



PSAD symposium

'Behavioural diabetes and technology: where is it going?'

Wednesday 3rd October from 08.15-09.45

54th EASD Annual Meeting in Berlin

Presenters:

- 1. Prof. Frank J. Snoek:** Online psychosocial interventions for persons with diabetes
- 2. Prof. Norbert Hermanns:** Psychological aspects of continuous glucose sensing technology and artificial pancreas
- 3. Prof. Katherine Barnard:** Psychological impact of diabetes apps and diabetes blogs

Chairperson: Prof. Arie Nouwen

Background: Scientists, clinicians and people with diabetes have witnessed tremendous progress in the field of diabetes technology in the last few years. Key developments are e-health based interventions and technological innovations such as novel glucose sensing systems and artificial pancreas systems.

E-health based interventions can support people with diabetes with mental health problems or people who struggle to maintain self-care activities. E-health based interventions have the advantage of being available at all times, at lower costs than face to face interventions and they can be used anonymously.

Continuous glucose monitoring devices provide glucose values every five to 15 minutes providing a complete overview of the course of blood glucose allowing better stratification of hypo- and hyperglycaemic risk. Information about current and previous glucose trends support informed treatment adjustments as opposed to adjustments based on spot blood glucose values.

Most continuous glucose monitoring systems are also able to alert people with diabetes if critical glucose values are exceeded or undercut.

Combining continuous glucose monitoring systems with insulin pumps opens the window for artificial pancreas systems. The hope is that artificial pancreas systems will be able to control glucose autonomously in the future.

However, trials using e-health interventions show selection bias and a high attrition rate. Also, clinical efficacy of continuous glucose monitoring- and artificial pancreas systems do not always live up to the great expectations associated with these systems. Irregular sensor usage and/or discontinuation of continuous glucose monitoring are often associated with suboptimal clinical outcomes. Handling of the huge amount of glucose data, and the detection of problematic glucose patterns that could be addressed by treatment adjustments, are other challenges that might limit the clinical efficacy of these systems. Moreover, overwhelming expectations associated with artificial pancreas sometimes disappoint subgroups of participants in clinical trials. These challenges suggest that psychological aspects are important for the adoption and efficacy of new technologies.

In this symposium the scientific evidence for the impact of psychological factors on the adoption, use, benefit and challenges of e-health interventions, continuous glucose monitoring and artificial pancreas systems will be reviewed. Current evidence for the effects of e-health interventions will be reviewed as well as psychosocial interventions and education designed to support people in the adoption and use of the above mentioned technological systems will also be evaluated.

A new, poorly understood and under researched phenomenon is the use of diabetes blogs, apps and technological developments exclusively driven by people with diabetes. These developments and associated research will also be reviewed and criteria proposed for the scientific evaluation of them.

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