

Original Paper

# Ease of Use of the Electroconvulsive Therapy App by Its Users: Cross-Sectional Questionnaire Study

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## Abstract

**Background:** Electroconvulsive therapy (ECT) is one of the oldest, most effective, and potentially life-saving noninvasive brain stimulation treatments for psychiatric illnesses such as severe depression, mania, and catatonia. The decision-making process to use ECT involves well-informed discussion between the clinician and the client. A platform, like an app, which provides this information in an easy-to-understand format may be of benefit to various stakeholders in making an informed decision. Apps developed by clinicians/hospitals taking into consideration user perspectives will filter and provide trustworthy information to the users. In this regard, the ECT app, an app which is freely available for download at the Apple Store, was developed by the Leicestershire Partnership National Health Service (NHS) Trust and Leicestershire Health Informatics Service (LHIS).

**Objective:** The objective of this study is to evaluate and demonstrate the accessibility of the ECT app to the chosen audiences it was created for, via a paper and electronic questionnaire.

**Methods:** A survey was conducted between January 2017 and March 2019. A survey questionnaire designed for the study was sent to mental health professionals, medical students, patients, carers, and members of the public via post, email, and SurveyMonkey or informed via posts shared in Psychiatry online groups and face-to-face contact. All participants who were willing to participate in the study were included.

**Results:** Results were collected via paper forms, email responses, and SurveyMonkey and all were inputted into SurveyMonkey to facilitate analysis. A total of 20 responses were received during the study period (January 2017 to March 2019). The participants of the survey, which included a mixed group of professionals (12/20, 60%), patients (3/20, 15%), and carers (1/20, 5%), opined that the app was easy to download (14/20, 70%) and use (9/20, 45%); contained adequate information (19/20, 95%); they felt more informed after having used the app (9/20, 45%); and they would recommend it to others (19/20, 95%). The participants of the survey also provided suggestions on the app (10/20, 50%).

**Conclusions:** The ECT app can be beneficial in sharing appropriate information to professionals and the public alike and help in gathering unbiased and nonjudgmental information on the current use of ECT as a treatment option.

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**KEYWORDS**

mHealth; depression; apps; electroconvulsive therapy; smartphone; mobile phone; surveys; psychiatry

## Introduction

Electroconvulsive therapy (ECT) is one of the oldest, most effective, and potentially life-saving noninvasive brain stimulation treatments for psychiatric illnesses such as severe depression, mania, and catatonia. The National Institute for

Health and Care Excellence (NICE) recommends use of ECT only to achieve rapid and short-term improvement in treatment-resistant or life-threatening conditions [1]. The decision-making process to use ECT involves well-informed discussion between the clinician and the client. NICE guidelines also recommend development of leaflets to aid this cause [1].

A platform which provides this information in an easy-to-understand format may be of benefit to various stakeholders in making an informed decision.

Penetration of technology in our daily lives is substantial and advancements in technology and health informatics can be leveraged for better patient care. Mental health care delivery using digital platforms is affordable, available, and accessible to many [2]. Especially, the rapidly expanding numbers of mobile medical apps have the potential to transform the patient–health care provider relationship by improving the turnaround time and reducing costs [3]. In a study conducted in China, it was found that 96.7% (612/633) of participants used mobile devices, among which 38.4% (235/612) used multiple types of health apps [4]. The clinician rather than “prescribing apps” can engage the patient in “problem-solving” discussion, the problem here being “making a treatment choice.” There is a vast sea of information available in the market and patients find it difficult to gather information and make informed choices. Clinicians also may lack time to explain a procedure fully and apps will help in the cause [5]. Apps developed by clinicians/hospitals taking into consideration user perspectives will filter and provide trustworthy information to the users.

In this regard, the ECT app was developed by the Leicestershire Partnership National Health Service (NHS) Trust and Leicestershire Health Informatics Service (LHIS) using the mDesign Development Platform to bring awareness about ECT for use by patients, carers, students, professionals, and the general public. It uses a multimedia approach, inclusive of video, text, and audio content, to show all aspects of the treatment.

Although the app was launched in November 2015, as of yet, there has been no formal feedback collated around the effectiveness of its content and accessibility. More recently, the mHealth App Usability Questionnaire (MAUQ) has been developed [6], but was not available during the study period. The aim of this survey is to evaluate and demonstrate the accessibility of the ECT app to the chosen audiences it was created for, via a paper and electronic questionnaire.

## Methods

### Survey

A survey was conducted between January 2017 and March 2019. The survey questions, which are provided in the [Multimedia Appendix 1](#), were sent to mental health professionals, medical students, patients, carers, and members of the public via post, email, and SurveyMonkey or informed via posts shared in Psychiatry online groups and face-to-face contact. The survey questionnaire was developed for the purpose of this study and was not validated. The survey questionnaire was devised by the corresponding author (GK) in consultation with the ECT team and service users’ representatives. The survey questionnaire did not collect personal/demographic details of the participants and hence provided anonymized data. Institute Research and Development opined that “...this proposal is more akin to a customer feedback or satisfaction survey

commonly used in product development, and would not, in this form, require approval through R&D.” Consent was sought to participate in the survey and the informed consent form is provided in [Multimedia Appendix 2](#).

All participants who were willing to participate in the study were included. There were no exclusion criteria. The participants were chosen in the following manner:

- All service users (and their carers) who were prescribed ECT in the Leicestershire Partnership NHS Trust since July 1, 2016, and the service user/carer group of ECT Accreditation Service (ECTAS) from Royal College of Psychiatrists were contacted.
- All the trainees, consultants, and ward nurses in the Leicestershire Partnership NHS Trust who prescribe or are involved with ECT and the consultants and nurses of the ECTAS were contacted. Consultants and Trainees were also approached through the Deanery of the University of Leicester and the Royal College of Psychiatrists.
- The final-year medical students from the University of Leicester were also approached through the Deanery and the Royal College of Psychiatrists.

Results were collected via paper forms, email responses, and SurveyMonkey and all were inputted into SurveyMonkey to facilitate analysis. The analysis was done using SurveyMonkey [7]. The results are expressed as frequencies and the comments/suggestions are grouped into themes and are expressed verbatim.

### Ethics Statement

Institute ethics committee approval was sought and it opined that the survey did not require approval from them.

### Consent Statement

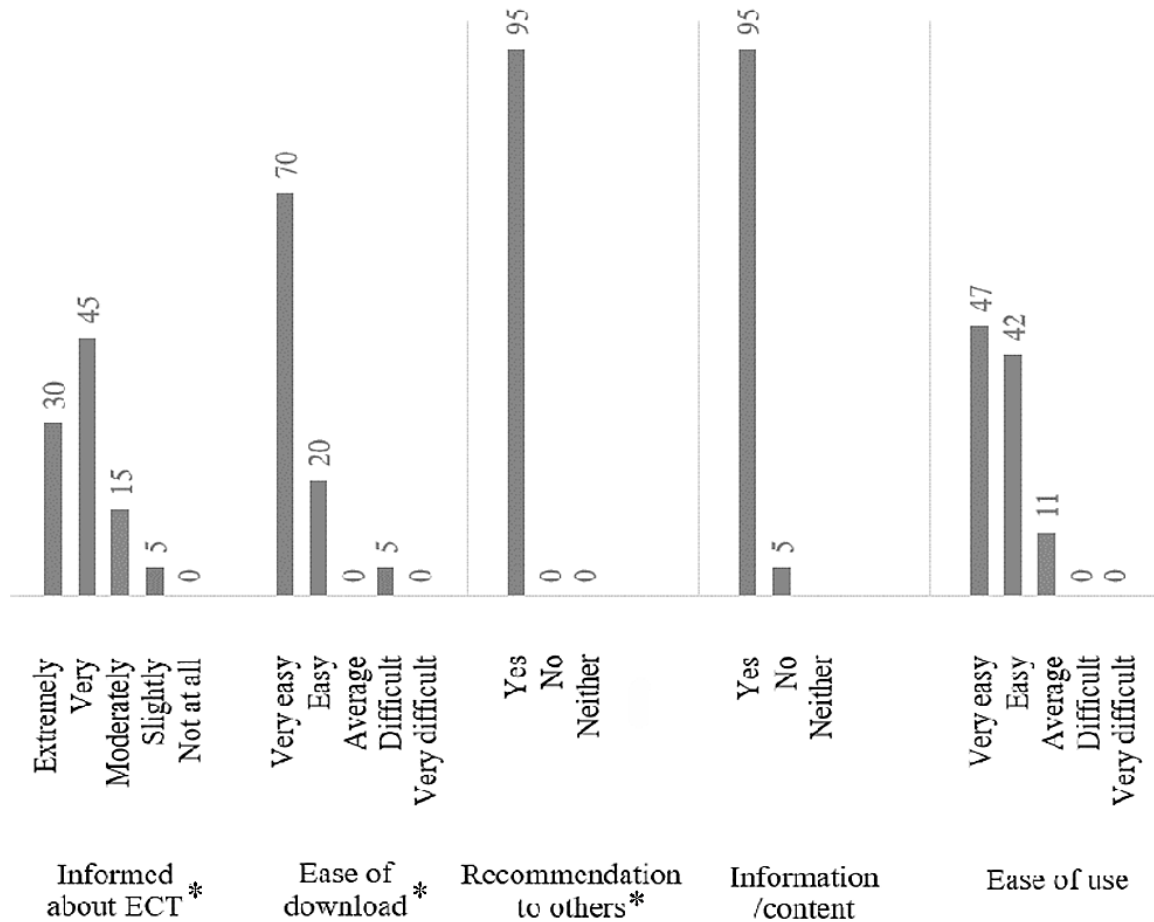
Consent was sought to participate in the survey and the informed consent form is provided in [Multimedia Appendix 2](#).

## Results

A total of 20 responses were received during the study period (January 2017 to March 2019). A majority of the participants (12/20, 60%) were professionals; 15% (3/20) were patients; 5% (1/20) were carers; and 20% (4/20) were others, including a member of the public, a friend of a patient, a past patient, and a medical student. The details are provided in [Multimedia Appendix 3](#).

The responses to the questionnaire are provided in [Figure 1](#). Almost everyone (19/20, 95%) (1 person skipped the question) answered that they could find all the information they were expecting to see in the app. Three-fourth of the respondents (15/20, 75%) felt more informed about ECT after the use of the app (Extremely [6/20, 30%] and very [9/20, 45%]). A vast majority felt that the app was very easy to download (14/20, 70%) and use (9/20, 45%). Almost all (19/20, 95%; 1 person did not answer the question) said that they would recommend the app to other patients/professionals.

Figure 1. Survey responses.



\*1 participant provided no response

Many (10/20, 50%) participants also provided suggestions and comments. Among these, 50% (5/10) commented on information provision, 10% (1/10) complained of network and connectivity issues, 20% (2/10) gave compliments, and 20% (2/10) provided miscellaneous comments to make the app free and that they had no computer or smartphone. The details are provided in [Multimedia Appendix 4](#).

### Discussion

The participants of the survey, which included a mixed group of professionals, patients, and carers, opined that the app was easy to download and use, contained adequate information and they felt more informed after having used the app, and they would recommend it to others. The participants of the survey also provided suggestions on the app.

It is pertinent to know that the decision-making process to use ECT involves provision of adequate, appropriate, and accurate information on the method, benefits, and risks of ECT [1]. This discussion is particularly important as ECT is usually shown in a bad light in popular culture and general public have formed myths around ECT. Apps may be particularly beneficial in this regard as they have the advantages of being readily available and mostly free of cost to all users of electronic devices on

which apps can be downloaded (eg, mobile phones, tablets, laptops). In addition, in an app, a large amount of information and resources can be condensed into a small space, and can include a wealth of learning material accessible in a number of ways, including audio and video (as opposed to physical material, which can be bulky and one dimensional). Numerous apps are now available to assist health care providers with many important tasks, such as information and time management, health record maintenance and access, communications and consulting, reference and information gathering, patient management and monitoring, clinical decision making, and medical education and training [8]. The ECT app is specially designed to provide information and practical procedure of ECT to patients and carers to make informed choices and to relieve anxiety and myths related to ECT. In addition, it provides detailed information on ECT to both mental health and nonmental health professions to broaden their knowledge and support their patients when appropriate. Patients still rely on their general practitioners and other health professions to help them in making decisions in psychiatry. The app was developed for the use of professionals and public (not for the purpose of this study) by the hospital with inputs from professionals and service users as is also suggested by Chiauzzi and Newell [5]. The app is free to download on the Apple Store online [9].

In this survey, the response rate was low, despite multiple methods of distribution of the survey and reminders being sent to individuals. The exact number of surveys sent cannot be specified due to the use of online forums in which it is unclear how many have seen the link. Not all responders had access to electronic devices which utilize apps. Leaflets would be an alternative option for this population, although not all parts of the app (eg, videos) would be translatable into paper format. Although text is available on the app for all the videos, subtitles for the videos may aid users with hearing disabilities to use the app and may improve accessibility. Not all respondents experienced technical issues; therefore, this is likely to be as a result of the local internet connection availability, rather than a feature of the app itself. Overall, the feedback was positive and encouraging.

The ECT app can be beneficial in sharing appropriate information to professionals and the public alike and help in gathering unbiased and nonjudgmental information on the current use of ECT as a treatment option. The app is specially

designed to provide information and practical procedure of ECT to patients and carers to make informed choices and to relieve anxiety and myths related to ECT. In addition, it provides detailed information on ECT to both mental health and nonmental health professions to broaden their knowledge and support their patients when appropriate. Patients still rely on their general practitioners and other health professions to help them in making decisions in psychiatry.

We aim to update the app regularly; to ensure that it is in line with the most recent guidance and advances in ECT practice. In the future, mental health professionals who provide information on ECT can suggest the patients and their carers to go through the app and later have a discussion on their decision. A feedback about the app can be taken from both mental health professional and patients/carers at that point of time. A validated feedback form can also be incorporated in the app. Future studies can aim at using validated survey questionnaires such as MAUQ [6] on targeted population of ECT users. Measuring saved clinician time can help in better utilization of human resources.

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## Authors' Contributions

All the authors have contributed to the development of the paper.

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## Conflicts of Interest

None declared.

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## Multimedia Appendix 1

The user survey questionnaire.

[\[PDF File \(Adobe PDF File\), 33 KB-Multimedia Appendix 1\]](#)

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## Multimedia Appendix 2

Informed Consent Form.

[\[PDF File \(Adobe PDF File\), 55 KB-Multimedia Appendix 2\]](#)

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## Multimedia Appendix 3

Type of Participants.

[\[PDF File \(Adobe PDF File\), 29 KB-Multimedia Appendix 3\]](#)

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## Multimedia Appendix 4

Comments and suggestions by the participants.

[\[PDF File \(Adobe PDF File\), 56 KB-Multimedia Appendix 4\]](#)

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