








MALE URINARY INCONTINENCE AND THE DIGITAL TECHNOLOGY: EVALUATION OF MOBILE APPLICATIONS AVAILABLE FOR DOWNLOAD

Adriana Ferreira Machado¹ 
Fabrícia Eduarda Baia Estevam¹ 
Lívia Cristina de Rezende Izidoro² 
Hugo Miranda de Oliveira³ 
Filipe Maciel de Souza dos Anjos³ 
Sérgio Teixeira de Carvalho³ 
Luciana Regina Ferreira da Mata¹ 

ABSTRACT

Objective: to evaluate the suitability and usefulness of mobile apps aimed at urinary incontinence rehabilitation in the male population. **Method:** descriptive study, carried out with apps directed to the rehabilitation of male urinary incontinence. The apps were obtained from the Play Store and App Store. The search was conducted between May 3 and 10, 2021, in Minas Gerais, Brazil. The terms "urinary incontinence", "incontinencia urinaria", "urinary incontinence", and "Kegel" were used for selection. The applications were described and evaluated as established in the Applications Scoring System items. **Results:** Twenty-two apps were selected. Three were specific for men; three addressed exercises for pelvic muscle strengthening and voiding diary simultaneously; and five were compatible with both online stores. **Conclusion:** most of the available apps have limited functionality and information about male urinary incontinence. This study is expected to contribute to the development of more comprehensive and appropriate software for the male urinary incontinent population.

DESCRIPTORS: Urinary Incontinence; Mobile Applications; Technology; Health Education; Men's Health.

HOW TO REFERENCE THIS ARTICLE:

Machado AF, Estevam FEB, Izidoro LC de R, Oliveira HM de, Anjos EM de S dos, Carvalho ST de, et al. Male urinary incontinence and the digital technology: evaluation of mobile applications available for download. *Cogitare Enferm.* [Internet]. 2022 [accessed "insert day, month and year"]; 27. Available from: <http://dx.doi.org/10.5380/ce.v27i0.87470>.

¹Universidade Federal de Minas Gerais, Escola de Enfermagem, Belo Horizonte, MG, Brasil.

²Universidade Federal de Jataí, Jataí, GO, Brasil.

³Universidade Federal de Goiás, Instituto de Informática, Goiânia, GO, Brasil.

INTRODUCTION

Information and communication technologies (ICTs) are tools that facilitate the transmission of information by digital means, such as wireless networks, smartphones, and computers. These technologies make it possible to collect, store, and share data in real time or remotely, which favors the exchange of information and experiences between users. Due to its reach and ease of access, the use of ICTs has become democratic and indispensable for the daily lives of individuals, companies, educational and health institutions.¹⁻²

Given the democratization of ICTs through mobile devices in health services and among professionals, the number of applications (software) aimed at health care has increased.³ These applications (Apps) allow implementing preventive actions, consult diagnostic information, structure care, and optimize the time spent on assistance. Similarly, the applications can disseminate information for health promotion by acting directly on improving the quality of life of patients.³⁻⁴

In this perspective, specific mobile apps have emerged to assist the control and monitoring of diseases and clinical conditions. Apps can expand access to health guidelines, clarify doubts regarding the disease and treatment, and empower users to self-manage clinical conditions such as urinary incontinence (UI).⁵⁻⁶

UI is present in approximately 200 million people worldwide, and affects men and women of all ages.⁷ It is defined by the International Continence Society (ICS) as the complaint of any involuntary loss of urine, and is considered one of the storage symptoms indicating the presence of lower urinary tract dysfunction.⁸ Furthermore, it is a condition that can occur due to aging, the use of certain medications, as a result of urinary tract infections, trauma, and pelvic surgery.⁹

It is estimated that 80% of the men who undergo prostatectomy develop UI during the first postoperative month.¹⁰ Since prostate cancer accounts for 29.2% of new cancer cases among the Brazilian male population, and radical prostatectomy is the treatment of first choice for cases of localized cancer, the impact of UI on the quality of life of the patients who undergo prostatectomy has been discussed.¹¹

The losses of UI in prostatectomy patients go beyond health issues and treatment expenses, since they compromise the social, professional, and personal life of this group. To minimize these effects, conservative therapeutic strategies that integrate behavioral and pharmacological therapies are used as the first line of treatment.⁸ Regarding behavioral strategies, one can mention: control of fluid intake, reduction of consumption of irritants and tobacco, weight loss and strengthening of the pelvic floor muscles (PFM).⁸

However, for the control of UI to be efficient, it is essential that these strategies are adhered to. In this sense, mobile apps can be an educational technology to promote access to information and follow-up of patients with UI. Guidance on the strengthening of PFM, reinforcement notifications and encouragement of the adequate consumption of liquids and food, and voiding diaries are some of the benefits of mobile apps.¹²

However, the knowledge about apps related to the rehabilitation of UI in men is still incipient, since there is not enough information about the contribution of these technologies to the control and treatment of UI. Thus, it is believed that the search, description, and evaluation of the available apps may contribute to identify the gaps related to the conservative approach to the treatment of male UI and, thus, identify aspects that highlight the need for the development of more complete and comprehensive apps. Therefore, the objective of this study is to evaluate the adequacy and usefulness of mobile apps available for download aimed at the rehabilitation of UI in the male population.

METHOD

This is a descriptive, cross-sectional study, carried out between May 3 and 10, 2021, on mobile apps aimed at UI rehabilitation in the male population, available on Android (Play Store) and iOS (App Store) operating systems. The following devices were used: a Samsung Galaxy A01 smartphone, compatible with Android version 10.0; a Motorola Moto Z Play, compatible with version 8.0.0; an iPhone XR, compatible with iOS version 14.6; and an iPhone 11, compatible with iOS version 14.6.

As inclusion criteria were considered: mobile applications related to UI; with an approach applicable to the male audience; free of charge; and available in English, Spanish or Portuguese. The exclusion criteria established were mobile apps exclusively destined for health professionals and/or academics; linked to the purchase and use of devices for the performance of PFM training exercises; related to games; developed for other purposes that are not related to UI, such as social networks; and those that presented technical failures during operation.

The search was conducted by two researchers simultaneously and independently. A third researcher compared the results resulting from the search to verify the differences between the samples found. The keywords "incontinência urinária", "incontinencia urinaria", "urinary incontinence" e "Kegel".were used in isolated form.

The searches carried out in the Play Store and App Store platforms were divided into three phases: phase 1 - survey and listing of apps related to each keyword and removal of duplicates; phase 2 - pre-selection of apps based on the title and general description; phase 3 - download of apps included in the pre-selection and evaluation of compliance with all inclusion criteria. At the end of the selection in each online store, the spreadsheets were compared to identify the applications available in both stores and thus establish a single accounting.

The selected applications were described by name, developer, category, target audience, language, year of publication, and evaluation by users. To evaluate their quality, the Applications Scoring System¹³ scale, adapted by the authors, was used. This is an instrument developed in 2015 by the Department of Obstetrics, Gynecology, and Reproductive Science of the Icahn School of Medicine at Mount Sinai, New York, and aims to assess the suitability and usefulness of mobile applications for health care.¹³

The scale evaluates thirteen objective criteria for which the values zero or one are assigned, and one criterion that deals with the scope of the application that can receive a score from zero to three points. The total score of the app in the evaluation can range from 0 to 16, and the higher this value, the more appropriate and useful the app is in health care.¹³

For the present study, the items "app comprehensiveness", "literature used", "in-app purchases", "connectivity", "ads", text search field", "cross-device compatibility", "images/figures", "videos", and "special features" from the original scale were considered.

The items "price" and "paid subscription", included in the scale, were not considered because they were part of the exclusion criteria of the study. The items "ease of navigation" and "subjective presentation" were also disregarded because they are subjective evaluation components.

The items "images/figures" and "videos" were evaluated as a single item in the adapted scale and referred to the presence of images or videos related to the anatomical structures of the genitourinary system or to the demonstration of exercises for PFM training. For the item "special features", the applications that presented contact with the developers, user support, or configuration of notifications and alarms were considered.

It is also worth mentioning that in the scale adapted by the authors, the item “application comprehensiveness” evaluated which applications contained functionalities referring to PFM training and voiding diary simultaneously, so that applications that made both resources available received one point.

Thus, the adapted Applications Scoring System¹³ scale evaluated nine items, and for each of them a value of 0 or 1 was assigned, where 0=no and 1=yes. Therefore, the total score was nine points. For the description of the applications, information was also extracted about the content contemplated. The data collected and the total score for each application were transcribed into a Microsoft Excel 2016 spreadsheet, also used for descriptive statistical analysis.

Using the method described, 1229 applications were found on the virtual platforms, 1075 in the Play Store and 154 in the App Store. A total of 353 applications found in the Play Store and 27 in the App Store were removed for appearing in duplicity in the searches using the descriptors previously selected (Figure 1).

Of the 722 apps remaining in the Play Store, 30 apps were selected according to the title and description presented in the virtual store and, of these, 16 were included in the sample. Regarding the search conducted in the App Store, of the 127 remaining apps, 18 were selected according to the title and description. Finally, 11 apps met the inclusion criteria of the study and comprised the sample.

The reasons for excluding 706 apps available in the Play Store and 116 in the App Store were due to: being intended exclusively for health professionals and/or academics (Play Store = 14; App Store = 4); linked to the purchase and use of devices for performing PFM training exercises (Play Store = 24; App Store = 11); not addressing the UI theme (Play Store = 94; App Store = 21); catering only to the female audience (Play Store = 37; App Store = 15); being paid (Play Store = 15; App Store = 23); available only in other languages (Play Store = 31; App

Store = 4); being related to games (Play Store = 277; App Store = 13) and being developed for other purposes not related to UI, such as social networks (Play Store = 214; App Store = 25).

It should be noted that the applications available on the two virtual platforms were described only once and according to the base that contained the most complete information. Thus, 22 applications were evaluated in the study.

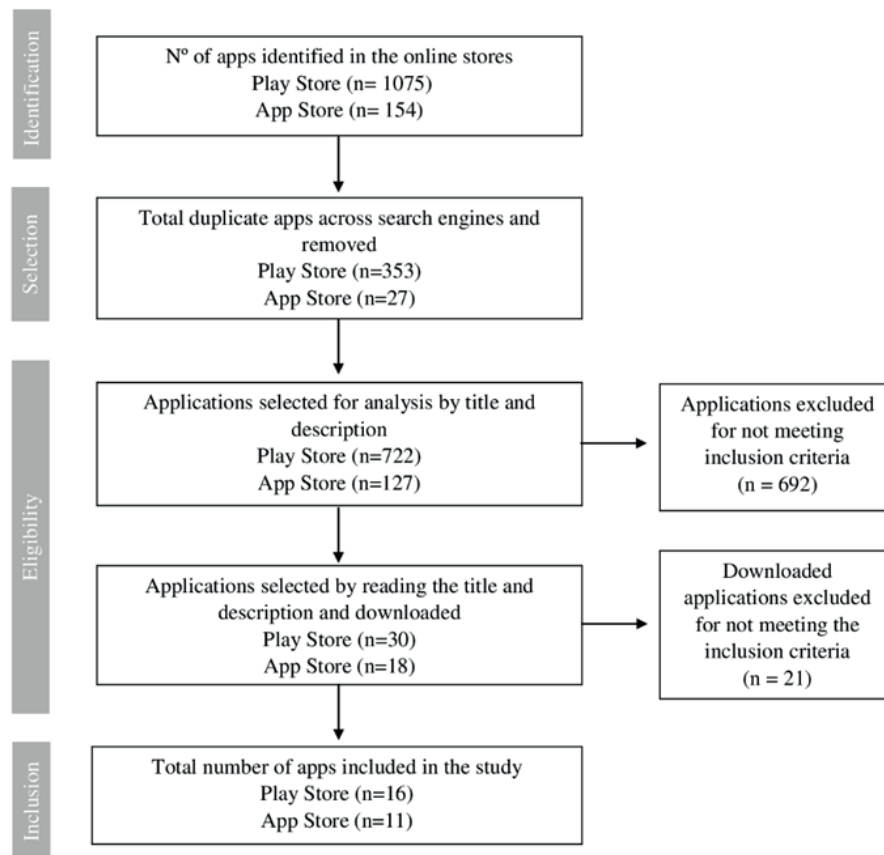


Figure 1 - Algorithm for search, identification and selection of applications for evaluation in online stores. Belo Horizonte, MG, Brazil, 2021.

Source: Prepared by the authors.

This study was not submitted for approval by the Research Ethics Committee because it was not research involving human beings and the analyzed contents belong to the public domain.

RESULTS

Of the 22 apps evaluated, 77.2% (n=17) belonged to the “health and fitness” category, while 22.8% (n=5) were inserted in the “medicine” category. As for the target audience, 13.6% (n=3) of the apps were developed exclusively for the male population.

Table 1 describes the applications as to name, developer, category, target audience, language, year of publication, and user rating.

Table 1 - Description of the applications according to identification variables. Belo Horizonte, MG, Brazil, 2021.

Code	Name	Developer	Category	Target Audience	Language	Year of publication	Evaluation by the users
App 1	Consortia Health	Consortia Medicine	Health and Fitness	Men and women	English	2019	Does not present
App 2	Day2Day	Coloplast Productos Medicos S. A	Health and Fitness	Men and women	Spanish	2016	Does not present
App 3	Easy Kegel	Dream Bear Ltda	Health and Fitness	Men and women	English	2019	4.6
App 4	Easy Squeezy – Pelvic floor exercises	Mtv Mobile	Health and Fitness	Men and women	English	2017	3.9
App 5	Ipelvis	Ipelvis	Health and Fitness	Men and women	Portuguese and English	2019	3.7
App 6	Kegel Exercise for Men & Women - Step by Step Guide	Academiaapps	Health and Fitness	Men and women	English	2020	4.2
App 7	Kegel Exercise Master	Tommyapps	Health and Fitness	Men and women	English	2017	4.5
App 8	Kegel for men – Kmibz	Leominoz	Health and Fitness	Men	English	2018	4.3
App 9	Kegel Nation	Ucsf	Medical	Men and women	English	2013	Does not present
App 10	Kegel Talent	Yunyu School	Medical	Men and women	English	2020	4.4
App 11	Kegel Trainer for All	Red Spritre Studio	Health and Fitness	Men and women	English	2021	Does not present
App 12	Kegelt	Daerobotics	Health and Fitness	Men and women	Spanish and English	2016	Does not present
App 13	Pee Tracker	Need Typing Limited	Health and Fitness	Men and women	English	2020	Does not present
App 14	PerineApp	Carlos Henrique Fallac	Health and Fitness	Men and women	Portuguese	2020	Does not present
App 15	Perineo power	Períneo Power	Health and Fitness	Men and women	Portuguese	2018	4.7
App 16	Simbex	Simbex	Medical	Men	English	2019	5
App 17	Squeeze time for men	Jonas Nolte	Medical	Men	English	2019	Does not present
App 18	Treinador Kegel	Olson Applications	Health and Fitness	Men and women	Portuguese English and Spanish	2012	4.9
App 19	Kegel Trainer - Kegel Exercises	Artiomapps	Health and Fitness	Men and women	English	2021	Does not present
App 20	Kegel Trainer - Kegel Exercises	Mpr Media Inc	Health and Fitness	Men and women	English	2021	5
App 21	Treino Kegel Feminino e Masculino	Mel Studio	Health and Fitness	Men and women	Portuguese	2020	4.8
App 22	Uritrack	Viktor Kocur	Medical	Men and women	English	2018	4.4

Source: Elaborated by the authors.

After evaluating the 22 applications using the adapted Applications Scoring System 13 scale, 90.9% (n=20) of them received five points or less and 9.1% (n=2) received six points. None of the applications evaluated reached the full score.

Regarding the scope of the application, 13.6% (n=3) contained functionalities referring to exercises for PFM training and voiding diary simultaneously, while most of them (86.4%/n=19) covered only one of these resources. Most apps (90.9%/n=20) did not cite the literature used as a source of information and contemplated contents.

Three apps (13.6%) were identified that depended on internet access to function properly. As for compatibility, only 22.8% (n=5) were available for both Android and iOS operating systems. Only eight apps (36.3%) featured images or videos related to UI or the urinary tract to exemplify how the exercises should be performed or to assist in locating the pelvic muscles. Table 2 evaluates the apps selected for the study as established in the Applications Scoring System scale¹³, adapted version.

Table 2 - Assessment of applications using the Applications Scoring System¹³ scale, adapted. Belo Horizonte, MG, Brazil, 2021.

Code	Scope	Literature used	In-App Purchases	Connectivity	Advertisements	Search field text	Compatibility	Images or videos	Special resources	Total Score
	It includes exercises and urinary diary.	It presents the literature used to support the content.	It is free of in-app purchases.	It does not depend on the Internet to work.	It contains no ads.	Contains text search field.	It is available for Android and iOS.	It shows images or videos.	It contains special features.	
App 1	1	0	1	0	0	0	1	0	1	4
App 2	0	0	1	1	1	0	0	0	1	4
App 3	0	0	0	1	1	0	1	0	1	4
App 4	0	0	0	0	0	0	0	0	1	1
App 5	1	0	0	1	1	0	1	1	1	6
App 6	0	1	0	1	0	0	0	1	1	4
App 7	0	0	0	1	0	0	0	1	0	2
App 8	0	0	0	1	0	0	0	0	0	1
App 9	1	1	1	1	1	0	0	0	1	6
App 10	0	0	0	1	1	0	0	0	1	3
App 11	0	0	0	1	1	0	0	1	1	4
App 12	0	0	0	1	1	0	0	0	0	2
App 13	0	0	1	1	1	0	0	0	1	4
App 14	0	0	0	1	0	0	0	1	0	2
App 15	0	0	0	0	0	0	0	1	1	2
App 16	0	0	1	1	0	0	1	1	1	5
App 17	0	0	0	1	0	0	0	0	1	2
App 18	0	0	0	1	1	0	1	0	1	4
App 19	0	0	0	1	1	0	0	1	0	3

App 20	0	0	1	1	0	0	0	0	0	1	3
App 21	0	0	0	1	0	0	0	0	0	1	2
App 22	0	0	0	1	0	0	0	0	0	1	2

*0=No; 1=Yes.

Source: Elaborated by the authors.

DISCUSSION

Currently, UI is considered the main complication in the postoperative period of radical prostatectomy and affects up to 80% of patients undergoing the procedure.¹⁰ To reduce the impacts of UI on the quality of life of this population, it is necessary that measures such as PFM training and voiding recordings be adopted by these patients.⁸

However, although these care strategies are commonly discussed in clinical practice, most of the mobile apps under study still only have functionalities related to PFM training and brief information about these exercises. A previous study reinforces that a significant portion of the apps have limited commands, such as "contract and relax" PFM, without offering instruction or feedback to users.¹²

It is noteworthy that PFM training is considered the first-choice treatment for UI and directly influences the reduction of the impact on the quality of life of patients.¹⁴ However, these exercises require an initial stage of proprioception or self-knowledge of the pelvic anatomy for this therapeutic modality to be effective¹⁵, which was not addressed in the applications evaluated. Therefore, it is important that men undergoing this treatment are sufficiently oriented about the structural and anatomical aspects of the genitourinary system before and after radical prostatectomy.

The urinary diary, content addressed in six of the apps evaluated, is a widely used tool in the follow-up of patients with urinary dysfunctions, for providing information on the behavior of the bladder and allowing monitoring the effectiveness of the treatment.⁸ Through it, the patient records his fluid intake, number of urinations, volume of urine eliminated, times, urinary losses, and associated factors for three to seven consecutive days. This record allows professionals to investigate dysfunctions such as UI and favors the patient's autonomy in relation to his treatment.⁸

One third of the applications described use images and videos in their construction to facilitate the understanding of the content presented and instruct on the use of the application. These resources are often used in health education strategies because they can bring the content closer to daily life, to the languages and codes used by users of health services.¹⁶

Moreover, this care is commonly accompanied by guidelines on changes in lifestyle habits that help control UI, such as trying to establish a rhythm of urination, avoiding excessive fluid intake at night, avoiding drinking beverages and foods that contain caffeine and alcohol, reducing weight, and maintaining regular bowel habits.¹⁷ However, despite being important guidelines for the control of UI, this information was addressed in only four applications.

Another important point is that only three of the applications described in this study were developed especially for the male audience, which represents a relatively low number. This data reinforces the fact that most of the applications developed for the training and strengthening of PFM are nonspecific, that is, they indicate the performance of the same exercises for all users, without worrying about the particularities of each one, such as clinical condition, age, or gender.¹²

In recent years, the quality of information disseminated through digital tools for health care has become a constant concern, and although the literature recommends that health apps be developed considering safe theoretical and methodological structures¹⁸⁻¹⁹, about 90% of the apps evaluated do not present the literature used to support the content provided in full. Thus, it is not possible to identify whether the information and guidance provided to the user come from reliable sources.

One of the facilities of the use of mobile applications aimed at UI rehabilitation lies in the possibility of accessing the software through smartphones or tablets. In this sense, smartphones stand out for being considered the most accessible devices and for allowing users to have access to efficient computing and communication tools at their fingertips.¹ A recent survey conducted by the Global Mobile Consumer Survey pointed out that 80% of the Brazilian population use smartphones in their daily lives.¹

On the other hand, features such as internet access and compatibility between operating systems may imply difficulties in accessing and using these applications. In assessing suitability and usefulness, three of the applications included in the study depend on Internet access to run properly, which may be a limiting factor for users who do not have a full-time Internet connection. Although internet access has grown significantly in the country, a survey conducted by the Brazilian Institute of Geography and Statistics revealed that 40 million Brazilians still did not have this resource in 2019.²⁰

Regarding compatibility, half of the apps described in the study were available exclusively on the Play Store, the Android operating system store, while less than a third were available on both virtual stores. It should be noted that the Android operating system is one of the most popular in the world and is commonly used in more affordable electronic devices, which explains the greater number of mobile applications developed especially for this system.²¹

Regarding language, only five of the apps evaluated were available in Portuguese. In addition, three of them received only two points in the evaluation of adequacy and usefulness. The small number of apps available in Portuguese considered adequate can be seen as an accessibility barrier for Brazilian users, since access to quality information about UI is present in apps in other languages. This barrier can compromise the user's health literacy due to the difficulty in adequately understanding the content proposed by the developers and the app's commands. The literature reinforces those mobile applications must be developed to meet all audiences that may use them, without imposing difficulties in their use.²²

None of the applications evaluated reached the total score foreseen in the adapted scale, and the highest score found was six points on a scale of zero to nine points. Although there is an extensive number of apps aimed at health control, there is a considerable variation in relation to the quality of resources provided by each of them, and more than half have limited applicability.²³ This reinforces the fact that most apps available for download from online stores have reduced functionality and insufficient information about UI, especially when considering those developed exclusively for the male population.

As a limitation of the study, we point out the description and evaluation of only the mobile applications available in the Play Store and App Store, so that applications available in virtual stores of other operating systems were not addressed.

CONCLUSION

The number of mobile applications that present information and orientation about UI, with emphasis on the male public, is still reduced. In general, the available apps are limited to functions to help the execution of exercises for PFM strengthening or daily hydric ingestion and urinary habits, without detailing how to do them or offering support to users. Considering mobile apps in Portuguese, the number and resources present in these softwares are even more reduced.

In the evaluation of adequacy and usefulness, most apps received a score of up to four points. It is possible to infer, therefore, that there are limitations as to the functionality of these apps from the perspective of conservative actions for the treatment of male UI.

The description and evaluation of these applications are essential for the gaps present in these applications to be identified, and more detailed studies to be carried out with the proposal of updates and new softwares. This is the first step towards the development of mobile applications that cover and meet the demands and peculiarities of the male UI population. Thus, it is expected that the access to quality information about UI and its treatment will be widened and democratized, favoring the promotion of health of this population.

REFERENCES

01. Silva AMA, Mascarenhas VHA, Araújo SNM, Machado RS, Santos AMR, Andrade EMLR. Mobile technologies in the nursing area. *Rev Bras Enferm* [Internet]. 2018 [cited 2021 Mar 10]; 71(5):2570-8. DOI: <http://dx.doi.org/10.1590/0034-7167-2017-0513>.
02. Gomes MLS, et al. Avaliação de aplicativos móveis para promoção da saúde de gestantes com pré-eclâmpsia. *Acta Paul Enferm* [Internet]. 2019 [cited 2021 Fev 24]; 32 (3):275-281. DOI: <https://doi.org/10.1590/1982-0194201900038>.
03. Ventola CL. Mobile devices and apps for health care professionals: uses and benefits. *P T* [Internet]. 2014 [cited 2021 Mar 10];39(5):356-64. PMID: 24883008; PMCID: PMC4029126.
04. Galindo Neto NM, Sá GGM, Barbosa LU, Pereira JCN, Henriques AHB, Barros LM. Covid-19 e tecnologia digital: aplicativos móveis disponíveis para download em smartphones. *Texto Contexto Enferm* [Internet]. 2020 [cited 2021 Mar 10]; 29:e20200150. DOI: <https://doi.org/10.1590/1980-265X-TCE-2020-0150>.
05. Amorim DNP, Sampaio LVP, Carvalho GA, Vilaça KHC. Aplicativos móveis para a saúde e o cuidado de idosos. *Rev Eletron Comun Inf Inov Saúde* [Internet]. 2018 [cited 2021 Mar 10]; 12(1):58-71. DOI: <https://doi.org/10.29397/reciis.v12i1.1365>.
06. Mendez CB, et al. Mobile educational follow-up application for patients with peripheral arterial disease, presented to Universidade Federal de Santa Catarina, Florianópolis, SC, Brazil. *Rev. Latino-Am. Enfermagem* [Internet]. 2019 [cited 2021 Mar 10]; 27: e3122. DOI: <https://doi.org/10.1590/1518-8345.2693-3122>.
07. Ministério da Saúde (BR). Portaria Conjunta nº1, de 09 de Janeiro de 2020. Aprova o Protocolo clínico e Diretrizes Terapêuticas da Incontinência Urinária Não Neurogênica. *Diário Oficial da União, Brasília, DF(BR)* [Internet]. 2020 [cited 2021 Abr 14]. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/saes/2020/poc0001_13_01_2020.html.
08. Abrams P, et al. 6th International Consultation on Incontinence. Recommendations of the International Scientific Committee: Evaluation and Treatment of Urinary Incontinence, Pelvic Organ Prolapse and Faecal Incontinence. *Neurourology and urodynamics* [Internet]; 2017 [cited 2021 Abr 14]. Available from: https://www.ics.org/publications/ici_6/Incontinence_6th_Edition_2017_eBook_v2.pdf.

09. Silva CP, Gruending M, Coelho NF, Kalil PS, Noronha JAP. Incontinência urinária: uma breve revisão da literatura. Acta med [Internet]. 2017 [cited 2021 Feb 24]. Available from: <https://pesquisa.bvsalud.org/portal/resource/pt/biblio-883713>.
10. Mata LRF, Azevedo C, Izidoro LCR, Ferreira DF, Estevam FEB, Amaral FMA, et al. Prevalence and severity levels of postradical prostatectomy incontinence: different assessment instruments. Rev Bras Enferm. 2021;74(2):e20200692. <https://doi.org/10.1590/0034-7167-2020-0692>.
11. Instituto Nacional do Câncer Jose Alencar Gomes da Silva. Coordenação de Prevenção e Vigilância. Estimativa 2020: Incidência de Câncer no Brasil; INCA [Internet]. 2020 [cited 2021 Abr 14]. Available from: <http://www1.inca.gov.br/estimativa/2018/estimativa-2018.pdf>.
12. Latorre GFS, de Fraga R, Seleme MR, Mueller CV, Berghmans B. An ideal e-health system for pelvic floor muscle training adherence: Systematic review. Neurourol Urodyn [Internet]. 2019 [cited 2021 Abr 14];38(1):63-80. DOI: <https://doi.org/10.1002/nau.23835>.
13. Farag S, Fields J, Pereira E, Chyjek K, Chen KT. Identification and Rating of Gynecologic Oncology Applications Using the APPLICATIONS Scoring System. Telemed J E Health [Internet]. 2016 [cited 2021 Abr 14]; 22(12):1001-1007. DOI: <https://doi.org/10.1089/tmj.2016.0040>.
14. Zaidan P, Silva EB. Pelvic floor muscle exercises with or without electric stimulation and post-prostatectomy urinary incontinence: a systematic review. Fisioter. Mov. [Internet]. 2016 [cited 2021 Set 15]; 29 (3): 635-649. DOI: <https://doi.org/10.1590/1980-5918.029.003.AO21>.
15. Hodges PW, Stafford RE, Hall L, Neumann P, Morrison S, Frawley H, Doorbar-Baptist S, Nahon I, Crow J, Thompson J, Cameron AP. Reconsideration of pelvic floor muscle training to prevent and treat incontinence after radical prostatectomy. Urol Oncol. 2020 [cited 2021 Set 15]; 38(5):354-371. DOI: <https://doi.org/10.1016/j.urolonc.2019.12.007>.
16. Faleiros F, Cucick CD, Silva Neto ET, Rabeh SAN, Favoretto NB, K ppler C. Desenvolvimento e valida  o de v deo educativo para autocateterismo vesical intermitente limpo. Rev. Eletr. Enferm. [Internet]. 2019 [cited 2021 Set 15]; 21. DOI: <https://doi.org/10.5216/ree.v21.53973>.
17. Lopes PC, Ledsham CM, Brand o IMTX, Santos LV, Torres RM. Estilo de vida e interven  es n o farmacol gicas no tratamento e na preven  o das s ndromes geri tricas: uma revis o integrativa. Rev. Kair s Geront. [Internet]. 2017 [cited 2021 Set 15]; 20(2): 375-398. DOI: <http://dx.doi.org/10.23925/2176-901X.2017v20i2p375-398>.
18. Bonif cio MCS, Silva ACSS da, G es FGB, Santos AST dos, Pinto LF, Coelho YCCB. Conte dos tem ticos para o desenvolvimento de aplicativo m vel sobre covid-19. Cogitare Enferm. [Internet]. 2021 [acesso em 9 jun 2022]; 26. DOI: <http://dx.doi.org/10.5380/ce.v26i0.78637>.
19. Saboia DM, Vasconcelos CTM, Ori  MOB, de C Bezerra K, Vasconcelos Neto JA, de M Lopes MHB. Continence App: Construction and validation of a mobile application for postnatal urinary incontinence prevention. Eur J Obstet Gynecol Reprod Biol [Internet]. 2019 [cited 2021 Set 15]; 240:330-335. DOI: <https://doi.org/10.1016/j.ejogrb.2019.07.026>.
20. Instituto Brasileiro de Geografia e Estat stica. Acesso   internet e   televis o e posse de telefone m vel celular para uso pessoal. IBGE [Internet]. 2019 [cited 2021 Set 15]. Available from: https://biblioteca.ibge.gov.br/visualizacao/livros/liv101794_informativo.pdf.
21. Siburian RM, Nuary RP. The difference of iOS and Android usage. Jurnal Darma Agung [Internet]. 2019 [cited 2021 Set 15]. DOI: <http://dx.doi.org/10.46930/ojsuda.v27i2.273>.
22. Ferreira DGS, Marques FP, Ponciano L. Avalia o da rela o entre usabilidade e popularidade de aplicativos voltados para o p blico idoso. [Internet]. 2019 [cited 2022 Abr 12]. Available from: <http://bib.pucminas.br:8080/pergamumweb/vinculos/000051/00005110.pdf>.
23. Institute for Healthcare Informatics (IHI). Patient Adoption of mHealth. Use, Evidence and Remaining Barriers to Mainstream Acceptance. IHI [Internet]. 2015 [cited 2021 Set 15]. Available from: <http://www.imshealth.com/en/thought-leadership/ims-institute/reports/patient-adoptionof-mhealth>.

Received: 25/02/2022
Approved: 24/05/2022

Associate editor: Luciana Nogueira

Corresponding author:

Luciana Regina Ferreira da Mata
Universidade Federal de Minas Gerais – Belo Horizonte, MG, Brasil
Av. Prof. Alfredo Balena, 190 - Santa Efigênia, Belo Horizonte - MG, 30130-100
E-mail: lucianarfmata@gmail.com

Role of Authors:

Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - Machado AF, Estevam FEB, Izidoro LC de R, Oliveira HM de, Anjos EM de S dos, Carvalho ST de, Mata LRF da; Drafting the work or revising it critically for important intellectual content - Machado AF, Estevam FEB, Izidoro LC de R, Oliveira HM de, Anjos EM de S dos, Carvalho ST de, Mata LRF da; Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - Machado AF, Estevam FEB, Mata LRF da. All authors approved the final version of the text.

ISSN 2176-9133



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).