Physicians’ perceptions and attitudes towards digitalization and new technologies in diabetes care

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ABSTRACT
Digitalization is an emerging field. However, little is known about the perceptions and expectations of physicians towards digitalization and new technologies in diabetes care.

We conducted a survey in secondary care practices throughout Germany. A total of 422 physicians completed the online survey (46% female; mean age: 53 years; mean work experience: 25 years). Per practice, 160 people with diabetes used flash sensor-based glucose monitoring, 41 used real-time continuous glucose monitoring, and 60 used insulin pump therapy. 79.6% of physicians reported a positive or very positive attitude towards digitalization in diabetes care which was somewhat higher than for general digitalization (63.7% reported a positive or very positive attitude).

Major advantages of digitalization referred to patient safety (63.4%), better quality of care (52.4%), and decision support (62.9%). The three major barriers were costs (54.6%), legal issues (49.2%), and concerns about data security (40.3%). Current and expected use in 5 years of new technologies are shown in the figure.

The potential for digitalization in diabetes is perceived as very high by physicians; however, costs and safety issues need to be addressed to overcome barriers towards implementation of digital solutions. Currently, the use of digital solutions in routine practice is not common and is expected to grow only marginally in the next 5 years.

INTRODUCTION
Diabetes is a “data-driven condition” and new diabetes technologies are introduced into routine care. Therefore, there are many opportunities how digital applications and technologies can influence diabetes care – for physicians/healthcare providers and people with diabetes. However, there are also potential risks and barriers towards an increasing digitalization of healthcare.

In this analysis, we wanted to shed some light on the perceptions and expectations of physicians towards digitalization and new technologies in diabetes care.

METHODS
We conducted a survey in secondary care practices throughout Germany. A total of 422 physicians completed a questionnaire regarding different aspects of digitalization and diabetes technology online (46% female; mean age: 53 years; mean work experience: 25 years). Per practice, 160 people with diabetes used flash sensor-based glucose monitoring, 41 used real-time continuous glucose monitoring, and 60 used insulin pump therapy. 79.6% of physicians reported a positive or very positive attitude towards digitalization in diabetes care (Figure 2). Only 17.3% reported a negative or very negative attitude.

This was somewhat higher than their attitude towards digitalization in general (63.7% reported a positive or very positive attitude; Figure 3).

ADVENTAGES AND BARRIERS OF DIGITALIZATION

• Major advantages of digitalization (Figure 4) referred to patient safety (63.4%), better quality of care (62.4%), and decision support (61.9%). Greater job satisfaction (33.8%) and better economic efficiency were not as strongly regarded as an advantage (28.4%).

• The three major barriers towards digitalization (Figure 5) were the high investment costs (54.6%), legal uncertainties (49.2%), and concerns about data security (40.3%). Role of mistrust was not strongly considered a barrier (11.9%).

RESULTS
Overall, physicians have a very positive attitude towards digitalization in diabetes care that also exceeds their attitude towards digitalization in general. Patient-related aspects of digitalization were considered as more advantageous than personal-related aspects.

However, personal-related aspects such as high investment costs as well as legal and safety issues were considered as important barriers and need to be addressed to overcome barriers towards implementation of digital solutions.

Currently, the use of digital solutions in routine practice is not common and is expected to grow only marginally in the next 5 years. Especially the use of telemedical consultations and digital forms were not rated as important by many physicians. Whether this is due to actual reservation of physicians or expected reservations of patients needs to be further investigated.

DISCUSSION
Thus, per practice, 160 people with diabetes used Flash Glucose Monitoring, 41 used real-time CGM, and 60 used insulin pump therapy.

• Interestingly, the absolute number of Flash Glucose Monitoring users is nearly identical for people with type 1 and type 2 diabetes.

Figure 1: Physician’s estimate of the number of patients with insulin pumps or continuous glucose monitoring (CGM) systems

Figure 2: Attitude towards digitalization in diabetology (in %)

Figure 3: Attitude towards digitalization in general (in %)

Figure 5: Physician’s appraisal of barriers towards digitalization

Figure 4: Physician’s appraisal of advantages of digitalization

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