Acceptance of Telemedicine in Tier 2 & Tier 3 Cities

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INTRODUCTION

- India is the world's largest democratic country, and second most populous country in the world. Despite recent successes in the economic front, India still faces many social challenges like poverty, illiteracy, sanitation, gender inequality, and lack of healthcare for all.
- The healthcare disparity is mainly due to shortage of trained health care professionals and lack of necessary infrastructure in remote areas of the country.
- Use of India's advances in the field of information and communications technology (ICT) industry in healthcare delivery is an innovative idea to tackle healthcare disparity.
- Telemedicine as a tool for health care delivery, particularly in the underserved areas, has been addressed and successfully tested by the Government of India, and the results have been very promising.

Telemedicine…

- **Telemedicine** is the use of telecommunication and information technologies in order to provide clinical health care at a distance.
- Telemedicine applications can be classified into two basic types. First, store-and-forward or asynchronous type, and second, real-time or synchronous type.
- In the former there is exchange of pre-recorded data between two or more individuals at different times/places, whereas in the latter there is a real time exchange of information by methods such as in videoconferencing.
- It helps eliminate distance barriers and can improve access to medical services that would often not be consistently available in distant rural communities.

It offers one of the best options for delivering healthcare for geographically distant population spread across India. In addition it addresses to the issues of -

- Inadequate medical facilities in rural & inaccessible areas.
- Problem of retaining doctors in rural areas where they are required to serve & propagate widespread health awareness.
- Specialist doctors cannot be retained at rural areas as they will be professionally isolated and become obsolete and even monetary incentives also cannot prevent it.

Dawn of Telemedicine in India

- The potential of telemedicine, as a tool for delivery of healthcare was recognized by the Government of India in the year 2000.
- Since then the Government of India has been working on creating telemedicine infrastructure all over the country.
- The telemedicine initiative was formulated by the Government of India with the involvement of Department of Information Technology (DIT), Ministry of Communications and Information Technology and the Indian Space Research Organization (ISRO), various state governments, and several premier technical and medical institutions all over the country.

Legal Positioning

- The practice of Telemedicine in India is governed by various statutes that generally relate to the practice of 'medicine' in India such as the Medical Council of India Act, 1956 ("**MCI Act**").
- In terms of the MCI Act, once a doctor/medical practitioner is qualified and registered in any one of the state medical registers maintained by the respective states, a copy of his/her registration certificate is forwarded to the Medical Council of India for enrollment of his/her name in the Indian medical register (national database).
- In terms of Section 27 of the MCI Act, any person whose name is enrolled in the Indian medical register can practice as a medical practitioner in any state of India according to his qualifications. Hence, inter-state practice of Telemedicine by medical practitioners is permissible.

Aim: To Study Acceptance of Telemedicine in Tier 2 & Tier 3 Cities

Objectives:

- To find out the current understanding of the society about telemedicine and online consultations.
- To study the acceptance of telemedicine by people traveling to big cities for consulting experts.
- To understand the requirement of the available resources such as internet for the benefits and betterment of the telemedicine process.
- To understand the current scenario and future growth of Telemedicine in healthcare sector in remote and rural areas, mostly the tier II and tier III cities.

RESEARCH QUESTION

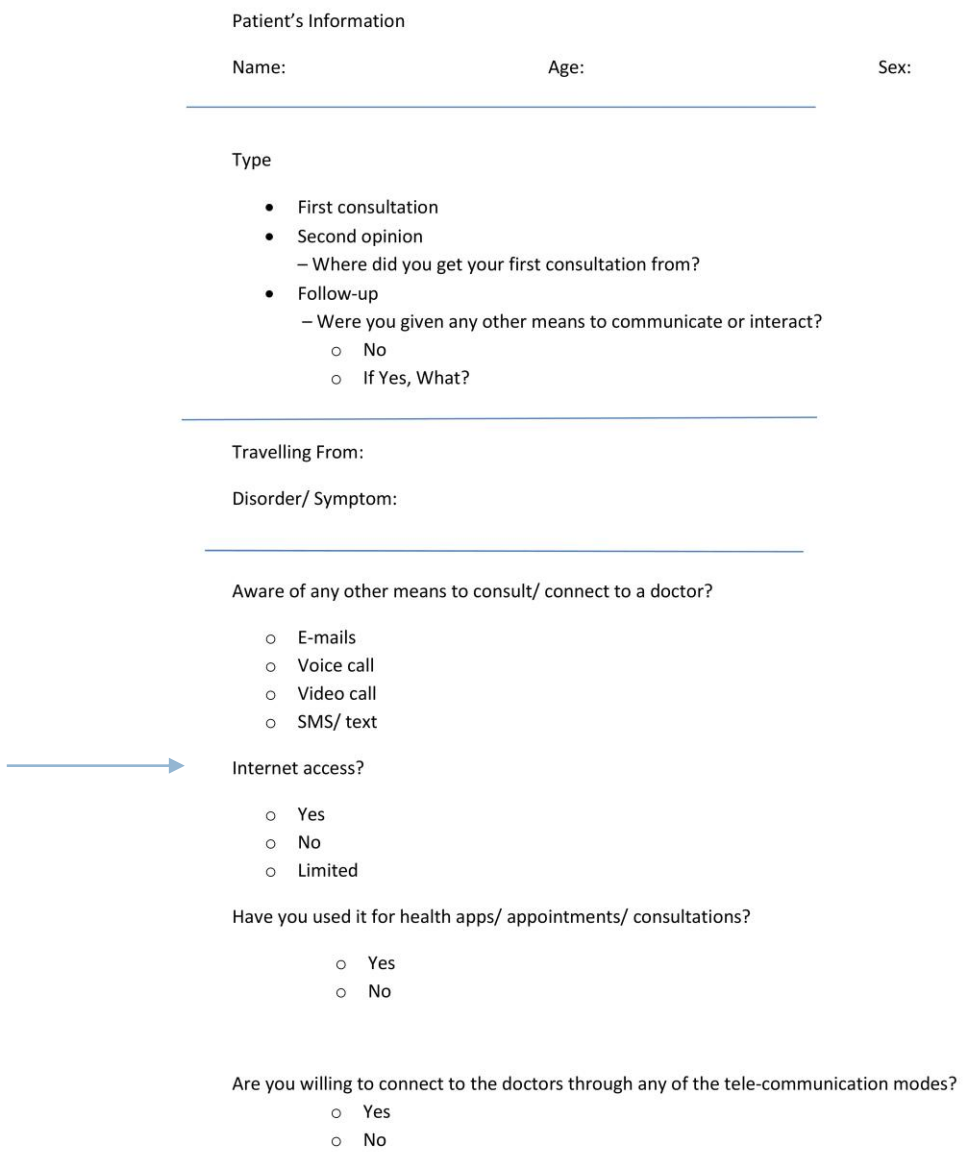
- Is telemedicine accepted in tier 2 & tier 3 cities?

Research Methodology

- **Study Area**: Various hospitals in Bengaluru where there were larger footfall of patients from tier 2 and tier 3 cities.
- **Type of Study**: Cross sectional study
- **Duration**: 3 months
- **Type of Data**: Primary data
- **Sampling Technique**: Random Sampling technique
- **DATA SOURCE:** by means of participant-patient/ bystanders interaction in various hospitals of Bengaluru. A large chunk of patients visiting these hospitals were from tier 1 and tier 2 cities.

Tool for Data Collection: An instrument (fig: 1) created for research was designed keeping in consideration the data that was required

Fig 1: Questionnaire designed to collect data by interacting with the patients



Patient's Information

Name: Age: Sex:

Type

- First consultation
- Second opinion
  – Where did you get your first consultation from?
- Follow-up
  – Were you given any other means to communicate or interact?
    - No
    - If Yes, What?

Travelling From:

Disorder/ Symptom:

Aware of any other means to consult/ connect to a doctor?

- E-mails
- Voice call
- Video call
- SMS/ text

Internet access?

- Yes
- No
- Limited

Have you used it for health apps/ appointments/ consultations?

- Yes
- No

Are you willing to connect to the doctors through any of the tele-communication modes?

- Yes
- No

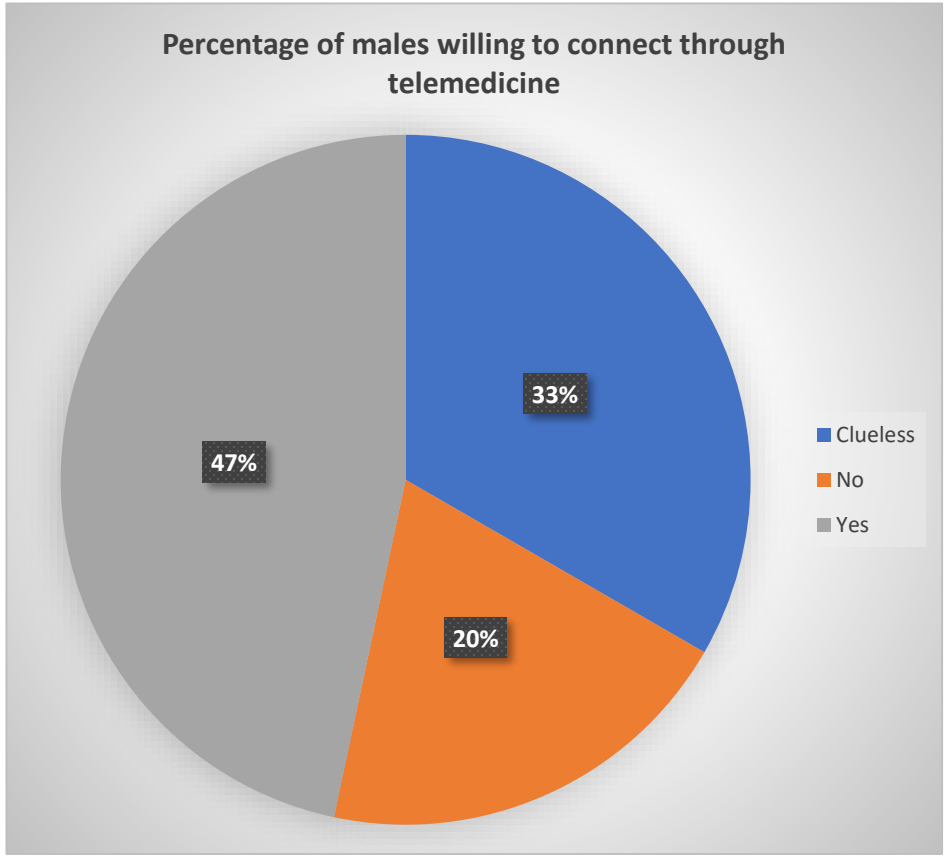
METHOD FOR DATA ANALYSIS

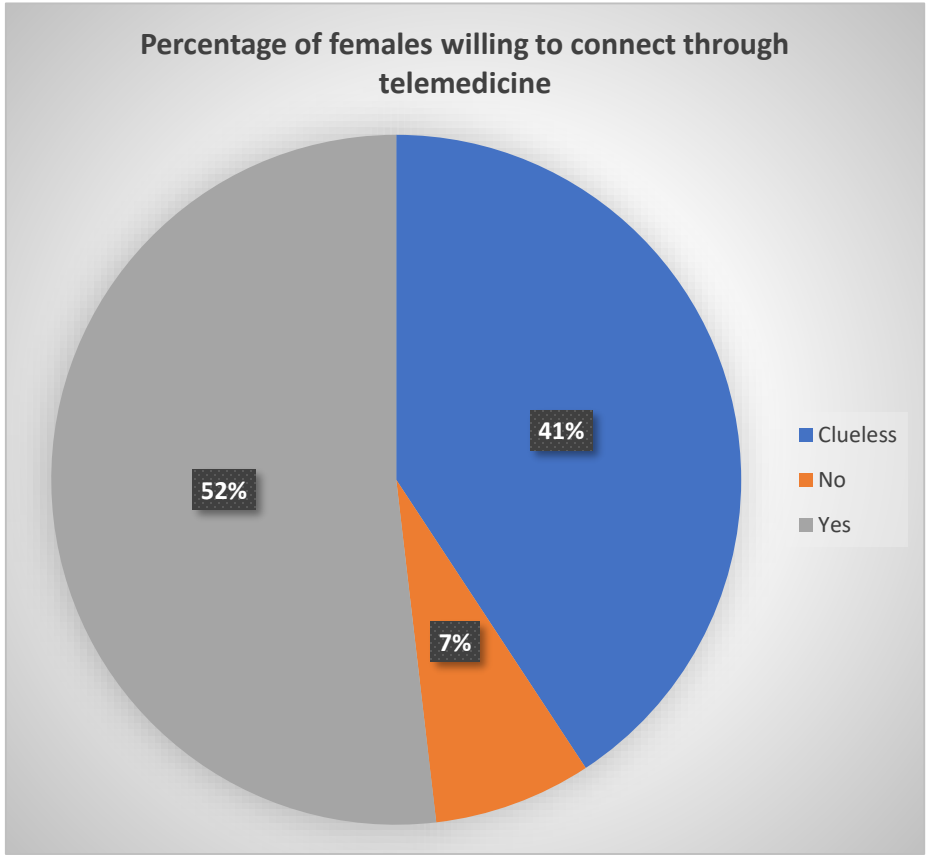
- For analysis of the data frequency or percent distribution analysis will be applied.
- Percentage for the ultimate responses (Willing or not) from the samples will be calculated separately after classifying them under different sections which are as follows:
- Gender
- Internet accessibility
- Awareness about telecommunication in medicine and other health applications
- Different age groups – (0 to 30 yrs.), (31 to 40 yrs.), (41 to 50 yrs.), (50+ yrs.)
- Course of disease/ disability – (0 to 6 months), (7 to 24 months), (25 to 60 months), (60+ months).

RESULTS..

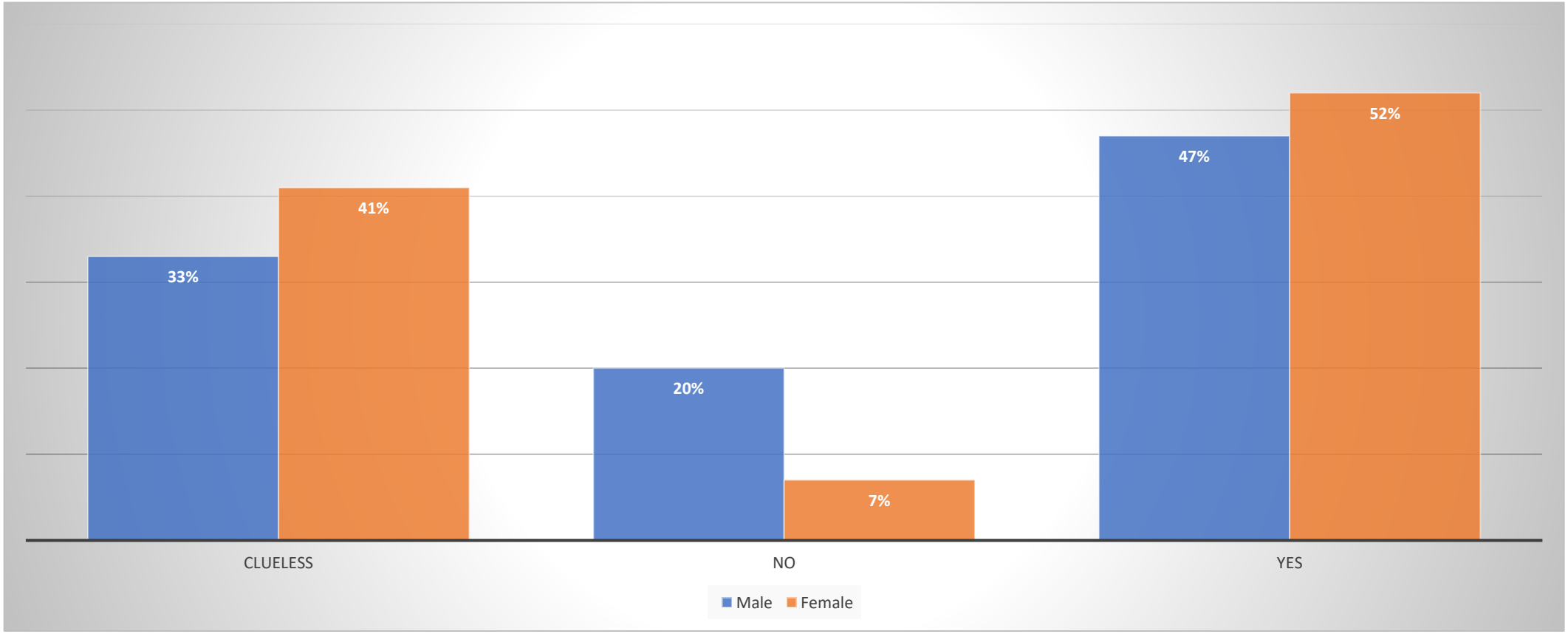
GENDER

Percentage of males & females willing to connect through telemedicine



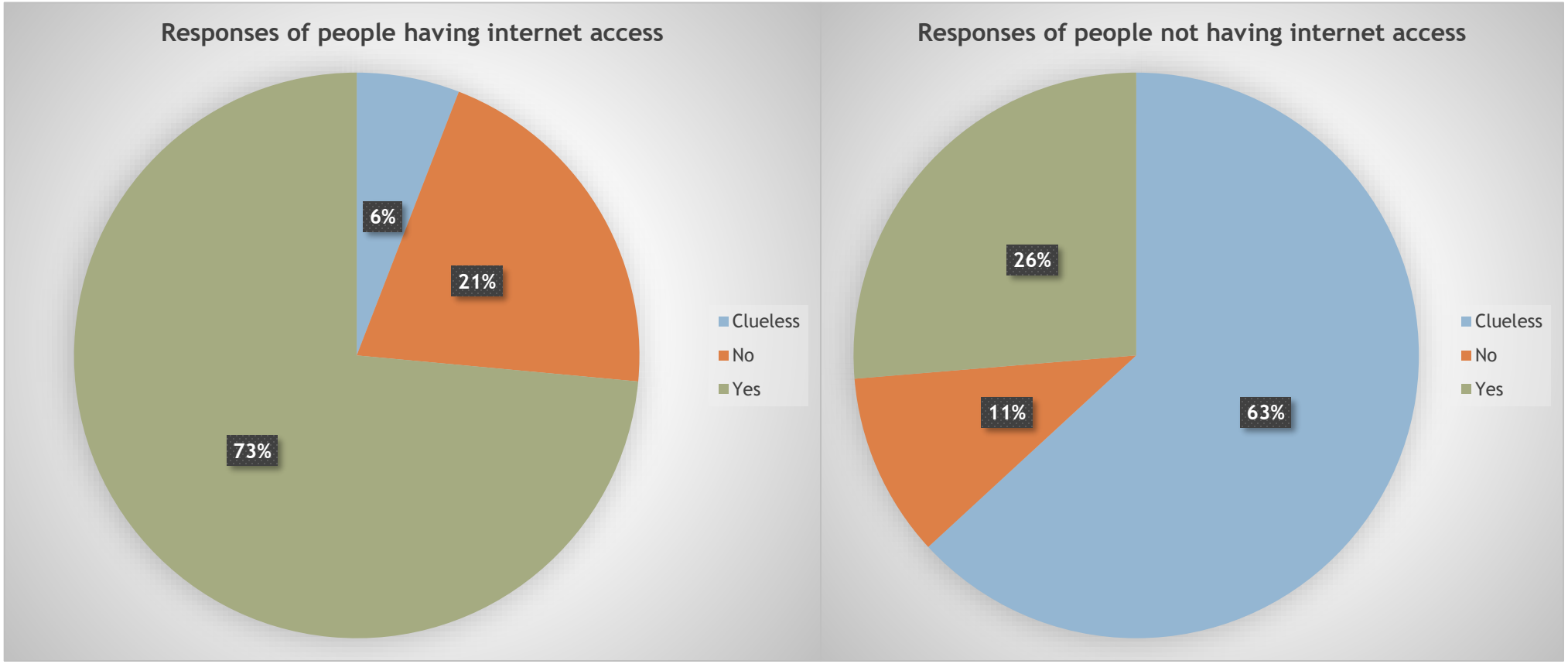


Comparison of the responses in above chart 1 and chart 2

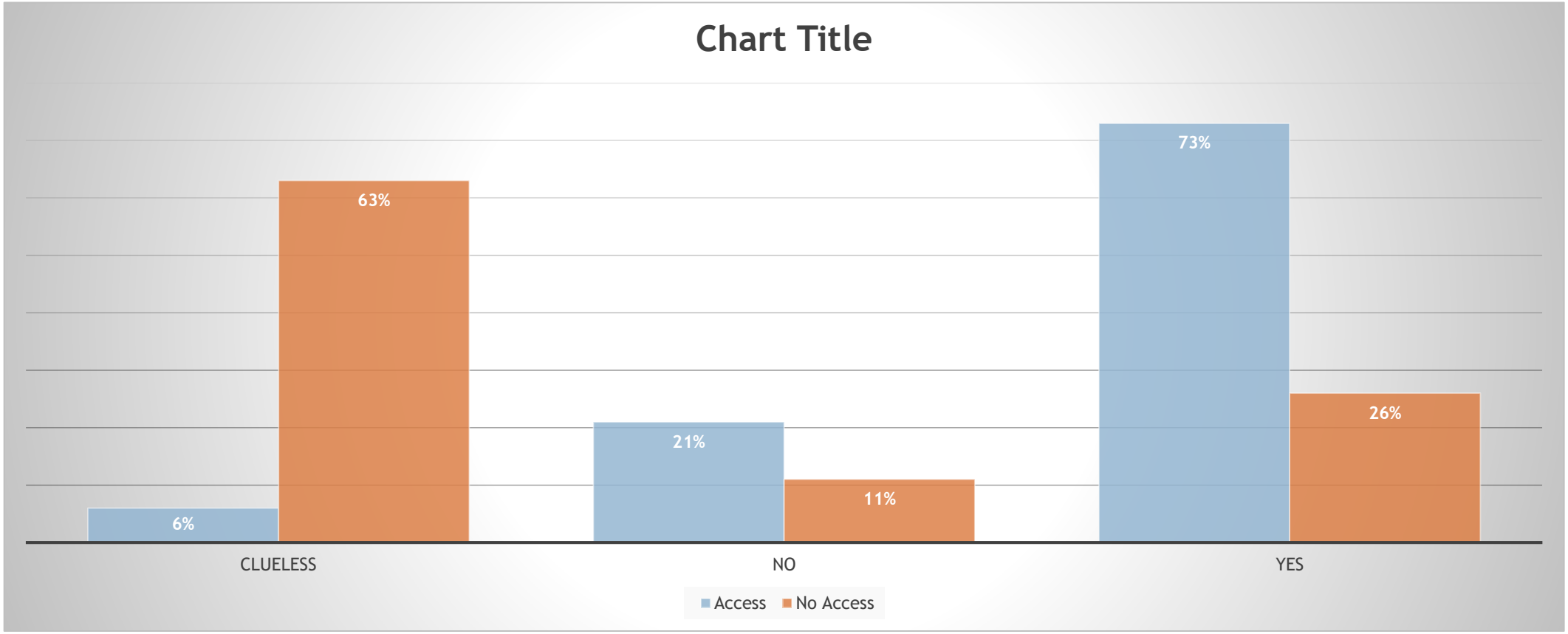


INTERNET ACCESSIBILITY

Responses from patients having internet access and no internet access

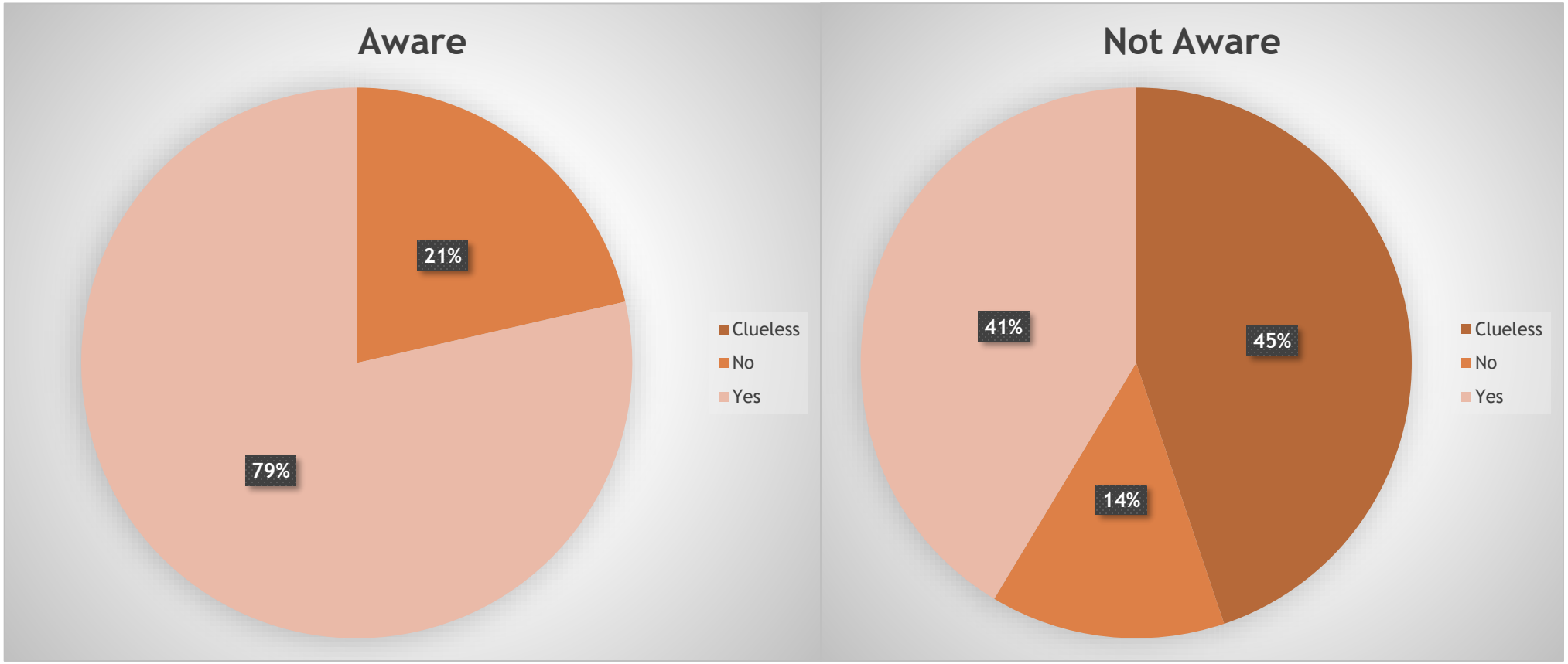


Comparison of responses of patients having internet access and patients having no internet access

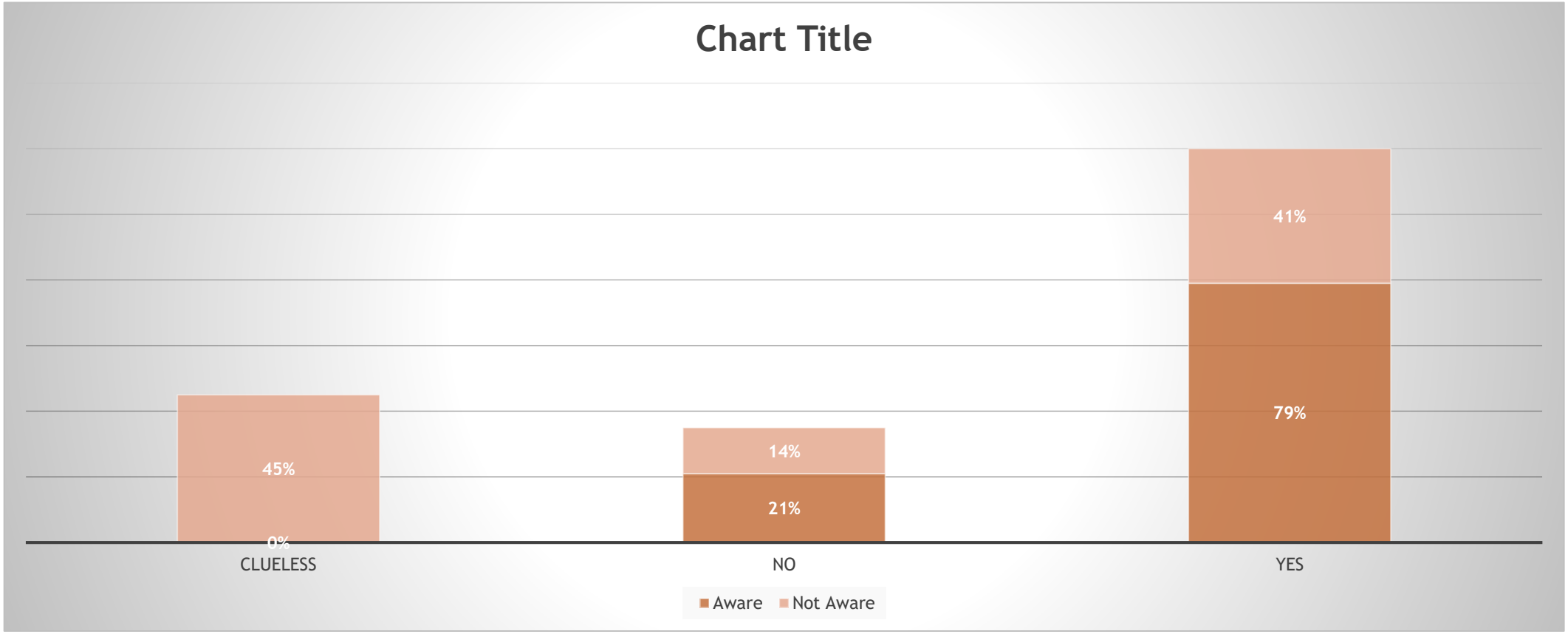


AWARENESS

Responses from patients aware and not aware of different health applications

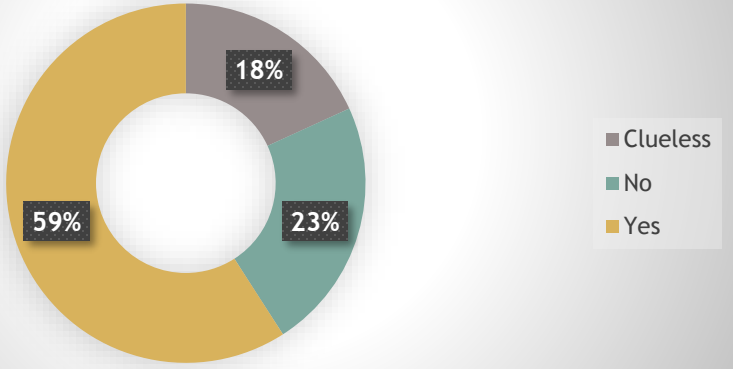


Comparison of responses from patient aware of health applications and patients not aware of health applications on connecting through telemedicine

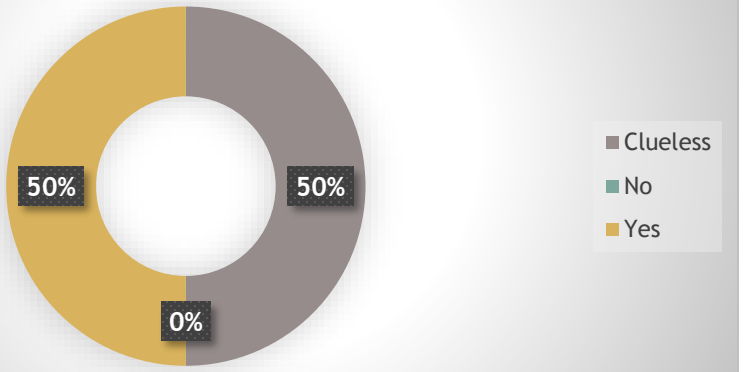


DIFFERENT AGE GROUPS

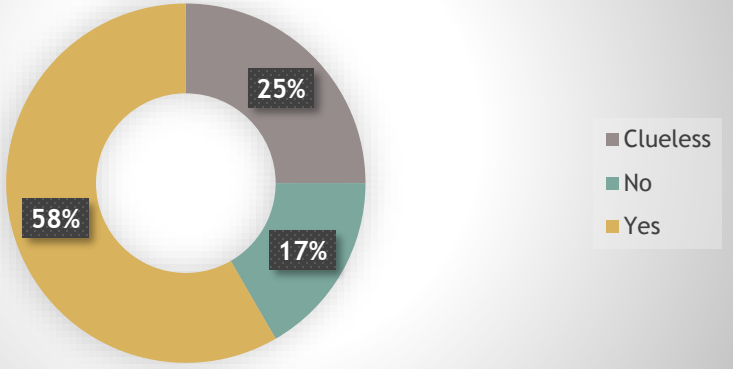
Percentage of patients of age (0-30 yrs.) willing to connect through telemedicine



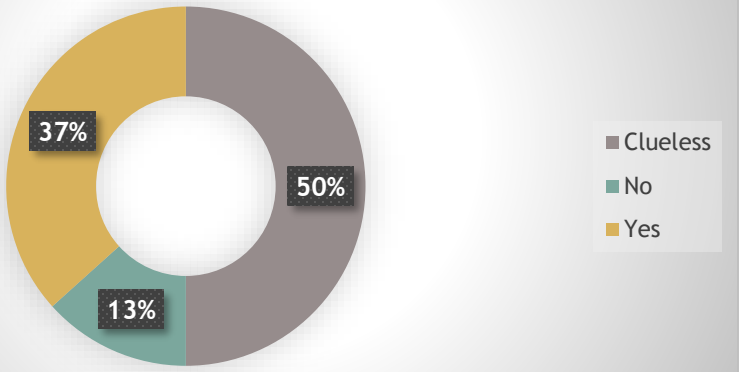
Percentage of patients of age (30-40 yrs) willing to connect through telemedicine



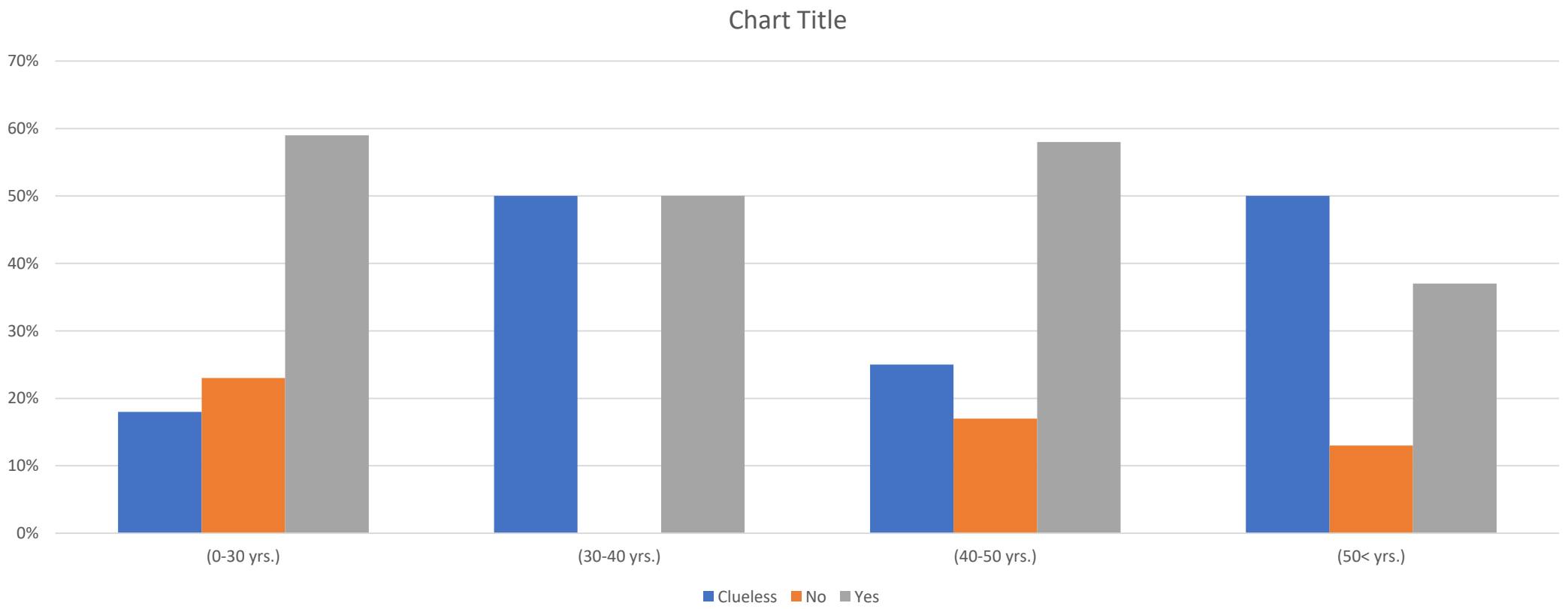
Percentage of patients between age group (40-50 yrs) willing to connect through telemedicine



Percentage of patients of age group (50+ yrs) willing to connect through telemedicine

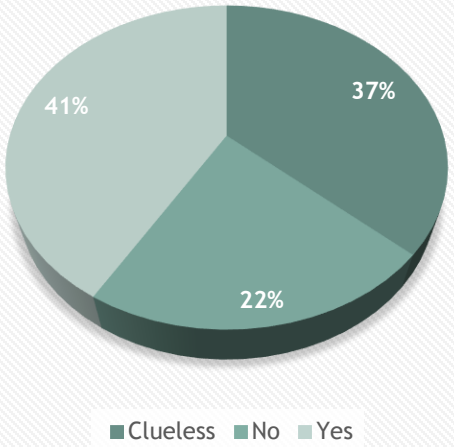


Comparison of responses from patient aware of health applications and patients not aware of health applications on connecting through telemedicine

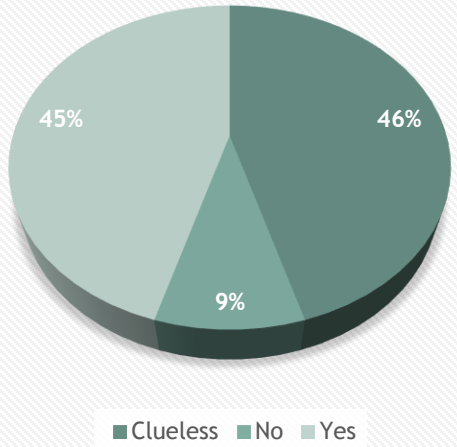


COURSE OF DISEASE

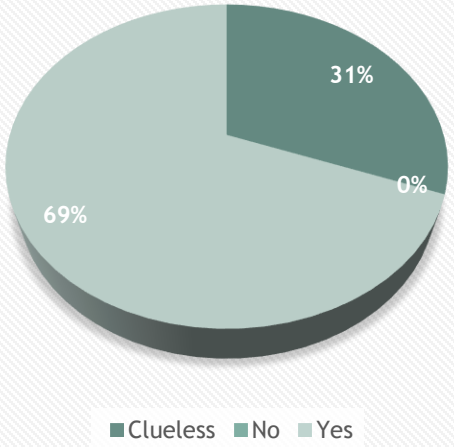
0-6 months



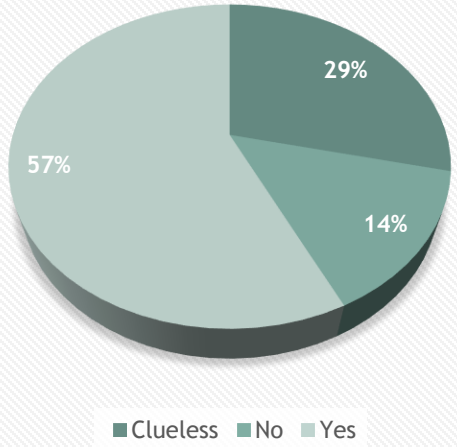
7-24 months



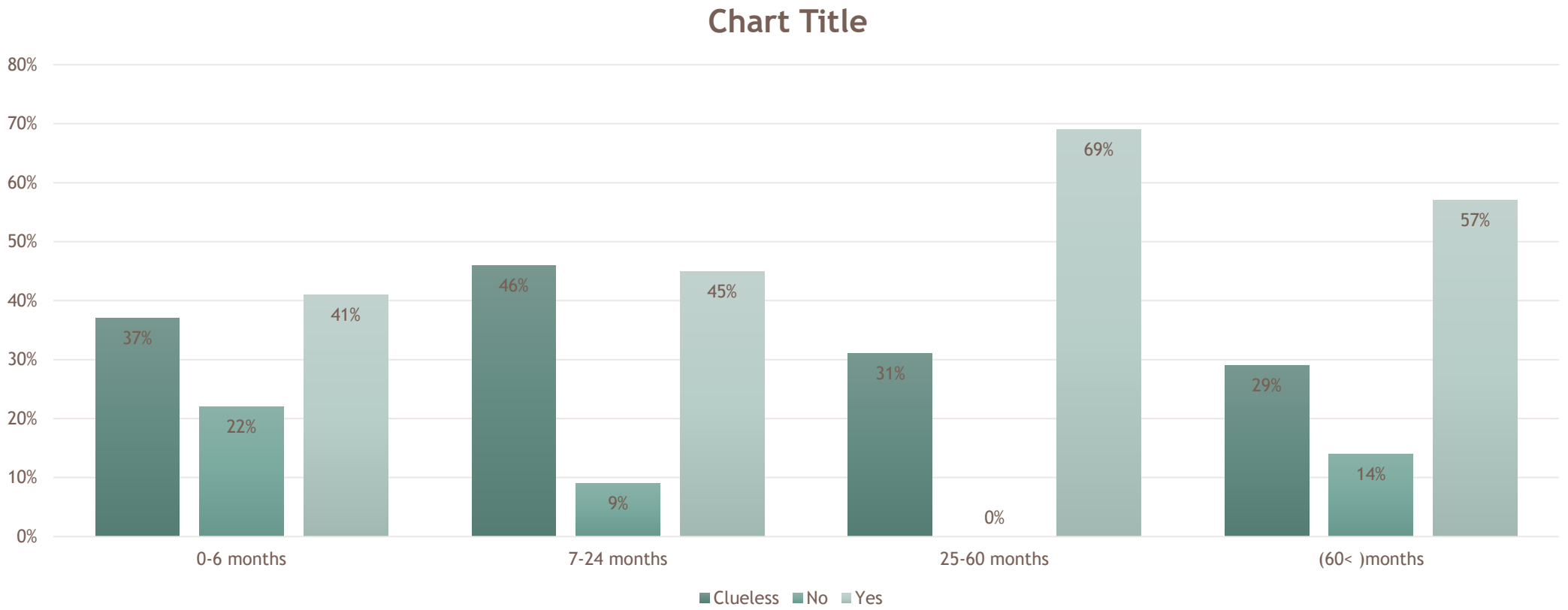
25-60 months



(60<)months



Comparison of responses from patient of different groups of course of disease on connecting through telemedicine



DISCUSSION

- Out of all the male patients who had internet access, 63% gave a positive response.
- Out of all the female patients who had internet access, 91% responded positively.
- All the female who had internet access and were also aware of health applications responded positively.
- All the male patients who had internet access and were also aware of health applications, 70% of them responded positively.
- The main challenge faced by telemedicine regarding its widespread acceptance as a method of health care delivery, is in validating its impact on clinical outcomes with scientific rigor.
- Other issues like standardization of the methods and techniques used for health care delivery, payment by insurers that need to be resolved.

RECOMMENDATION

- Awareness Raising: Develop and implement a communication strategy to increase the awareness of the added value of telemedicine in Health and encourage a positive public mind set towards e clinics.
- Develop and implement low cost telemedicine infrastructure managed under hospitals in tier 2 and tier 3 cities such as Meerut, Jalgaon, and Bareilly where despite high purchasing power of people, the availability of quality care is found wanting.
- A recommended set of standards and guidelines by central legislation need to be set in place to address issues related to security, privacy and confidentiality of patient data and potential misuse and even abuse of electronic records in the form of unauthorized interception and/or disclosure.

Recommended Guidelines

- Each healthcare provider should have a unique provider identifier which will flow to all its programs and telemedicine consultation centres (“**TCC**”).
- Each of the telemedicine speciality centres (“**TSC**”) and TCCs are also recommended to have a separate unique and universal identifier code.
- It is further recommended that each patient also be identified by a unique and universal patient identifier so that one central patient information record can be assimilated, comprehensive medical databases can be built, or if the patient wants, he/she can move across multiple providers without losing data.
- The Guidelines also spell out the hardware and software (including detailed configuration and specifications) which is recommended for the setting up of the TCC and TSCs.
- In the absence of a legislation governing Telemedicine, it is suggested that the machinery and equipment of the vendor complies with the specifications given in the Guidelines so as to dilute potential liability issues at a later stage.
- The Guidelines provide adequate risk mitigation at various stages in the process of Telemedicine and thereby must be closely consulted while setting up Telemedicine organizations.

CONCLUSION

- Telemedicine is already being recognized around the world to have a proven value in several subspecialties of medicine, such as cardiology, dermatology and neurology. Its success in India and its extrapolation to the global platform is something that holds the key to universal health care.
- Indian consumers, particularly the younger and middle age groups are increasingly becoming aware and inclining towards e-health marketplace services.
- There exists a huge market demand of online consultations with the doctors as it helps patients to get medical advice from experts of particular disease from anywhere in the world.
- With the advent of telemedicine & e-health marketplace geographies or physical distance has not existed as the barrier.
- Due to easy accessibility, convenience and affordability several patients are opting for e-health marketplace services as patients do not have to stand in long queues waiting outside the hospitals.
- Although not a substitute for traditional healthcare system, telemedicine can be used to overcome healthcare disparities in the underserved areas.

Thank you!