What telemedical care programmes can do for people with diabetes

The Austrian Institute for Health Technology Assessment (AIHTA) analysed how telemedical care programmes for people with diabetes can be evaluated and what evidence is available on possible care effects. In addition to the medical benefits, organisational and social care effects should also be considered in the evaluation of telemedical care programmes. The focus should be on validated measurement instruments, which have often been used in studies.

Diabetes mellitus poses major challenges to health systems worldwide. Globally, the number of people aged 20 to 79 years affected by diabetes is estimated to be around 537 million in 2021. According to forecasts, there could be 783 million diabetes patients by 2045. According to experts, more than 700,000 people in Austria suffer from some form of diabetes. However, the number of unreported cases is likely to be much higher, with probably 30 to 35 percent of those affected not yet diagnosed with the metabolic disease. This is according to an AIHTA report that examined the medical, social and organisational benefits of telemedicine care programmes for people with diabetes around the world.

Telemedicine is intended to improve the quality of treatment for chronically ill people in particular and to simplify intensive, regular medical care - especially in rural regions where GP care is no longer guaranteed throughout the country. In most cases, telemedical care programmes for diabetics are linked to digital health applications (DiHAs), such as an electronic diabetes diary. In this context, the patient no longer has to visit the doctor in person each time in order to adjust the therapy to the sugar measurement values, but instead enters blood pressure and sugar values, weight and his or her personal assessment of well-being daily either in an app or the data are automatically transmitted to the doctor. This tight monitoring is intended to quickly detect abnormalities and deviations and, if necessary, to quickly summon patients to the doctor's office for clarification. This should improve the control of patient flows, adherence to therapy, self-management and ultimately the quality of life of people with diabetes.

The situation in Austria

In Austria, there are two pilot projects for telemedical care of people with diabetes: One of them is called "Diabcare" and is offered in Tyrol. Throughout Austria, the "Diabetes Mellitus Health Dialogue" aims to improve the care situation. The national programme is not yet available to all people with diabetes living in Austria - only to those who are insured with the Austrian insurance fund for civil or public servants, miners and persons employed with the federal railways (BVAEB). "In principle, this is not a disadvantage, because it should be checked whether the telemedical care programmes also have a benefit before they are used nationwide. Since the pilot projects are not yet offered to all diabetics, comprehensive comparative evaluations are possible. This means that regions in which the programmes have been implemented can be compared with those in which they have not been implemented", explains study leader Goetz.

Currently, the digital health applications (DiHAs) "DiabCare" and "DiabMemory" developed for the two Austrian pilot projects are still isolated solutions and must primarily be compatible with the doctor's software. A connection to the electronic health record (ELGA) is planned but currently not possible. According to the expert, there is a need for improvement above all in the definition of the objectives and the evaluation of the two programmes: "The objectives are broad and thus formulated somewhat imprecisely. For a meaningful evaluation, however, clear objectives are necessary, which in turn determine the choice of measuring instruments."

The expert sees another shortcoming in the fact that compliance, i.e. the active participation of patients in the telemedical diabetes programmes, was relatively low with drop-out rates of up to 40 percent.

In addition, efforts are currently being made in Austria to design a transparent process for the evaluation and reimbursement of DiHAs. "It is important that the criteria and requirements for broad reimbursement and

implementation (e.g. data protection, benefit assessment, etc.) used in future are also applied to DiHAs embedded in telemedical care programmes", explains Goetz.

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For the evaluation of international telemedicine-assisted diabetes projects, 20 studies in 25 publications were identified, in which 17 endpoints were collected. The endpoints aimed to examine any medical, social and organisational care effects. Most of the endpoints were assessed quantitatively, primarily using standardised questionnaires.

Only randomised controlled trials (RCTs) were considered for the systematic review on the additional benefit of telemedical care programmes compared to usual diabetes care. The results showed that there are some signs of possible medical, social and organisational care effects. For example, some telemedicine-assisted care programmes were associated with an improvement in quality of life, an increase in satisfaction/acceptance of diabetes therapy and a reduction in the use of medical services. The care effects are strongly context-dependent: The organisational framework conditions of the care programmes were very heterogeneous (e.g. with regard to personnel resources, training, coaching elements).

For the further development of Austrian telemedical care programmes, these results can be of inspiration for conceptual improvement. However, careful planning taking into account the health literacy and ICT affinity of the patient population concerned is advisable in order to strengthen compliance.

In Austria, observational studies are currently considered to be sufficient, although results of these studies do not allow any causal conclusions on the additional benefit of telemedical care programmes. "The analysis of international studies has shown that RTCs based on validated measuring instruments are possible," emphasises the study leader. It is also important "that the objective is clearly defined in advance and that the various endpoints, such as health literacy, quality of life, improvement of self-management or the need for therapy adjustment, are determined with already established –and validated measurement instruments", explains Goetz.

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