Table 1- List and definitions of diabetes mobile applications features

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| --- | --- | --- | --- |
| Record | Mobile App Features extracted from reviewed papers | Definition | Reference |
| 1 | Blood Glucose Tracking | Comparison of BG test results entered in different sessions | El-Gayar (18), Rao (6), Chomutare (22), Arnhold, (21) , Issom (17) |
| 2 | Insulin and Medication Tracking | Comparison of insulin test results entered in different sessions | El-Gayar (18), Rao (6), Chomutare (22), Issom (17) |
| 3 | Physical Activity Tracking | Comparison of physical activity results entered in different sessions | El-Gayar (18), Rao (6), Chomutare (22), Issom (17) |
| 4 | Weight Tracking | Comparison of weight checking results entered in different sessions | El-Gayar (18), Rao (60, Chomutare(22), Issom (17) |
| 5 | Blood pressure Tracking | Comparison of blood pressure test results entered in different sessions | El-Gayar (18), Rao (6), Chomutare (22) |
| 6 | Diet Tracking | Comparison of calorie, fat or other nutritional information of consumed meal via barcode or selected from list | El-Gayar(18), Rao (6), Chomutare (22), Issom (17) |
| 7 | Food (Diet) database | The extent to which the user can choose consumed food in a list | Rao (6), Arnhold (21) |
| 8 | Meal time tagging | To tag the time/s patients have had meal/s over a specific time | Rao (6) |
| 9 | Education | To provide specific tip for patients to better manage a condition | El-Gayar (18), Chomutare (22), Arnhold (21) |
| 10 | Messaging | To communicate health care provide to get new update of app or events in health center | El-Gayar (18), Chomutare (22), Arnhold,(21) |
| 11 | Data export | To change entered data to other formats such as CSV or email | El-Gayar (18), Chomutare (22), Arnhold (21) |
| 12 | Synchronization to website | To keep mobile app in coherence with website in order to maintain data integrity between these two sources | Rao (6) |
| 13 | Synchronization with PHR | To keep mobile app in coherence with PHR in order to maintain data integrity between these two sources | El-Gayar (18), Chomutare (22) |
| 14 | Synchronization with social network | To keep mobile app in coherence with social network in order to maintain data integrity between these two sources | El-Gayar (18), Chomutare (22), Arnhold (21) |
| 15 | Color Coding | Categorizes are coded by different colors based on BG values including low, middle and high level | Rao (6) |
| 16 | Alerts | To alert user about particular condition | El-Gayar (18), Chomutare (22) |
| 17 | Reminder | To remind patient about activities user must do for self-care | Arnhold (21) |
| 18 | Prediction | To predict particular condition based on data entered in the system | El-Gayar (18) |
| 19 | Estimation | To estimate value of BG level based on user condition using entered related data | El-Gayar (18) |
| 20 | Detection | To detect specific condition based on value of BG entered in the system | Arnhold (21) |
| 21 | Trend Chart View | To show graphical display of BG or others health related measured values over time | Rao (6), Arnhold (21) |
| 22 | Wide Screen Mode View | To display video in a wide mode rather than zoom or normal mode. | Rao(6) |
| 23 | Logbook View | To review important events related to BG management in an electronic page | Rao (6), Arnhold (21) |
| 24 | Average View | To calculate the mean of patient BG level for a given duration | Rao (6), Arnhold (21) |
| 25 | Standard Deviation View | To calculate the variation of patient BG level over a specific time | Rao (6), Arnhold (21) |
| 26 | Personalized Theme | To change the them or layout of app | Rao (6) |
| 27 | Data Entry Automation | To upload the level of blood glucose into app automatically due to compatibility of app and blood glucose meter reader or insulin pump | El-Gayar (18), Rao (6) |
| 28 | Preset Notes | To use structured note by user in order to remember something or a number | Rao (6) |
| 29 | Custom Notes | To use unstructured note by user in order to remember something or a number | Rao(6) |
| 30 | Target range setting | To allow user to establish what they want to achieve in terms of BG level or other important measurements | Rao(6) |
| 31 | Security | The ability of putting pin code or password for whole or database part of app | El-Gayar (18) |
| 32 | Communication | Possibility of connecting patient to other patients, friends ,family or practice member via email, write a review or exchange their experiences | El-Gayar (18), Rao (6), Chomutare (22), Arnhold,(21) |

Table 2 - Conformity table (compare between CCM components and diabetes mobile application features)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Delivery System Design | | | | | | Self-management strategies | | | | | | Decision support and expert system | | | Information support | | | Community linkages | | Health systems support | | |
| Elements  Features | Care management roles | Team practice | Care delivery/coordination | Proactive follow-up | Planned visit | Visit system change | Patient education | Patient activation/psychosocial support | Self-management assessment | Self-management support | Collaborative decision making with  patients | Guidelines available to patients | Institutionalization of guidelines,  protocols, or prompts | Provider education | Expert consultation support | Patient registry system | Use of information for care management | Provision of performance data | For patients | For community | Leadership support | Provider participation | Coherent system improvement |
| Blood Glucose Tracking |  |  |  | \*  \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Insulin and Medication Tracking |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Physical Activity Tracking |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Weight  Tracking |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Blood pressure Tracking |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Diet Tracking |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Food (Diet) database |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Meal time tagging |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Education |  |  |  |  |  |  | \* | \* |  | \* |  | \* |  |  |  |  |  |  |  |  |  |  |  |
| Messaging |  |  |  |  |  |  |  | \* |  | \* |  |  |  |  |  |  |  |  | \* |  |  |  |  |
| Data export |  |  |  |  | \* |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Synchronization to website |  |  | \* | \* |  |  |  |  |  | \* |  | \* | \* |  |  |  | \* |  |  |  |  |  |  |
| Synchronization with PHR |  |  | \* | \* |  |  |  |  |  | \* |  |  | \* |  |  |  | \* |  |  |  |  |  |  |
| Synchronization with social network |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Color Coding |  |  |  |  | \* |  |  | \* |  | \* | \* |  |  |  |  |  |  |  |  |  |  |  |  |
| Alerts |  |  |  | \* |  |  |  |  |  | \* |  | \* |  |  |  |  | \* |  |  |  |  |  |  |
| Reminder |  |  |  | \* |  |  |  |  |  | \* |  | \* |  |  |  |  | \* |  |  |  |  |  |  |
| Prediction |  |  |  |  | \* |  |  |  |  | \* |  | \* |  |  |  |  | \* |  |  |  |  |  |  |
| Estimation |  |  |  |  | \* |  |  |  |  | \* |  | \* |  |  |  |  | \* |  |  |  |  |  |  |
| Detection |  |  |  |  | \* |  |  |  |  | \* |  | \* |  |  |  |  | \* |  |  |  |  |  |  |
| Trend Chart View |  |  |  | \* | \* |  |  |  |  | \* | \* |  |  |  |  |  |  |  |  |  |  |  |  |
| Wide Screen Mode View |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Logbook View |  |  |  | \* | \* |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Average View |  |  |  |  | \* |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Standard Deviation View |  |  |  |  | \* |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Personalized Theme |  |  |  |  |  |  |  | \* |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data Entry Automation |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Preset Notes |  |  |  |  |  |  |  | \* |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Custom Notes |  |  |  |  |  |  |  | \* |  | \* | \* |  |  |  |  |  |  |  |  |  |  |  |  |
| Target range setting |  |  |  |  |  |  |  | \* |  | \* | \* |  |  |  |  |  |  |  |  |  |  |  |  |
| Security |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Communication |  |  | \* |  |  | \* |  | \* |  | \* | \* |  |  |  |  |  |  |  | \* |  |  |  |  |

Table 3- compare between CCM components and selected diabetes mobile application based on conformity table

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Apps Name | Delivery System Design | | | | | | Self-management strategies | | | | | | Decision support and expert system | | | Information support | | | Community linkages | | Health systems support | | |
| Care management roles | Team practice | Care delivery/coordination | Proactive follow-up | Planned visit | Visit system change | Patient education | Patient activation/psychosocial support | Self-management assessment | Self-management support | Collaborative decision making with patients | Guidelines available to patients | Institutionalization of guidelines,  protocols, or prompts | Provider education | Expert consultation support | Patient registry system | Use of information for care management | Provision of performance data | For patients | For community | Leadership support | Provider participation | Coherent system improvement |
| Habits |  |  |  | \* |  |  | \* |  |  | \* | \* | \* | \* |  |  |  | \* |  |  |  |  |  |  |
| Diaguard |  |  |  | \* |  |  |  |  |  | \* | \* |  |  |  |  |  | \* |  |  |  |  |  |  |
| Glucosio |  |  |  |  |  |  | \* | \* |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| MedMDiabete |  |  |  | \* |  |  |  | \* |  | \* | \* |  |  |  |  |  | \* |  |  |  |  |  |  |
| Managelt-Diabetes Assisstant |  |  |  | \* | \* |  |  | \* |  | \* | \* |  |  |  |  |  | \* |  | \* |  |  |  |  |
| BeatO |  |  |  | \* |  |  | \* | \* |  | \* |  | \* | \* |  |  |  | \* |  | \* |  |  |  |  |
| Diabeto Diabetes Logbook |  |  |  | \* |  |  |  | \* |  | \* |  |  | \* |  |  |  | \* |  |  |  |  |  |  |
| Deazy-Diabetes & Weight App |  |  |  | \* |  |  | \* |  |  | \* |  | \* | \* |  |  |  | \* |  | \* |  |  |  |  |
| Diabetes Journal |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Diabetes Checker |  |  |  | \* |  |  | \* |  |  | \* |  | \* | \* |  |  |  | \* |  |  |  |  |  |  |
| DiaLog: Diabetes Logbook Demo |  |  |  | \* |  |  |  |  |  | \* | \* |  | \* |  |  |  | \* |  |  |  |  |  |  |
| Diabetes, Blood Pressure and Wt |  |  |  | \* |  |  |  | \* | \* | \* | \* |  |  |  |  |  | \* |  |  |  |  |  |  |
| Health-PIE Digital Nurse |  |  |  | \* |  |  |  |  |  | \* |  |  | \* |  |  |  | \* |  |  |  |  |  |  |
| DIAry |  |  |  |  |  |  |  |  |  | \* |  |  | \* |  |  |  | \* |  |  |  |  |  |  |
| DiabetesPA |  |  |  | \* |  |  |  |  |  | \* |  |  | \* |  |  |  | \* |  |  |  |  |  |  |
| e-SMBG |  |  |  | \* |  |  |  |  |  | \* | \* |  | \* |  |  |  | \* |  |  |  |  |  |  |
| The Best Diabetes Calculator |  |  |  | \* |  |  |  |  |  | \* | \* |  |  |  |  |  | \* |  |  |  |  |  |  |
| Sugar Sense |  |  |  | \*  \* |  |  |  |  |  | \* | \* |  | \* |  |  |  | \* |  |  |  |  |  |  |
| My DIabetes |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Diabetes Studio |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Blood Diary |  |  |  | \*  \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Cafydia Diabetes |  |  |  | \*  \* |  |  |  |  |  | \* |  |  |  |  |  |  | \* |  |  |  |  |  |  |
| Laborom |  |  |  | \* |  |  |  |  |  | \* | \* |  | \* |  |  | \* | \* |  |  |  |  |  |  |