Keynote Forum
November 29, 2019

Diabetes 2019
Diabetes Congress 2019

Joint Event on

28th International Conference on

Diabetes and Endocrinology

&

3rd International Conference on

Diabetes and Metabolism

November 29-30, 2019 | Frankfurt, Germany

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Julia Jacoby

Oslo Metropolitan University, Norway

Deliberations on the development of mobile phone apps to support diabetes self-management: A review from a designer's perspective

Diabetes is a chronic illness with significant health consequences, especially for those who are unable to adhere to the complex treatment regimen. Self-management tasks such as regular medication and insulin use, frequent blood sugar checks, strict diet management, and consistent exercise can be quite challenging. Mobile technologies, specifically mobile applications (apps), present a unique opportunity to help patients improve adherence to these behaviors. The availability of commercial diabetes self-management apps is increasing rapidly, making it difficult for patients and providers to stay informed about app options. A number of reviews have described commercial app technology and use for patients with diabetes.

This article provides a systematic review examining the factors considered in trials which engage mobile phone apps for diabetes self-management. The reason for reviewing such trials is to gain an understanding of what developmental considerations were adopted in these trials. This gives insight into what has been considered by other researchers in the past and can give insight into what can be valuable measures to adopt in the future. In addition these insights will be used to compare and contrast with findings from the actual market situation found in the two largest app stores Google Play and iTunes. In order to lay the ground work for an ethnographic fieldwork study in which diabetes patients will be asked about the use of self-tracking diabetes apps in the management of their diabetes in daily life.

In order to achieve this a search was implemented across four electronic databases; Medline, Scopus, Social Science Citation Index, and CINALHL. The findings from these databases were reviewed based on the Joanna Briggs Checklist for Systematic Reviews. With the added query of whether Design, Interaction Design or Graphic Design were considered in the trials.

Speaker Biography

Julia Jacoby is currently writing her PhD at the Nordic Norwegian University of Science and Technology (NTNU), while working at Oslo Metropolitan University. She is educated as a product designer in the two converging fields of Health and Design. She is particularly interested in how patients cope with chronic illness over long periods of time and how design can benefit this experience.

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Fabio Sartori

University of Milano-Bicocca, Italy

Personalized treatment of chronic diseases from a computational perspective

Quality of life (QoL) of patients affected by chronic diseases and their caregivers is a very important and interdisciplinary research topic. From recent literature new methodologies to reduce the impact of a chronic disorders on everyday life of affected people and their relatives are required: PERsonal Care Instructor and VALuator (PERCIVAL) project is an attempt to build up an integrated environment to promote the sharing, deliberation and monitoring of decisions about different aspects of chronic diseases among all the actors involved. Patients affected by chronic diseases are often interested by multiple disorders, which make them frail from many points of view: From the physical perspective, they must follow different kinds of therapies, with possible negative intersections that could cause them very hard side-effects; From the psychological standpoint, the self-acceptance of such long-term disability, and, for most of them, life-long disability, is very difficult to reach; Last, but not least, from the social viewpoint, they must entirely depend on their caregivers, that are their relatives most of times, for all the aspects related to their condition; this dependency typically becomes closer and closer according to the evolution of the chronic disease. PERCIVAL aims at developing decision support systems capable to exploit both quantitative data perceived by wearable devices, that are nowadays recognized as very useful to face with chronic disorders, and qualitative data provided by the user to take decisions tailored on patient profile. In this talk, the general architecture and a prototype of the PERCIVAL system focusing on the definition of personalized training programmes will be presented. Moreover, the conceptual model behind the system, based on the adoption of bayesian networks and the first experiments, whose goal was to profile potential users of the PEERCIVAL system to derive effective Conditional Probability Tables will be introduced.

Speaker Biography

Fabio Sartori, PhD, is Assistant Professor at the Department of Computer Science, Systems and Communication, University of Milan-Bicocca, Milan. His research mainly focuses on conceptual and computational frameworks for knowledge-based systems design and implementation and case-based reasoning. He is the author and co-author of more than 70 scientific papers on international journals and conference proceedings. He is associate editor of Data Technologies and Applications journal and member of the steering committee of the Metadata and Semantics Conference Series.

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Jharna Majumdar
Mamatha Bai B G

Nitte Meenakshi Institute of Technology, India

Application of data analytics in healthcare to serve the mankind

As we are the era of rapid technological advancement, the data is increasing rapidly and the emerging technologies are used for a better solution. Due to the busy lifestyle, the focus and care on the health issues is neglected and is leading to severe health concerns at a later stage if not properly monitored and detected at an early stage. To overcome this problem and create an awareness among the individuals, a research is proposed to serve the Mankind using Data Analytics.

Data Analytics involves a large volume and variety of data and helps us to examine the medical data and draw timely conclusions so that the patients can be sent regular alerts based on monitoring their health conditions. This work also helps the doctors to diagnose the disease at an early stage and prevents the patients from suffering at a later stage by adopting smart decision and right management techniques.

This research involves the examination of the symptoms, previous health reports, treatment history of the patients and treatment record of similar disease which helps in deriving accurate conclusions and gives a way forward towards adopting the preventive measures. This work also leads to the confidentiality and data privacy challenges as the medical data being examined is to be restricted among the patients and doctors. The motivation behind this work is to serve the mankind and help them to lead a happy and healthy balanced life.

Speaker Biography

Jharna Majumdar is currently the Dean R & D, Prof. Dept of M Tech Comp Sc. & Engg. and Head, Centre for Robotics Research at the Nitte Meenakshi Institute of Technology, Bangalore, India. Dr. Majumdar served Defense Research & Development Organization, Govt. of India from 1990 to 2007, worked as a Research Scientist on 'Robotics and Automation' at the Forschungs Zentrum Informatik, Karlsruhe, Germany from 1983 to 1989 and as a Research Scientist at the Stanford Research International California, USA in 2002. Dr. Majumdar has a PhD in Electrical Engg., Undergraduate and Post Graduate Engineering from IIT Kharagpur, India. Dr. Majumdar published more than 180 reviewed technical papers, has 4 Patents and received a large number of awards. Some of her worth mentioning awards are : Award from President, Stanford Research International (SRI International), California, USA, Performance Excellence Award from the Prime Minister of India, Dr V M Ghatage award from Aeronautical Society of India, Dr. Suman Sharma Award from National Design and Research Forum (NDRF), Dr. Kalpana Chawla Memorial Lecture Award etc. Her current research areas include Real Time Image and Video Processing, Data and Video Analytics, Robotics and Autonomous Systems, Artificial Intelligence, Machine Learning, ANN and Deep Learning.

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Daniela Moraru

Politehnica University, Romania

Data analyses with ImageJ software in diabetic retinopathy, by processing the OCT images

The study is based on OCT (Optical Coherence Tomography) images resulting from investigation of 24 patients (with a total of 33 eyes) with non-proliferative diabetic retinopathy and of 19 patients (with a total of 26 eyes) without diabetes mellitus as control group. Patients' age was between 43 and 92 years old, with a mean age of 66.4 years for first group, and a mean age of 67.6 years for the second one. From this large group, after the first data evaluation, we selected patients aged 40 to 65. We evaluate daily each patient, at 9am, 12am, 3pm and 6pm, through glycaemic index level and OCT investigation using Macular Cube 512x128 images acquisition type. In the same time, we made specifically measurements of ISel (photoreceptor inner segment ellipsoid band) layer thickness using ImageJ soft. We analysed comparatively data given by OCT device and those obtained through direct thickness measurements for three macular zones: one central (foveola) and two circulars (para-foveola and peri-foveola), having 1mm, 3mm, respectively 6mm in diameter.

We concluded that age and time of the day are significantly factors that influence the diabetic retinopathy. We also suggest this method as further investigation tool mostly for patients at the beginning of illness discovering, in order to diminishing and even stopping its evolution.

Speaker Biography

Daniela Moraru is completing her PhD studies in Bio-photonic and Optical Medical research fields at Politehnica University, Bucharest, within Academic Centre for Optical Engineering and Photonics, working also as Physics teacher. She graduated Physics Faculty, being specialized in Biophysics. She has several publications and presentations regarding some aspects of glycaemia influence on contrast sensitivity and on retinal thickness from bio-photonic point of view.

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Suhas Gopal Erande

Diabetic Speciality Centre & Insulin Pump Centre Akshay Hospital, India

QT/QTc safety and efficacy evaluation of Teneligliptin in Indian type 2 diabetes mellitus patients: the "thorough QT/QTc" study (Q-SET study)

Therapeutic armamentarium of T2DM has been rapidly expanding over last decade & dipeptidyl peptidase IV inhibitors (gliptins) have emerged as safe, efficacious, durable class. In this same timeframe, ADA-EASD guidelines have become more patient centric & the USFDA has given a mandate to prove cardiovascular safety before marketing any antidiabetic drug.

Teneligliptin is a very widely used drug for T2DM in India since 2015. Therapeutic doses of teneligliptin(20 or 40 mg/day) have not been known to alter the QT interval in ECG, but, supratherapeutic doses(160mg/day) may prolong the same. Similar observations are made with sitagliptin (50 or 100 mg/d safe-but-400mg/d may prolong QT interval). Since prolongation of QT interval can increase risk of polymorphic ventricular tachyarrythmia Torsade de Pointes, this scrutiny is essential.

Since there is no devoted study to assess if routine doses of teneligliptin(20 or 40mg/day) are safe with respect to effect on QT interval, we undertook this exercise.

We selected 66 adult nonpregnant T2DM patients (age >18 yrs <65 yrs) who were gliptin naïve & on standard antidiabetic treatment, but, uncontrolled(HbA1c>7%). Teneligliptin 20mg/day was added to therapy & if needed, doubled to 40mg/day. Other drugs were unchanged through the study duration (unless compelling clinically). Baseline 12 lead ECG

was recorded & also within 120 minutes of the 1st, 15th & 90th day of teneligliptin. Glycemic parameters were recorded alongwith other laboratory tests. QT interval was measured for each of these 4 ECGs (baseline, day 1, day 15 & 90) & QTc was calculated as per Bazett's formula(QTc=QT/ sq root RR interval).

It was observed that there was no increase in QT/QTc interval after 3 months of teneligliptin treatment(along with other antidiabetic drugs like glimepiride, pioglitazone, metformin). The drug improved glycemic parameters & without noteworthy adverse events. Larger studies & longer observation periods may help in future.

Speaker Biography

Suhas Gopal Erande is a practicing consultant who is having own Diabetes centre & Insulin Pump Clinic at Akshaya Hospital, India. He has been writing Diabetes Patient Education books over 2 decades. Felicitated for social services for diabetes by 'Diabetes Mitra' award. He has written academic articles for physicians at National & International levels. Publications in National & International journals. He has been writing chapters in textbooks over years. Invited for poster presentation on Intensive Glucose Monitoring in Bethesda Baltimore 2016 Diabetes Technology Society Meet Invited for Global Diabetes Conference. For Diabetes in Women lecture in Prague August 2017. His recently published studies Prevalence of depression in T2DM in India(DEPTH study) & effect of teneligliptin on QT-QTc interval(Q SET study) have got International acclaim.

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