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Does Health-IT Improve People Centered Care?

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Abstract. Patient involvement can be supported in many ways, some of these through health IT (HIT). Health care practice is changing with digitalization and technologies that patients can use to generate data outside the formal health facilities are growing. Inequality affect citizens ability to participate. There is a need to be mindful of the perceptions and the willingness of citizens and the health care professionals to meet this change. Selected data from two Danish surveys, highlight the citizens and health care professional's perspective on health IT. From the analysis emerge central considerations on what to be aware of in the future development of HIT.

Keywords. eHealth, Survey, Citizens, Clinicians, Equality.

1. Introduction

1.1. Strategy and practice

In line with the WHO global strategy on people-centered and integrated health service [1] the latest Danish Digital Health Strategy 2018-2022 emphasize that: "Patients should be more involved in their own treatment, so that the health system interacts with the patients on his/her own terms" [2] (p.21). Throughout the strategy we can read an increased focus on the involvement of the patients and an interest to increase the support to them and their relatives "… in taking greater ownership of their own illness in their daily lives …" [2] (p.18).

There is a general international interest in the use of what is termed patient generated health data (PGHD), in the healthcare sector [3]. The availability of technological solutions makes it possible for citizens and patients to collect data themselves. This is one of the ways of framing patient involvement through HIT. However, equality and inequality aspects of HIT is not predominant.

The strategy recognizes that in the formal health care system there are relatively few experiences using data collected by the patient's own equipment but also "that the areas where apps, medical devises and medication converge are currently shifting" [2] (p.24). Hence there is a need to develop a shared framework that allow patients to start using devices and apps and share their data with the health care system. A central notion is to combine the potential of HIT and PGHD to improve service and reduce costs. However, in Denmark and in most other countries little is known about what type of technologies citizens use, and which social groups use the technologies as well as how clinicians and citizens recognize and use digital health care [4]. Here we explore the different perspectives on the use of patient generated health data from selected questions in two different surveys.

Present-day, we see small devices sensing a range of vital measures among average consumers allowing them to track their own health data. It is no longer exclusive toys for more well-off first movers [3]. Although the potential in PGHD and health apps for mobile devices is immense a German study shows that a substantial proportion of the population is not engaged [5]. They conclude that although there are many health app users a substantial proportion of the population are not engaged. They suggest that socioeconomic-related and literacy-related disparities as well as motivation to change should be considered by app developers and researchers. A Study from US show that Collage education has a significant positive impact on eHealth behaviors [9]. Nonetheless, as stated in the Danish digital health strategy, it still remains to work out how best to integrate these data into contemporary clinical work, and as emphasized by [5], to make sure those in most needs also are those being encouraged to collect own health data and thus benefitting from the use of the health data.

To direct the future development of citizens centered health apps it is necessary to have more knowledge on who the actual users of health apps are, and knowledge on the health providers attitudes towards citizens using these tools and services.

2. Methods

Selected questions from two different studies were used to analyze the citizens' experiences with accessing and using health information systems, and health providers attitudes to opportunities for patients' use of information systems and the impact of these systems on patients' engagement in personal health.

2.1. Citizen survey

The 2017 citizen survey reported from in this paper is the third in a bi-annual series of National surveys on Danish citizens' expectations and perspectives on eHealth. A questionnaire was developed by the authors and a Danish market research agency (Megafon), was commissioned to administer the surveys, on a population sample of n=1059. The survey is combinational using both email and telephone. The selected respondents are part of a citizens' panel reflecting the Danish adult population with respect to age, education and geographic distribution. The questionnaire consists of 10 demographic background questions (Age, gender, education, state of health, etc.) and 39 questions about their relations and attitudes towards their use of e-health technologies (hardware, service used, etc.). Data from three questions are reported in this paper.

2.2. Clinician survey

The 2017 study of clinicians use of health information systems has been conducted for 9 consecutive years. Questionnaires was distributed to medical doctors, nurses and medical secretaries with the help from their respective professional associations. Random samples (in average 10.000) from their member files received a link to a web-based questionnaire. An average response rate of 23% was achieved over the 9 years of study. The questionnaire consists of 7 background questions (Age, gender, education, seniority, medical specialty etc.) and 48 questions about their use of specific systems, their user experience (Ux) and attitude towards e-health in general. Data from one question is reported in this paper.

3. Results

3.1. What is the educational background of the citizens using e-health?

There is a clear majority of citizens with a master level university education that are using e-health services to monitor their health or seek health advice (Figure 1). 48% were familiar with one or more of these services compared to 29 % of those with elementary public-school education.

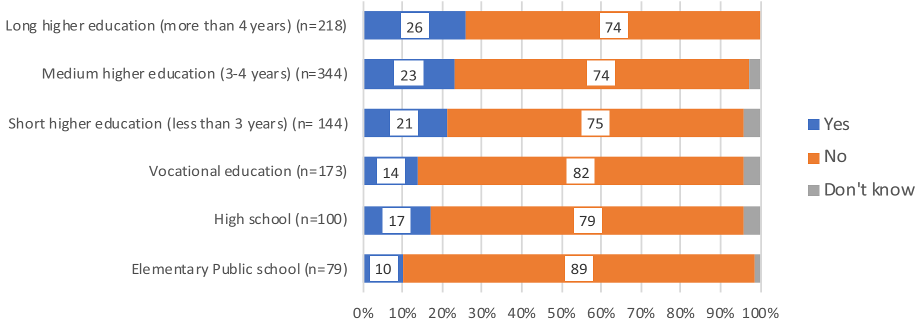

Figure 1. Number of citizens who indicate they have used e-health services to manage their health (e.g. sleep monitoring, smoking cessation, nutrition or exercise).

There are 59% to 64% of citizens who expect that the use of health-IT will improve the quality of the healthcare services they get. Only 10% -12% are concerned that it might impair the quality of health care services. About every four indicate that they have not made up their mind. As shown in figure 2 the attitudes have been quite stable in the period where the studies have taken place.

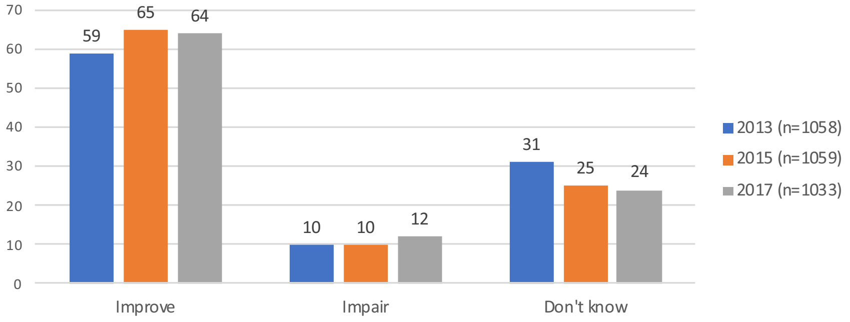

Figure 2. Citizens expectations to whether the use of health-IT will improve or impair the quality of the healthcare services they receive.

In the question of clinicians' attitude to citizens potential benefits of the national health-IT, almost one third indicate that they do not think the health-IT initiated by the national initiatives will improve the citizens engagement in their own health situation

(Figure 3). Of these just under 8% disagree strongly. On the other hand, more than 20% agree that health-IT can enhance the citizens engagement in health issues, of which only just over 1% strongly agree. More than half of the responding clinicians indicate a neutral attitude, or they don't know.

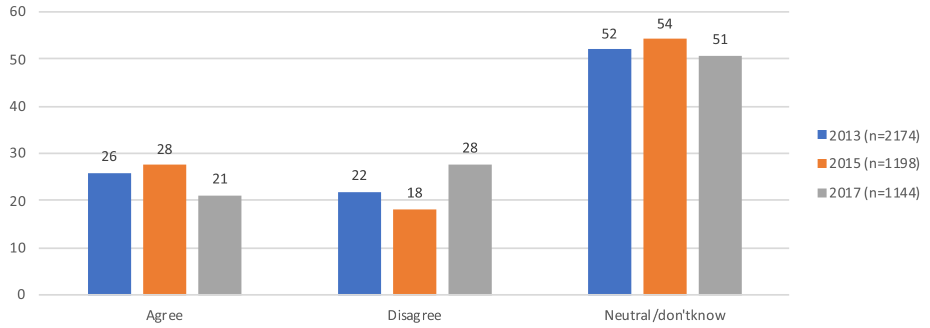

Figure 3. Clinicians attitude to the statement: The national health IT initiatives will strengthen the citizens engagement in their own health

When clinicians are asked about their opinion on how patient can benefit from health-IT by having improved capabilities to master own diseases more than 30% strongly disagree or disagree (Figure 4). Half of the responding clinicians are neutral, or they don't know. Only 18% indicate they strongly agree or agree. This question was not part of surveys before 2015.

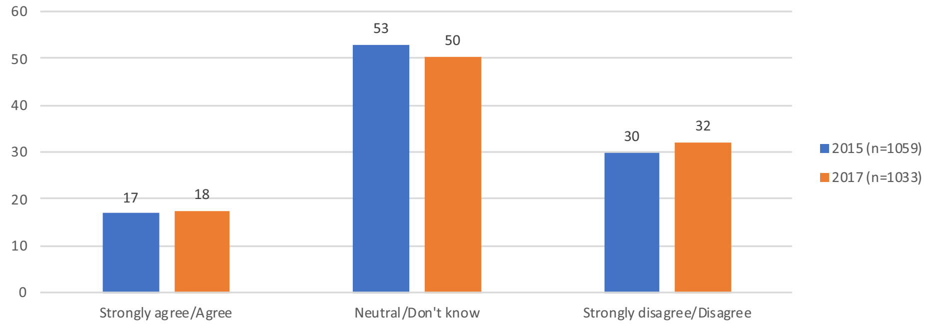

Figure 4. Clinicians response to the statement: I believe that the digital tools we provide to the patients give them better options to master own diseases. (2017, in %, n=1144)

4. Discussion

The objective of this paper was to provide insight into citizens and clinicians perspective on HIT. Despite a well-developed Danish health care service high inequality in health pertains [6]. Our data shows how the citizens with highest education have used e-health services more than twice as much as citizens with the lowest education (26% vs 10%). This, notwithstanding the fact that those citizens in most need of health care service are to be find among those with lowest education [7]. This result is very much in line with the data from the German study [5], that also find a socio-economic difference in the use of HIT, and call for strategic awareness among health care managers and e-health system developers on how to target those citizens in most need of health care when developing

HIT interventions? Awareness of how to beat inequality in use at an early stage when designing health IT is needed. Health inventions need to be context sensitive in its design and need to be supported by health care professionals, to have high impact [8]. We claim this should also be considered for development of HIT. The demographic development, comorbidity, increased expenses should work as enough incentives.

Further, data show that citizens and clinicians have different opinions on the role that HIT can play to enhance citizens engagement and ability to master own disease. Citizens express a far more positive predictions than clinicians as to whether HIT initiatives will strengthen the citizens engagement in their own health or not.

Clinicians also express a dis-satisfaction with the available HIT tools, as to whether they actually do give a better option for the patients to master their health. Whether this view is nourished by clinicians' experience of patient's difficulties in handling HIT tools available today, or from their own disbelieve in HIT tools, are not known but could be further investigated by qualitative research methods. The HIT technology needs to be understood as a socio-technical intervention and therefore, designed and targeted with attention to the context of its use and its users. Finally, we like to draw attention to limitation being the difficulties we have faced in getting a high respondence rate in the self-selected clinician survey. However, this is not specific for our study but common for this type of studies.

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