

BUILDING AN EDUCATIONAL APP TO SUPPORT PHYSIOTHERAPY PRACTICE IN ACUTE CARE

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Abstract

Introduction: To meet the increasing demand, physiotherapists should have the competencies to intervene in all conditions and contexts throughout the life cycle of their clients/patients. Educating and supporting physiotherapy students in the knowledge and skills required to operate in an acute care setting both expands and improves their entry-level capabilities as well as preparing them to work with patients. To facilitate easy access to updated information related to Acute care Settings (health and professional guidelines, media resources) we decided to develop and implement a Mobile App available to all physiotherapy professionals and students.

Methodology: The app was developed in the curricular year of 2020-2021, as a student project, included in the International Minor in Physiotherapy in Acute Care organized in partnership with Alcoitão School of Health Sciences, Portugal and the Hanze University of Applied Sciences, Groningen, the Netherlands. After the initial needs assessment related to the future App contents and features, the students were divided into different working groups to develop the different sections of the App. The content was developed using international guidelines and research related to physiotherapist practice in Acute Care. The mobile app was implemented using a free online tool (glideapps.com) and divided into 3 main sections: Patient Assessment, evidence resources and tools.

Results: At the end of the Minor edition, students answered an anonymous online questionnaire on the development of this tool. The data revealed a very favourable opinion regarding pedagogical approaches used and consider activities like App development had contributed to the overall objectives of the Minor (90% agree / totally agree).

Conclusions: Based on the positive input from the students, we consider the implementation to have been successful. The next steps are, to update the content and resources based on the evidence available and allow the App to be freely available to the Physiotherapy educational and professional context. After this experience, we will try to disseminate the use of mobile apps in education.

Keywords: Mobile App, Acute Care, Education.

1 INTRODUCTION

Acute care is a type of health care that is designed to address a short-term illness or injury. It is typically provided in a hospital or other health facility and is focused on the immediate treatment of the condition. Acute care may involve a range of services, including diagnostic testing, medication, surgery, and rehabilitation. The goal of acute care is to stabilize the patient and address the immediate health problem, after which the patient may be discharged or transferred to a different level of care, such as long-term care or rehabilitation.

Physiotherapists play an important role in acute care settings, such as hospitals and emergency departments. They work with patients who have a wide range of conditions, including injuries, surgeries, and chronic illnesses. Evidence, published since 1999, suggests that physiotherapy intervention that comprises early progressive mobilization is beneficial for adult patients in the ICU in terms of its positive effect on functional ability and its potential to reduce ICU and hospital length of stay[1]. Besides that, in acute care setting, a physiotherapist may also be involved in the following activities[2]:

- Assessing the patient's physical condition and mobility.
- Developing a treatment plan to address the patient's immediate needs and goals.
- Providing hands-on interventions, such as exercises and respiratory therapy, to improve mobility and reduce impact of recumbency.
- Educating the patient and their family about the treatment plan and any exercises or activities that they can do after discharge to aid in their recovery.

- Collaborating with other healthcare professionals, such as doctors and nurses, to provide a coordinated and comprehensive approach to the patient's care.
- Providing follow-up care and support as the patient transitions to a different level of care, such as rehabilitation or long-term care.

To meet the increasing demand, physiotherapists should have the competencies to intervene in all conditions and contexts throughout the life cycle of their clients/patients. Educating and supporting physiotherapy students in the knowledge and skills required to operate in an acute care setting both expands and improves their entry-level capabilities as well as preparing them to work with patients[3].

To work as a physiotherapist in an acute care setting, it is important to have a strong foundation in a range of clinical skills and knowledge. Some specific competencies that may be required include [4] [5]:

- Knowledge of anatomy and physiology: A deep understanding of the human body is essential for physiotherapists working in acute care.
- Skill in physical assessment: Physiotherapists need to be able to assess a patient's physical condition and mobility and determine the best course of treatment.
- Ability to develop and implement treatment plans: In acute care, physiotherapists may need to create and execute treatment plans quickly and effectively.
- Expertise in various treatment techniques: This may include hands-on techniques, as well as exercises and other interventions.
- Good communication skills: Physiotherapists working in acute care need to be able to effectively communicate with patients, families, and other healthcare professionals.
- Ability to work in a team: Acute care is often a fast-paced and high-stress environment, and it is important for physiotherapists to be able to work well with others to provide the best possible care for their patients.
- Adaptability: The needs of patients in acute care can change rapidly, and physiotherapists need to be able to adapt and adjust their treatment plans as needed.

Web resources and mobile computing technologies have changed people's lifestyle. The number of smartphone users worldwide today surpasses six billion and is forecast to further grow by several hundred million in the next few years[6]. Regarding mobile devices in health, mobile devices, such as smartphones, and tablets, have been widely adopted by health professionals. These devices are quickly becoming some of the main instruments for accessing clinical information, especially for novice health professionals and students[7].

Health mobile apps are applications that can be downloaded and used on a mobile device, such as a smartphone or tablet. These apps are designed to provide users with access to a range of health-related resources and tools, such as information about conditions and treatments, tracking and monitoring tools, and communication with healthcare professionals. Health mobile apps can be used for a variety of purposes, including tracking, and managing health conditions, accessing health information, and connecting with healthcare professionals for remote care. Some health mobile apps are designed for use by the public, while others are intended for use by healthcare professionals. Mobile apps can be a useful tool in acute care settings for several reasons, helping streamline processes and reduce paperwork, provide quick and easy access to a range of resources, such as real-time patient data, guidelines, and protocols.

In the educational context, besides supporting the learning process, mobile apps could be a useful resource for clinical support and professional development and may offer a range of features such as, resources for clinical decision making, such as calculators and reference materials, up-to-date information on best practices and guidelines and providing easy access to online courses and lectures [8] [9].

To facilitate easy access to updated information related to Acute care Settings (health and professional guidelines, media resources) we decided to develop and implement a Mobile App available to all physiotherapy professionals and students.

2 METHODOLOGY

The app was developed in the curricular year of 2020-2021, as a student project, included in the International Minor in Physiotherapy in Acute Care organized in partnership with Alcoitão School of Health Sciences (Portugal) and the Hanze University of Applied Sciences, Groningen (Netherlands).

The development of a mobile app involved several steps of project development, which included (Fig. 1):

- Ideation: that includes the process of creating the idea for the app and identifying the aims to achieve.
- Research: after the idea has been identified, the next step was to do a context needs assessment to understand the target audience and focus for the app.
- Planning: The planning phase involved creating a roadmap for the development of the app, including defining the goals, features, and timeline for the project.
- Design: In the design phase, the user interface and user experience of the app are developed including creating user paths and visual designs. For the contents and features, the students were divided into different working groups to develop the different sections of the App. The content was developed using international guidelines and research related to physiotherapist practice in Acute Care.
- Development: During the development phase, the app was built using a free online tool (glideapps.com) and divided into 3 main sections: Patient Assessment, evidence resources and tools.
- Testing: After building the first version of the app, it was tested using student feedback, to ensure that it was functioning properly and meeting the requirements and goals of the project.
- Launch: Once the app is complete and passed all user testing, was publicly launched, and made available to the Physiotherapy educational and professional context.

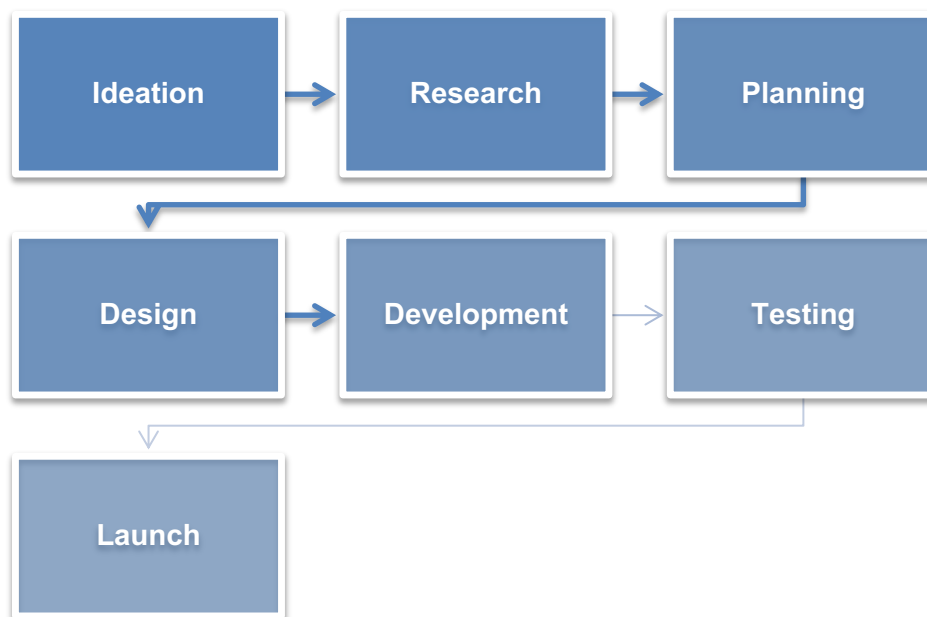


Figure 1. Steps of the project development

At the end of the Minor in Physiotherapy in Acute Care, students were also asked to provide feedback on the development of the mobile app and its impact on the pedagogical process by completing an anonymous online questionnaire. The survey was designed to gather information on the student's perceptions of the development process, their experience using the app, and the effectiveness of the app in achieving the objectives of the minor program. The questionnaire included a combination of multiple-choice and open-ended questions to gather both quantitative and qualitative data.

3 RESULTS

3.1 Mobile App implementation

The mobile app was developed using a free online tool (glideapps.com), which allowed for the easy and efficient creation of the app. The app was divided into three main sections: Patients Assessment, Evidence, and Tools.

The Patients Assessment section covers quick reference values and instruments that are commonly used in acute care contexts. This section is designed to provide quick and easy access to important information that is frequently used to assess and diagnose patients in acute care settings.

The Evidence section contains a list of guidelines and the latest research related to this topic. This section was designed to provide users with access to the most up-to-date information and research in the field of acute care physiotherapy.

The Tools section is a database of the most useful mobile applications that can be used in acute care physiotherapy. This section is designed to provide users with easy access to a variety of useful Apps that can help them in their context. Overall, the app was created to provide a convenient and user-friendly resource for acute care physiotherapists (Fig. 2).

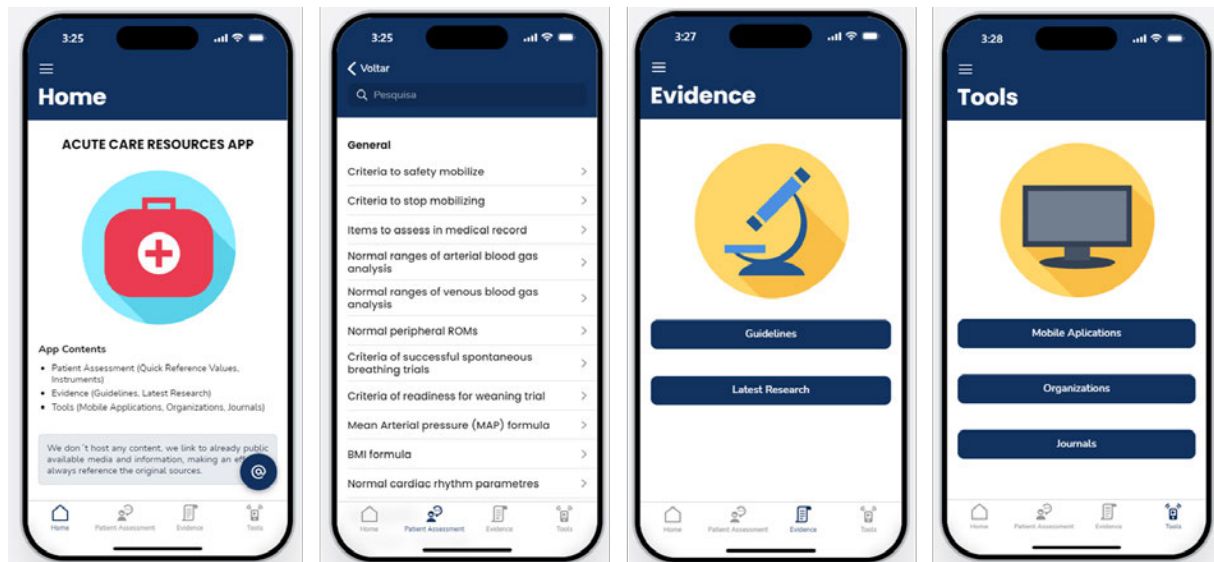


Figure 2. Acute Care Resources App

3.2 Students Feedback

At the end of the development process of the mobile app, students were asked to provide feedback by completing an anonymous online questionnaire. The data collected from these surveys provided valuable insight into the students' perceptions of the development process and the effectiveness of the app in achieving the objectives of the minor program.

The results of the survey revealed that most students had a very favourable opinion of the pedagogical approaches used throughout the development process. Specifically, 90% of students agreed or strongly agreed that the activities involved in the development of the app, such as App development, had contributed to the overall objectives of the minor program. This indicates that the students found the development process to be engaging and beneficial to their learning experience.

Furthermore, the feedback provided by the students allows us to make improvements and fine-tune the process to better meet the needs of the students. Overall, the data collected from the questionnaire suggests that the mobile app development project was a success and has contributed to the overall objectives of the minor program.

4 CONCLUSIONS

Based on the positive feedback received from the students, the development of the mobile app in question was important. This is evident from the students' engagement and positive feedback on the ease of use, convenience, and effectiveness of the app in facilitating their learning experience.

Considering this, the next steps will involve updating the content and resources available within the app to ensure that it is always providing the most current and accurate information. This will be done by regularly reviewing the literature, incorporating new research findings, as well as incorporating feedback from students and physiotherapists. This will help to keep the app relevant and useful for the final users.

Additionally, we plan to make the app freely available to those in the field of Physiotherapy education and practice to ensure that as many people as possible can benefit from the app. This will help to increase the reach of the app and make it more accessible to those who need it.

Furthermore, this experience has reinforced the potential benefits of using mobile apps in education, not only in terms of student engagement and learning but also in terms of convenience and accessibility. As such, we will be actively seeking ways to promote and disseminate the use of such tools in the future. This may include collaborating with other institutions and organizations in the field of physiotherapy education, as well as presenting our findings at conferences and publishing articles in relevant journals. This will help to raise awareness of the benefits of using mobile apps in education and encourage others to adopt similar strategies.

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