

Software Requirement Catalog on Acceptability, Usability, Internationalization and Sustainability for Contraception mPHRs

Manal Kharbouch[1], Ali Idri[1,2(✉)], Leanne Redman[3], Hassan Alami[4], José Luis Fernández-Alemán[5], and Ambrosio Toval[5]

[1] Software Project Management Research Team ENSIAS, Mohammed V University, Rabat, Morocco
ali.idri@um5.ac.ma
[2] CSEHS-MSDA, Mohammed VI Polytechnic University, Ben Guerir, Morocco
[3] Pennington Biomedical Research Center, Baton Rouge, LA 70808, USA
[4] Faculty of Medicine, University Mohammed V, Rabat, Morocco
[5] Software Engineering Research Group, Department of Computing and Systems, Faculty of Informatics, University of Murcia, Murcia, Spain

Abstract. Contraception Mobile Personal Health Records (mPHRs) are efficient mobile health applications (apps) to increase awareness about fertility and contraception and to allow women to access, track, manage, and share their health data with healthcare providers. This paper aims to develop a requirements catalog, according to standards, guidelines, and relevant literature to e-health technology and psychology. The requirements covered by this catalog are Acceptability, Usability, Sustainability, and Internationalization (i18n). This catalog can be very useful for developing, evaluating, and auditing contraceptive apps, as well as helping stakeholders and developers identify potential requirements for their mPHRs to improve them.

Keywords: Acceptability · Usability · Internationalization · Sustainability · l18n · mPHR · Contraception · SRS · eHealth

1 Introduction

Besides being important for both individuals and families, well-informed contraception is mandatory for population regulation [1], and deserves by all means high attention, since it does not only improve women's reproductive health but also their quality of life [2]. Owing to the tremendous evolution in medicine and technology, unprecedented opportunities for new progress in the field of contraception now present themselves. The development of emerging contraceptive solutions that improve the understanding and use of existing contraceptives; expanding acceptance and access to contraception, will help alleviate the growing unmet demand for satisfactory contraceptives worldwide[1]. However, the need for more theory-guided research to support the

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development of future Mobile Health (mHealth) apps to determine their clinical efficacy is highly stressed, especially in the field of contraception [3].

Addressing occasional treatment unfairness in health care, improving access to health information, reducing health system failures and remodeling primary health care, all depend on the enormous potential that the use of mobile health technologies offers nowadays [4]. These mHealth apps potentially involve reaching a wider scope with equal accessibility while keeping it a low-cost way to deliver a healthcare service, which makes these apps a vigorous public health solutions [5]. These apps are widespread, however, in-depth research addressing the effectiveness and acceptability of these apps is lacking [6]. Although there are many methods for evaluating existing systems and technologies that have already proven themselves, there is a lack of methods for evaluating innovative technologies. In this regard, systematic and scientific methods are required to evaluate innovative technologies in terms of user acceptance [7]. Of course, usability assessment is an essential feature of user-centered designs, where an iterative approach to product development is emphasized and user feedback is included at various points in the process. However, more research is needed to understand the gaps between intent and the actual and ongoing use of the application [3]. While the Human-Computer Interaction (HCI) is about usability, the Acceptability Engineering (AE) deals with acceptability. Comparative studies of usability and acceptability provided insight into the fact that acceptance can be understood as a concept of a higher level of usability, and acts as a compromise between a variety of factors that influence the adoption of new technologies [7]. For instance, there are cases when the system is easy to use, but users do not accept it. On the contrary, there may be unwieldy systems, but they are appreciated by many users. Moreover, limited reliance on Personal Health Records (PHRs) by individuals is a real problem, for several reasons such as the use of medical terms that are generally difficult to understand by users, the lack of language support, as well as social and cultural barriers [8]. Yet, having solid awareness about contraception solutions does not necessarily induce them to be used, since the bottleneck of modern contraception usage is still misconceptions entrained by social and cultural influences [9], which stress the importance of internationalization in contraception applications.

To the best of our knowledge, no software requirement catalog for contraception mPHRs has yet been developed. Therefore, this paper aims to elaborate on a requirements' catalog suited for the contraception apps with respect to IEEE 29148:2011 ISO/IEC/IEEE Standard [10]. This catalog mainly focuses on acceptability, usability, i18n, and sustainability for contraception mPHRs.

This article is structured as follows. Section 2 describes this software requirements specification (SRS) catalog, the process to obtain it, and explains the audit method to validate the catalog. The catalog validation is well explained in Sect. 3 through an application example that serves as the validation strategy for the proposed approach. Section 4 discusses the results of the audit report. Finally, Sect. 5 outlines our conclusions and further work.

2 Method

In order to identify standards and studies as resources to extract requirements related to contraception apps prior to the catalog generation, a literature review was conducted within the software engineering, psychology, and health fields. The distinguished standards and models were applied in the extraction process of requirements. Then, on the basis of the set of extracted requirements a catalog that was generated conforming to the IEEE 29148:2011 ISO/IEC/IEEE Standard [10]. Finally, the catalog is evaluated with a contraception app for audit purposes.

2.1 Requirements Specification

In the interest of including the distinguished SRS for the catalog, the present study relied upon the following: (1) previous studies concerning software quality [11, 12]. (2) research dealing with usability [3, 13, 14], acceptability[7], and the fare difference between the two aspects [15]. (3) software requirements catalogs that implement sustainability and internationalization [8, 16], and reusable catalog concerning software usability specifications [17]. Likewise, the following set of standards and models was applied in the extraction process of requirements.

- ISO/IEC 25010 is considered the cornerstone of a product quality evaluation system;
- ISO 9241-11 is a multi-part standard dealing with product usage characteristics. It offers a framework for understanding the concept of usability and its application to situations in which people use interactive systems and other types of systems;
- ISO/TR 14292 is used for the definition of the scope and context of personal health records;
- The W3C standards for Web and mobile devices;
- UTAUT stands for Unified Theory of Acceptance and Use of Technology and explains the user's intentions to use an information system and subsequent usage behavior.

2.2 Catalog Development

Geared toward ensuring a firm and reliable set of software requirements for contraception mPHRs, the development of the catalog in question is in respect to the specifications of contraception apps in the leading apps repositories. and to the former literature related to contraception. As described in Fig. 1 the generation process of the catalog consists of four steps: (1) Resources identification, which are the aforementioned related studies and standards. (2) The requirements extraction from the highlighted resources. (3) The catalog generation from the extracted requirements conforming to the IEEE 29148:2011 ISO/IEC/IEEE Standard [10], which contains a set of provisions for the processes and products related to the engineering of requirements for systems and software products and services throughout the life cycle.

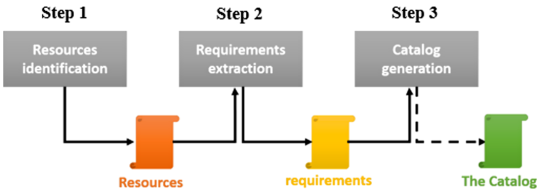

Fig. 1. The generation process of the catalog

2.3 Audit Process

In order to assess an mPHR for contraception using the catalog of requirements of the developed software, and to validate the latter, we elaborated a questionnaire that consists of 30 items based on the catalog guidelines, which is presented in Table 2. This questionnaire has been used in the evaluation of the app 'Clue Period & Ovulation Tracker' and was exclusively tailored to this app's relevant specifications. Following the app installation, the first step of the evaluation is to carry out a preliminary analysis of the application's work environment, its characteristics, and its main functionalities. The first author then conducted the assessment questionnaire on the 5th of February 2020. Then, a Checklist to evaluate the app was generated from the catalog. The Checklist was in the form of a questionnaire containing 30 questions, to facilitate the work of the evaluator, requirements that are not applicable to this app have been discarded. The answer to the questions adopted in this study has three choices, which are as follows: Yes (1 point) if the application offers this feature/functionality, No (0 points) if the application does not support this feature/functionality, and Partially (0.5 points) if the app does not fully respond to the statement detailed.

3 Results

3.1 The Identified Requirements

Based on existing contraception apps for iOS and Android platforms and scientific literature on contraception [18–23] (step 1 in Fig. 1), contraception mPHR requirements have been extracted (Step 2 of Fig. 1). Note that the requirements for i18n and sustainability and acceptability have been slightly adapted to contraception mPHRs according to [8, 16, 24, 25]. The contraception mPHR requirements are detailed in Table 1.

Table 1. Requirements identified for contraception mPHR

Usability requirements
1) The mPHR must keep the user informed
1.1) The mPHR must inform users about the internal status of the system
1.2) The mPHR must inform users when the system registers a user interaction
1.3) The mPHR must inform users of any action with important consequences
1.4) The mPHR should inform users that the system is processing an action when the action takes some time to complete
2) The mPHR must allow easy navigation and system recovery for the user
2.1) The mPHR must allow undoing system actions at several levels
2.2) The mPHR must allow canceling the execution of an action or the whole application
2.3) The mPHR must allow going back to a particular state in a command execution sequence
3) The mPHR must support user error protection
3.1) The mPHR must prevent users from data input errors
3.2) The mPHR must help users with tasks that require different steps with user input and correct such input records for each user's option
Internationalization requirements
1) The mPHR must be designed for cultural diversity and multilingual use
1.1) The mPHR must adapt its content to the user's linguistic preferences
1.2) The mPHR should be available in multiple languages, providing a simple and clear way to switch languages at multiple points while using it
1.3) The mPHR must adapt the help sections and the privacy policy to the user's linguistic preferences
1.4) The mPHR must adapt the reproductive health and contraception terms to the user's language preferences
1.5) The mPHR must display the text with the correct alignment of the text according to the user's linguistic preferences
2) The mPHR must use images to express ideas
3) The mPHR should clarify the content with icons
4) The mPHR should use graphs to display the history of measurements and period/ovulation tracking
5) The mPHR uses formats, units of measurement, and currencies appropriate for an international audience
5.1) The mPHR must adopt the digital format to the linguistic preferences of the user
5.2) The mPHR must adapt the currency to the geographic location of the user
5.3) The mPHR must adapt the units of measurement to the geographic location of the user
5.4) The mPHR must adapt the date and time format to the user's preferences
5.5) The mPHR must adapt the telephone numbers to the geographic location of the user
5.6) mPHR must adapt the address to the geographic location of the user
6) The mPHR should take into account the first day of the week depending on the geographic location
7) The mPHR should adjust the advertisements broadcast to the user to avoid cultural inconsistencies
8) The mPHR should allow the user to manage personal information, according to the laws or regulations of different countries regarding the ownership of personal information by the user
8.1) The user must be able to adjust the personal information in accordance with the laws or regulations of the different countries concerning the ownership of personal information by the user

(*continued*)

Table 1. (*continued*)

Internationalization requirements
8.2) The user must be able to control personal information in accordance with the laws or regulations of the various countries concerning the ownership of personal information by the user 8.3) The user must be able to process personal information in accordance with the laws or regulations of different countries regarding the ownership of personal information by the user
Sustainability requirements
1) The mPHR must have a positive individual impact 1.1) The mPHR must respect the security and confidentiality of the user 1.2) The mPHR must promote fertility and contraception awareness 2) The mPHR must have a positive social impact 2.1) The mPHR should allow interaction between users 2.1.1) The mPHR must connect to social networks 2.1.2) The mPHR should support a forum and/or chat 2.2) The mPHR should promote social solidarity and user participation 3) The mPHR must have a positive environmental impact 3.1) The mPHR should reduce transportation to restore health in Obstetrics and family planning centers 3.2) The mPHR should be convenient for frequent use 3.3) The app shall connect to other IT resources 3.3.1) The mPHR must store data in data warehouses, drivers, or cloud systems 3.3.2) The mPHR should use device functions such as Bluetooth, GPS, camera, and fingerprint sensor 3.3.3) The mPHR must communicate with mapping applications to display locations 3.4) The mPHR should be energy efficient 4) The app shall have a positive technical impact 4.1) The mPHR will easily adapt to future updates 4.2) The mPHR should stop in standby mode
Acceptability requirements
1) The mPHR should be personally relevant 2) The mPHR should be interesting 3) The mPHR should contribute to establish and maintain contraception self-monitoring 4) The mPHR should be clear and easily understandable 5) The mPHR should teach the user about contraception and reproductive health 6) The mPHR should motivate the user to keep track of her contraceptive use

3.2 The Generated Catalog

The general structure of the catalog is thus adapted to the recommended SRS structure from the standard as shown in Fig. 2. Seeking to address the most relevant software requirements for contraception mPHRs, the present catalog covers acceptability, usability, internationalization, and sustainability. As illustrated in Fig. 2, the Usability Requirements are indexed under Sect. 3.3. Three additional subsections have been integrated into the SRS structure under the Software system attributes section, which are internationalization (3.7.6) and sustainability (3.7.7) in keeping with [16], followed

by acceptability (3.7.8). Each identified requirement contains a set of predefined attributes, which provide additional information about it, such as Project Unique Identification (PUID), description, and priority to cite but a few.

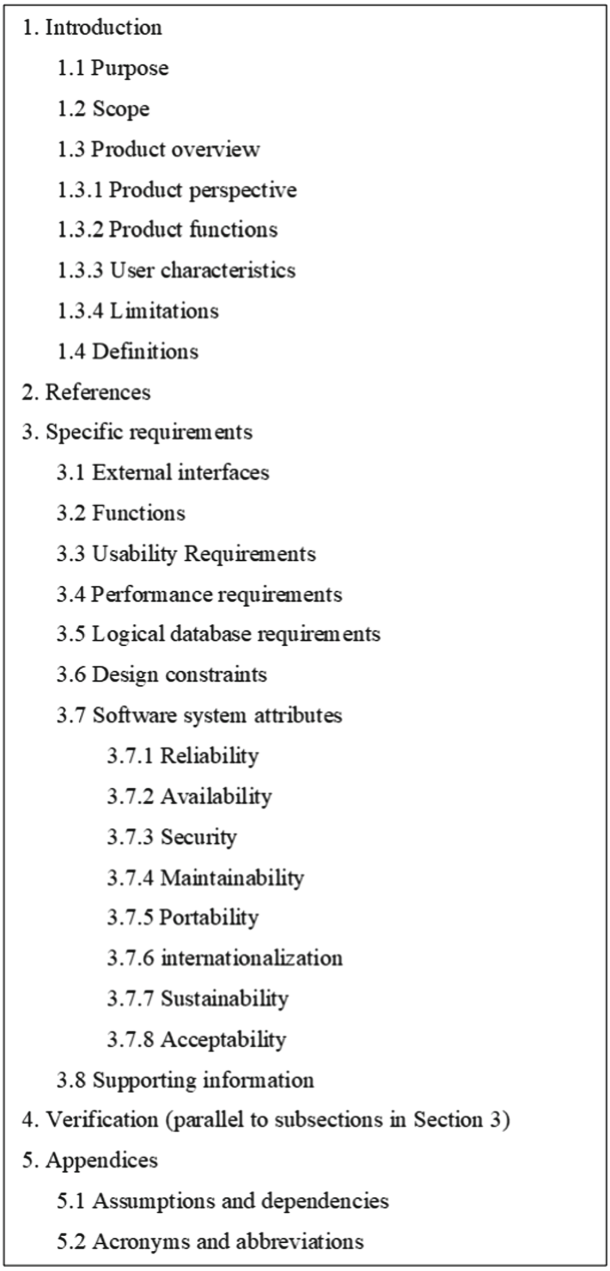

Fig. 2. IEEE 29148:2011 SRS outline

3.3 Illustration

In order to illustrate how to apply the developed catalog to evaluate an mPHR for contraception, we selected Clue Period Tracker, Ovulation, which is one of the most downloaded, best-reviewed mPHR in apps repositories. The number of total installs of this app exceeds ten million, and its review score on the app store is 4.8/5, which is considered a very high score.

The assessment questionnaire responses for 'Clue Period Tracker, Ovulation' evaluation, as shown in Table 2, are as follows: 22 Yes (73.33%), 1 Partially (3.33%), and 7 No (23.33%). The result for Q14 was "Partially", although the app allows adding, editing, and removing some personal data it does not allow the user to edit the current menstrual cycle nor add logs of previous menstrual cycles. Thereby, the score of this app is:

$$(22 * 1 + 1 * 0.5 + 7 * 0)/30 = 75\%$$

This score is considered as a very high score since 73.33% of the answers were positive. Yet, there is still room for improvement. Although 'Clue Period Tracker, Ovulation' recorded a perfect score of 100% in terms of usability and acceptability. However, the app scored 50% in internationalization and 63.64% in sustainability. Thereby, to improve this app, it is recommended to cover sustainability in all its dimensions (individual, social, environmental, technical, and economical) in future versions of this app, and to bridge the cultural and language barriers among women seeking contraception from different backgrounds to enhance the international aspect of the app.

4 Discussion

4.1 Main Findings

Despite the undeniable importance of user acceptability, usability, internationalization (i18n), and sustainability in today's contraception apps industry, no specific standard is found to handle such required mPHRs. Therefore, the catalog presented in this article is very useful for stakeholders of contraception apps. Developers can use some or all of the requirements in this catalog to develop international and sustainable contraceptive applications in which end users can find them both usable and acceptable.

Health organizations and/or development companies that wish to promote, improve, and facilitate access to contraceptive care through mPHRs can obtain their needs and define them from this catalog. Moreover, audit organizations or contraception apps stakeholders can use the catalog to assess and/or audit contraceptive applications. Furthermore, the content of the catalog of requirements will be continuously improved by incorporating new knowledge from additional information sources, such as recommendations, standards, or other policies.

Table 2. Assessment questionnaire

ID	Question	Result
Q1	Does the mPHR inform the user when the system registers a user interaction?	Yes
Q2	Does the mPHR inform the user of actions with important consequences?	Yes
Q3	Does the mPHR inform the user when the system is processing long actions?	Yes
Q4	Does the mPHR allow easy navigation?	Yes
Q5	Does the mPHR allow canceling the execution of an action or the whole application?	Yes
Q6	Does the mPHR support user error protection?	Yes
Q7	Does the mPHR list in its description the supported languages?	No
Q8	Does the mPHR adapt its content to the user's linguistic preferences?	No
Q9	Does the mPHR use pictures/icons to explain ideas?	Yes
Q10	Does the mPHR support the possibility to browse the history of the logs taken?	Yes
Q11	Does the mPHR use graphs to display the history of measurements and period/ovulation tracking?	Yes
Q12	Does the mPHR use formats, date/time, and units of measurement appropriate for an international audience?	Yes
Q13	Does the mPHR adjust the advertisements broadcast to the user?	No
Q14	Does the mPHR allow the user to manage personal information?	Partially
Q15	Does the mPHR support different profiles in the same device?	Yes
Q16	Is the user able to access the app without Internet connexion?	Yes
Q17	Is the user able to access the app using a login or social network account?	Yes
Q18	Does the mPHR connect to social networks?	Yes
Q19	Does the mPHR connect with maps repositories?	No
Q20	Is the user able to back up data from the mPHR?	Yes
Q21	Is the user able to find nearby obstetrics and family planning centers?	No
Q22	Is the user able to use phone resources (i.e. Bluetooth, camera, GPS..) within the mPHR?	Yes
Q23	Does the mPHR promote interaction among users via social networks?	Yes
Q24	Does the mPHR promote social solidarity among users via forums/chats?	No
Q25	Does the app shut down in idle mode?	No
Q26	Is the mPHR personally relevant?	Yes
Q27	Does the mPHR provide interesting contraception awareness content?	Yes
Q28	Does the mPHR contributes to period/ovulation tracking and contraception self-monitoring	Yes
Q29	Dos the mPHR include a Help or FAQ section to help understand it?	Yes
Q30	Does the mPHR motivate keep track of period/ovulation and contraceptive use?	Yes

4.2 Limitations

This study may contain several limitations, such as: (1) the multiple requirements that are scattered throughout different sources for the catalog generation were not harmonized; and (2) The application example that uses only one application may not be sufficient to demonstrate the applicability of the catalog. However, an example of the application is presented to give an overview of how the catalog is used to evaluate contraception apps.

5 Conclusion and Future Work

This study has presented the software requirement catalog on acceptability, usability, internationalization, and sustainability for contraception mPHRs, which is an SRS repository for contraception stakeholders to help them design, identify and verify requirements for acceptable, usable, internationalized, and sustainable contraception mPHRs. The requirements presented in this study were determined mainly from the results of literature reviews conducted in this domain and from the analysis of standards related to software engineering, psychology, and e-health.

For future work, we intend to: (1) Evaluate the moderation effect of personal innovativeness on each sub-component of acceptability requirement and its influence on the intention of use of mobile applications for contraception. (2) Make progress in improving the catalog of requirements by harmonizing the multiple requirements distributed across different sources and detailing those requirements giving various application examples resulting in a much richer catalog that would still have simple topics, but would be able to guide stakeholders into perfecting contraception mPHRs. (3) Develop a validation method called AUISC-AUDIT to determine if the contraception mPHRs meet the requirements mentioned in AUISC-CAT which evaluation will be carried out in a family planning center in Rabat (Morocco).

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References

1. Sitruk-Ware, R., Nath, A., Mishell, D.R.: Contraception technology: past, present and future. In: Contraception, pp. 319–330. Elsevier, Amsterdam (2013)
2. Institute of Medicine: New Frontiers in Contraceptive Research. National Academies Press (2004). https://doi.org/10.17226/10905
3. Reyes, J., Washio, Y., Stringer, M., Teitelman, A.M.: Usability and acceptability of everhealthier women, a mobile application to enhance informed health choices. J. Obstet. Gynecol. Neonatal Nurs. **47**, 853–861 (2018)

4. Malvey, D., Slovensky, D.J. (eds.): mHealth: Transforming Healthcare. Springer, Boston (2014). https://doi.org/10.1007/978-1-4899-7457-0
5. Fjeldsoe, B.S., Miller, Y.D., Marshall, A.L.: MobileMums: a randomized controlled trial of an sms-based physical activity intervention. Ann. Behav. Med. **39**, 101–111 (2010). https://doi.org/10.1007/s12160-010-9170-z
6. Zhao, J., Freeman, B., Li, M.: Can mobile phone apps influence people's health behavior change? Evid. Rev. (2016). https://doi.org/10.2196/jmir.5692
7. Kim, H.C.: Acceptability engineering: the study of user acceptance of innovative technologies. J. Appl. Res. Technol., 230–237 (2015). https://doi.org/10.1016/j.jart.2015.06.001
8. Bachiri, M., Idri, A., Redman, L.M., Fernandez-Aleman, J.L., Toval, A.: A requirements catalog of mobile personal health records for prenatal care. In: Misra, S., et al. (eds.) ICCSA 2019. LNCS, vol. 11622, pp. 483–495. Springer, Cham (2019). https://doi.org/10.1007/978-3-030-24305-0_36
9. Ochako, R., et al.: Barriers to modern contraceptive methods uptake among young women in kenya: a qualitative study global health. BMC Public Health **15**, 1–9 (2015). https://doi.org/10.1186/s12889-015-1483-1
10. ISO, IEC, IEE: ISO/IEC/IEEE 29148: systems and software engineering—life cycle processes—requirements engineering (2011). https://doi.org/10.1109/IEEESTD.2011.6146379
11. Ouhbi, S., Idri, A., Aleman, J.L.F., Toval, A.: Evaluating software product quality: a systematic mapping study. In: Proceedings - 2014 Joint Conference of the International Workshop on Software Measurement, IWSM 2014 and The International Conference on Software Process and Product Measurement, Mensura 2014, pp. 141–151. Institute of Electrical and Electronics Engineers Inc. (2014). https://doi.org/10.1109/IWSM.Mensura.2014.30
12. Ouhbi, S., Idri, A., Fern, L.: Applying ISO/IEC 25010 on mobile personal health records. In: 8th International Conference on Health and Informatics, pp. 405–412 (2015)
13. Mistrik, I., Bahsoon, R., Eeles, P., Roshandel, R., Stal, M.: Relating system quality and software architecture (2014). https://doi.org/10.1016/C2013-0-00646-9
14. Ouhbi, S., Fernández-Alemán, J.L., Pozo, J.R., Bajta, M.E., Toval, A., Idri, A.: Compliance of blood donation apps with mobile OS usability guidelines. J. Med. Syst. **39**(6), 1–21 (2015). https://doi.org/10.1007/s10916-015-0243-1
15. Okumus, B., Ali, F., Bilgihan, A., Ozturk, A.B.: Psychological factors influencing customers' acceptance of smartphone diet apps when ordering food at restaurants. Int. J. Hosp. Manag., 67–77 (2018). https://doi.org/10.1016/j.ijhm.2018.01.001
16. Ouhbi, S., Fernández-Aleḿan, J.L., Idri, A., Toval, A., Pozo, J.R., Bajta, M.E.: A reusable requirements catalog for internationalized and sustainable blood donation apps. In: Proceedings of the 12th International Conference on Evaluation of Novel Approaches to Software Engineering, pp. 285–292 (2017). https://doi.org/10.5220/0006360202850292
17. Cruz Zapata, B., Fernández-Alemán, J.L., Toval, A., Idri, A.: Reusable software usability specifications for mHealth applications. J. Med. Syst. **42**(3), 1–9 (2018). https://doi.org/10.1007/s10916-018-0902-0
18. Egarter, C., Grimm, C., Nouri, K., Ahrendt, H.J., Bitzer, J., Cermak, C.: Contraceptive counselling and factors affecting women's contraceptive choices: results of the CHOICE study in Austria. Reprod. Biomed. Online, 692–697 (2012). https://doi.org/10.1016/j.rbmo.2011.12.003

19. Reiss, K., et al.: Using automated voice messages linked to telephone counselling to increase post-menstrual regulation contraceptive uptake and continuation in Bangladesh: study protocol for a randomised controlled trial. BMC Public Health, 1–10 (2017). https://doi.org/10.1186/s12889-017-4703-z
20. Koch, M.C., et al.: Improving usability and pregnancy rates of a fertility monitor by an additional mobile application: results of a retrospective efficacy study of Daysy and DaysyView app. Reprod. Health, 1–10 (2018). https://doi.org/10.1186/s12978-018-0479-6
21. McCarthy, O., et al.: A randomized controlled trial of an intervention delivered by mobile phone app instant messaging to increase the acceptability of effective contraception among young people in Tajikistan. Reprod. Health **15**, 1–14 (2018)
22. Fruhauf, T., et al.: Measuring family planning quality and its link with contraceptive use in public facilities in Burkina Faso, Ethiopia, Kenya and Uganda. Health Policy Plan., 828–839 (2018). https://doi.org/10.1093/heapol/czy058
23. Hardon, A.: The development of contraceptive technologies: a feminist critique. Gend. Dev., 40–44 (1994). https://doi.org/10.1080/09682869308520010
24. Ouhbi, S., Fernández-Alemán, J.L., Carrillo-de-Gea, J.M., Toval, A., Idri, A.: E-health internationalization requirements for audit purposes. Comput. Methods Programs Biomed. **144**, 49–60 (2017)
25. Plaete, J., De Bourdeaudhuij, I., Verloigne, M., Crombez, G.: Acceptability, feasibility and effectiveness of an eHealth behaviour intervention using self-regulation: "MyPlan". Patient Educ. Couns. **98**, 1617–1624 (2015). https://doi.org/10.1016/j.pec.2015.07.014