Journal of Surgery
Moore M, et al. J Surg 8: 1858
www.doi.org/10.29011/2575-9760.001858
www.gavinpublishers.com
Research Article

Patient's Perspective on 'Post Op'Experience

Melanie Moore[1], Sara Monteiro[2], Moza Al-Thani[3], Adriana Raicu[4], Faizal Rayan[5*], Ashish Kelkar[6]

[1]Elective Nurse Practitioner, Kettering General Hospital, NN16 8UZ, UK

[2]Infection Prevention and Control Clinical Nurse, Kettering General Hospital, NN16 8UZ, UK

[3]UCL Global Business School for Health, London, UK

[4]Consultant General Surgeon, Kettering General Hospital, NN16 8UZ, UK

[5]Trauma and Orthopaedic Surgeon, Kettering General Hospital, NN16 8UZ, UK

[6]Consultant General & Colorectal Surgeon, Kettering General Hospital, NN16 8UZ, UK

[*]**Corresponding author:** Faizal Rayan, Trauma and Orthopaedic Surgeon, Kettering General Hospital, NN16 8UZ, UK

Citation: Moore M, Monteiro S, Al-Thani M, Raicu A, Rayan F, Kelkar A (2023) Patient's Perspective on 'Post Op'Experience. J Surg 8: 1858 DOI: 10.29011/2575-9760.001858

Received Date: 26 July, 2023; **Accepted Date:** 31 July, 2023; **Published Date:** 02 August, 2023

Abstract

Smartphone applications have significant potential in healthcare. However, the success of these technologies depends on their design, usability, and patient accessibility. 'Post Op' is a relatively new smartphone application in healthcare, that aims to assist patients postoperatively via remote monitoring. Due to it's launch in 2022, no studies yet exist that examine the usability and patient experience of Post Op. Thus, we designed a study to gain preliminary insights into the app's suitability and efficacy from the patient perspective. We conducted telephone interviews with 30 patients who had undergone surgery and were offered use of the Post Op app. The interview consisted of 10 anonymised quantitative and qualitative questions on patient experience while using the app. Quantitative question responses ranged from '1' to '6', with '1' being the worst possible performance and '6' being the best.

The mean score for ease of use of the app was 5.16, with only one patient scoring below 3. 23 patients (76.7%) reported that the app helped them to feel more confident in their recovery and 22 patients (73.3%) reported that it helped them to avoid visiting their primary care physician or go to the emergency department. This suggested that Post Op can help alleviate the burden on community and emergency health services. The mean score for ease of wound image upload was 4.48, with some patients reporting that they found this feature challenging. Overall, the results indicated a primarily positive experience of the Post Op app with patients finding it easy to use. The design meets the aims of the app, it is a useful tool for clinicians to help provide support for their patients. We are now using in other specialties and we plan to perform similar surveys to test its utility in all groups.

Introduction

Digital technologies and mobile devices are expected to be increasingly integral in the healthcare ecosystem. This is particularly the case with smartphones, given that as of 2020, there are 5.2 billion smartphone users worldwide and given the nascent proliferation of smartphone-based applications ("apps") [1,2]. These devices have significant potential for patient usage in scheduling appointments, accessing results, and providing information and instruction [3,4]. Simultaneously, they have notable therapeutic use ranging from patient monitoring and communication to information and diagnostics provision [5]. However, the practical success of these apps depends on various aspects, such as the quality of the user interface, their functionality, and the robustness of their data security/privacy [6]. In a recent study examining 5000 healthcare apps, the Organisation for the Review of Health and Care Apps found that 80% did not adhere to the necessary security standards [7,8]. Moreover, the success of

these apps is contingent upon their compliance with regulatory and legislator standards, such as those set by the National Institute for Health and Care Excellence (NICE) for those wishing to use their products in the United Kingdom's health and social care system [9].

Post Op, a comprehensive patient experience app that strictly adheres to security standards and regulations, was launched at Kettering General Hospital (KGH), United Kingdom, in 2022. Its primary aim is to assist patients postoperatively, following their discharge from the hospital, by recording the relevant patient data required to support the decision-making of the clinical team. Its success, however, depends upon its design, usability, and patient accessibility, as these each influence the degree to which patients can successfully navigate and interact with the app. This includes its compliance with accessibility guidelines and its usability by patients with impairments. Given the recency of Post Op's launch, no existing studies examine the app's usability and patient experience when using it. As such, this research investigated a small cohort of patients who had undergone surgery and were offered this app. This was done to gain some preliminary insights into the suitability and efficacy of the app, which would be used in turn as valuable feedback to ensure that the app can satisfy the needs of patients and healthcare professionals.

Materials and Methods

We considered the following means of ascertaining the Post Op app's efficacy from the patient's perspective and how well it aids their recovery were considered:

- Surveys and questionnaires allow a relatively feasible means of collecting data on patient views that can be scaled. Questions would likely focus on the app's usability, accessibility, information clarity, and value to the user's recovery process. It would also be possible to perform a comparative analysis of patients using the Post Op app and those not using it. However, this would require careful matching of patients for their surgery, demographics, and smartphone skills.
- Focus groups: Small-group discussions with patients enable a deeper and more thorough insight into their experiences. This might include information about any problems they encountered or suggestions for improvement. However, this is much more time-intensive for the staff undertaking the study and various privacy/ethical concerns due to the group nature of this method.
- Healthcare professional interviews: Doctors and nurses may be engaged to determine whether the app has successfully given them the needed information and whether it has contributed to better patient management. Although essential, this only provides a very indirect measure of patient experience and usability.
- Analysis of usage data: Information on how patients use the app could be examined. This could include aspects such as the most frequently used features, the amount of time spent using them, and usage patterns that could show whether or not the app successfully engages patients. The developers of Post Op are performing this themselves, but this data has been released.

This study utilized a telephone survey using a standardised and anonymised questionnaire. The sample involved 30 consecutive patients undergoing various general surgery procedures at KGH, ranging from immediate to 60 days postoperative. The sample selection began once the app was installed and the extended scope nurse practitioner was familiar with it. All patients were informed that their participation was entirely voluntary and that the confidentiality of their data would be maintained.

The questionnaire is included in Appendix 1. It includes quantitative questions with ordinal responses ranging from '1' to '6', with '1' being the worst possible performance and '6' representing the best. In addition, several qualitative questions were included, which allowed patients to provide narrative responses, from which a more in-depth understanding of patient experiences could be obtained.

Results

The results indicate a primarily positive experience of the Post Op app, based upon the quantitative and qualitative feedback given by the sample. Of the entire cohort, the mean score for ease of use on the app was 5.16, with only one patient scoring '1', '2', or '3' on the scale (Figure 1). In addition, 23 patients (76.7%) reported that the app helped them to feel more confident in their recovery (Figure 2), and 22 patients (73.3%) reported that it had helped them avoid needing to see their primary care physician or go to the emergency department due to concerns (Figure 3). Finally, in the 24 cases where the app was used to send a question from the patient to their healthcare team, the patient reported a mean level of satisfaction of 5.64 with both the response timing and substance (Figure 4).

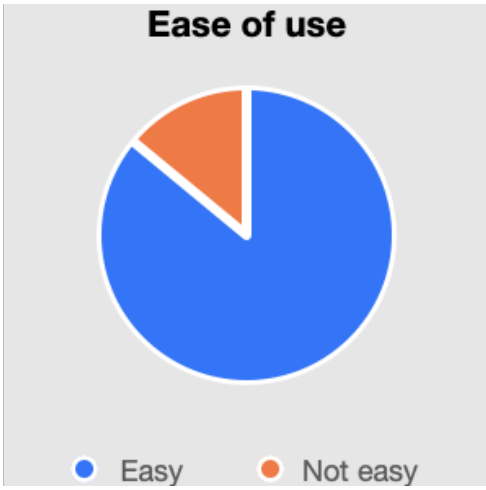


Figure 1: Pie chart depicting the mean patient rating for how easy the Post Op app is to use (5.16/6).

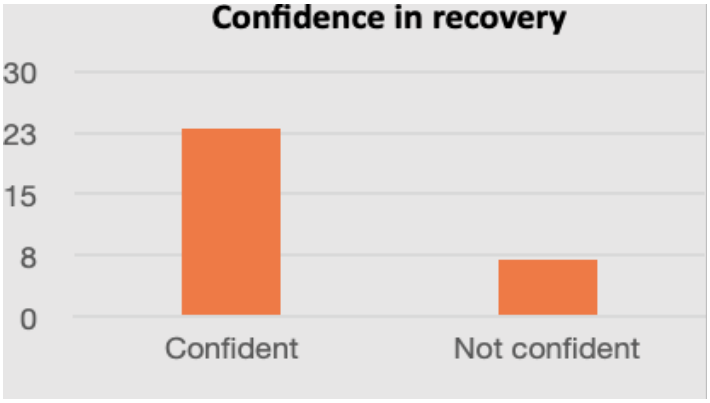


Figure 2: Bar chart showing the number of patients who were confident (23) and not confident (7) in their recovery following use of the Post Op app.

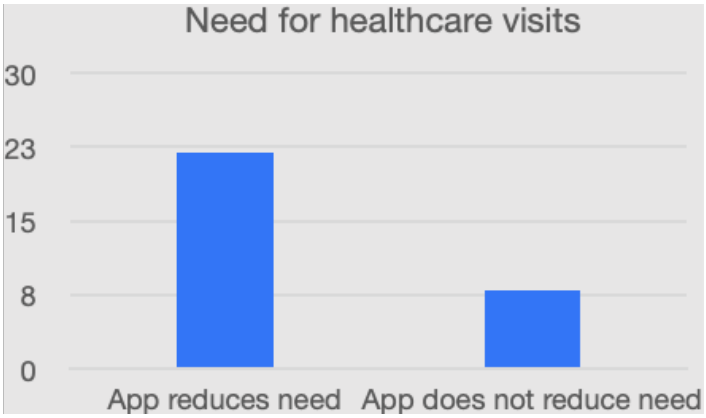


Figure 3: Bar chart showing the number of patients who believed the Post Op app reduced (22) and did not reduce (8) the need for primary care or emergency department visits.

Figure 4: Pie chart depicting the mean patient satisfaction score with clinical team communication (5.64/6).

The favourable findings in the quantitative questions were also supported by several of the patients' qualitative (narrative) responses. These included comments relating to ease of use, positive experiences, and user engagement, such as:

"nice to have for reassurance,"

"direct messaging is great - felt supported,"

"is like a virtual ward, felt connected with the team, in the comfort of own home."

"reassured. gave confidence ++."

"very helpful; the crew got back to me quickly by phone call or text message."

Most patients reported that uploading images of their wounds was simple, with a mean rating of 4.48, based on the 27 patients who downloaded and used this function in the app (Figure 5). However, a minority encountered challenges. When asked whether they would suggest the app to a friend, 24 30 respondents said yes, representing an 80% positive response rate (Figure 6). The overall satisfaction rate with this app is promising, and the preliminary findings indicate a mostly favourable patient experience. Nonetheless, the challenges relating to submitting images experienced by a few patients indicate concerns that must be addressed, particularly given that this is a key distinctive feature of the app.

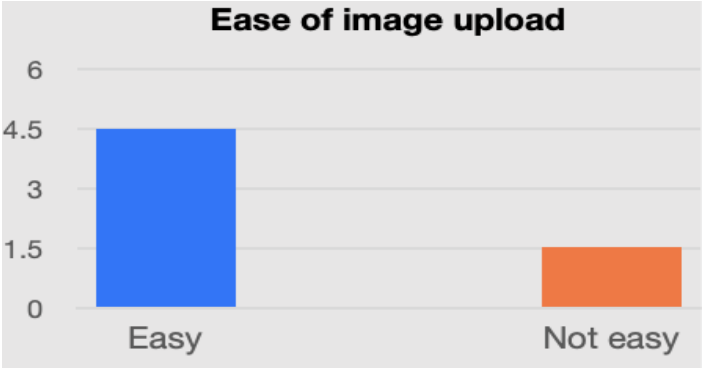


Figure 5: Bar chart depicting the mean patient score for ease of image upload (4.48/6).

Figure 6: Bar chart showing the percentage of patients who would (80%) and would not (20%) recommend the Post Op app.

Discussion

In past decades, patients would typically be admitted a day or more before surgery and expect to stay postoperatively for at least several days. In recent years, there has been a consistent effort within global health systems to reduce patients' average hospital stay in conjunction with decreasing the overall number of acute hospital beds. This has resulted in most elective procedures being conducted as day cases, and patients rarely spend more than a day or two in the hospital post-surgery. This is particularly the case within the UK, where a combination of health, economic and political grounds have catalysed these changes. Nevertheless, there is a danger that patient experience and health outcomes are compromised. One key concern relates to patients feeling unsupported and concerned when they find themselves alone at home only a day or so following surgery. Another relates that discharged patients are cared for by community health services (e.g., general practitioners). However, these resources are already overburdened and need to be more familiar and experienced in dealing with early postoperative patients than hospital teams. Although patients can still access emergency departments, these currently need help to meet patient demand. The Post Op app was developed to assist patients through the early stages of their postoperative care and thus helps partly remedy the above mentioned issues experienced by UK patients post-surgically. This study conducted a preliminary investigation into patient experiences with the Post Op app and found that this objective has been accomplished considerably.

Based upon the research conducted on the cohort of 30 patients from KGH, there are several salient learning points regarding the Post Op:

- **Ease of use:** The app received a mean usability score of 5.16, indicating that, on average, patients found it very simple to use. This is further supported by the fact that only three patients gave it a low score ('1', '2', or '3'). The broad sense of contentment regarding the app was also supported by the fact that 23 patients (76.7%) reported feeling more confident in their recovery after using the app, and 22 patients (73.3%) reported believing it reduced the need for visits to their primary care physician or emergency room. These findings reflect a favourable patient experience that is likely to impact their overall healthcare experience positively and has important implications for healthcare resources.
- **Narrative feedback:** Qualitative remarks such as "nice to have for reassurance" and "direct messaging is great - felt supported" provide valuable insights into what elements patients found most beneficial. These particular comments reflect the potential value patients see in receiving reassurance and feeling supported and the potential benefits of the direct messaging feature.
- **Communication within the clinical team:** The clinical team must be informed of the patient's progress, issues they experience, and how the app assists in patient recovery. Patients placed great importance on their ability to communicate with the clinical team. This was evidenced by the high mean score of 5.64 for patient perceptions of the response times and content. The lower mean score of 4.48 for the image upload feature implies that while the majority found it easy, there were challenges for some users. As such, it is essential to remedy this feature to resolve any issues and provide an even better experience for users. To make improvements, it will be necessary to investigate in detail the challenges experienced by those who have trouble using this feature. These concerns have been communicated to the app developers, who will use this information to ensure the app continues to develop and improve.

- **Timing of the survey:** The sampled cohort was contacted at varying times after their surgery, which reduces the quality of the data and the degree to which it can be validly compared across patients. This is because the timeframe influences the extent to which patients have used the app and also to which the app experiences can easily be recalled. A timeframe of between 2-6 weeks post-operation may be appropriate. However, this could vary depending on the nature of the procedure and the anticipated recovery.
- **Patient selection:** The sampled cohort of 30 consecutive patients had undergone various general surgical operations, each with a unique road to recovery and a unique set of necessities. This enhanced the research practicality and enabled greater accessibility to study participants, as well as providing real-world experience. Nonetheless, standardisation across participants based on surgery type (or even other demographics) would enhance the comparability of results and the degree to which credible inferences can be drawn
- **Documentation:** The research involved documenting several stages, such as the steps required to install the app, how the extended scope nurse practitioner was involved, and how the telephone survey was carried out. The gathered data was analysed, and the results were considered to improve the app for future patients. This kind of evaluation is necessary for healthcare apps to ensure that they satisfy patients' requirements and contribute positively to their recoveries. In addition, patients were informed that their feedback is essential and would be used to enhance the PostOp app for future users.
- **Small sample size:** The research included a small cohort of 30 patients, with a small complement of staff responding to the questions posed via the app. Additional studies with larger sample sizes are needed in other hospitals and clinical areas to determine whether the findings can be replicated across all fields and settings.
- **Quality of responses to patient queries:** Occasionally, there were issues relating to the timeliness and appropriateness of the responses given to patient queries. Consequently, clinical teams must ensure that those responding to incoming inquiries promptly and efficiently respond. Moreover, protocols should be established to avoid staffing issues, such as over weekends or holidays, to ensure continuity despite potential staff shortages.
- **Technical support:** Some patients are likely to encounter difficulties in understanding, accessing, or using the app, and in response, appropriate strategies must be implemented to safeguard their postoperative care. This could include a hotline for technical support, alternative communication channels (e.g., SMS-based messaging), user education, and tutorials. Beyond this, it is also imperative to establish a clear and robust feedback system that can help to understand the unique difficulties that users experience so that these can be addressed in the future.

The findings provide insight into the promising role that digital technologies, namely the Post Op app, may play in the modern healthcare system, where there is a premium on shortening the length of hospital stays.

In light of the above, the following are some essential takeaways and recommendations:

- The findings of this investigation, despite their limited scope, suggest that the Post Op app has the potential to bridge the gap between hospital care and home recovery successfully. Plans exist to conduct similar studies on a bigger scale across various hospitals and fields of practice to validate the usefulness of the Post Op app in various environments.
- Clinical teams must establish a protocol for responding to questions submitted via the app, particularly outside regular working hours and when staff members are absent. When responding to patients, it is crucial to be sensitive to the needs of patients to earn their trust and ensure their well-being.
- Improving the patient's postoperative experience could reduce the number of patients who attend emergency departments after surgery. This is especially helpful in the challenging healthcare climate, where emergency care patient volumes are critical.
- The insights provided regarding the challenges in image upload and other areas that may be improved have been used to fine-tune the system. This ensures that the app remains valid and suits patients' ever-changing requirements.
- While the app provides considerable help, it is essential to acknowledge the crucial role of community nurses and general practitioners. It is possible that postoperative treatment for the patient could be improved further through effective coordination between the app and these community healthcare experts.
- Providing training and education to clinical staff about the app's features and the significance of rapid communication is vital to improving the efficacy of this digital health technology.
- In order to optimise the app for the benefit of postoperative care and to further build upon future collected data, it is necessary to engage all stakeholders, including patients, clinical staff, and developers.

In adjusting to the rapidly shifting nature of the healthcare industry and contemporary challenges, the Post Op app is a move in the right direction. However, despite the encouraging results of this study which support this view, several limitations limit the generalisability of the results. These include but are not limited to the small cohort size, the restriction to general surgical procedures they underwent, and the dependence on a single clinical staff member. These issues can be addressed through future research conducted with more extensive and diverse patient samples and represented by numerous clinical teams in various medical specialties.

Conclusions

This research has shown promising potential for the Post Op app during the early postoperative period and was generally viewed to have favourable usability. A small minority of patients experienced issues with some app features, such as image uploading. However, the condition of these patients was similar to what it would have been if they had not been provided with the app in the first place. As such, the Post Op app has proven to efficiently meet the needs of most patients during the crucial postoperative period. Therefore, the app may help reduce the need for post-surgical patients to remain in the hospital and visit the emergency department, consistent with current economic and health strategic priorities. In addition, it has the potential to aid patients' further own recovery at home in order to improve health outcomes.

The Post-Op app is a helpful instrument in postoperative care. It provides patients with a 'virtual' link to their clinical team, thereby addressing the risk of patients feeling abandoned following discharge from the hospital with a bridge between the hospital and the patient's home. The results of the telephone survey conducted in this research demonstrated that the vast majority of patients thought the application was simple to use, helpful in enhancing their sense of self-assurance while they were recovering, and efficient in lowering the number of times they needed to go to their primary care physician or the emergency room. The narrative replies further confirmed the positive perceptions regarding the ease and support patients had due to contacting their clinical team and obtaining rapid feedback. Nevertheless, difficulties in image upload highlight one area that might be improved to provide users with a more seamless experience. Moreover, it was suggested that patients who have difficulty using the app should be provided access to alternative support systems when they need help. They should not be made to feel inferior compared to people who could use the application without any problems. Therefore, a culture of continuous improvement and one that fosters an attitude that puts the patient first is critical to assist in maximising the positive impact of the app while ensuring that no patient feels abandoned or neglected.

"The authors wish to declare a potential conflict of interest. Author Mr F Rayan is the founder of Post Op ,a software application that has been utilised in the conduction of this study.This affiliation has not influenced the objectivity, integrity or intepretation of the findings in this study. All procedures, data collection and analysis were performed independently and were subject to peer review to ensure rigorous academic scrutiny".

References

1. Finances Online - Reviews for Business. Number of Smartphone and Mobile Phone Users Worldwide in 2022/2023: Demographics, Statistics, Predictions 2022.
2. Statista. Do you personally use a smartphone? - by age 2021.
3. Market Data Forecast. Global mhealth market/Mobile Health Market Size, Share, Trends, Growth & COVID 19 Impact Analysis Report – Segmented by Type, Services, Application & Region – Industry Forecast (2022-2027) 2022.
4. Su D, Michaud TL, Estabrooks P, Schwab RJ, Eiland LA, et al. (2019) Diabetes Management Through Remote Patient Monitoring: The Importance of Patient Activation and Engagement with the Technology. Telemed J E Health 25: 952-959.
5. Patel B, Thind A (2020) Usability of mobile health apps for postoperative care: systematic review. JMIR Perioperative Medicine 3: 19099.
6. Eckardt I, Buschhaus C, Nickenig G, Jansen F (2021) Smartphone-guided secondary prevention for patients with coronary artery disease. J Rehabil Assist Technol Eng 8: 1-9.
7. BBC News. Most healthcare apps not up to NHS standards. 16th February 2021.
8. Schoenfeld AJ, Sehgal NJ, Auerbach A (2016) The challenges of mobile health regulation. JAMA Intern Med 176: 704-705.
9. National Institute For Health and Care Excellence. Evidence standards framework for digital health technologies. ECD7 2022.

Appendix 1

Patient experience questionnaire for Post Op:

1. Did you find it easy to use the Post Op app?

1 – 6

2. Did you find using the app helped your recovery?

Y – N.

3. Has the app given you more confidence in your recovery process?

Y - N

4. How often would you like to be asked to fill in a simple form about how you are doing after your operation?

Daily - Alt days - Twice weekly - Weekly - Less often

5. How easy was it to take and send photos of your wound?

1 – 6

6. Did you use the app to message your surgical team?

Y- N.

6.1. If Y:

Were you happy with the response from your surgical team?

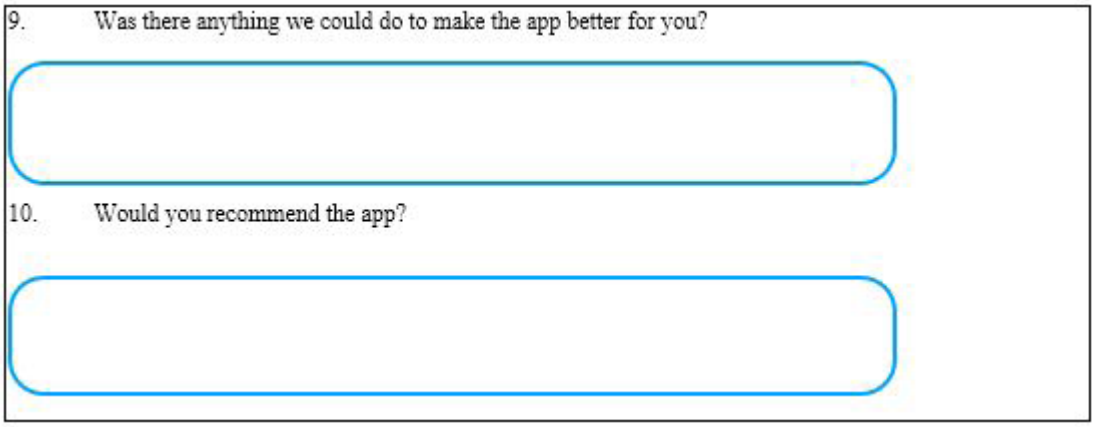
Time 1 - 6

Content 1 – 6

7. Did you find that using the photo/video and messaging service in the app allowed you to recover without having to contact/visit your surgical team/GP or A&E?

Y- N

8. Was there anything you particularly liked about the app?


9. Was there anything we could do to make the app better for you?
10. Would you recommend the app?