

Barriers and facilitators of adherence to a digital app for melanoma survivors.

Barriers and facilitators of adherence to the use of ASICA, a digital app designed to support melanoma survivors: concise report of a qualitative study.

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Learning Points:

- ASICA, an app-based digital intervention increased regular total-skin-self-examination and improved quality of life in melanoma survivors.
- Adherence varied however, one third adhered optimally, adherence dropped off in one third, and one third of recruits did not adopt the intervention at all.
- Barriers and facilitators were explored in interviews and a focus group with app-users.
- Important barriers to adherence were interface problems, orientation toward technology, lack of support from others and competing priorities.
- Important facilitators of adherence were technology receptiveness, having support from others, tailoring to individual needs, and being more recently diagnosed.
- These barriers and facilitators are now informing further development of the ASICA intervention.

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Abstract

We developed the Achieving Self-directed Integrated Cancer Aftercare (ASICA) in melanoma app to support monthly total-skin-self-examinations (TSSE) by melanoma survivors. A randomized 12-month trial demonstrated ASICA supported optimal monthly TSSE adherence in one third of participants. However, a further third of participants adhered well initially but subsequently dropped off, and a final third did not adhere at all. This follow-up qualitative study investigated trial participants' perceptions of barriers and facilitators to TSSE adherence using the app. Three former trial participants participated in a single focus group and 11 participated in new semi-structured telephone interviews. These were analysed thematically alongside secondary analysis of 12 qualitative interviews conducted during the trial. All transcripts were recorded, transcribed, and analysed thematically. Five themes encompassing barriers and facilitators to ASICA adherence emerged. These were: technology; role of others; tailoring; disease journey, and competing priorities. These data will inform further development of ASICA to increase user-adherence.

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Key words: melanoma; digital app; qualitative interviews; adherence; barriers and facilitators

INTRODUCTION

People previously treated for cutaneous melanoma are recommended to conduct monthly total-skin-self-examinations (TSSEs) to enable earliest detection of recurrence or new primaries, but only 20-25% of melanoma survivors report doing so.[1-3] We developed the Achieving Self-directed Integrated Cancer Aftercare (ASICA) app with patients and clinicians to support monthly TSSE by melanoma survivors.[4] Briefly, ASICA is an app-based digital intervention prompting and guiding TSSEs and enabling users to send descriptions and photographs of any skin concerns to a remote dermatology nurse practitioner. After refinement, ASICA was subject to a 12-month randomised controlled trial. Overall, the intervention group reported increased TSSE and improved quality of life.[5] Most (57%) of the intervention group submitted details of a concern with most resolved without face-to-face consultation.[5,6] We concluded that ASICA could support increased TSSE by melanoma survivors, a view endorsed by a parallel qualitative study.[7] Based on user feedback a "mocked-up" smartphone (rather than the original tablet) version of ASICA was developed. It has been observed, however, that digital healthcare adherence is subject to attrition where a proportion of users stop using the intervention over time, and non-adoption where users do not engage with the intervention at all.[8] Adherence data from the ASICA trial supported this, identifying three distinct trajectories. "Adherent" participants (41%) consistently completed monthly TSSEs for 12 months; "drop-off" participants (35%) adhered initially but declined over 2-6 months (35%), and "non-adherent" participants (24%) failed to engage with the intervention despite enrolling.[9] This qualitative study explored the perceptions of ASICA users of adherence barriers and facilitators.

REPORT

Qualitative data derived from three sources. Previous trial participants participated in a facilitated focus group (3 attended) or semi-structured telephone interviews (11 conducted) and were texted a link to a smartphone "mock-up" of ASICA to view beforehand. The focus group lasted 98 minutes and interviews 14-58 minutes. We also conducted secondary analysis of 13 semi-structured interviews (10-45 minutes) conducted with ASICA users to capture their experiences during the trial. These participants used the tablet version of ASICA and did not view the smartphone "mock-up".[8] Transcripts were uploaded to NVIVO 1.6.1 and subject to thematic analysis.[10] Five themes emerged: technology; role of others; tailoring; disease journey and competing priorities.

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Technology

Several suggested the current interface had limitations which could hinder engagement and suggested improvements, especially developing a smartphone version. Some participants did not use technology routinely and others were unfamiliar with different operating systems. Our current prototype does not include AI however general concerns about emergent AI technology were viewed as a barrier to engaging with digital healthcare, particularly the robustness of diagnosis and a preference for human contact when worried. Conversely, one younger participant thought AI would enhance future adherence. One user expressed concerns about how personal data could be harvested while using digital healthcare. Other ideas to improve adherence included virtual small group sessions, an easy-to-navigate instructional video, and integrating social media functionality.

Role of Others

A few participants suggested engaging others would improve motivation and adherence. More than half were helped by other people to perform TSSEs, to check and photograph hard to see body areas or compare between current and previous skin images. Some participants said they were strongly motivated to adhere to the trial to help others in future. Several participants mentioned speaking to the dermatology nurse practitioner by phone and thought this subsequently sustained their adherence.

Tailoring

Participants thought adherence could improve if the app provided individually salient information but recognized that different people would want different things. Some felt a reminder of why skin-checking was important would help. Other participants suggested news about research, information about skin protection products, and UV weather reports would provide motivation. Tailoring monthly prompts and the importance of a reminder that worked for individuals featured prominently. Phone calls, email, auto-syncing with calendars, an app-based prompt like food delivery apps, even a physical postcard, were all mentioned. It was also suggested that a prompt could arrive at the wrong time for participants (eg during work, on holiday). One participant felt regular prompts may be off-putting for some users and suggested individuals should be able to set their own schedule of TSSEs.

Disease Journey

A third of participants suggested that adherence would likely drop as skin-checking became less salient as time went on. They suggested that individuals may have heightened concern in the first few months but would accommodate to their condition over time and feel less need to check. It was noted that ongoing traditional face-to-face follow-up contributed to this process. On the other hand, it was acknowledged that individuals differed and that some may be motivated by ongoing concerns about recurrence, the belief that one annual check was insufficient, and a sense of well-being produced by having completed the skin check.

Competing Priorities

Two thirds of the participants noted that busy lives, for example work commitments affected adherence. They mentioned that other things take precedence and reduce the priority of skin-checking. One participant had disengaged with TSSE during a bereavement. The burden of the task, (i.e. having more moles to check) also contributed to disengagement.

DISCUSSION

Digital technology can support regular TSSEs for melanoma survivors, but more effectively for some than others. Our study sheds light on practical reasons why some people adhered more closely than others with corresponding implications for modification and tailoring. Our data, derived from 27 individuals at different stages of experience highlights several themes with

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the potential to be addressed in future, for example by simplifying the interface; introducing additional tailoring; encouraging engagement with others; and/or integrating smart scheduling. Socially deprived participants were underrepresented in the current sample, but urban and rural dwellers were included. Similarly, the sample included adherent and drop-off participants but not non-adherent participants. **Including individuals from the non-adherent group and other demographics, such as the elderly will be essential in future research to ensure digital healthcare does not increase health inequalities.** Overall, the information we have obtained from this study, in context with our other data, will inform the detailed modifications we are now making to ASICA.

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Abbreviations:

ASICA: Achieving Self-Directed Integrated Cancer Aftercare

DNP: Dermatology Nurse Practitioner

RCT: Randomised Control Trial

TSSE: Total Skin Self Examination

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