualitative studies are requested to identify topics that are of high relevance to the users but have not been addressed until now.
Limitations

Due to methodological limitations the results of the study need to be interpreted with caution.

First of all, convenience sampling was used by informing users about the survey without attracting attention and not actively recruiting. This resulted in a relatively small number of respondents – compared with the number of website users and the number of people who started the survey. It is assumed, that respondents might have had an incentive to participate in the study as a consequence of being either particularly satisfied or dissatisfied with the offers presented at the portal. However, the positive ratings of the respondents suggest that they might have been motivated rather by their satisfaction than dissatisfaction with the system. However, high attrition rates are a common problem in online-surveys (Thielsch & Weltzin 2012).

As we do not know if the investigated sample was representative the results presented here might overestimate the acceptance of the portal. Future evaluations should be conducted using probability sampling methods to confirm the present findings.

As we used hardly any standardised instrument, the comparability of our results is limited. However, the questionnaire was developed based on widespread theories and evidence on acceptance of information technologies (Chau & Hu 2002; Davis 1989; Kerr et al. 2006; Lemire et al. 2008; Wu et al. 2008) and pilot tested among 10 participants. Furthermore, in order to provoke a definitive choice, no mid-point was provided. Due to the forced choice, the use of a 4-point scale might have led to a biased rating. However, Weijters, Cabooter & Schillewaert (2010) assumed that ambivalent or neutral respondents tend to rate negatively in the absence of a midpoint.
Moreover, as we used self-reported information on the respondents’ experience with mental disorders, the validity of this information is limited.

**Conclusions**

Despite the methodological limitations, this study provides first evidence on the acceptance of the e-mental health portal www.psychenet.de. The results on the usefulness of the portal showed that there is still room for improvement. It is assumed that the portal empowers people with mental disorders and their relatives by facilitating to gather high-quality evidenced-based information about their illness, to rapidly find the right treatment services without great effort, and to prepare for health care provider contacts. Within the framework of this project, PtDAs for common mental disorders (i.e. depression, anxiety disorders, psychosis) supporting active user behavior were developed and implemented on the e-health portal www.psychenet.de based on a comprehensive mixed-methods needs assessment study. In addition to the PtDAs, self-management tools are currently being evaluated.

**Acknowledgements**

psychenet is a project network supported by the German Federal Ministry of Education and Research in the region of Hamburg which consists of more than 100 scientific and medical institutions, counselling centers, the Senate and the Chamber of Commerce of the Free and Hanseatic City of Hamburg, companies, as well as patients' and relatives' associations (2011–2015). The vision of the project is to promote mental health today and in the future, concerning
early diagnosis and effective treatment of mental illnesses. For more information and a list of all
partners please visit www.psychenet.de.
References


Figure 1. Participant flow chart.

- **started survey**
  - N = 1030 (100%)

- **consent to participate**
  - n = 819 (80%)

- **finished questionnaire**
  - n = 314 (30%)

- **consent to data use and included in the statistical analysis**
  - n = 252 (25%)
### Table 1. Descriptive characteristics and frequency distributions of access paths and website use (N=252).

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>162</td>
<td>64.3</td>
</tr>
<tr>
<td>Age (M=42.2, SD=15.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 45</td>
<td>135</td>
<td>53.6</td>
</tr>
<tr>
<td>&gt; 45</td>
<td>117</td>
<td>46.4</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>61</td>
<td>24.2</td>
</tr>
<tr>
<td>Middle</td>
<td>66</td>
<td>26.2</td>
</tr>
<tr>
<td>High</td>
<td>125</td>
<td>49.6</td>
</tr>
<tr>
<td>Experience with mental disorders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected people</td>
<td>139</td>
<td>55.2</td>
</tr>
<tr>
<td>Relatives</td>
<td>65</td>
<td>25.8</td>
</tr>
<tr>
<td>Experts</td>
<td>25</td>
<td>9.9</td>
</tr>
<tr>
<td>None</td>
<td>23</td>
<td>9.1</td>
</tr>
<tr>
<td>Residential area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region of Hamburg</td>
<td>62</td>
<td>24.6</td>
</tr>
<tr>
<td>Other regions</td>
<td>190</td>
<td>75.4</td>
</tr>
<tr>
<td>Internet usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Almost) every day</td>
<td>228</td>
<td>90.5</td>
</tr>
<tr>
<td>At least once a week</td>
<td>21</td>
<td>8.3</td>
</tr>
<tr>
<td>At least once a month</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Access to the portal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directly</td>
<td>122</td>
<td>48.4</td>
</tr>
<tr>
<td>Via search engine</td>
<td>102</td>
<td>40.5</td>
</tr>
<tr>
<td>Via referring website</td>
<td>28</td>
<td>11.1</td>
</tr>
<tr>
<td>Awareness of the portal through</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online searches for mental illnesses</td>
<td>145</td>
<td>57.5</td>
</tr>
<tr>
<td>Personal recommendation</td>
<td>27</td>
<td>10.7</td>
</tr>
<tr>
<td>Newspaper article</td>
<td>19</td>
<td>7.5</td>
</tr>
<tr>
<td>Cinema advert</td>
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<td>7.5</td>
</tr>
<tr>
<td>Poster</td>
<td>7</td>
<td>2.8</td>
</tr>
<tr>
<td>YouTube</td>
<td>6</td>
<td>2.4</td>
</tr>
<tr>
<td>Postcard</td>
<td>4</td>
<td>1.6</td>
</tr>
<tr>
<td>Other</td>
<td>60</td>
<td>23.8</td>
</tr>
<tr>
<td>Frequency of use</td>
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<td></td>
</tr>
<tr>
<td>First time</td>
<td>185</td>
<td>73.4</td>
</tr>
<tr>
<td>&lt; 5 times</td>
<td>42</td>
<td>16.7</td>
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<tr>
<td>&gt; 5 times</td>
<td>12</td>
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<tr>
<td>&gt; 10 times</td>
<td>13</td>
<td>5.2</td>
</tr>
<tr>
<td>Date of attendance</td>
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<td></td>
</tr>
<tr>
<td>Before the integration of the first PtDA</td>
<td>156</td>
<td>61.9</td>
</tr>
<tr>
<td>After the integration of the first PtDA</td>
<td>96</td>
<td>38.1</td>
</tr>
</tbody>
</table>
Table 2. User ratings on perceived ease of use, perceived usefulness, attitude towards using the portal, and perceived trust (N=252).

<table>
<thead>
<tr>
<th>Variables</th>
<th>agree</th>
<th>somewhat agree</th>
<th>somewhat disagree</th>
<th>disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived ease of use</strong></td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
</tr>
<tr>
<td>The font of the website is easy to read</td>
<td>71.0 (179)</td>
<td>25.0 (63)</td>
<td>1.6 (4)</td>
<td>2.4 (6)</td>
</tr>
<tr>
<td>The website is easy to use</td>
<td>58.7 (148)</td>
<td>33.7 (85)</td>
<td>5.2 (13)</td>
<td>2.4 (6)</td>
</tr>
<tr>
<td>The presentation of the information is clearly arranged</td>
<td>52.0 (131)</td>
<td>39.7 (100)</td>
<td>4.4 (11)</td>
<td>4.0 (10)</td>
</tr>
<tr>
<td>The design of the website is appealing</td>
<td>52.8 (133)</td>
<td>39.3 (99)</td>
<td>4.8 (12)</td>
<td>3.2 (8)</td>
</tr>
<tr>
<td>The information on the website is easy to understand</td>
<td>63.5 (160)</td>
<td>30.2 (76)</td>
<td>3.2 (8)</td>
<td>3.2 (8)</td>
</tr>
<tr>
<td>The colors of the website are pleasant</td>
<td>54.0 (136)</td>
<td>38.5 (97)</td>
<td>5.6 (14)</td>
<td>2.0 (5)</td>
</tr>
<tr>
<td>The pictures on the website are appropriate</td>
<td>44.0 (111)</td>
<td>46.8 (118)</td>
<td>6.3 (16)</td>
<td>2.8 (7)</td>
</tr>
<tr>
<td>I can quickly find the information that is important to me</td>
<td>48.0 (121)</td>
<td>40.5 (102)</td>
<td>6.3 (16)</td>
<td>5.2 (13)</td>
</tr>
<tr>
<td><strong>Perceived usefulness</strong></td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
</tr>
<tr>
<td>The content of the website is interesting</td>
<td>61.1 (154)</td>
<td>31.7 (80)</td>
<td>4.4 (11)</td>
<td>2.8 (7)</td>
</tr>
<tr>
<td>All in all, the website is useful for me</td>
<td>48.8 (123)</td>
<td>40.1 (101)</td>
<td>8.3 (21)</td>
<td>2.8 (7)</td>
</tr>
<tr>
<td>The amount of information presented on the website is appropriate</td>
<td>44.8 (113)</td>
<td>43.3 (109)</td>
<td>8.7 (22)</td>
<td>3.2 (8)</td>
</tr>
<tr>
<td>The website contains information that I need</td>
<td>47.2 (119)</td>
<td>40.1 (101)</td>
<td>9.5 (24)</td>
<td>3.2 (8)</td>
</tr>
<tr>
<td>The information on the website has helped me with my concerns</td>
<td>40.1 (101)</td>
<td>42.9 (108)</td>
<td>12.7 (32)</td>
<td>4.4 (11)</td>
</tr>
<tr>
<td>Through the website, I received references to other sources</td>
<td>39.7 (100)</td>
<td>44.8 (113)</td>
<td>11.9 (30)</td>
<td>3.6 (9)</td>
</tr>
<tr>
<td>By using this website I have learned something new</td>
<td>37.3 (94)</td>
<td>41.3 (104)</td>
<td>15.5 (39)</td>
<td>6.0 (15)</td>
</tr>
<tr>
<td>Now I’m able to talk better about mental disorders with my relative&lt;sup&gt;a&lt;/sup&gt;</td>
<td>21.5 (14)</td>
<td>50.8 (33)</td>
<td>21.5 (14)</td>
<td>6.2 (4)</td>
</tr>
<tr>
<td>Now I’m able to talk better about mental disorders with my health professional&lt;sup&gt;b&lt;/sup&gt;</td>
<td>20.9 (29)</td>
<td>38.8 (54)</td>
<td>19.4 (27)</td>
<td>20.9 (29)</td>
</tr>
<tr>
<td>Now I’m able to talk better about mental disorders with my relative&lt;sup&gt;b&lt;/sup&gt;</td>
<td>23.7 (33)</td>
<td>27.3 (38)</td>
<td>26.6 (37)</td>
<td>22.3 (31)</td>
</tr>
<tr>
<td><strong>Attitude towards using</strong></td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
</tr>
<tr>
<td>I would recommend the website to others</td>
<td>55.6 (140)</td>
<td>34.5 (87)</td>
<td>6.0 (15)</td>
<td>4.0 (10)</td>
</tr>
<tr>
<td>I will revisit the website if needed</td>
<td>64.3 (162)</td>
<td>28.6 (72)</td>
<td>4.4 (11)</td>
<td>2.8 (7)</td>
</tr>
<tr>
<td><strong>Perceived trust</strong></td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
</tr>
<tr>
<td>The information on the website is trustworthy</td>
<td>59.1 (149)</td>
<td>36.9 (93)</td>
<td>2.0 (5)</td>
<td>2.0 (5)</td>
</tr>
<tr>
<td>The information on the website is up to date</td>
<td>48.0 (121)</td>
<td>45.6 (115)</td>
<td>4.0 (10)</td>
<td>2.4 (6)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Sample size was reduced to n=65 respondents that reported being relative of a person with mental disorders

<sup>b</sup> Sample size was reduced to n=139 respondents that reported being affected by a mental disorder