Diabetic Medicine May 2019

**Editorial**

**The role of telehealth and diabetes**

Contrary to popular belief, telehealth is not a new phenomenon; for many centuries, humankind has sought medical help remotely. In Ancient Rome and Greece, people who were unable to travel to temples to seek medical attention sent messengers with details of their symptoms with the expectation that they would return with advice about the diagnosis and treatment.

The development of the telephone expanded the potential for remote health care and indeed Alexander Graham Bell, the inventor of the telephone, is reported to have asked for help from his assistant after he spilt acid on his trousers. In 1879, the Lancet published the first case history of a child whose condition was diagnosed successfully over the phone in the middle of the night. The potential for reducing face-to-face clinical contact was considered as the Lancet discussed how the telephone could obviate the need for unnecessary house visits.

The advent of the internet and the rapid adoption of portable devices including laptops, tablets and mobile phones in everyday life has transformed the ability to deliver telehealth. Today in March 2019, 4.3 billion (55.6% of the world’s population) have access to the internet while in Europe and North America, internet coverage is enjoyed by 80-95% of the population. In 2016, two-thirds of the global population owned a mobile phone and by the end of 2019, the number of mobile phone users is forecast to pass 5 billion, with around half this number possessing a smartphone. Over 36% of the world's population use a smartphone, up from about 10% in 2011.

Although face-to-face consultations are likely to remain the bedrock of clinical care, the opportunities to provide a more flexible and convenient service through telehealth now seem possible and are increasingly being adopted. As a chronic condition with its demands for self-management, diabetes may be particularly well suited to telehealth. A recent systematic review of seven studies assessing the effectiveness of telehealth on diabetes control self-management in primary healthcare settings showed positive effects for diabetes self-management in the short term and a fall in HbA1c [1].

In this month’s issue, we have three papers that assessed different aspects of telehealth, two with positive effects and one with a neutral effect. The first is a systematic review of patient decision aids, which are designed to help people make better choices about healthcare. These may be used remotely or during a consultation and may be computer- or paper-based. Previous studies in other conditions have shown that patient decision aids improve knowledge, risk perception, satisfaction and shared decision-making. Karagiannis et al have brought together the findings of 15 randomized controlled trials assessing the effect of decision aids on a variety of outcomes for people with Type 2 diabetes [2]. Decision aids improved the quality of and active participation in decision making and knowledge transfer; however, there was no effect on glycaemic control or medication taking.

Healthcare professionals have used text messaging to support young people with diabetes for a number of years. Over a decade ago, Franklin et al reported that Sweet Talk, a text-messaging support system, improved self-efficacy and medication taking but did not improve glycaemic control [3]. In this month’s issue, McGill et al report the results of an 18-month text-messaging intervention in teenagers with Type 1 diabetes [4]. The participants received text reminders to check blood glucose levels and reply with their results. Over the trial period, nearly half the teenagers responded with at least one blood glucose result on more than half of the days. Regardless of baseline HbA1c, these individuals experienced better glycaemic control than those who did not engage with the service. Texting appeared to be an acceptable means of engaging teenagers but we need further work to understand how to maintain interest in the long term.

The third study assessed the benefit of TeleCare support in people with Type 2 diabetes [5]. Participants were randomised to structured self-monitoring of blood glucose with or without additional monthly telephone consultations with a trained nurse compared with usual diabetes care. HbA1c fell in both intervention groups over the 12 months’ trial, emphasising the importance of training in testing and interpretation when the individual commences glucose monitoring; however, there was no further benefit from the TeleCare support.

This month’s issue also includes the Diabetes UK Type 1 diabetes technology pathway and consensus statement. This describes how technology should be added incrementally and emphasizes the importance of combining technology with structured education, specialist support and appropriate access to psychological therapies. This pathway has been added to the recently updated virtual issue of Diabetes UK position statements and guidelines which are available at <https://onlinelibrary.wiley.com/page/journal/14645491/homepage/virtual_issue__duk_position_statements_and_other_guidelines.htm>.

Richard IG Holt

University of Southampton

Editor-in-Chief

Diabetic Medicine

References

1. So CF, Chung JW. Telehealth for diabetes self-management in primary healthcare: A systematic review and meta-analysis. J Telemed Telecare. 2018;24:356-364.
2. Karagiannis et al. Decision aids for people with Type 2 diabetes mellitus: an effectiveness rapid review and meta-analysis. DME13939
3. Franklin VL, Waller A, Pagliari C, Greene SA. A randomized controlled trial of Sweet Talk, a text-messaging system to support young people with diabetes. Diabet Med. 2006 Dec;23(12):1332-8.
4. McGill et al Text-message responsiveness to blood glucose monitoring reminders is associated with HbA1c benefit in teenagers with Type 1 diabetes. DME13929
5. Parsons et al Effect of structured self-monitoring of blood glucose, with and without additional TeleCare support, on overall glycaemic control in non-insulin treated Type 2 diabetes: the SMBG Study, a 12-month randomized controlled trial. DME1392
6. Choudhary et al. A Type 1 diabetes technology pathway: consensus statement for the use of technology in Type 1 diabetes. DME-2018-00373.R2