# Classification of Pregnancy Apps in Medical Technology Despite the Coronavirus

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**Research article**

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# Abstract

Background

The use of mobile applications is very popular among the public these days. Pregnant women are a segment of society who need constant care to monitor their condition and that of the fetus. Pregnant women find it very difficult to keep track of their condition. An application software is needed. But choosing a reliable application is important.

Methods

The article is a research article that uses PRISMA flowchart to extract articles. Given that there are many apps in the field of pregnancy and due to technological advances as well as the recent outbreak of coronavirus disease, so the articles of the last 10 years that have been scientifically published in the databases of Google Scholar, PubMed, Science Direct have been analyzed. The most widely used and at the same time the best app is introduced in terms of its high usability.

Results

After searching for the keywords m-health, pregnancy, mobile app, coronavirus, covid-19 and combining them in databases according to the inclusion and exclusion criteria, 23 articles were finally reached. In the initial search, 3, 18 and 292 articles were extracted in PubMed, Science Direct and Google Scholar, respectively. According to the search strategy, 23 articles were identified qualitatively by reviewing both authors. Then, the types of apps were divided into three general categories, pregnant entertainment apps, pregnant information apps, and monitoring apps for mothers' physical health. Finally, 10 apps were selected and the Amila app was introduced as the best due to its high usability.

Conclusion

Considering that pregnant women are an important segment of society and in addition to their health, the health of the fetus is also important to them, and also despite the coronavirus and the difficulty of mothers traveling for check-ups and checking their condition, As a result, using trusted apps to maintain their health and reduce traffic in the current situation will be very important. Given that this research article was written with the aim of choosing the best app, so it can be a suggestion for pregnant women and even gynecologists to introduce such apps to their patients.


# Background

In today's world of technology, electronic devices such as cell phones and tablets have become an essential tool in everyday life. Whether used for formal or personal purposes, these devices influence and shape the way people think and live. The rapid development of Internet-based communication technologies over the past twenty years has changed the lifestyles of people around the world. Residents of cities and villages can equally access the opportunities used by mobile devices.(1–3)

When it comes to women's health and addressing important issues such as childbirth and pregnancy, the most important thing is to constantly monitor the health of the mother and fetus. In the past, due to unnecessary considerations due to ignorance, information about pregnancy and childbirth was usually done incompletely and with strange restrictions. Some even considered educating and informing people about this natural issue an ugly act.(4–7)

But fortunately, over time, extremist views have largely disappeared, so that today there are many tools to inform young women about the important issue of pregnancy and maintaining their health during this critical period.(8–11)

Today, with the significant advancement of medical technologies in the field of pregnancy and childbirth, the world of applications and websites has entered all aspects of human life, including pregnancy. (12) These days, you can rarely see a pregnant woman who is unaware of the gender and health status of her fetus, or you can almost say that you will not find any urban mother who goes to the virtual networks to solve the problems of pregnancy, breastfeeding and child care. (13)

Therefore, the category of motherhood has been and is a very lucrative and popular subject for launching startups in the world, so that if you look at virtual stores, you can encounter with a considerable variety of apps and websites in the field of motherhood. Since children need educational facilities and special care to grow, and it is time consuming for parents to do all the activities related to proper care and proper nutrition, ideas have been developed to help them in this important matter. (14, 15)

Today, the use of apps is more popular than websites. As a result, most reputable sites in the field of pregnancy have designed apps that usually use tools such as estimating the time of delivery, calculating BMI, determining gender, calculating the required calories, scheduling the vaccine, searching for the baby's name, etc. in this program are included that can be easily used. In addition to the above tools, the "Pregnancy and Childhood Calendar" is also one of the most popular sections of the applications, which provides accurate and complete articles from the first week of pregnancy to the 41st week of pregnancy.(16–24)

Today, from the topic of pregnancy health and counseling in this field to counseling for buying clothes, designing a room and preparing baby food, everyone is discussing and progressing in the context of applications. There are also many websites that work in this field and are a kind of database for young mothers.(3, 17, 19, 25)

But despite the multiplicity of these apps, choosing the best type has become difficult for pregnant women. On the other hand, the reliability of the software, its accuracy and precision, and finally how to use it is very important. However, the main concern is the quality of these programs. Therefore, there is a need to monitor the quality of information provided by these pregnancy programs. In the development of interactive mobile applications, one of the main factors that determine their success is usability. However, although many researchers have done research on mobile health-related applications, many of these studies are inaccurate.

On the other hand, despite coronavirus disease, traveling is a dangerous act for pregnant women, and using the app can reduce their travel to some extent and provide them with the necessary information and measurement.

However, the quality, reliability and effectiveness of existing pregnancy programs have not yet been determined. Therefore, exposure to potentially harmful programs or participation in research with evidence-based mobile applications should be carefully considered, especially during pregnancy when women are more sensitive to external influences. In addition, unnecessary information and advice about lifestyle and health care can cause more anxiety and stress during pregnancy. Therefore, information on usability and effectiveness is very important for implementing new programs in maternal health care.(4, 14, 15, 20, 22, 23, 26)

In this research article, pregnancy apps will be categorized first and then they will be compared in terms of accuracy, precision and usability of the dimensions of Jacob Nielsen's five principles, it will be given users a detailed view to choose the best type of app.

# Methods

This article is a research article. First by searching for the keywords mHealth, pregnancy, mobile app, mobile phone and covid-19 and coronavirus, as well as combining the keywords in the Google Scholar, PubMed and Science Direct databases in the period October 2010 to October 2020, a total of 313 articles extracted. Then, considering the inclusion and exclusion criteria (Table 1) and also reviewing the abstracts of articles by both authors separately, finally 23 articles were included in the study. Of these 23 articles, 10 apps were reviewed according to inclusion and exclusion criteria. Flowchart 1 shows the study selection chart.

Table 1 Inclusion and exclusion criteria of the study

| Exclusion criteria | Inclusion criteria |
|---|---|
| Apps for fathers or plugins for fathers were excluded from the study | Articles in the period 2010–2020 |
| Apps designed for pregnant women with a specific illness. | Articles in English |
| — | Access to the full text of the article |
| — | Apps with the target group of pregnant women |

# Results

Of the 23 studies, 78% were conducted in Malaysia, China, the United States and Australia. The apps reviewed in these articles included the dimensions of weight control, week-to-week care, pregnant mothers, and examining mothers' physical and mental condition, choosing a name for their child, and purchasing supplies. Table 2 shows the categories of different dimensions of pregnancy apps. There were a total of 251 apps on Google Play related to pregnant women, only a fraction of which have been scientifically reviewed, which is actually done in Table 2 of this category. One of the most important parts of the app category is the information section. The information must be up-to-date and credible, and on the other hand, it must take into account all sections of the pregnant woman and the scientific texts must be expressed in simple language. On the other hand, it is one of the sub-sections of information about specific pregnancies, which includes women with certain diseases such as diabetes, asthma and hypertension, which were excluded from the present study.

Table 2. Categories of pregnancy apps (1, 3-8, 10-14, 19, 20, 22-25, 28-32)

| Hobby | Monitoring | Information |
|---|---|---|
| - Games<br>- Pregnancy test and ultrasound pranks<br>- Shopping for pregnancy<br>- Gender predictors<br>- Baby name generators<br>- Writing diaries<br>- Training yoga<br>- Pregnancy calendar | - Tracking weight and waist<br>- Measurements<br>- Diet<br>- Water consumption<br>- Symptoms<br>- Moods<br>- Medications<br>- Cravings<br>- Appetite<br>- Energy levels<br>- Input due dates and appointments<br>- Production of a repository of personal medical information<br>- Monitoring every week ($1^{st}$ -$41^{st}$ )<br>- BMI | - Information about pregnancy,<br>- Information about nutrition and exercise<br>- Behaviors that should be avoided by pregnant women<br>- Online forums in which to connect to other pregnant women (for example, to share and compare stories and experiences).<br>- Recognize the time of baby birth<br>- Special pregnancy (for ill mom)<br>- Information about corona virus |

On the other hand, identifying the quality of apps also requires examining quality indicators such as usability (Table 3). Table 4 classifies the quality of pregnancy apps based on the dimensions of Nielsen's five principles of accuracy and precision. Figure 1 shows a graph of user satisfaction with pregnancy software based on reports of app satisfaction on Google Play and the App Store.

Table 3. Nielsen's Five Principles of Usability (33, 34)

| The Jakob Nielsen's usability principles |
|---|
| Effectiveness: easy to recover from errors |
| Efficiency: efficient to use |
| Learnability: easy to learn |
| Memorability: easy to remember |
| Satisfaction: subjectively pleasing |

Table 4. Check the quality of apps based on Nielsen principles, accuracy and precision extracted from articles

| precision | Accuracy | Satisfaction | Memorability | Learnability | Efficiency | Effectiveness | Apps' name | |
|---|---|---|---|---|---|---|---|---|
| 98% | 98% | 98% | 76.66% | 73.33% | 77.14% | 66.66% | **Amila** | 1 |
| 96% | 96% | 75% | 76% | 75% | 75% | 75% | **Day by Day Pregnancy Tracker** | 2 |
| 96% | 96% | 75% | 75% | 75% | 75% | 75% | **Pregnancy + tracker** | 3 |
| 96% | 96% | 75% | 75% | 75% | 75% | 75% | **Pregnancy & Baby Tracker** | 4 |
| 96% | 96% | 75% | 75% | 75% | 75% | 75% | **Pregnancy+** | 5 |
| 96% | 96% | 75% | 75% | 75% | 75% | 75% | **The Bump - Pregnancy & Baby Tracker** | 6 |
| 92% | 92% | 88% | 82% | 75% | 83% | 85% | **Sprout Pregnancy** | **7** |
| 96% | 96% | 75% | 75% | 75% | 75% | 75% | **Ovia Fertility & Cycle Tracker** | **8** |
| 90% | 90% | 90% | 83% | 81% | 88% | 88% | **WebMD Pregnancy** | **9** |
| 56% | 56% | 50% | 62% | 52% | 53% | 52% | **My Baby's Movements app.** | 10 |

Amila app

The Amila Pregnancy mobile app has revolutionized the delivery of healthcare services to pregnant women around the world that are increasingly beneficial in their daily lives. Only a few digital interventions have been developed for pregnant women, and little is known about the acceptance and use of such mobile apps that help pregnant women. According to the evaluation of this program, Nielsen usability criteria were obtained with an average of 71.824 percent. This program has the following capabilities that are more accurate than similar apps and are more satisfied with users.(12)

- Track your pregnancy week by week

- Get information about your baby

- Calculate current week of pregnancy

- Calculate due date (pregnancy date)

- Track your weight

- Track baby kicks

- Make notes with your pregnancy symptoms (morning sickness, changes with your body, doctor appointment)

- Free pregnancy app.

Figure 2 shows part of this software. As shown in the figure, the menu of this app has become more attractive in the 2020 update and has provided the ability to access different sections more quickly. Important parts of this software include weight monitoring, pregnancy exercises such as pregnancy yoga, weekly pregnancy information, and communication with the doctor, exchanging views with other mothers and using the experiences of pregnant women, pregnancy calendar and taking notes in it (7, 12).

## Discussion

In this research article of category pregnancy apps and Amila app according to Table 4 in terms of usability, accuracy and precision received the highest score compared to other apps and was suggested as a reliable app to pregnant women and experts in this field. According to the evaluation of this program, Nielsen usability criteria were obtained with an average of 71.824%. Given that there are many pregnancy apps in the Apple Store and Google Play, finding the most reputable ones is very difficult and requires scientific research, which is addressed in this study. Out of 23 extracted articles, we reached a total of 10 apps for which usability criteria were examined.

Azham Hussain et al. In Malaysia evaluated Amila using the Nielsen Five Principles, which found that some of the main menu extensions were difficult for the public to access, and it was difficult for users to access the calendar and record events in it. In the 2020 version, these problems have been fixed.(31)

A study by Alicia A. Dahl et al. collected pregnancy apps with a weight control approach for pregnant women, which collected the apps by 2016 and reported the results. In this article, out of 87 apps surveyed, only six met the inclusion criteria. Of these apps, Day by Day Pregnancy Tracker, Pregnancy + tracker, Pregnancy & Baby Tracker, and Pregnancy + also met the inclusion criteria in this study.(2)

A review by Sanne B Overdijkink et al. also examines the life cycle of pregnancy apps with the approach of pregnant women with the disease. This study was excluded due to exclusion criteria in this article and only the apps introduced in this article were used in this article.(35)

In 2017, Tamar Krishnamurti et al. introduced the MPH Pregnancy App as the first pregnancy app based on behavioral decision research that provides and collects risk information related to preterm delivery. In the new update, satisfaction is 56%. And due to the similarities with other software and lacked some of the features of Table 2, was not selected for this study and did not enter the study. Because in this study, articles that had all the features of Table 2 were reported.(36)

In general, it can be concluded that due to the high volume of pregnancy apps and the lack of review of many of them in terms of usability, a research article to review such apps in terms of user-friendliness and user satisfaction is important for pregnant women and professionals in this field. Given that many apps in the field of pregnancy are commercial and there is no scientific article about them, so they did not participate in the present study (1, 16-18, 28, 37) which is one of the main

limitations of this article and the strength of the article is that the apps reported in this article has been scientifically validated by experts.

## Conclusion

Today, the use of smartphones has grown significantly and most people use mobile apps instead of websites. Due to the prevalence of coronavirus and the risk of pregnant women, most pregnant women have turned to apps to reduce their travel to find out about their status. (16, 17, 19-21, 23, 24, 38, 39) But using a reputable and reliable app is also very important. Because a search on Google Play or the App Store shows a large number of apps for them, many of which may not be scientifically qualified.(40-46)

In this article, the best apps that are also popular from the users' point of view were introduced so that not only pregnant women but also obstetricians can use them. Some of the available apps were designed specifically for pregnant mothers. Mothers with underlying diseases such as diabetes, asthma and high blood pressure. Such apps were excluded from the study because they included a certain segment of pregnant women, and finally 10 of the most widely used apps in the field of pregnancy were selected, which were approved by users and scientifically evaluated. Finally, the Amila app was selected as one of those apps that not only provides the required information to mothers, but also the ability to interact with doctors and specialists, due to its higher accuracy, precision and usability than other apps. Also gives and the user can use it with peace of mind.

## Abbreviations

App: Application

MPH: perinatal methylphenidate

Covid-19: corona virus

## Declarations

**Ethics approval and consent to participate:** It is not applicable.

**Consent for publication:** It is not applicable.

**Availability of data and materials:** It has done by searching in relevant databases.

**Competing interests:** Both authors are interested in all parts and it has done by both.

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## References

1. Brown HM, Bucher T, Collins CE, Rollo ME. A review of pregnancy iPhone apps assessing their quality, inclusion of behaviour change techniques, and nutrition information. Maternal & child nutrition. 2019;15(3):e12768.
2. Dahl AA, Dunn CG, Boutté AK, Crimarco A, Turner-McGrievy G. Mobilizing mHealth for moms: A review of mobile apps for tracking gestational weight gain. Journal of Technology in Behavioral Science. 2018;3(1):32-40.

3. Darlaston H. Using your BRAIN for Pregnancy Apps.
4. Haelle T. Pregnancy Apps: Your Patients Use Them—Are You Up to Speed? Medscape Ob/Gyn. 2018.
5. Hughson J-aP, Daly JO, Woodward-Kron R, Hajek J, Story D. The rise of pregnancy apps and the implications for culturally and linguistically diverse women: narrative review. JMIR mHealth and uHealth. 2018;6(11):e189.
6. Hughson JP, Daly JO, Woodward-Kron R, Hajek J, Story D. The Rise of Pregnancy Apps and the Implications for Culturally and Linguistically Diverse Women: Narrative Review. JMIR mHealth and uHealth. 2018;6(11):e189.
7. Jacobson A. THE Risks OF PREGNANCY-TRACKING APPS. Risk Management. 2019;66(7):24-8.
8. Jangi M, Ferandez-de-las-Penas C, Tara M, Moghbeli F, Ghaderi F, Javanshir K. A systematic review on reminder systems in physical therapy. Caspian journal of internal medicine. 2018;9(1):7.
9. Peyton T, Poole E, Reddy M, Kraschnewski J, Chuang C, editors. " Every pregnancy is different" designing mHealth for the pregnancy ecology. Proceedings of the 2014 conference on Designing interactive systems; 2014.
10. Qing L, Weiying S. A Chinese Survey of Women's Use and Expectation of Pregnancy Applications. Studies in health technology and informatics. 2019;264:749-52.
11. Rau NM, Hasan K, Ahamed SI, Asan O, Flynn KE, Basir MA. Designing a tablet-based prematurity education app for parents hospitalized for preterm birth. International journal of medical informatics. 2020;141:104200.
12. Hussain A, Mkpojiogu EO, Fadzil NM, Hassan NM, editors. The UX of amila pregnancy on mobile device. AIP Conference Proceedings; 2017: AIP Publishing LLC.
13. Peyton T, Poole E, Reddy M, Kraschnewski J, Chuang C, editors. Information, sharing and support in pregnancy: addressing needs for mHealth design. Proceedings of the companion publication of the 17th ACM conference on Computer supported cooperative work & social computing; 2014.
14. Thomas GM, Lupton D. Threats and thrills: pregnancy apps, risk and consumption. Health, Risk & Society. 2016;17(7-8):495-509.
15. Wang N, Deng Z, Wen LM, Ding Y, He G. Understanding the use of smartphone apps for health information among pregnant Chinese women: Mixed methods study. JMIR mHealth and uHealth. 2019;7(6):e12631.
16. Berglund Scherwitzl E, Gemzell Danielsson K, Sellberg JA, Scherwitzl R. Fertility awareness-based mobile application for contraception. The European journal of contraception & reproductive health care : the official journal of the European Society of Contraception. 2016;21(3):234-41.
17. Carter J, Sandall J, Shennan AH, Tribe RM. Mobile phone apps for clinical decision support in pregnancy: a scoping review. BMC medical informatics and decision making. 2019;19(1):219.
18. Chan KL, Chen M. Effects of Social Media and Mobile Health Apps on Pregnancy Care: Meta-Analysis. JMIR mHealth and uHealth. 2019;7(1):e11836.
19. Gyselaers W, Lanssens D, Perry H, Khalil A. Mobile Health Applications for Prenatal Assessment and Monitoring. Current pharmaceutical design. 2019;25(5):615-23.
20. Hantsoo L, Criniti S, Khan A, Moseley M, Kincler N, Faherty LJ, et al. A Mobile Application for Monitoring and Management of Depressed Mood in a Vulnerable Pregnant Population. Psychiatric services (Washington, DC). 2018;69(1):104-7.
21. Khalil A, Perry H, Lanssens D, Gyselaers W. Telemonitoring for hypertensive disease in pregnancy. Expert review of medical devices. 2019;16(8):653-61.
22. Rathbone AL, Prescott J. The Use of Mobile Apps and SMS Messaging as Physical and Mental Health Interventions: Systematic Review. Journal of medical Internet research. 2017;19(8):e295.
23. Sales RO, Dilts LM, Silva RMD, Brasil CCP, Vasconcelos Filho JE. Development and evaluation of an application for syphilis control. Revista brasileira de enfermagem. 2019;72(5):1326-32.
24. Sommer J, Daus M, Smith M, Luna D. Mobile Application for Pregnant Women: What Do Mothers Say? Stud Health Technol Inform. 2017;245:221-4.

25. Fonseca F, Peixoto H, Braga J, Machado J, Abelha A, editors. Smart Mobile Computing in Pregnancy Care. CATA; 2019.
26. Thomas GM, Lupton D. Playing pregnancy: the ludification and gamification of expectant motherhood in smartphone apps. M/C Journal. 2015;18(5).
27. Oxford U. PRISMA 2015 [Available from: http://prisma-statement.org/.
28. Brown HM, Bucher T, Collins CE, Rollo ME. A review of pregnancy apps freely available in the Google Play Store. Health promotion journal of Australia : official journal of Australian Association of Health Promotion Professionals. 2020;31(3):340-2.
29. Frazer C, Hussey L, Bosch E, Squire M. Pregnancy apps: A closer look at the implications for childbirth educators. 2015.
30. Günay A, Erbuğ Ç. Mobile Health Integration in Pregnancy. Current and Emerging mHealth Technologies: Springer; 2018. p. 57-83.
31. Hussain A, Mkpojiogu EO, Fadzil N, Hassan N, Zaaba ZF. A mobile usability evaluation of a pregnancy app. Journal of Telecommunication, Electronic and Computer Engineering (JTEC). 2018;10(1-11):13-8.
32. Sustamy RP, Pratiwi RD, Wahyuni S, editors. USING THE SMARTPHONE APPLICATION FOR PREGNANCY CARE: A LITERATURE REVIEW. Proceedings of the International Conference on Applied Science and Health; 2019.
33. Miller K, Capan M, Weldon D, Noaiseh Y, Kowalski R, Kraft R, et al. The design of decisions: Matching clinical decision support recommendations to Nielsen's design heuristics. International journal of medical informatics. 2018;117:19-25.
34. Nielsen J. How to conduct a heuristic evaluation. Nielsen Norman Group. 1995;1:1-8.
35. Overdijkink SB, Velu AV, Rosman AN, Van Beukering MD, Kok M, Steegers-Theunissen RP. The usability and effectiveness of mobile health technology–based lifestyle and medical intervention apps supporting health care during pregnancy: systematic review. JMIR mHealth and uHealth. 2018;6(4):e109.
36. Krishnamurti T, Davis AL, Wong-Parodi G, Fischhoff B, Sadovsky Y, Simhan HN. Development and testing of the Myhealthypregnancy app: a behavioral decision research-based tool for assessing and communicating pregnancy risk. JMIR mHealth and uHealth. 2017;5(4):e42.
37. Barassi V. BabyVeillance? Expecting parents, online surveillance and the cultural specificity of pregnancy apps. Social Media+ Society. 2017;3(2):2056305117707188.
38. Molteni E, Astley CM, Ma W, Sudre CH, Magee LA, Murray B, et al. SARS-CoV-2 (COVID-19) infection in pregnant women: characterization of symptoms and syndromes predictive of disease and severity through real-time, remote participatory epidemiology. medRxiv : the preprint server for health sciences. 2020.
39. Peterson SF, Fok WK. Mobile technology for family planning. Current opinion in obstetrics & gynecology. 2019;31(6):459-63.
40. Ayatollahi H, Ghalandar Abadi M, Hemmat M. Web and mobile-based technologies for monitoring high-risk pregnancies. BMJ health & care informatics. 2019;26(1).
41. Bachiri M, Idri A, Fernández-Alemán JL, Toval A. Mobile personal health records for pregnancy monitoring functionalities: Analysis and potential. Computer methods and programs in biomedicine. 2016;134:121-35.
42. Borgen I, Garnweidner-Holme LM, Jacobsen AF, Bjerkan K, Fayyad S, Joranger P, et al. Smartphone application for women with gestational diabetes mellitus: a study protocol for a multicentre randomised controlled trial. BMJ open. 2017;7(3):e013117.
43. Haddad SM, Souza RT, Cecatti JG. Mobile technology in health (mHealth) and antenatal care-Searching for apps and available solutions: A systematic review. International journal of medical informatics. 2019;127:1-8.
44. Marcano Belisario JS, Doherty K, O'Donoghue J, Ramchandani P, Majeed A, Doherty G, et al. A bespoke mobile application for the longitudinal assessment of depression and mood during pregnancy: protocol of a feasibility study. BMJ open. 2017;7(5):e014469.
45. Nikolopoulos M, Karampela I, Antonakos G, Tzortzis E, Stratigou T, Diomidous M, et al. Mobile Phone Applications for Gestational Diabetes Mellitus: Appraisal and Perspectives. Stud Health Technol Inform. 2019;262:39-42.

46. Tumminia A, Vitacolonna E, Sciacca L, Dodesini AR, Festa C, Lencioni C, et al. "MySweetGestation": A novel smartphone application for women with or at risk of diabetes during pregnancy. Diabetes research and clinical practice. 2019;158:107896.

# Figures

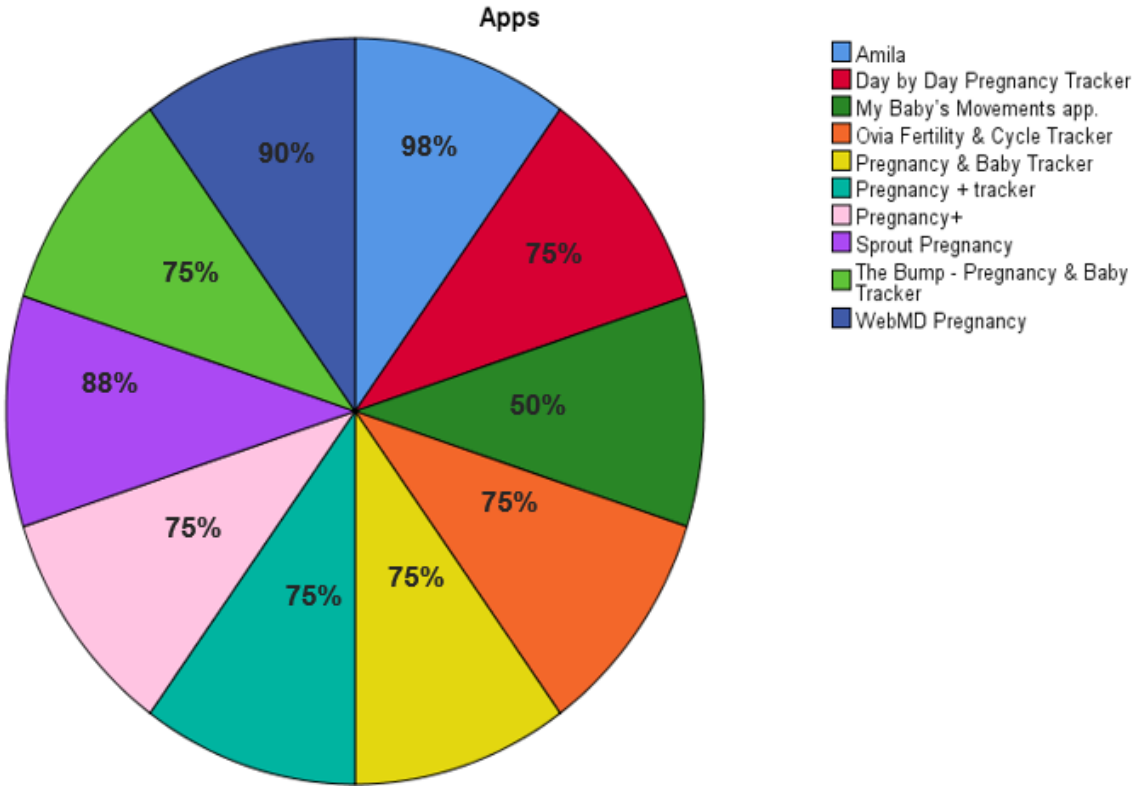


**Figure 1**

Satisfaction chart of pregnancy app users

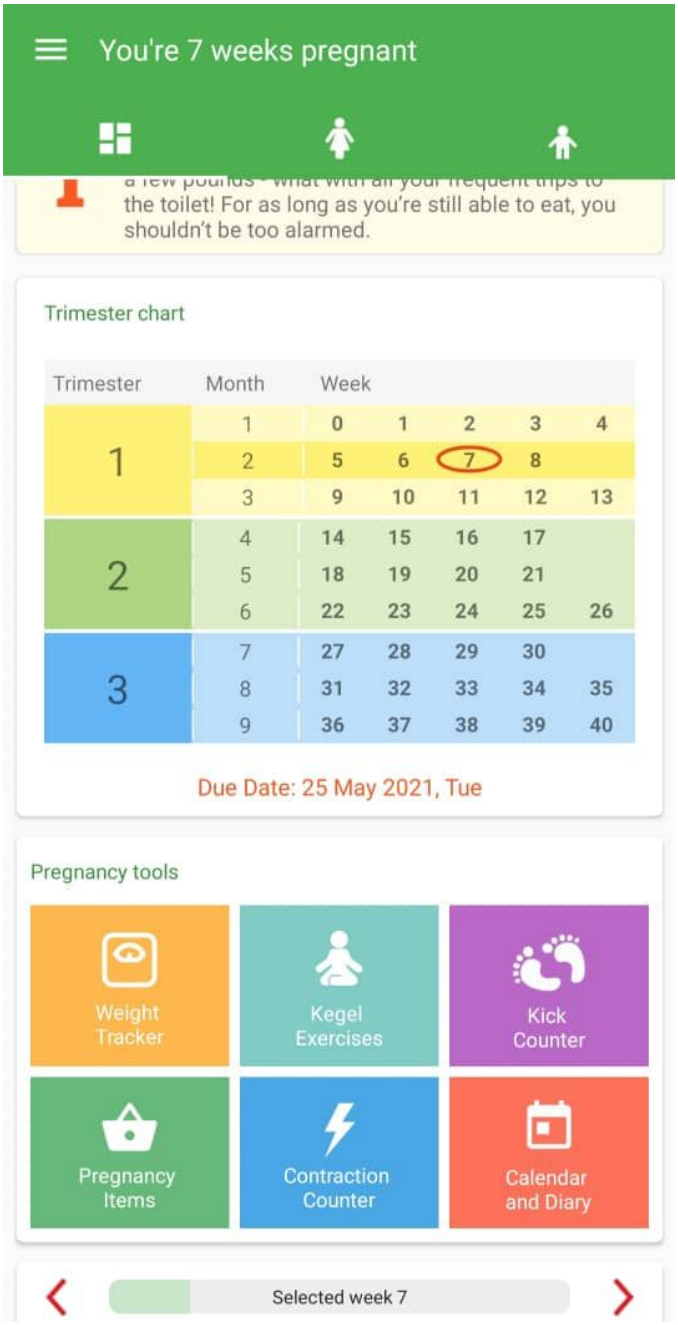


**Figure 2**

Amila App scheme