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Physicians' Experiences of Patient-Initiated Online Consultations in Primary Care Using Direct-To-Consumer Technology

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Abstract. Both private and public primary healthcare providers increasingly offer their patients online consultation services on request. However, the actual use of these services from a physician's perspective as well as the educational competencies required by the physicians are insufficiently studied. The aim of this study is therefore to explore how general practitioners (GPs) experience video consultations with patients compared to physical consultations in primary care in Sweden. We performed a web-based survey amongst 32 GPs. Despite the advantage of being perceived as time saving, more than half of the physicians did not agree that video consultations are more effective than physical consultations. Most physicians had a positive attitude towards the use of video consultations in their work but reliability of the technical platform was considered to be essential, younger physicians should have worked with physical consultations prior to working with online consultations and the use of (semi-) automatic triage systems was wanted when patients themselves can book appointments for online consultations.

Keywords. Digital visit, online consultation, video consultation, primary care

1. Introduction

Recently the use of mobile technologies related to healthcare delivery has experienced a rapid growth. Direct communication between a healthcare professional and a patient at home or work, so called Direct-to-Consumer (DTC) telemedicine gives patients quick and convenient access to a healthcare professional [1].

In primary care the feasibility and acceptance of utilization of healthcare-initiated telemedicine is supported by many studies and is often more acceptable to patients than healthcare professionals [2]. There are however limited studies about how physicians perceive patient-initiated video consultations. Most studies [3-5] focused on the patients´ experience and their satisfaction with using video consultation. Some studies on video consultation investigated physicians´ perceptions showing that participants were positive to the use of video consultations in general [6] and elicited potential benefits to use video consultation in primary care [7]. However, at the same time participants felt it should not be used as a substitute for physical consultation and some

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GPs were concerned about the possibility that video consultations would prevent younger physicians from getting clinical experience [7].

In Sweden both public and private care providers have delivered a variety of digital care services and the number of patient-initiated digital visits to physicians is increasing rapidly. Physicians in Sweden have raised concerns regarding their work environment, patient safety and healthcare priorities which have been partly analysed at a smaller scale [8]. Nevertheless, studies of video consultation from a physician's perspective are limited and there is a lack of knowledge about how video consultations are adopted by GPs compared to physical consultations.

Therefore this study aims to explore how general practitioners (GPs) experience video consultations with patients compared to physical consultations in primary care in Sweden.

2. Methods

Data was collected through a web-based survey targeting general practitioners (n=32) in Sweden using exploratory and snowball sampling. The questionnaire consisted of 28 statements to be rated by the GPs on a five-point Likert scale [do not agree at all…completely agree]. The statements were structured according to eight categories; 1. Background, 2. Accessibility, 3. Consultation, 4. Communication, 5. Competence, Education, 6. Care delivery structure, 7. Technology and 8. Open-ended questions regarding the advantages and challenges of video consultation and the competencies needed for physicians in video consultation.

A link to the questionnaire was sent by e-mail to representatives of organizations that offer online video consultations to their patients and to the Swedish Medical Association.

Respondents signed an informed consent when contributing to the study, the data was treated anonymously and was used for research purposes only.

Microsoft Excel and R were used to analyze and visualize quantitative data from the questionnaire. Microsoft Excel and KH Coder were used to analyze and visualize free text/qualitative data.

3. Results

The total number of respondents was 32 with an average age of 42.8 years and the ratio of males to females was 56% and 44%. The average years of experience as GP was 9.6 years.19 respondents had less than 10 years of experience and 2 respondents had more than 20 years of the experience. The average of years of experience doing video consultation was 1.3 years. The ratio of private, public and both private and public organizations where GPs worked with video consultation was 16%, 78% and 6% respectively. The respondents belonged to 10 different organizations.

28 respondents had access to the patient's health record during video consultations in the same way that they had during physical consultations, four respondents did not. Two third of the respondents (n=22) received education about how to communicate with the patient during video consultations, one third (n=10) did not. The average length of video consultation´s time (9.3minutes) was shorter than physical consultation´s time (20.8 minutes). Only 1 respondent stated the same length for both

video and physical consultations. All respondents worked with both physical and video consultations, on average 14% of fulltime work was devoted to video consultations.

3.1. Comparison of physical versus video consultations

There was a strong agreement among the respondents that *video consultations give patients faster access to healthcare* [AVG: 4.4; SD: 1.26][2], *provide high flexibility to patients* [AVG: 4.3; SD: 0.84], *decrease travel time and costs for patients* [AVG: 4.3; SD: 1.26] and *increase accessibility for persons with functional disabilities* [AVG: 4.1; SD: 1.14]. The respondents were indecisive whether *video consultations increase accessibility for patients with chronic diseases* [AVG: 2.8; SD: 1.70].

The respondents considered *information for decision making during video consultations to be limited compared to physical consultations* [AVG: 4.1; SD: 0.78] but a majority agreed that *video consultations* however *influence their working environment in a positive way* [AVG: 3.9; SD: 1.27], e.g. through higher flexibility. They were indecisive, however, if *video consultations reduce their workload* [AVG: 3.1; SD: 1.45] and most respondents did not think that *video consultations are more effective than physical consultations* [AVG: 2.2; SD: 1.01]. Also, a slight majority did not *feel comfortable referring patients from a video consultation directly to secondary care* [AVG: 2.8; SD: 1.35].

The respondents were indecisive whether *communication with the patient works as good during a video consultation as during a physical consultation* [AVG: 3.4; SD: 1.27] and whether *GPs need to get extra education about communication and need extra skills when doing video consultations* [AVG: 3.3; SD: 1.13]. The respondents however strongly agreed that *younger physicians need to get clinical experience from physical consultations prior to working with video consultations* [AVG: 4.6; SD: 0.86]. In general, few respondents were *concerned about patients recording the video consultations* [AVG: 1.7; SD: 0.85]. There was not much agreement among the respondents if they *lose the personal contact with the patient during a video consultation* [AVG: 2.8; SD: 1.45].

The respondents further strongly agreed that *a (semi)-automatic triage system needs to be in place* that would guide patients to the right level of care [AVG: 3.9; SD: 1.29] and respodents tended to agree that *it is possible to predict which patient is appropriate for video consultation by analyzing the medical history* [AVG: 3.2; SD: 0.96]There was also a strong agreement among the respondents that the *technology for video consultations is easy to use* [AVG: 4.2; SD: 0.85] and its *quality (sound, image, reliability of the connection) is good enough* [AVG: 3.9; SD: 0.98].

3.2. Advantages of video consultations

Time efficiency, flexibility regarding working hours and working from home as well as improved working conditions and opportunities for clinical consulting were mentioned as advantages of video consultations.

[2] Text in this section resembles the statements from the questionnaire that were rated on a five-point Likert scale [do not agree at all…completely agree]. This example*: Video consultations give patients faster access to healthcare* (= Statement); AVG = average Likert value; SD = standard deviation

Time efficiency was supported in the free-text analyses by quotes such as "I get time to meet more patients", "I meet many patients and can help them urgently" or "Digital visits give a better structure for how the consultation time is used in an efficient way".

Respondents also pointed out the flexibility of the work specifically by expressing opinions such as "Video consultations give more flexibility for me as physician", "Flexibility to work from home" and "Flexibility regarding working time".

They further mentioned advantages regarding their work environment such as "New experience that you would need in case of a general digitalization that you cannot avoid", "Stimulating and challenging to work in a different way", "It is very good to be able to follow your own patients", "Reach patients who are unable to get to the clinic themselves", and "That patients who are not very sick do not take time slots on the clinics".

Respondents also discussed video consultations vs phone consultations in their free-text answers exemplifying additional benefits such as "Visual contact is a complement to contact over the phone", "For example, when dealing with psychiatric disease or skin disease, it is better to have video contact with the patient compared to using phone" and "Gives somewhat more information than a phone call".

3.3. Challenges of video consultations

The respondents considered it to be challenging to guide the right patients to video consultations, i.e. they should not require a physical examination. This was clearly articulated in free-text answers such as "Need to find the right way in which patients and conditions can best be managed" and "To deselect patients who do not need medical assessment in order to save on healthcare resources". Further, other forms of digital communication were proposed in some cases - "A lot of consultations can be made with chat not requiring video consultation". Automatic triage systems were seen as a possible solution to guide patients to the right level of care - "Faster and safer consultations with AI-triage in place".

Respondents also reported about high expectations and a poor understanding by patients of what can be handled during a video consultation. This is supported by statements such as "Wrong patients are looking for video meetings and they are not those with disabilities but those who are in a hurry in everyday life", "Some patients have a poor understanding of what can be handled digitally" and "Without triage patients are to a large extent looking for things that are obviously not suitable for video visits".

Further challenges mentioned by the respondents include the lack of a continuous relationship between physician and patient, the lack of an automatic system for patient triage, the lack of accessibility to integrate with physical care, and the necessity to adapt the current reimbursement model.

4. Discussion and conclusion

The respondents of this study were in general very positive to video consultations. The main advantages mentioned were GPs' flexibility regarding time and working place, increased accessibility for patients and time efficiency for both physicians and patients which is in line with other studies [7-10]. 59% of the respondents were were of the

opinion that the lack of a physical examination makes the assessment of the patient insecure during video consultations. This is comparable with the results by Randhawa et al [7] who found that many GPs thought the lack of physical examination was a drawback in video consultations and the assessment of the patient became somewhat incomplete.

The main challenges of video consultations were to find a way to guide the patients to the appropriate consultation that matched with their conditions and the limited information for decision making in video consultations compared to physical consultations. It was considered necessary to introduce a (semi)-automatic triage system before video consultations.

The respondents were indecisive regarding the need to get extra education and need extra skills when doing video consultations. Nevertheless, skills related to digital technology certainly need to be introduced into physicians' educational programs which is also confirmed by a study by Jiwa and Meng [6] who considered video consultation techniques to be required to be learned by medical students in undergraduate education.

In conclusion, most physicians had a positive attitude towards the use of video consultations in their work but reliability of the technical platform was considered to be essential, younger physicians should have worked with physical consultations prior to working with online consultations and the use of (semi-) automatic triage systems was wanted when patients themselves can book appointments for online consultations.

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