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Do social support features and gaming experience on health websites affect physical and health behaviors? A web-based intervention for rheumatoid arthritis patients

Submission date
21/04/2014

Registration date
28/04/2014

Last Edited
01/09/2022

Recruitment status
No longer recruiting

Overall study status
Completed

Condition category
Musculoskeletal Diseases

☐ Prospectively registered
☐ Protocol
☐ Statistical analysis plan
☒ Results
☐ Individual participant data

Plain English summary of protocol

Background and study aims
Rheumatoid arthritis (RA) is a chronic disease that affects the joints, connective tissues, muscles, tendons, and fibrous tissues. The disease predominantly targets adults between the ages of 20 to 40 and it is more prevalent in women than in men. As RA affects people during an especially productive period of their lives, it is globally considered a serious public health problem. In Switzerland 1 out of 4 disability pensions is paid for rheumatologic problems. The impact of RA goes beyond physical and economic aspects: it also affects people psychologically and emotionally. Gamification is the use of game thinking in other contexts than games in order to solve problems. As there is little evidence on the effect of online social support and gaming from web-based health interventions on health outcomes, we decided to carry out a study that included both. It is called the ONESELF study and was designed and operated in collaboration with the Swiss Rheumatology Association for chronically ill patients diagnosed with RA.

Who can participate?
Patients diagnosed with RA by a doctor, with no chronic illness, with internet access and fluent in Italian.

What does the study involve?
Patients were randomly allocated to one of four experimental groups or to a control group with no access to the website. The experimental groups had access to the different features and sections of the website: Group 1 had access to the informational sections only (InfO), Group 2 additionally to the social support sections but not to the gaming feature (SocSup), Group 3 to the gaming but not the social support sections (Gaming), and Group 4 had access to everything (SocSupGaming).

What are the possible benefits and risks of participating?
Benefits - increase physical activity, reduce visits to doctors, hospitals, etc. and decrease the use of prescription drugs.
Risks - there were no risks or side effects from using a website.

Where is the study run from?
It was a web-based study (www.oneself.ch) developed in collaboration with the doctors of the Swiss Rheumatology Association. The researchers who developed and managed the website work at the University of Lugano (Università della Svizzera italiana) in Switzerland.

When is the study starting and how long is it expected to run for?
Recruitment lasted from November 2012 to February 2013. Patients were introduced to the study through brochures left with rheumatologists, physiotherapists, ergotherapists and psychologists. The patients were given the brochure with a brief description of the study and also a consent form to be signed and sent back to the research team. The study took place between February 2013 and July 2013.

Who is funding the project?
The Swiss National Science Foundation

Who is the main contact?
Professor Peter Johannes Schulz
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Study website
http://oneself.ch/arthritis-rct-experiment/demo-material

Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
PDFMP1_135114/1

Study information

Scientific Title
Do social support features and gamification on health websites affect physical and health behaviors? A randomized controlled trial of a web-based intervention for rheumatoid arthritis patients

Acronym
SuSTAIN

Study objectives
The goal of the study was to look into the effects of social support features and gamification (operationalized through different types of access to website's sections and features) on the primary outcomes (physical activity, health care utilization, prescription medication overuse) expecting beneficial effects (more exercise, less health care utilization, less medication overuse) for the former, and treating the direction of an effect of gamification as an open research question. Additionally, the effect of gamification on the website use was also addressed.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Ethical Committee of Canton Ticino (the Italian-speaking part of Switzerland), February 2012

Study design
Randomized single-blind controlled repeated-measure intervention

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Other

Study type(s)
Quality of life

Participant information sheet
http://oneself.ch/sites/default/files/artrite/rctexperiment/flyer-oneself.pdf

Health condition(s) or problem(s) studied
Rheumatoid arthritis (RA)

Interventions

The intervention included five groups. Four experimental groups who had access to the website and a control group that did not.
The experimental groups combined access vs. no access to the social support sections of the website and presence vs. absence of the gaming feature, all on top of access to the informational sections, which was given to all four experimental groups. In more detail, each group had access to different sections and features of the website. The main sections and features were:
1. One section included informative webpages about RA and served to improve the declarative knowledge of the patients by using simple layperson language to present and describe arthritis, covering its main aspects and the issues around it.
2. Three sections included articles and videos prepared in collaboration with physiotherapists, ergotherapists and doctors. They explained methods and techniques that helped in coping with RA especially in ones everyday life. This section served to minimize the negative impact of the disease on patients life at home and at the workplace. Treatment options like medications and alternative therapies were also discussed in these sections. The goal was to target mainly the procedural knowledge of the patients by explaining the steps and actions that contribute to better disease management.
3. The testimonies section included video interviews with patients speaking about their experience with the disease and the way they dealt with it.
4. Another section offered video interviews with doctors about different therapies and the ways for handling the pain and getting over the obstacles presented by RA.
5. A forum and chat-room were implemented and made available to the patients. During the course of the intervention, 9 pre-scheduled sessions were offered in the chat-room. Patients were able to see the agenda of the planned sessions and the topic that would be tackled by each doctor. In each session, a different doctor participated in the chat with the patients, moderated by the research team. Patients discussed their questions and concerns with the doctor. The whole discussion was visible to all participants in the chat-room.
6. A patients blog that was a tool for them to contribute to the website by proposing topics, ideas or even add materials related to the RA disease.
7. Gamification was added to encourage and motivate the patients to use the platform more. Participants' actions and contributions to the platform were rewarded by points that allowed for collecting different badges and in turn gaining various medals. Points were given according to patients' contributions and interaction with different features of the website. We differentiated between immediate and delayed rewarding. Points were immediately rewarded for posting, commenting/replying in the forum, writing and publishing in the patients' blog and answering correctly to one of the quizzes that were attached to the different webpages. Delayed rewarding was given for visiting and exploring the different webpages and sections and for participating in the chat-room sessions. Points were automatically calculated and distributed at midnight (Swiss-time). A section called My points was available in which patients saw their rank and statistics about their performance in collecting points, badges and medals. The same section contained a leadership board that showed the top 5 users from among the same experimental group and gave information about their points collected in the different categories. The rules of the game and the explanation of how to earn points, badges and medals were included in the same section that announced a real prize for the top 5 users at the end of the intervention.

Sections 1, 2 primarily offered information, while Sections 3, 4, 5 and 6 provided social support to users, comprising emotional, practical and informational support from different parties: RA patients in case of testimonies and contributions to the blog, physicians and doctors in case of video-interviews and both in case of forum and chat-room.

Intervention Type

Other

Phase
Not Applicable

Primary outcome measure
The same measures were used and responses were collected at baseline, posttest (2 months) and follow-up (4 months)
1. Physical activity: 6 items based on the Exercise Behaviours Scale (Lorig et al., 1996). The items measured the time spent on physical activity in the last week on a scale from 0 = never to 5 = more than 3 hours per week. The scoring of each item as reported by the original scale, estimated the number of minutes spent on exercise from 0 to 180 minutes.
2. Health care utilization: 5 items based on Healthcare Utilization Scale (Ritter, 2001). They were used to measure the self-reported outpatient visits to physicians, emergency room visits, nights in the hospital, chiropractic visits, and physical therapy visits.
3. Prescription medication overuse: 6 items based on the Addiction Severity Index. Each item was a Yes/No question. Items were scored yes = 1, no = 0. The higher the sum score, the more medication overuse is indicated.

Secondary outcome measures
The same measures were used and responses were collected at baseline, posttest (2 months) and follow-up (4 months)

1. Rheumatoid Arthritis Knowledge: 15 multiple-choice questions based on the Patient Knowledge Questionnaire in RA (Hill J, Bird HA, Hopkins R, et al., 1991)
2. Empowerment: 12 items adapted for RA, based on the empowerment scale proposed by (Spreitzer, 1995). It includes four sub-dimensions: meaning, competence, self-determination, and impact. Each item in the scale is measured on a 7-point Likert scale from 1 = very strongly disagree to 7 = very strongly agree.

Overall study start date
01/11/2012

Completion date
31/07/2013

Eligibility

Key inclusion criteria
1. To have received a diagnosis for RA from a doctor
2. To have cognitive function sufficient to use the website effectively
3. Not to suffer from any other major chronic illness (e.g., cancer, diabetes)
4. To have Internet access
5. Willingness to use the website for at least 1 hour per week
6. To be fluent in Italian

Participant type(s)
Patient

Age group

Adult

Sex
Both

Target number of participants
160

Total final enrolment
157

Key exclusion criteria
Not satisfying the inclusion criteria

Date of first enrolment
01/11/2012

Date of final enrolment
01/02/2013

Locations

Countries of recruitment
Switzerland

Study participating centre
Via G. Buffi 6
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Sponsor information

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Sponsor type

Research organisation

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https://ror.org/00yjd3n13

Funder(s)

Funder type
Research organisation

Funder Name
The Swiss National Science Foundation (Switzerland) Ref. PDFMP1_135114/1

Results and Publications

Publication and dissemination plan
Not provided at time of registration

Intention to publish date

Individual participant data (IPD) sharing plan
Not provided at time of registration

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	resullts	09/01/2015		Yes	No