

Perceptions and Attitudes of Doctors towards Telemedicine: Case of Georgia

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Abstract:-Digital transformation and the Fourth Industrial Revolution triggered substantial changes in many industries, worldwide. Healthcare industry is not an exclusion in this regard. Digitalization of healthcare and specifically digital health is becoming more important, year by year. Furthermore, COVID-19 pandemics dramatically increased importance of digital health. Telemedicine and specifically teleconsultations offer many benefits, such as, increased access to high quality healthcare services for individuals (especially for those living in rural areas), improved management of chronic conditions, cost efficiency, time saving for patients etc. However, despite all the benefits related with telemedicine, its adoption and uptake is relatively slow, especially in developing countries. One of the major barriers hindering telemedicine adoption is skepticism and lack of confidence among doctors providing these services. Subsequently, presented research was focused on this aspect of telemedicine, in Georgia.

The purpose of this study is to evaluate attitudes and perceptions of doctors towards telemedicine in Georgia. The main question of the conducted research was - how acceptable telemedicine is for the doctors providing this service?

A combination of mixed-research methods has been applied. Initially qualitative research, focus group discussions were conducted with doctors and specialists providing telemedicine consultations to patients. At the second stage, quantitative research- survey of doctors was performed.

Analysis of results demonstrate, that skepticism and lack of confidence exists among doctors providing telemedicine services in Georgia. Moreover, there is a lack of qualification and specific skills for teleconsultations. Consequently, it is highly recommended to conduct trainings for doctors, to increase their awareness about areas of successful utilization of telemedicine, its benefits and specific characteristics. Furthermore, increased qualification of doctors will increase their confidence, which in turn will be reflected on patients and accordingly increase trust towards telemedicine.

Keywords:-Telemedicine adoption, teleconsultation, doctors' attitudes towards telemedicine, telemedicine skills.

I. INTRODUCTION

In times of COVID-19 pandemics the world has learned many valuable lessons. Especially, this concerns stakeholders of healthcare sphere, globally. One of the most accentuated directions after pandemics is digital health, in particular telemedicine.

According to the definition offered by American Telemedicine Association, "telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve a (specific) patient's clinical health status". Telemedicine was born in 1960s in Boston. Since then this direction keeps developing and attracting attention of policy makers and healthcare industry players. To focus on developing countries, healthcare industry is in the midst of a paradigm shift, from a traditional brick-and-mortar, disease-oriented, provider-centered approach to a patient-centered, health management model. Telemedicine has impacted all aspects of healthcare and many success cases have accentuated the role of telemedicine in increasing accessibility towards healthcare services, reducing cost of care, and enhancing quality of medical care. Telemedicine could be substantial means to achieve better healthcare management and reduce healthcare inequalities (1). In other words, telemedicine promises a huge potential for patients and society as a whole. It will help improve the quality of diagnosis, treatment, self-management and quality of life for patients as well (2).

However, despite all the benefits it offers, adoption and uptake of telemedicine is still lagging behind. What are the main reasons explaining this slow acceptance? Among the factors considered crucial for the successful adoption of telemedicine is stakeholder satisfaction (3). The three major stakeholder categories in telemedicine field are physicians as service providers, IT Industry as supplier of technology, and society as user. One of the major barriers for development of telemedicine in developing countries is the inactiveness of provider doctors and users (4). Furthermore, satisfaction of stakeholders, such as patients and providers, can influence the success and the scope to which telemedicine services are adopted (5).

A persistent cultural barrier hindering broader adoption of telemedicine is a lack of acceptance of using teleconsultation practices by doctors and healthcare professionals, overall. According to the results of the survey conducted on the usability of telemedicine application, in Austria in 2015, "lack of acceptance by doctors" was identified as the second top ranked barrier for the adoption of telemedicine (6). It is somewhat related to the reluctance to use innovative technologies to treat patients and change "the

way it has always done previously". Doctors' attitudes towards telemedicine strongly influence its acceptance by their patients (7).

It should be emphasized, that if doctors and patients are not taken into account while developing telemedicine platform and the process is not approached by "change management" principles, success and sustainability cannot be achieved. To illustrate, In India, in Madhya Pradesh, top-level administrators at ministry of healthcare decided to implement telemedicine solutions across the state but it failed shortly. The major reason for the failure was identified to be lack of trainings and confidence on doctors' side and a lack of awareness about the benefits on patients' side (8). Moreover, as it is demonstrated in scientific literature perceived usefulness of telemedicine among doctors directly impacts the behavioral intention to use it, and the perceived ease of use directly impacts both, the perceived usefulness, as well as, behavioral intention to utilize it. The other factors influencing doctors' perceived usefulness of telemedicine were: accessibility of medical records, self-efficacy and perceived incentives (9).

In Georgia, attempts to develop telemedicine direction has started in early 2000s. However, these initiatives and projects mainly have been unsuccessful and unsustainable. During COVID-19 pandemics telemedicine captured attention of various stakeholders and two tele-clinics were implemented on Georgia's healthcare market - "EKIMO" and "RedMed". Telemedicine can bring significant benefits for Georgia's healthcare sphere in scope of increased accessibility to medical services, improved management of patients' health condition etc. As it was demonstrated above, doctors' attitudes and perceptions play substantial role in the development of telemedicine. Consequently, the purpose of presented research was to evaluate attitudes and perceptions of doctors towards telemedicine, in Georgia. The main research question was –how acceptable telemedicine is for the doctors providing this service?

II. METHODOLOGY

A combination of mixed-research methods has been applied. Initially, qualitative research, focus group discussions (FDGs) were conducted with doctors and specialists, who are providers of telemedicine clinics in Georgia, using 'single-group' traditional methodology. Overall, three FDGs were held, in rooms equipped with relevant video/audio devices and other necessary materials. Convenience sampling was utilized for selecting participants. Respondents for FDGs were doctors from various specialties contracted by telemedicine clinics who had experience of virtual consultations. Respondents were from different specialties – endocrinologists, therapists, pediatricians, psychologists, cardiologists, dermatologists, neurologists, pulmonologists and gastroenterologists. Duration of interviews ranged from 40 minutes to 1.5 hour. From 6 to 10 doctors participated in each discussion. The FDGs were led by an experienced moderator using appropriate „Discussion guide“ and supported by a research assistant. The assistant was pre-trained in FGD method and specific aspects of transcript preparation. All discussions

were audio/video recorded and transcripts were prepared based on them. Transcript data were analyzed using 'content-analysis' methodology. Analysis started immediately after the FDGs were conducted. For each focus group question, 'main ideas' or 'themes' were summarized and highlighted using 'concept map' approach. The purpose of FDGs was to evaluate opinions and attitudes of professionals with regard to research topic.

At the second stage, quantitative research was conducted. More specifically, telemedicine provider doctors were surveyed using online structured questionnaire. Recommended sample size (at 95% confidence level and 5% margin of error) was 100 doctors, since approximate number of doctors providing telemedicine services in Georgia is 1,200. Overall, 150 respondents filled out questionnaire and 142 were counted as valid for research purposes and analyzed. The purpose of the survey was to evaluate doctors' perceptions and attitudes towards telemedicine and to reveal challenges. Furthermore, the questionnaires were distributed on emails of doctors individually and SMS-es were sent on their mobiles to remind participation in the survey. The questionnaire was prepared according to the findings of FDGs and literature review. Prior to the research, instrument was piloted with seven respondents and refined accordingly.

III. RESULTS

A. Main findings of focus group discussions

According to the findings of three focus group discussions, various challenges were revealed with regard to telemedicine consultations. Literature review shows, that doctors' skepticism towards telemedicine and their lack of confidence in distant consultations is one of the major barriers hindering its adoption. Therefore, questions addressed this issue primarily. It can be said, that perceptions of doctors differed significantly, even among the same specialty representatives. To illustrate, one endocrinologist described how useful telemedicine service was for patients, she didn't need to conduct examination face-to-face to provide high quality consultation. However, another endocrinologist in the same group had different attitude: "if I don't conduct consultation with patient face-to-face, don't see color of his skin with my own eyes, don't observe how he walked in etc. how can I diagnose him?" The same controversy was observed among different pediatricians and cardiologists, as well. It should be emphasized, that all participants were telemedicine service providers, contractors of telemedicine clinics, who provide virtual consultations already!

Another finding of FDGs is that doctors lack knowledge and qualification with regard to specific features and needs of telemedicine consultations. When asked -if they needed additional information or skills to improve effectiveness of virtual consultations, the majority didn't see that need. However, after showing them videos, how doctors in USA were teaching patients self-examination skills online and using patients' hands for information gathering in telemedicine, their attitudes were changing. To cite one of the participant's comment: "I've never heard and thought

before about this and now I think this can be very helpful. I would like to have more information on this”. Moreover, doctors were asked if they possessed information about symptom checker devices and various applications, such as chronic disease virtual assistants and others, which are useful to make virtual consultations of the same quality, as one conducted face-to face. The vast majority of participants hadn’t heard before about that.

Furthermore, doctors emphasized the need for promoting telemedicine services in the country, to educate patients about its benefits and to increase awareness.

Another challenge encountered by doctors was financial side of telemedicine consultations. Commonly patients have to pay out-of-pocket for telemedicine services. As one of the respondents explained: “when my patients call me on mobile phone, I cannot tell them to hang up and connect via telemedicine platform to conduct payed video consultation”.

Concerning usefulness of telemedicine, all the respondents believed in value and perspective of it, in

Georgia. In their opinion telemedicine has a great potential to increase accessibility to high quality medical services for citizens living in rural areas, for Georgian emigrants living abroad and for the better management of chronic conditions.

B. Quantitative research findings

On the second stage of the research, online survey was conducted and 150 telemedicine provider doctors participated. Among them 142 questionnaires were counted as valid. Among the respondents 80% were males and 20% female. To illustrate age distribution of respondents – 35% were in the 26-40 years’ age range, 35% in 41-55 and 30% in 56-70 years’ range.

Regarding expertise in telemedicine services, 84% of respondents indicated having 2 years’ experience in this direction, 15% had less than 1.5 years’ experience and 1% - more than 2 years. To illustrate distribution by specialty types, as it is demonstrated on Diagram #1, among respondents – 21% were therapists, 21% gynecologists, 12% endocrinologists, 12% pediatricians, 9% neurologists etc.

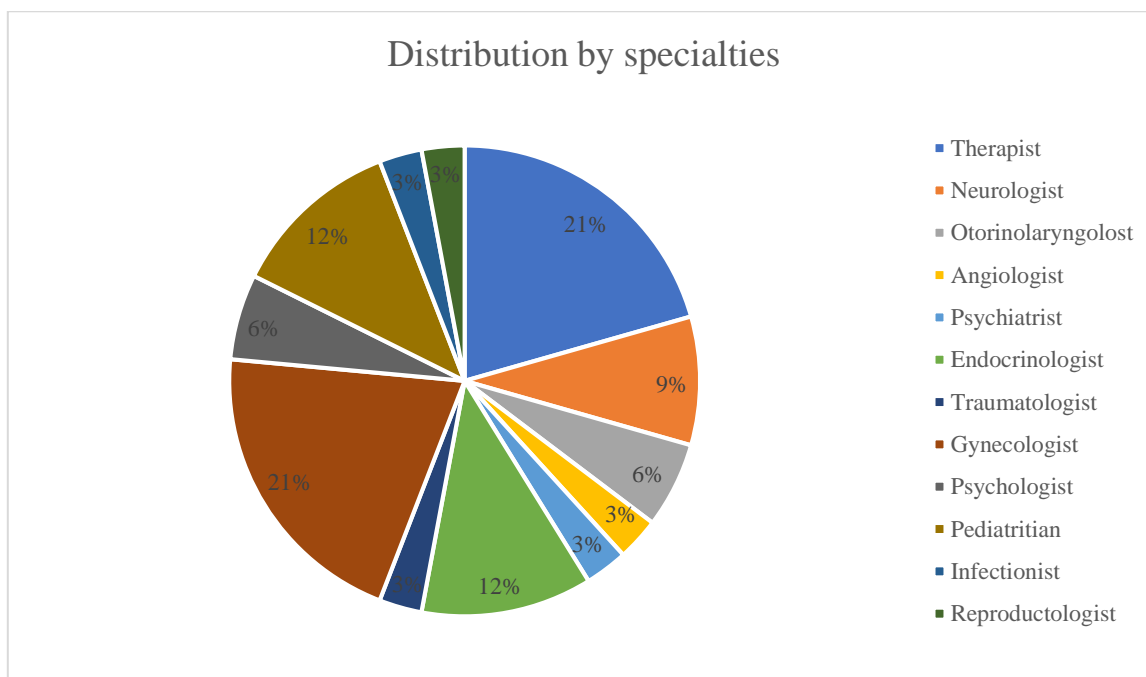


Diagram1: Distribution by specialties

One of the areas of inquiry was to assess doctors’ attitudes towards important issues and most commonly encountered challenges. It should be noted, that these issues were identified during focus group discussions, as well as picked from literature review. As a Diagram #2 illustrates, 31% of participants strongly agree, while 37% agree, 20% are neutral and 6% disagree to the statement – “Virtual consultations deliver desirable results for my patients”; “for me it is difficult to consult patient and simultaneously fill out medical record” – 8% of respondents strongly agrees to this statement, while 19% agreed, 23% were neutral, 46% disagreed and 4% strongly disagreed. “I would like to conduct teleconsultation in future” – 41% of doctors strongly agreed, 31% agreed, 20%- neutral, 3% disagreed

and 3% strongly disagreed. Moreover, to the statement- “in my opinion teleconsultation is of the same quality as face-to-face consultations” – 18% strongly agreed, 11% agreed, 21% were neutral, 46% disagreed and 4% strongly disagreed. Still another statement was – “during teleconsultations I can clearly explain information/diagnosis to patients” – 50% of respondents strongly agreed, 33% agreed, 7% were neutral, 7% disagreed and 7% strongly disagreed. To the statement – “lack of physical contact doesn’t represent a problem during teleconsultations” – 29% strongly agreed, while 21% agreed, 14%-neutral, 32% disagreed and 4% strongly disagreed. 73% of participants strongly agreed to the opinion – “positive side of telemedicine is that patients do not have to travel from rural

areas”, while 18% agreed, 6% disagreed, 3% strongly disagreed and 5% were neutral.

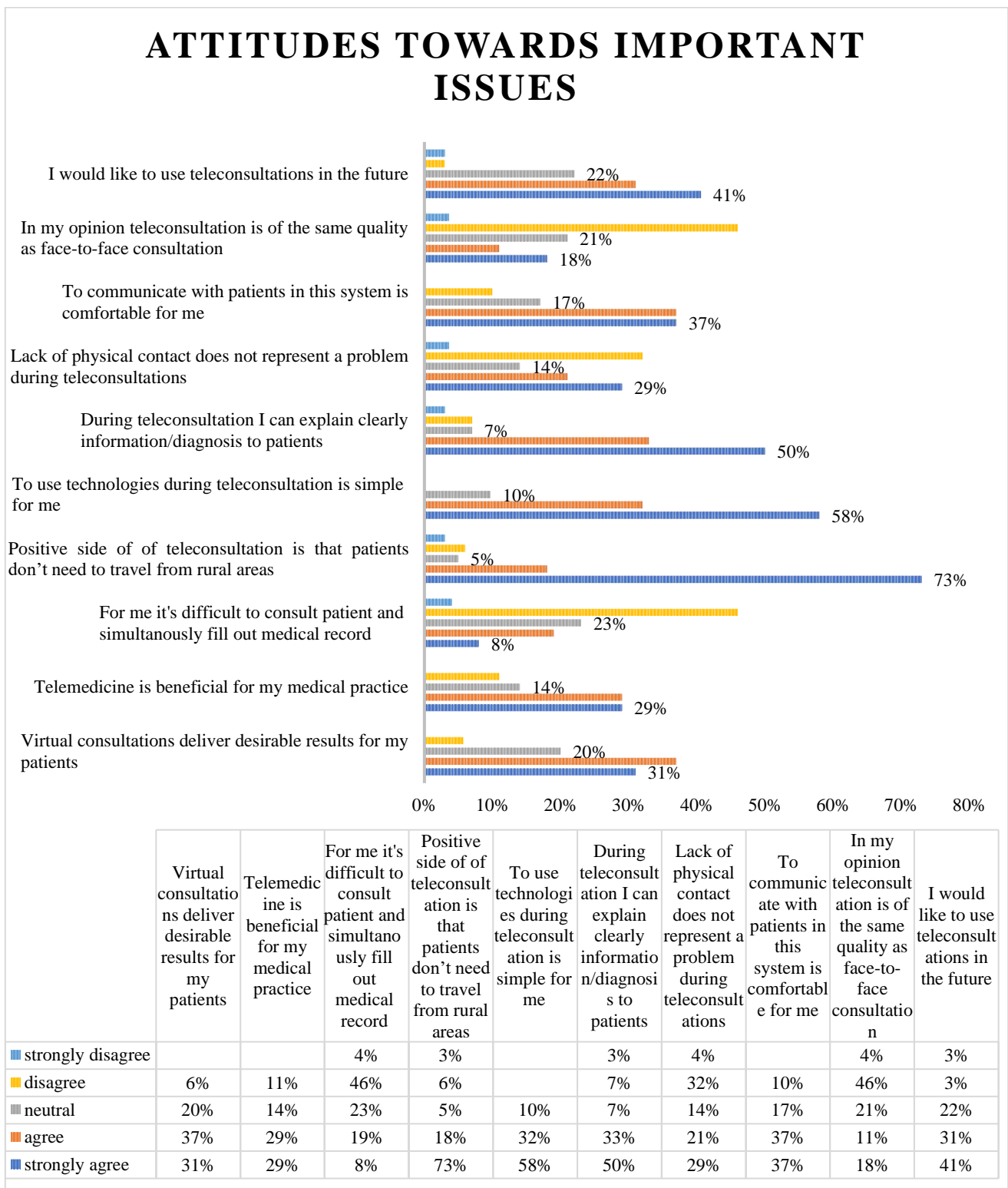


Diagram 2: Attitudes towards important issues

Still another question was focused if doctors experienced fear with regard to treatment outcomes, while managing patients distantly. On this question, 26% of respondents answered “Yes”, while 31% said “No” and 43% chose option “partially”.

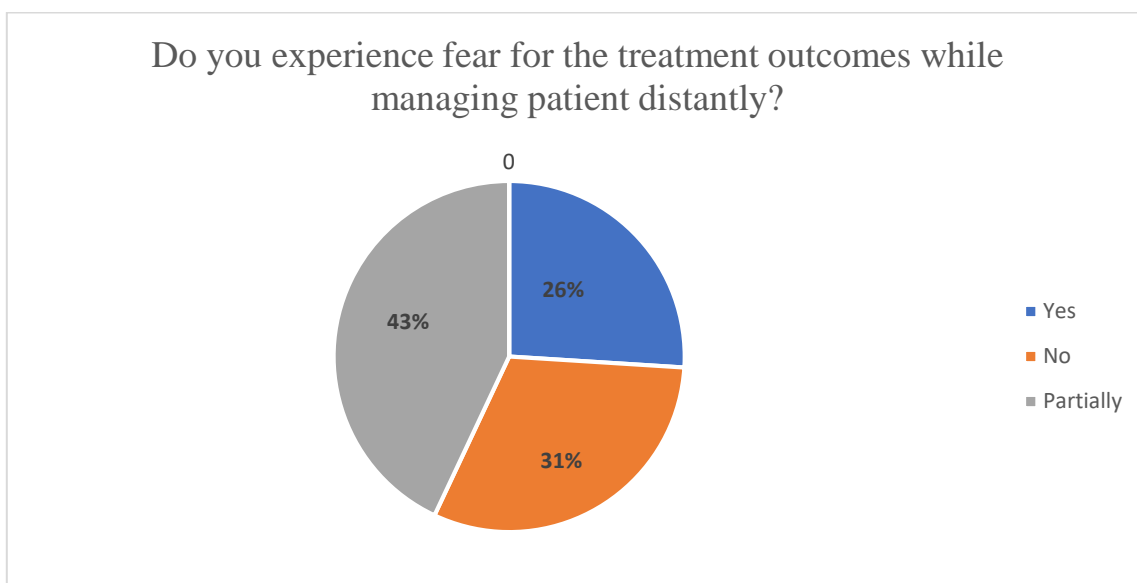


Diagram 3: Do you experience fear for the treatment outcomes while managing patient distantly?

In the survey, respondents were asked to choose problems and challenges they have experienced in teleconsultations, among the most prevalent ones identified during literature review and FGDs. “I need to examine patient and teleconsultation is not bringing results” was

chosen by 47% of respondents; 34% of participants said that lack of face-to-face communication with patient was challenging for them; issues related with broadband quality represented problem for 31%; lack of information about patient for 19% etc.

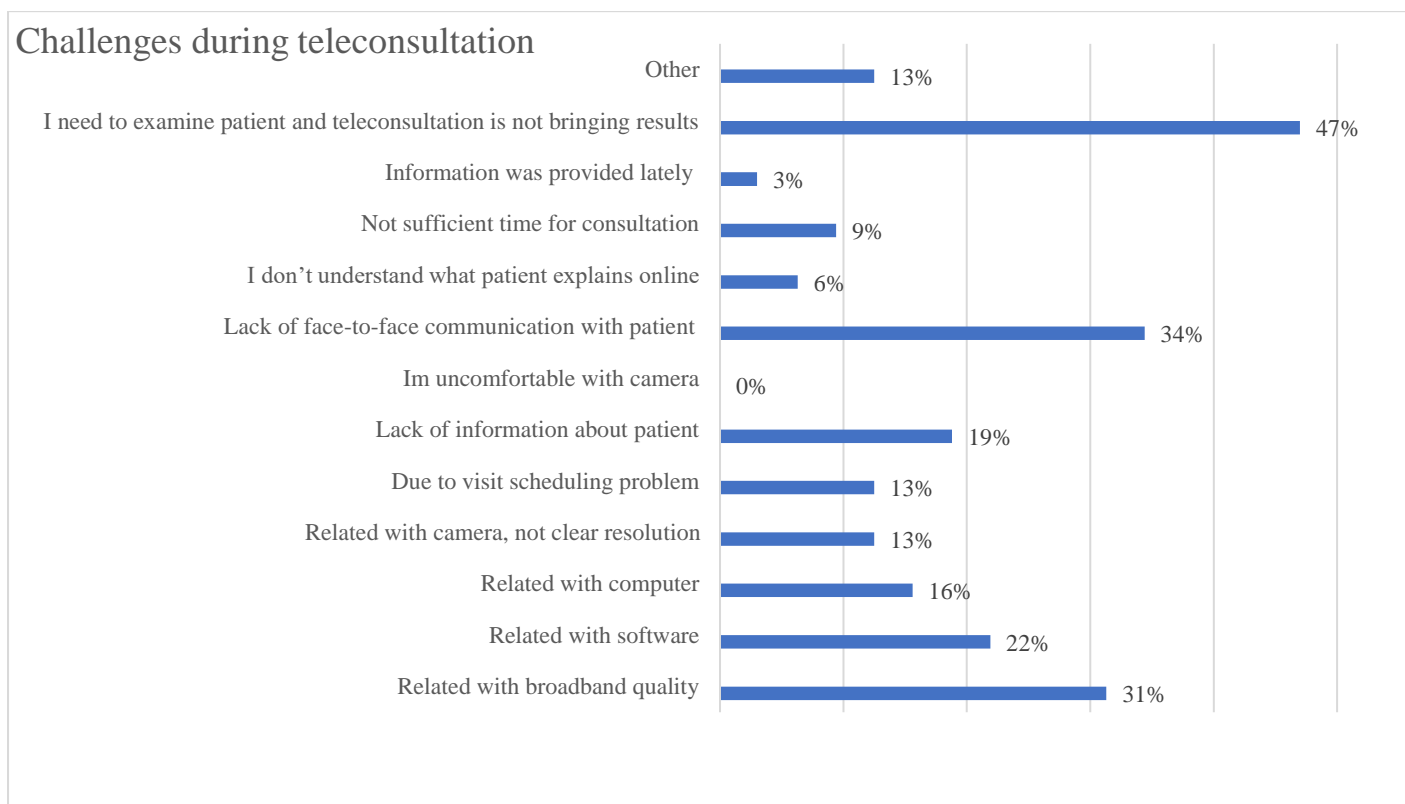


Diagram4: Challenges during teleconsultation

One of the questions asked doctors, to rate on one to five scale, according to their opinions how satisfied patients are with telemedicine. More than a third of respondents

(32%) appraised patient satisfaction by 5 points, while 44% indicated 4 points and 24% marked 3 points (Diagram #5).

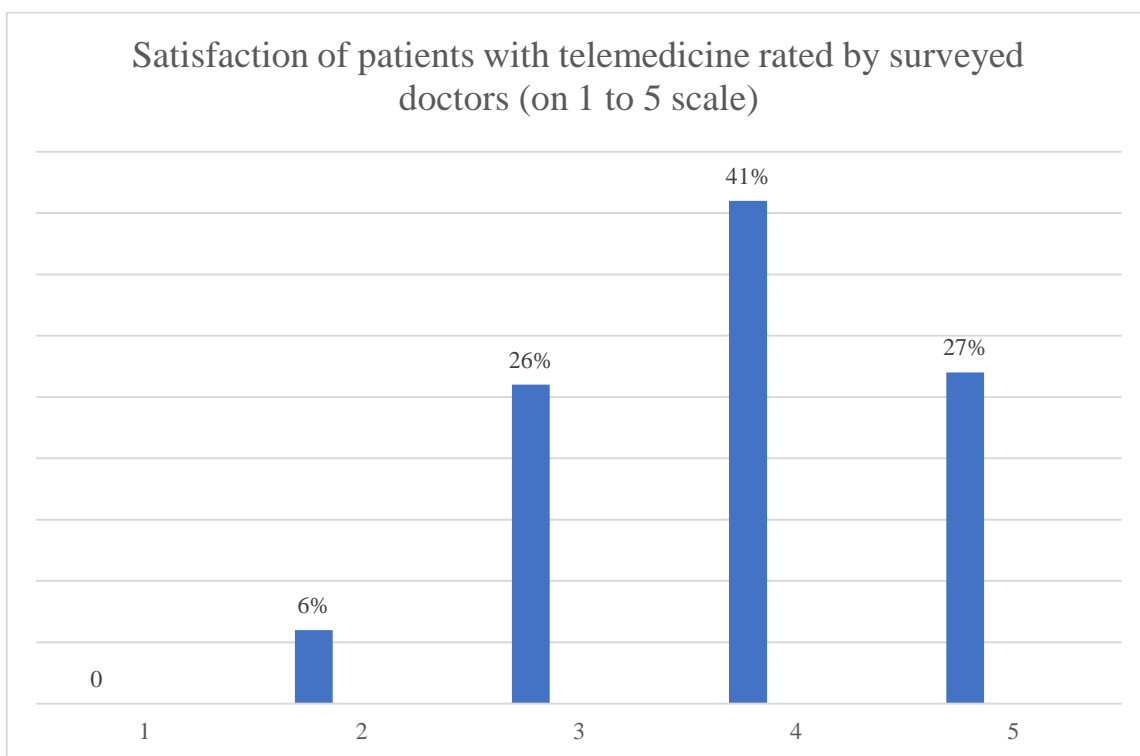


Diagram5: Satisfaction of patients with telemedicine rated by surveyed doctors (on 1 to 5 scale)

Surveyed physicians were asked to indicate in which conditions or necessities is teleconsultation most relevant. Less than half of respondents (48.5%) answered that it is most relevant in case chronic conditions, 33.5% - in acute/urgent conditions and 18% chose option “other”.

Doctors were questioned, what would increase their confidence and make it easier for them to conduct teleconsultation? According to the results, 19% of respondents answered- trainings based on practical cases; 32% said – to provide additional information about

telemedicine; 5% said both, trainings and additional information about specificities of telemedicine, 7% - additional skills and the other responses included options such as, to promote and advertise telemedicine, to conduct informational campaigns for patients etc.

Diagram #6 illustrates how respondents rated their overall satisfaction with telemedicine. 41% of doctors expressed their satisfaction by 4 points, while 28.5% by 3 points and 24.5% by 5 points.

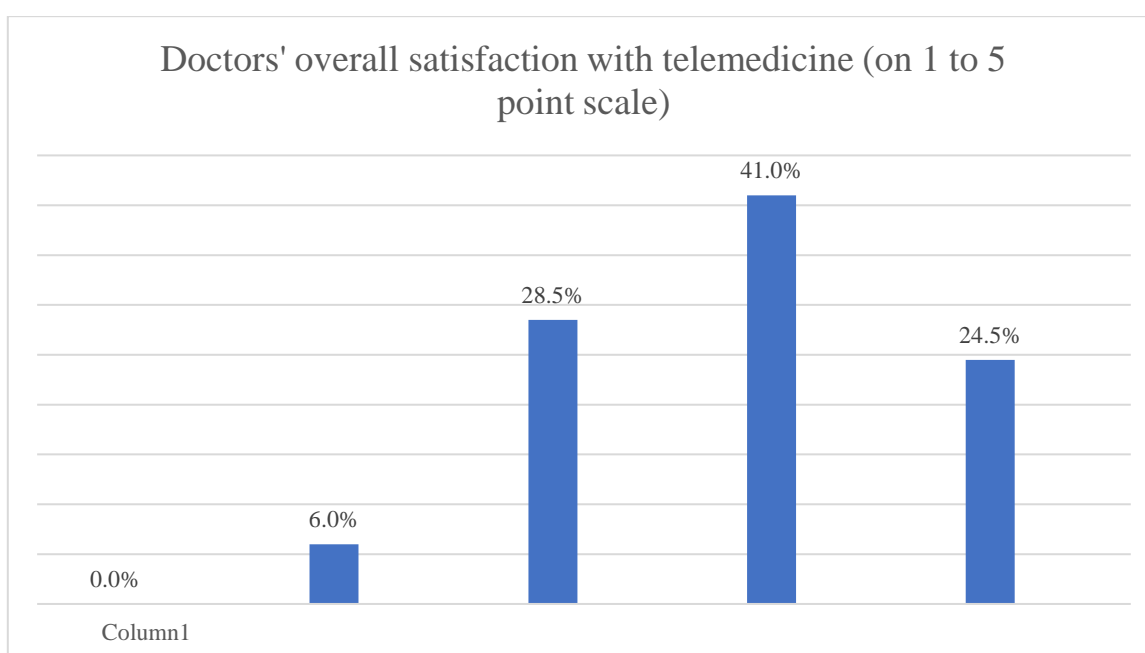


Diagram6: Doctors' overall satisfaction with telemedicine (on 1 to 5 point scale)

The last question of the survey was – would you promote utilization of telemedicine in your colleague doctors? On this question, 79% of respondents answered “Yes”, 12% indicated “No” and 9% chose option “other”.

IV. DISCUSSION

Analysis of research findings reveals, that telemedicine is relatively new area for the vast majority of doctors, in Georgia. As 84% of the respondents indicated having two years' experience in this field and 15% had even less than this. There is a consensus between reviewed literature and results of the research. More specifically, lack of confidence and skepticism among telemedicine provider doctors was revealed in FGDs, as it is cited in the literature among the most common challenges in this field. This finding was confirmed by results of the survey, as well. To illustrate, 47% of respondents said, that they need to examine patients and telemedicine is not bringing results. Moreover, for 34% of doctors lack of face-to-face communication with patients represented a problem. It was apparent in FGDs, that doctors treated teleconsultations in a similar way as face-to-face consultations. Moreover, they were unaware about important specific requirements for teleconsultations and lacked relevant skills. For instance, doctors lacked knowledge what should be considered during communication with patients, how to gather and provide information effectively, online. Moreover, they didn't possess information how to use patients' hands and their family members' assistance for self-examination or information collection in teleconsultation. In a similar vein, the vast majority of participants of FGDs didn't have information about symptom checkers and applications that can be used to increase collection of necessary information and data about patients' health condition etc.

Doctors participating in the research found telemedicine very important and beneficial, especially for individuals living in rural areas and emigrants living abroad. However, they also raised concerns regarding absence of laboratories and ambulatory clinics in the regions, as without additional tests and investigations teleconsultations alone cannot bring value for patients in remote areas. Problems related with broadband connection and connectivity issues were also cited among the problems hindering telemedicine effectiveness, in Georgia.

As results demonstrate, doctors participating in the research have willingness and readiness to increase their qualification and acquire knowledge in order to improve effectiveness of their teleconsultations. To illustrate, 19% of respondents said trainings based on practical cases would be beneficial for them, while 32% expressed need for additional information about telemedicine and 5% of respondents said both, trainings and additional information about specificities of telemedicine would be helpful.

Concerns raised by respondents was lack of awareness about telemedicine among population. Moreover, they find it necessary to popularize this direction in a society and to increase belief in its usefulness. For this purpose, physicians recommend conducting informational campaigns with population living in the regions and Georgian emigrants.

Respondents of the research see a huge potential in telemedicine and perspective for the future. Overall, doctors are satisfied with telemedicine, are willing to continue this practice and to promote it among their colleague doctors.

V. CONCLUSION

According to the results, we can conclude that doctors have positive attitudes towards telemedicine, in general. They perceive, this direction has a big potential and perspective and are willing to continue working on it. Lack of confidence among doctors providing telemedicine represents a barrier for broader adoption of telemedicine. Furthermore, this skepticism is transferred to patients and further aggravates distrust in them with regard to teleconsultations.

Research revealed a lack of awareness and knowledge concerning specific characteristics and requirements of online consultations in doctors providing telemedicine services. Additionally, lack of possession of skills, for instance how to instruct patients for self-examination or how to collect more information during teleconsultations was also apparent.

Consequently, it is recommended to train doctors to acquire specific skills for effective teleconsultations. In addition, information about telemedicine should be provided. More specifically, it embraces information about best practices, areas and conditions in which telemedicine is beneficial, how to increase level of trust in patients and make communication process more effective during teleconsultations etc.

To conclude, increased qualification and knowledge of doctors in regard to telemedicine will boost their confidence, which in turn will result in greater trust and acceptance for this direction in patients.

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She is a healthcare and management specialist, business coach, with 18 years' experience in management, in insurance and healthcare sectors. Throughout her career, Nino occupied senior level positions in Georgia's biggest insurance companies and chains of clinics. Nino is an invited lecturer, expert and thesis supervisor in several universities in Georgia. She teaches bachelor and master program students, Organizational Behavior, Essentials of Management and Insurance and Risk Management. Nino is a medical doctor. She holds Master's degree in business administration and PhD in Public health. Her dissertation topic was – "Georgia's Prospects in Medical Tourism: Barriers and Challenges in Healthcare Sector". Her research fields are- E-health, digital technologies in healthcare; medical tourism. Nino has completed global health course in Tromso University, Norway. Following her passion about healthcare quality and patient safety, Nino completed lean management course at Kaizen Institute Georgia. Embracing the core values of professional development, innovation, integrity and personal growth, Nino is actively participating in various workshops and conferences abroad. She is MASHAV program Alumni. In the role of principal researcher, Nino has worked on several research projects. She has published several articles in scientific journals.