

**PATIENTS ON THE WEB.  
ANALYSIS OF THE ACTIVITY OF MEDICAL INTERNET PORTAL  
USERS. METHODOLOGICAL REFLECTIONS AFTER AN ONLINE  
EXPERIMENT**

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**ABSTRACT**

The aim of the research presented in the article was to analyse the activity of medical internet portal users initiated by positive, negative, and neutral stimuli. The content of the researchers' comments, i.e. the stimuli, was related to three issue areas:

- 1) communication: the attitude of doctors towards their patients, the way doctors treat their patients,
- 2) subjectivity: patients' self-reflection on the character of the relations with doctors and on the way that doctors treat their patients,
- 3) awareness of patients' rights: patients' knowledge of their rights, awareness of infringements of patients' rights - in the opinions of the patients, exercising of patients' rights to be awarded damages.

The research was conducted according to experimental research procedures. 20 medical internet portals were qualified as the research sample and randomly selected to be included in the experimental group (10) and the control group (10). Results of the analysis of the collected data suggest that neutral stimuli generated the highest number of user responses, and negative stimuli generated positive user responses more often than negative responses, which was contrary to the initial assumptions. The online experiment allowed for the collection of interesting data that serve to present the relationships between the activity of internet users and forum topics and the stimuli types.

**Keywords:** online experiment, randomisation, activity on the Web, stimulus, post-test.

## INTRODUCTION

The internet is omnipresent in the life of the modern man. The internet community has reached 2.3 billion worldwide, and in Poland its number has exceeded 17 million (57%) (Malec, 2012, p. 24). As a result of the informatisation of societies more and more receivers of healthcare services desire and seek simpler access to healthcare and health-related knowledge and services on the internet. Looking for medical information and information about healthcare on the Web is common. Nearly 70% of Poles declare that they use the internet every day, and that they use it the most frequently when they require information about health, illness, and treatment (88%) (see: *Pacjenci w sieci* [Patients on the Web], 2012, *Serwisy o zdrowiu* [Internet websites about health], 2011, *Aktualne problemy i wydarzenia* [Current problems and events], 2011). Websites containing information about doctors and healthcare are the second most popular type: 73% (*Pacjenci w sieci*, 2012). Other sources, i.e. the press, television, family, and other people with similar problems are less popular. On the internet one can find over 800 Polish language websites on health, illness, and medicines. The number of websites and the activity of internet users prove that the interest in and the popularity of medical knowledge and the number of opportunities to express opinions on health-related subjects are increasing. That is why, among others, the issues discussed in the present article constitute the topic of the authors' scientific interest.

The issue area of the conducted experimental research is connected with one of the most important problems related to the activity of medical internet portal users, i.e. expressing opinion on the course of doctors appointments and evaluation of medical personnel's attitudes. The authors were interested in the influence of emotional comments of the researchers on the three following issue areas of the activity (intensity = quantity, scope, and type of posts) of medical internet portal users:

- 1) 1) Communication: the attitude of doctors towards their patients, the way doctors treat their patients,
- 2) 2) Subjectivity: patients' self-reflection on the character of the relations with doctors and on the way that doctors treat their patients,
- 3) 3) Awareness of patient's rights: patients' knowledge of their rights, awareness of infringements of patients' rights - in the opinions of the patients, exercising of patients' rights to be awarded damages.

Analysis of patient attitudes towards the above problems seems particularly interesting. That is because issues connected with the difficulties in patient-doctor relations are discussed increasingly often in reference sources (e.g. Gordon, 1999, pp. 106-125, pp.162-180; Barański, 2002b, pp. 162-167; Więckowska, 2005, pp. 259-266; Łaska-Formejster, 2002, pp. 150-177). Dissatisfaction, lack of satisfaction, and failure to meet patients' expectations have substantial influence on treatment and on how patients follow medical advice. Such problems may prolong recovery, raise doubts as to the competences of medical doctors, and increase the number of cases brought against doctors in connection with malpractice or unethical behaviour in relations with patients. The information published on the websites of The Polish Chamber of Physicians and Dentists (see: <http://www.nil.org.pl/> struktura-nil/

naczelny -rzecznik- odpowiedzialności - zawodowej / sprawozdania), the Ministry of Health (see: <http://www.mz.gov.pl/>, [www.mz.gov.pl/index?mr=m5&ms=0&ml=pl&mi=0&mx=7&mt=0&my=0&ma=se](http://www.mz.gov.pl/index?mr=m5&ms=0&ml=pl&mi=0&mx=7&mt=0&my=0&ma=se)), and Rzecznik Praw Pacjenta (Patients' Rights Advocate) (see: [http://www.bpp.gov.pl/bip\\_sprawozdania.html](http://www.bpp.gov.pl/bip_sprawozdania.html)) leads to the conclusion that the number of complaints related to the structure and organization of the healthcare system in Poland as well as, or perhaps the most frequently, doctors' unethical conduct in relations with patients or malpractice is growing rapidly. Patient awareness is increasing, and because of the medical knowledge that they receive through mass media the patients expect to participate in the treatment process more actively. During doctors' interviews patients often make suggestions based on media information and new findings in medicine. Patients closely observe the healthcare services market and notice certain tendencies, such as the contrary interests of certain parties; they expect healthcare services of increasingly higher quality, and more and more often they demand that their rights be respected. They take certain actions, such as sharing their experiences, opinions, and assessments: on the internet, among others.

This activity is aimed at initiating changes that medical personnel should also take into consideration, because most patients still believe that money is more important for doctors than the good of the patient (Gordon, 1999, p. 19). Patients tend to complain that doctors are in a hurry, that interviews are too short to give a diagnosis, and that doctors are not empathetic. Yet, both sides of these relations could benefit from more empathy, because it could allow for better mutual understanding and trust. Doctors could become more kind and caring, and they could analyse a patient's condition holistically as well as understanding a patient's needs better. The patients, in turn, may benefit from such an interaction because they may feel free to discuss their feelings, ailments, and doubts. Empathy allows patients to be subjects in the relationship: they become "human beings" instead of cases. Empathy allows for the establishment of a relationship in which the good of the patient is the ultimate goal. Empathetic doctors are sensitive, reliable, and charitable; they use language that can be easily understood by the patients and they bring hope of recovery (Dolińska-Zygmunt, 2001, pp. 283-289). It has been proven repeatedly that the very interaction between a doctor and a patient may in and of itself have beneficial therapeutic influence. Doctors themselves, with their positive character traits, can be an effective cure. Pleasant atmosphere in a surgery facilitates open discussion of patients' problems, which makes it easier for doctors to give a diagnosis and select proper treatment (Sokołowska, 1986, p. 91). The importance of doctor-patient interaction and the establishment of proper relations (taking into account their subjectivity-connected context and the respecting of rights) is crucial in diagnosis as well as in the process of treatment, which is why it is fully justified to investigate patients' opinions on this subject that are already being expressed on the internet. That is even more so because internet activity is increasingly more popular among patients (see: *Serwisy o zdrowiu*, 2011; *Aktualne problemy i wydarzenia*, 2011). The fact that over 80% of internet users look for medical information indicates that the interest in and the need for such knowledge is growing. The popularity of medical internet portals and the need to share knowledge, opinions, and assessments on medical internet

forums proves the current importance of the issues of improper doctor-patient interactions, and of the failure to respect the fundamental rights of patients to receive comprehensive and comprehensible information on their medical condition, alternative treatments, etc.

That is why an online experiment is the most adequate method to collect the data sought by researchers: the data allowing for the analysis of the patients' attitudes towards doctors developed on the basis of the patients' activity on medical internet portals.

### **METHODOLOGICAL ASSUMPTIONS OF THE RESEARCH**

As it has been mentioned before, the main question of the conducted experimental research was: what influence do researchers' emotional comments on three issue areas: communication, subjectivity, and awareness of patients' rights have on the activity of medical internet portal users?

The aim of the research was to discern the relationships between the researchers' emotional comments and the opinions of medical internet portal users and the length of the discussions initiated by the comments. In this context, activity is understood as posting in a particular forum topic and the length of the discussion in a particular group. Willingness to participate in discussions and the way in which the opinions on particular subjects articulated were analysed.

The detailed questions are presented below, along with their division into the methodological and the substantive ones. Methodological questions were related to the nature of experimental research conducted online, and the substantive ones to the differences in the activity of patients on medical internet forums in the comparative groups in the context of the above issues, initiated by the particular stimuli.

The following questions were qualified as methodological:

- 1) What can a researcher do to ensure representativeness of the results of online research?
- 2) Is it attainable – and if so, how – to control the experimental environment and ensure a proper reception of the stimuli, i.e. the reception intended by the researchers?
- 3) How do the stimuli of a particular emotional charge (positive, negative, or neutral) influence the activity of forum users?
  - a) How many posts were there in the topic started by the researchers? If there were none, why?
  - b) How does a post by a new, unknown user influence the course of the experiment?
  - c) Who reacts to a researchers' comments? Is it only the most active forum users? If so, why do other users fail to participate in the research?
  - d) What influence do radical and emotional comments on a particular topic have on the discussion and the opinions of other forum users?
  - e) Does the entire course of the discussion influence the relations between users? If so, how?

- f) How does the discussion end? Is the ending closed or open?
- 4) Is there a difference in the time of the influence of the stimuli of various emotional charges (a negative and a positive comment)? If so, what is the difference?
- 5) Is it feasible to evaluate the honesty of users' posts? If so, how?
- 6) Can the researcher decrease the number of users discontinuing their participation in the experiment? If so, how?
- 7) How can the researcher address the doubts as to the ethical character of the experiment without informing the participants about the research?
- 8) What factor interferes the most with the present research?

Furthermore, the researchers found it interesting to attempt to answer the substantive questions below:

- 1) How many negative, positive, and neutral posts were there in a particular issue area before the stimulus was introduced?
- 2) How many posts initiated by the stimuli were there on a particular forum in a given issue area?
- 3) In which of the issue areas were the users of medical internet portals the most active?
- 4) Are there any differences between the posts of the users in the experimental and the control group? If so, what are they?

The main hypothesis verified in the course of the research was: *The more negative the beginning of a discussion (the researchers' post), the higher the number of negative posts by medical portal users and the longer and more comprehensive and substantive the discussion on a given forum.*

The above hypothesis was formulated on the basis of the researchers' experience gained by observation of the activity of internet portal users. A certain regularity has been observed: negative and controversial posts inspire the users of forums and websites to be more active, and to post more expressive comments.

The authors of the research developed a plan of the online experiment. Simple randomisation was carried out with the use of a random numbers table. The forums qualified for the research (20) were divided into the experimental (10) and the control (10) group. It needs to be noted that the experimental and control conditions applied to the selected websites, and not to the particular, registered users. The experimental and the control group were subsequently divided into the three issue areas described above. Comments related to the three areas (stimuli) were posted in the experimental and in the control group. In the experimental group, two types of stimuli in the form of negative and positive posts were introduced, i.e. 5 positive stimuli and 5 negative stimuli. In the control group, 10 neutral stimuli were used. Altogether, the researchers posted 20 comments in both groups. The research participants in the experimental group were not informed about the experiment. The users of the forums included in the control group, however, were made aware of their participation. They were asked to express their opinion on a given issue area within the subject matter of a given medical internet forum.

### DESCRIPTION OF THE RESEARCH SAMPLE

The research sample included 20 medical internet portals selected by the researchers. The forums meeting the following criteria were qualified for the experiment: the numbers of registered users and posts had to be high. Also the "timeliness" of a forum was taken into account during the selection. The topics of internet forums on which the experimental research was conducted are presented below, in Table 1.

**Table 1. Topics on the portals qualified for research**

Portal number	Portal type
00	Disabled persons
01	Multiple sclerosis
02	Wilson's disease
03	Gynaecology and obstetrics
04	Cancer
05	Mental illness, psychotherapy
06	Gynaecology
07	Stomatology
08	Eating disorders
09	Allergies
10	Neurological disorders
11	Diseases of the lungs
12	Pregnancy, conception
13	Pregnancy, conception, adoption
14	Cluster headache
15	Dermatology
16	Heart and circulatory system diseases
17	Psoriasis
18	Forum for people undergoing dialysis and after kidney transplants
19	Ophthalmology

Source: Author's research.

Before posting the particular stimuli on the selected forums, the websites were first characterised. The following data were analysed: structure of the portal, type of patients' activity, type of information available on the forums (related to doctors, treatment, illness, or other data), patients' complaints, number of posts and number of registered users.

Analysis of the structure of the selected 20 portals showed that they were well-organised. The forums were divided into sections dedicated to particular forms of illness or problems that the patients had, depending on the general forum subject. However, the structure of some of the portals selected for research was disorganised and chaotic: the websites were difficult to navigate and finding information was troublesome. Some of the forums were of a broad scope, and some were only concerned with narrow issue areas.

It needs to be emphasised that the users of most of the forums were very active, typically in providing mutual support in illness and support for the families of the ill. The forums played a therapeutic role. What is more, there were expert advice topics on numerous forums. Experts, as well as the patients themselves, would provide valuable advice on the treatment of a given illness and ways of coping with everyday problems.

The types of information found on the forums were also analysed. Patients exchanged information about good medical doctors; the doctors that could help them combat their illness or improve their quality of life. They would also seek information about reliable surgeries. Furthermore, they exchanged information about treatment methods, medicines and their side effects, as well as the treatment that the patients had undergone in the past. On some of the portals there was legal advice to be found on how to look for help when a doctor violates a patient's rights. It ought to be added that in a number of cases complaints about doctors' attitudes and the healthcare system were posted.

Taking into account the number of posts on a forum one could discern those ranging from a few thousand to tens of thousands (e.g. ophthalmology forum: 7,814 posts, see: <http://www.forum.optyczny.pl/index.php>; disability forum: 198,111 posts<sup>4</sup>, see: <http://www.ipon.pl/forum/>). The number of users would also vary greatly. Most portals had up to 20 thousand users, however, some only had a few hundred (these were in the minority): this was influenced by the commonness of a disease (e.g. cluster headache forum: 388 users, see: <http://forum.klasterowy.pl/>; disability forum: 27,551 users<sup>5</sup>, see: <http://www.ipon.pl/forum/>).

### **DESCRIPTION OF THE INTERNET AS A MEDIUM EMPLOYED IN SOCIAL RESEARCH**

Modernity is characterised by, among others, rapid progress and development of new technologies. Modernisation and development of technology, including information technology, are omnipresent in the life of the modern man. Because of these changes the area of social research is altered, as well. It has become significantly broader. That is why researchers need not restrict themselves to analysis of material world phenomena: they can also investigate the phenomena in virtual reality. The internet provides such an opportunity. As researchers claim: "The internet is the most important carrier of change in the civilisation of the modern world [...]. Thanks to the internet the social environment and the social context of an individual are fundamentally changed. [...] The internet has become the fullest expression of postmodern, web-based information society" (Batorski, Marody, & Nowak, 2006, pp. 5, 18). Furthermore, it has been stated that the internet provides individuals with almost complete anonymity, which, in turn, results in easier communication with others and easy, honest self-expression (Batorski, Marody, & Nowak, 2006, p. 102). Additionally, the costs of research conducted online are lower, and it makes data collection faster (Gregor, & Stawiszyński, 2005, pp. 333-334).

<sup>4</sup> Number of posts as of 16.08.2013.

<sup>5</sup> Number of users as of 16.08.2013.

Taking into account the advantages and the opportunities of internet exploration, as well as the subject of the research, the authors of the present article have decided to conduct an online experiment. It needs to be noted that in this research the "natural environment" of the research participants, in the form of 20 medical portals, constituted an "online laboratory". No websites were created especially for the research. The research technique selected was site centric research, also termed server centric. Server/site centric research in an Opt-In<sup>6</sup> technique, in which only selected websites are analysed. The collected data allows for the introduction of various types of indicators, such as number of forum users, number and duration of visits to a website, average number of a user sessions: number of posts and frequency of posting. The indicators can then be employed to generate statistical tables presenting how frequently a particular website is accessed (Żmijewska – Jędrzejczyk, 2004, p. 244). Such types of indicators, among others, were used by the researchers during conceptualisation, realisation, and evaluation of the research.

When conducting online research one must not forget the rights of internet users. The users constitute a sample, just as in the case of traditional research. Therefore, one ought to bear in mind that voluntariness of participation, anonymity, and confidentiality need to be ensured. It is crucial that research subjects have the right to discontinue their participation at any stage, and that contact between them and the researcher is established in case of any doubts or misunderstandings (Żmijewska – Jędrzejczyk, 2004, p. 246). The authors of the present research complied with these remarks and requirements throughout the process of data collection and analysis.

#### **RANDOMISATION – RANDOM SELECTION OF RESEARCH PARTICIPANTS**

Ensuring a random character of the research sample is essential. The researchers had to take into consideration certain uncontrolled variables that could not be eliminated, such as the time in which the experiment was conducted. It may influence the temperature of the environment, tensions on the Web, etc. (Braszczyński, 1992, p. 51). According to the methodological assumptions of experimental research, randomisation allowed for the random selection of 10 medical portals for the experimental and the control group, which equalled the influence of the independent variable (stimulus – researchers' comment) on the dependent variable (users' activity). In order to carry out the randomization a sample frame was developed: each forum was assigned a number 0 – 19. Computer-generated random number tables were used to determine whether a given forum was included in the experimental or the control group (see: Brzeziński, 2000, p. 49). A part of such a table was used in the described research. The table and the column were randomly selected. Reading from top to bottom, the numbers higher or equal to 0 and lower or equal to 19 were marked. Repeating numbers were omitted. As a result, the numbers 10, 08, 12, 04, 02, 19, 09, 13, 15, 16 allowed for the identification of the experimental group, and the remaining forums were included in the control group.

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6 Opt-In – only the websites that apply to take part in the research and those selected by the researchers are investigated



**Table 2. Division of the research sample into comparative groups**

Portal number	Portal type	Portal number	Portal type
10	Neurological disorders	00	Disabled persons
08	Eating disorders	01	Multiple sclerosis
12	Pregnancy, conception	03	Gynaecology and obstetrics
04	Cancer	05	Mental illness, psychotherapy
02	Wilson's disease	06	Gynaecology
19	Ophthalmology	07	Stomatology
09	Allergies	11	Diseases of the lungs
13	Pregnancy, conception, adoption	14	Cluster headache
15	Dermatology	17	Psoriasis
16	Heart and circulatory system diseases	18	Forum for people undergoing dialysis and after kidney transplants

Source: Author's research.

In the experimental research a two-group frame with an experimental and a control group with post-tests in both groups was employed (see: Brzeziński, 2000, pp. 65-70). The authors concluded that conducting a pre-test was unnecessary, because the users' posts that they intended to stimulate were dependent on the particular types of questions and comments that had been posted on the portals. What is more, the initial analysis of the portals indicated that the numbers of opinions on the subjects of research interest were equal: in fact, there were no such opinions to be found. Carrying out a pre-test in the natural environment of the research participants (a medical portal for active, ill forum users is certainly an environment of this type) could allow them to realise the experimental character of the stimuli they were exposed to. Such awareness could significantly influence the reactions of the research participants (see: Sulek, 1979, p. 103).

The authors of the analysed posts were the people who had had previous experience posting on other medical forums as well as those for whom commenting on the researchers' post on the portals selected for the experiment was their first activity of this type. This served to confirm a regularity described in the results of psychological internet research: online discussion groups are created because of, among others, topography, i.e. the lack of a space to exchange thoughts and opinions, the topics on a given forum for people with certain traits, and equality of access, i.e. free participation in forum discussions (Konopka, 2006, p. 194).

At the beginning of the research the researchers became acquainted with the procedures as well as ethical rules and norms of online research. It needs to be added that the ethical rules of research conducted on the Web are not unambiguously defined. However, the experimenters closely observed certain defined ethical rules throughout the course of the experiment. Anonymity of research participants was one of the most important issues. In accordance with the rule that the internet users' pseudonyms are to be treated as their real surnames (Kozinets, 2012, p. 217) the

researchers ensured that the users were completely anonymous: the names under the particular posts were not used. Among the four levels of research participants' identity protection: lack of protection, minimum protection, medium protection, and maximum protection (see: Kozinets, 2012, pp. 219-221) the researchers chose to employ the medium level of identity protection in the described experiment. It is commonly considered a compromise. It consists of ensuring the confidentiality of the investigated group's identity by describing the group in general categories, without presenting detailed data that may disclose the respondents' identities (Kozinets, 2012, p. 220).

### RESULTS OF THE RESEARCH EXPERIMENT

According to the research procedure, the main research question was assigned detailed methodological and substantive questions. This part of the paper presents an analysis of the collected data pertaining to the methodological questions, i.e. the questions connected with the differences between the selected medical portals users' activity in the experimental and the control group after the introduction of the defined stimuli in the issue areas discerned by the researchers.

The results of the analysis of the collected data allow for the conclusion that the total number of posts answering the researchers' stimuli (positive, negative, and neutral) depends on the topics of the threads. Table 3 illustrates the statistical number of comments posted by the research participants.

**Table 3. The number of positive and negative comments divided into three issue areas**

	Number of positive comments	Number of negative comments	Total number of comments*
<b>The first issue area</b>	18	20	39
<b>The second issue area</b>	10	6	13
<b>The third issue area</b>	1	4	4

Source: Author's research.

\* The numbers do not add up, because one post of a research participant could contain both negative and positive opinions, and some posts were unrelated to the issue areas of the research.

One can notice that the research participants would most frequently address the problems in the first issue area, related to doctor-patient communication and doctors' attitudes towards their patients (a total of 39 comments<sup>7</sup>). In reply to the stimuli (the posted comments) there were 18 positive comments and 20 negative opinions. The stimuli connected with the problems of the second issue area, related to subjectivity, i.e. the character of the relations and the way the doctors treat their patients, produced 10 positive comments and 6 negative messages (a total of 13 comments). The third issue area, pertaining to the awareness of patients' rights,

<sup>7</sup> The numbers of comments do not add up, because one post of a research participant could contain both negative and positive opinions, and some posts were unrelated to the issue areas of the research.

initiated the lowest number of comments: 1 positive comment and 4 negative ones (a total of 4 comments).

The differences in the numbers of comments in the particular issue areas may arise from the fact that some of them play a more important role in the eyes of the patients, or the patients may have more experience and knowledge of certain issues. Communication between a medical doctor and a patient constitutes the basis of interaction and effectiveness of treatment (Mayerscough, & Ford, 200, pp. 14-18; Barański, 2002a, p.161). How doctors talk to their patients also provokes strong emotions in patients, because it may alleviate or increase anxiety (medical doctors' lack of communication skills is an issue that draws a lot of attention, for example, problems of doctor-patient communication are often discussed in the media). It may be assumed that the number of comments in the third issue area was the lowest, because the area is related to patients' rights, and the general level of awareness of these rights is low (see: *Prawa pacjenta* [Patients' rights], 2008; *Gotowość do zmian w służbie zdrowia* [Readiness for change in the healthcare system], 2010; *Wiedza o prawach pacjenta* [Awareness of patients' rights], 2001; *Łamanie praw pacjentów – mit czy rzeczywistość* [Infringement of patients' rights – myth or reality?], 1996).

In the context of methodological assumptions, the substantive and cognitive aspects of the data on the distribution of positive and negative comments between the particular issue areas and the experimental and the control group were of crucial importance. What requires additional explanation is that each user comment was either positive or negative and it was considered an expression of the users' attitude towards an issue area. The comments of medical forums users contained no neutral content. As can be seen in Table 4 below, the number of positive comments was higher in the control group (a total of 17 positive comments) compared to the experimental group (a total of 12 positive comments). It needs to be underlined that the number of negative comments was also higher in the control group (a total of 25 negative comments) compared to the experimental group (a total of 4 negative comments). On the basis of the above data it can be concluded that the research subjects were more willing to post when they were informed about their participation in the experiment (that is, the people in the control group). What one may find interesting and remarkable is that the numbers of positive and negative comments both equalled 29.

**Table 4. The number of positive and negative comments in the experimental and the control group divided into three issue areas**

	Number of comments - experimental group		Number of comments - control group	
	Positive	Negative	Positive	Negative
The first issue area	5	1	13	18
The second issue area	7	2	3	4
The third issue area	0	1	1	3

Source: Author's research.

Analysis of the data collected in the research experiment allowed for the verification of the hypothesis formulated during the conceptualisation stage: *The more negative the beginning of a discussion (the researchers post), the higher the number of negative posts by the medical portal users and the longer and more comprehensive and substantive the discussion on a given forum.* On the basis of the collected data (see: Table 5) it can be concluded that the above hypothesis was not confirmed, because the negative researcher comments provoked more positive user posts (9). There were only 2 negative comments on negative researcher posts. A similar tendency was noticed in the case of positive stimuli posted on medical portals: in this case, there were slightly more positive (3) than negative (1) replies. The longest discussion ensued as a result of a neutral comment (43). Negative researcher comments led to 11 posts, and the positive ones to 4. Most of the positive replies of medical portal users to negative stimuli were therapeutic and consoling; the users would provide examples of “good” doctors. One explanation may be that the internet plays a specific role for those who seek help and support, who feel powerless and perhaps rejected by their close ones. The anonymity that they find on the Web allows them to freely discuss their problems and ask for help. Results of psychological research indicate that people are typically more willing to help those similar to them, in this case, people with similar ailments, illnesses, and problems. This facilitates the establishment of strong social relations with “online friends” (Wallace, 2001, pp. 260-262). That is why the specific character of a medical forum had substantial influence on the attitudes of its users, who would reply to negative comments with consolation, help, support, and attempts to present the described situation in a more favourable light. Negative researcher posts in topics other than medical ones could have provoked a different reaction.

**Table 5. The number of different types of comments in response to particular types of stimuli**

Type of stimuli	Number of stimuli	Type of comment		Length of discussion
		Positive	Negative	
Positive	5	3	1	4
Negative	5	9	2	11
Neutral	10	17	26	43

Source: Authors' research.

#### METHODOLOGICAL REFLECTIONS AFTER THE RESEARCH EXPERIMENT

Methodological reflections inspired by the conducted online research experiment are presented below. When addressing the methodological questions formulated at the conceptualization stage, its authors also intended to share their reflections on the difficulties encountered in the course of the research.

Representativeness of online research is a problematic issue mainly due to the unfeasibility of defining the internet population. What is more, it remains unknown who replied to the researchers' posts, because this could have depended on a number of factors, such as the type of the question. All the researchers could do was

collect a satisfactory number of answers. The medical portals selected for the present research had a sufficiently high number of registered users and were in current use.

It was mainly technical and administrative problems that made it unattainable for the researchers to fully control the research environment and to ensure a proper reception of stimuli. In order to address any uncertainties or doubts that the forum users in the control group might have had the experimenters would provide quick and comprehensive answers. Respondents' questions were usually related to the topic of the research and the innovative method of data collection. In the experimental group, in turn, the researchers made an independent decision to post additional discussion stimuli in the threads in which the online patients would not post at all.

In 8 of the 20 analysed portals there were no replies to the stimuli posted by the researchers. On the forums where positive stimuli were posted there was no reaction on 4 forums; where negative stimuli were posted there was no reply from the users of 1 forum, and on the portals where the researchers posted neutral questions there was no reaction on 3 forums. To sum up, there was no reply on 5 forums in the experimental group and on 3 forums in the control group. It can, therefore, be concluded that stimuli in the form of negative researchers' comments would provoke users' replies and attract their attention more often. A question may be asked about the reasons for this lack of user reaction. We may only suppose that one of the reasons could be the mistrust of a new, "unknown" individual. One must bear in mind that the questions asked were quite personal. They were related to the users' opinions, personal experiences of relations with doctors, and awareness of their rights in the context of healthcare services. Another reason could be the lack of knowledge and experience with a particular life problem, or the unwillingness to share personal experiences with others, especially "strangers". It was also possible that the users would "duck" the responsibility to answer the researchers' question, while assuming that others would, in fact, reply to it. It may also be assumed that the presence of a new person registered on the forum could have influenced the number of users' replies. Analysis of the results indicates that there were more comments on the researchers' posts in the control group, in which the authors did not hide their identities and would openly ask for answers to the questions they were interested in. The most active people of a particular forum were also the authors of the highest numbers of replies to researchers' posts. Perhaps these people wanted to reaffirm their positions as leaders of the groups, or maybe they aspired to such roles. It should also be emphasised that on most medical portals there are points awarded for each forum post, and exceeding a certain number of points resulted in the user gaining a title. What is interesting in this context and from the cognitive perspective is that despite the controversies connected with the addressed problems there were no radical comments in the analysed discussion threads. Each discussion initiated on a medical portal was calm and open. The researchers decided to conclude the data collection stage on the particular forums when there were no new replies for 7 days. No difference in the duration of the influence of negative and positive stimuli was observed.

In the clearly defined conditions of an online experiment it is difficult to control the number of participants quitting before the research is concluded. In the discus-

sed research the experimenters had no influence whatsoever on who comments on the posts, at what time, and whether the same person will take part in the same discussion again. In the case of incomplete, unclear respondents' answers the researcher sent public or private messages to the users, asking them to post again to complete the comment.

Most users' replies to the researchers' posts were long and comprehensive. The problem, in this case, is the honesty of the answers. The researchers assumed that mentioning personal experiences in a post was an indicator of honesty. The reaction of other participants in the discussion, who knew that particular "life" example, or who expressed their emotions in connection with the comment by, for example, showing sympathy (in the case of "bad" experiences) or jealousy (in the case of "good" experiences) was considered another indicator.

Ethics of the online research experiment are still a subject of discussion. In the present research the issues that could raise doubts as to its ethical character was the fact that the information about the research, the aim of the research, and the true identity of the authors of the posts (stimuli) in the experimental group were left undisclosed. In order to minimise the ethical problem the fact that the research was conducted as well as its aims can be published on a given medical portal after the data collection stage is concluded.

The factors of highest interference with the experiment were outside factors, independent of the experimenters and connected with the nature of the employed medium: the internet. These include: problems with logging on a given portal, repetition of logins, a relatively long time needed to receive a forum administrator's confirmation of registration, problems with starting a new forum thread. The advantages of conducting the experiment online certainly include the opportunity to reach a great number of people who can be included in the sample, and the perfect anonymity of the participants as well as the researchers.

The conducted research experiment allowed its authors to develop a classification of the difficulties encountered throughout its course. The first category contains the difficulties arising from the low level of control over the experiment environment. This includes technical problems connected with forum registration, visibility of a topic on w website, and the short-termed influence of the stimuli among the constant influx of new posts.

The second category contains the problems related to the motivation of the users to reply to posts. In the control group, the unwillingness of the users to react to the researchers' comments could have been related to the fact that they frequently receive survey questions from students. The unwillingness to answer could have also been the result of a lack of understanding of the aim and the meaning of the research. What is more, the "new" way of data collection could have made the patients used to surveys sceptical. It could have been that the ill would not discuss their personal issues on the forum, because while they were anonymous to the researchers, their identities were not confidential to other forum users. The forums on which the experiment was conducted were often a places of discussion for people who knew each other, which could have constituted a communication barrier, because posting in the research threads might have been perceived as potentially harmful

to somebody's image. On the other hand, it was possible that the users sent private messages on the topic of the research, which is also disadvantageous to the research experiment. Cyber space presented no difficulties in the communication between the researchers and the respondents. The communication was fluent. In the experimental group, the number of user posts could have been influenced by the aforementioned mistrust of new users ("strangers") or placing the responsibility to respond on other people. On one of the forums there was a problem related to the negative researchers' comments: there were certain agreed upon, unwritten rules not to complain or "grudge" in public. That is why the lack of replies resulted from the internal rules of the forum and its specific profile. In the case of positive researchers' comments we encountered the "Facebook syndrome": the researchers' comment received 219 "likes" on the social networking site, which was understood as a positive reaction to the stimulus.

The voluntary participation and the protection of the identities of research subjects constitute important rules of online research. The same rules apply to experimental research. That is why online research of this type does not put as much pressure on possible participants as that in "real life" (Siuda, 2009, p. 159), however, this research is also not free from ethical issues. The third category of difficulties includes all doubts of ethical nature, such as failure to supply the respondents with sufficient information about the aim of the research, selection of the experimental stimulus: assuming a "false identity" of an ill person. We also do not know what were the psychological reactions on the forum users.

The problems with the representativeness of the sample constitute the last group of difficulties. This is connected with the specificity of the internet as a medium in Poland. There is still no common access to the internet: Almost 77% of Poles have internet access (...). Only 37% of Poles have access to modern technology (Zadrozna, 2013). Internet access as well as the skills required to use modern technology appear all the more important in light of the predictions that beginning with the year 2020 a "virtual cyber-doctor" is to be the patient's first contact with the healthcare system (Białoblocki, & Moroz, 2006, p. 156). The problem of digital exclusion is reflected in online experiments, resulting in unrepresentative samples, because it is only possible to reach people with internet access and skills required to use computers and the internet. The lack of internet access leads to immediate exclusion, and the lack of skills necessary to use computers and the Web may result in mistakes made during the participation in research or declining to take part in an experiment. Representativeness of online experiments is also lowered or "falsified" by identity cheating: claiming to be somebody else, or taking part in a discussion under different "nicks" (Batorski, & Olcoń-Kubicka, 2006, pp. 121-122). Analysis of the data of the conducted research experiment allows one to formulate a presumption that since the participants were registered forum users they had sufficient skills. However, the possibility that the users received some help cannot be excluded.

Conducting research experiments online becomes increasingly popular (Siuda, 2009, p. 158). The issues discussed in the present article could be perfectly addressed by means of online research experiment. To sum up, the specificity of research experiments carried out on the internet made it possible to easily collect information

and data which would have been difficult to access in the off-line world. The online character of the research allowed the experimenters to reach a large group of potential respondents, that is, patients with various illnesses. It is a specific, closed group. However, thanks to medical forums the contact with this group is much simpler. The experimental character of the research allowed the experimenters to receive honest answers from people who believed that they were having a "conversation" with an individual with similar problems. The assumption as to the honesty of the posts was formulated on the basis of the results of psychological online research experiments. The conclusions from this research prove that more and more often the results of online research are analogous to those of traditional research (Siuda, 2009, p. 159). In some cases online research is even considered more reliable and objective, which may be connected with the general advantages of conducting research on the internet; these can be divided into three groups: sampling-related, gaining control over an investigated environment, and the benefits connected with the process of data collection and analysis. The first group of sampling-related advantages pertains to the fact that the number of internet users is increasing, which is why the access to certain social groups active on the Web is easier. Control over the research environment is related to the easier, more open and authentic communication and attitudes of internet users. That is connected with the fact that online research is less stressful to the respondents. What is more, this form of the research allows a researcher to avoid any prejudice against the participants. Unlike traditional research, data collection and analysis online is much quicker and more effective, which allows the authors of the research to save time and funds (Epstein, & Klinkenberg, 2009, pp. 230-232). The respondents' posts in the three issue areas on the particular forums are not presented in this paper. Also, the posts did not undergo interpretation, because this was not the main aim of the research and neither was it directly connected with the subject matter of the paper. Thanks to the use of an online experiment the collected research material suggests a new direction in research and investigation of problems of the ever-changing area of relations between doctors and patients.

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