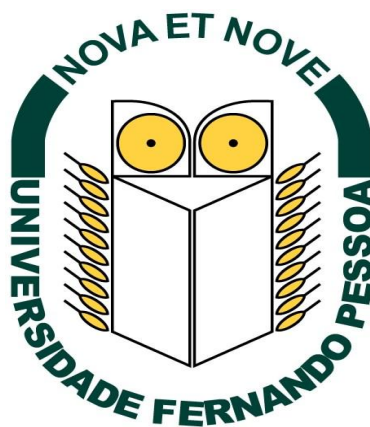


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New Era in Service Delivery Models:
Greek SLPs Knowledge and Perceptions of Telepractice



Universidade Fernando Pessoa

Porto, 2014

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A thesis Submitted in partial fulfillment of the requirements for the degree of
Master in Speech -Language Therapy Faculty of Health Sciences
Universidade Fernando Pessoa Porto, Portugal

Abstract

Telepractice is a service delivery model that allows speech- language pathologists to provide their services in remote areas via a teleconference tool. The current study aimed to investigate the knowledge, the use, the perceptions and intentions of Greek SLPs on telepractice.

For the purposes of this study a non experimental, descriptive method survey research design selected. Information collected via an online, distributed, self- administered questionnaire. The instrumental tool designed by the author and the Greek SLP Association –SELLE (Σύλλογος Επιστημών Λογοπαθολόγων Λογοθεραπευτών Ελλάδος - Association of Greek Sciences, Speech Language Pathologists Speech Language Therapists) the link of the survey was sent to 925 members via newsletter. Seventy-five responded to the survey indicating a response rate 8% and finally 74 participants met the inclusion criteria.

The results indicated that the majority of Greek SLPs know what telepractice means. Some of them , use it as a service delivery model for both adults and children with a wide range of disorders. In addition, they provided interesting benefits and barriers of this model and in general have a positive intention in using it in the future.

The results obtained have numerous significant clinical and theoretical implications regarding this new service delivery model in Greece. Recommendations are made to Greek speech language therapists as well as future researchers.

Keywords: telepractice, telemedicine, speech- language pathology, distance sessions, knowledge, use, perceptions, intentions.

Resumo

Teleprática é um modelo de prestação de serviço que permite aos terapeutas da fala prestarem os seus serviços em zonas remotas através de uma ferramenta de teleconferência. O presente estudo teve como objetivo investigar o conhecimento, o uso, as percepções e as intenções dos terapeutas da fala gregos sobre a teleprática.

Para o propósito deste estudo, foi selecionado um desenho de investigação descritivo e não experimental. As informações foram recolhidas com recurso à distribuição de um questionário on-line, de autoadministração. O instrumento foi concebido pela autora, tendo a Associação Grega de Terapia da Fala -SELLE (Σύλλογος Επιστημών Λογοπαθολόγων Λογοθεραπευτών Ελλάδος - Association of Greek Sciences, Speech Language Pathologists Speech Language Therapists) enviado o link do questionário a 925 membros via newsletter. Setenta e cinco terapeutas da fala responderam, o que indica uma taxa de resposta de 8% e, finalmente, 74 participantes preencheram os critérios de inclusão.

Os resultados indicaram que a maioria dos terapeutas da fala gregos sabe o que significa teleprática. Alguns deles usam este modelo de prestação de serviços, tanto com adultos como com crianças e com uma ampla gama de perturbações. Além disso, os participantes apontaram benefícios interessantes deste modelo, bem como barreiras, revelando, em geral, terem uma intenção positiva em usá-lo no futuro.

Os resultados obtidos têm diversas implicações significativas, clínicas e teóricas, em relação a este novo modelo de prestação de serviços na Grécia. São feitas recomendações para terapeutas da fala gregos, bem como para futuros investigadores.

Palavras-chave: teleprática, telemedicina, terapia da fala, sessões à distância, conhecimento, uso, percepções, intenções.

Dedications

To my adorable friends, who are the family I chose!
You are my thoughts and my love no matter where I am...

Acknowledgments

I would like to express my sincerely thanks and appreciations:

To my professor and supervisor Doctor Fatima Maia for her support and insightful comments during all this process.

To the Greek SLP Organization SELLE, which accepted to help me and spread my survey to the members.

To all the participants who took the time to complete the questionnaires, without whom this research would not have been possible.

To my amazing sister Mairi , who made the editing of this work.

To my translator Georgia Erminidou for the backward translation.

To my colleagues and close friends Nick Triadopoulos, Apostolos Lavoutas, Sotiris Sotiriou and George Tsekos for the forward translations.

To my wonderful friends and excellent SLPs Hellen Gratswni, Theodora Kalantzi, Konstantininos Vantanas, Panayiotis Papadatos, Katerina Patsiouri and Angela Resiti for their help during piloting process.

To my family.

To my close friends Christie, Christina, Nick, George and Kostas who always believe in me and supporting me.

Without you I could not have completed this project.

Thank you all!

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List of Abbreviations:

AAA American Academy of Audiology

AHRQ Agency for Healthcare Research and Quality

AOTA American Occupational Therapy Association

ASHA American Speech Hearing Association

ATA American Telemedicine Association

CNO College of Nurses of Toronto

CT Computed Tomography

ESR European Society of Radiology

IMF International Monetary Fund

MRI Magnetic Resonance Imaging

NABP National Association of Boards of Pharmacy Website

PD- Parkinson Disease

PET Positron Emission Tomography

SLP Speech Language Pathology

SLPs Speech Language Pathologists

WHO World Health Organization

WMA, 2007 World Medical Association

ΕΛΣΤΑΤ Ελληνική Στατιστική Αρχή – Greek Statistical Authority

ΥΥ & ΚΑ Υπουργείο Υγείας και Κοινωνικής Αλληλεγγύης - Ministry of Health and Social Solidarity

INTRODUCTION

Every single session can be unique as every client and every clinician is unique. Thus, the approach, the service deliver model, the settings, the assessment, the therapeutic plan, and even the material that speech language therapists use in their clinical practice are different. The sessions can be focus on the individual or the whole family can be direct or indirect and the most important can be take part by one clinician or the whole pluridiscipline team. One thing that usually doesn't change in all approaches and in all clients is the traditional face- to- face sessions. But it seems that nothing can remain the same during the period of time.

The technological improvement introduces us a new era of service delivery models. Telepractice or telespeech is considered as a “new” service delivery model. Telepractice belongs to the telemedicine “family” that in medicine filed, it is not a new delivery model but a developing one. Regarding speech- language therapy, this model is not considered as new but as unusual. Questions remain core: What in reality happens in the SLP field? Is this model came to stay? Do SLPs know it? Do SLPs use it?

Telecommunication, teleconference and telemedicine are part of medical life for many years, mainly in the USA but as well in Europe; giving an excellent solution for remote areas as well as for people who are not able to move for medical or economic reasons. Telemedicine is also part of the Greek reality and through several programs Greek doctors provide services around Greece.

This service delivery model has already started and for speech- language therapy field. Telepractice or telespeech is considered to be an innovative application for assessment and treatment of speech, language, voice and swallowing disorders in children and adults. New surveys appear day to day and ensure that telepractice is a promising method as clinical population can enjoy almost the same benefits as in face- to- face sessions (Palsbo, 2007; Hill et al., 2009, Hill et al., 2009a, Hill et al., 2009, Hoffman et al., 2010, Constantinescu et al., 2011).

ASHA from the late 1990s, started to investigate the success of applications of telemedicine technology to the delivery of speech-language pathology services in USA. This application can be useful for assessment, diagnosis and treatment of

speech, language, voice and swallowing disorders in children and adults. Meanwhile, researchers point out that: “telepractice is still in its infancy” thus further research must be conducted (Tucker, 2012).

Statement of the Problem

The aim of this survey is to investigate Greeks SLPs knowledge on telepractice. Specifically, we want to determine if SLPs in Greece know what telepractice is, if they use telepractice and their perceptions about it. Additionally, it is important to investigate for what type of clinical services (assessment/management) and with which population (age/disorder) SLPs use telepractice. It was also crucial for us to investigate if SLPs intent to use this service delivery model in the future and for what reasons. Finally, we try to identify if there are any differences between those SLPs who use telepractice and those who don't related to gender, age group, degree level, institution, highest degree, qualification years, work settings and workplace.

Telepractice is not a new service delivery model, but an uncommon one in the field of speech- language therapy. Evidences support that this method can be promising for the field. Meantime, two researches running by ASHA indicated that SLPs didn't prefer this method (ASHA, 2002; 2011). On the other hand, evidence supports that parents and caregivers are overall satisfied with telespeech program when their children took advantage of it it for one year (Crutchley& Campbell, 2010).

It has been since 1989 that telemedicine started in Greece, but in the area of speech-language therapy we don't know the knowledge and the opinion of SLPs. To the authors' knowledge, there is no other study published in Greek or in English language that provides information about the reality in Greece regarding telepractice and telespeech. Plus, there are four surveys on USA that provide information about the perceptions of SLPs on telepractice (ASHA, 2002, 2011; Tucher 2012; Stellmacher, 2011). We emphasize that in the International bibliography may exist more surveys that the author didn't succeed to find.

Research Design

The purpose of this study is to investigate the current knowledge of Greek SLPs on telepractice. The aims of this study are to identify:

The sources of the knowledge;

The amount of use of telepractice (experience);

Type of client services (assessment/management, etc.);

Client's age (children/adults);

Client's disorder;

SLPs who used telepractice perceptions;

SLPs intentions (future use);

Potential reasons to use it or not (benefits-barriers).

The differences that may exist between those SLPs who use and those who do not use telepractice (differently: age, academic background etc.).

Our research questions summarized as follows:

What is the knowledge of Greek SLPs on telepractice?

What is the use (experience) of Greek SLPs on telepractice?

What are the perceptions of Greek SLPs on telepractice?

What are the intentions of Greek SLPs on telepractice?

What are the differences between those SLPs who use and those who do not use telepractice?

In order to answer to these questions a non experimental research survey was conducted. Data collection was made using online questionnaire, which was sent via newsletter to 925 Greek SLPs. That instrument consisted of closed-ended and semi-opened questions regarding the knowledge on telepractice, the amount of use of telepractice, type of client services and client's age, perceptions on telepractice and future attempts on telepractice. Data collection was conducted between 13rd of February until 13rd of March with a return rate of 8%.

Significance of the Study

The present study reflects author's personal desire to this specific issue and author's personal long term goals. The motivation hidden behind is double as author has both clinical and academic motivations. In the first case, the author, as professional SLP, desires to work via this delivery model in Greece. In the second case, this study is the first step to a bigger project that will lead the author in a doctoral program.

Beyond the personal motivation, from this survey arise important clinical applications. Firstly, the data will provide information regarding the clinical reality in Greece. Data collected can be helpful for the SLPs, and both the clinicians and the academics. In addition, the opinion that SLPs have regarding telepractice can determine the performance of their clinical services. If SLPs use or are willing to use telepractice can engage them to a new era of practice and in this case population, even in remote and isolated areas can enjoy their services. The benefit is equal for clients and clinicians.

In academic level ASHA (2010); Hill et al., (2006); Torrens (2004), has underlined that there are many that should be learned about how SLPs view telepractice. This research comes to cover a gap in the literacy. As we already discussed to the authors' knowledge, there is no other same or similar topic in the Greek and British bibliography. Our long term goal is this study to pave the way and introduce this service delivery model to the Greek SLP both clinicians and academics.

Organization and Contents of the Study

First pages provide an introduction to the study. The theoretical background, the research problem, the purpose and the significance of the study are presented.

Chapter I

In the first chapter of the study the theoretical background of the study is presented analytically. This chapter is in a way subdivided, into two parts. In the first part information about telemedicine are presented. Specifically, all basic information about telemedicine are described in order the reader, to get the proper knowledge which is needed for further understanding of telepractice. Beyond everything else telemedicine area and specializations, telemedicine delivery models, delivery

mechanisms and equipment, telemedicine ethical principles and technology safety are discussed.

In the second part of this chapter all essential information about telepractice are presented. In this part the reader will study about telepractice equipment, licenses, benefits, challenges, regulations, and economical issues. Following that, studies that aimed to compare face- to- face and telepractice sessions are presented. Finally, surveys regarding assessment and management via telepractice are discussed.

Chapter II

This chapter provides a description of the method which has been used, to plan and execute the research. Information presented in this chapter provide a detailed declaration of the aims research, design, ethical considerations, apparatus and material, responders and procedures used for data collection and analysis in this study.

Chapter III

The statistical analyses of the study is presented. The results are organized according to the stated purposes and aims of the study. Specifically, descriptive statistic for the quantitative data is presented first and as follows the qualitative data are illustrated via tables.

Chapter IV

This chapter provides the explanations and the academic discussion of the results that presented in the previous chapter. The results compared and explained based on similar research in the area.

Chapter V -Conclusions and Implications

This chapter provides a final conclusion of the study and discusses the clinical and academical implications of the results. A critical evaluation of the study is provided, as well as recommendations for further study.

CHAPTER I – LITERACY REVIEW

In this part of this work telemedicine and telepractice are discussed. The aim of this chapter is to present all the essential information about telemedicine and telepractice, in order for reader to better understand the aims and the purposes of the survey. For the convenience of reading, this chapter is subdivided into two parts. In the first part are discussed telemedicine issues, including definitions, history, services, specializations, delivery models, equipment need it, ethical considerations and reality in Greece. In the second part telepractice issues are presented and including definitions, history, guidelines for beginners, economical issues, benefits and challenges, practice areas, client's selection, client's disorders and SLPs perception. In the third and last part we discussed only about published articles and specifically about studies that investigate the outcomes of client's assessment or management via telepractice.

1. Telemedicine

In the begging of the century, Teleservices constitute the most dynamic and big market in volume. This, beyond else, led to an increase of the networks and the cost's reduction in hardware and software (Λουϊζή, 2006). Science doesn't have anything more to do, apart from the use of it for its benefit. Our new "health reality" named telemedicine and according to the Agency for Healthcare Research and Quality (AHRQ, 2001), defined as "... the use of telecommunications technology for medical diagnostic, monitoring, and therapeutic purposes when distance separates the users."

The Greek Ministry of Health and Social Solidarity (Υπουργείο Υγείας και Κοινωνικής Αλληλεγγύης) defines telemedicine as the system that allows health professionals to use specialized, interconnected medical devices in order to analyze, diagnose and treat patients, who are in different geographic locations (YY & KA, 2009). Bird (1972) defines telemedicine as the practice of medicine, not with the classical confrontation physician- patient, but via an interactive audio- visual teleconference system.

The term e-health covers all major applications of Medical Informatics (Περδικούρη, 2005). Finally, the term telerehabilitation refers to: "the delivery of rehabilitation services via information and communication technologies. Clinically, this term

encompasses a range of rehabilitation and habilitation services that include assessment, monitoring, prevention, intervention, supervision, education, consultation, and counseling” (Brennan et al., 2010: ATA, Telerehabilitation SIG). Generally in bibliography all that terms are met, but the telemedicine term is probably the term with the highest use.

1.1 Telemedicine History Review

In this part, are discussed, some turning points about telemedicine. As it is not our aim to analyze historically the use of telemedicine, headlines are mainly used. Historically, telemedicine can be traced back to the mid to late 19th century (cited by Craig & Patterson, 2005) with one of the first published accounts occurring in the early 20th century when electrocardiograph data were transmitted over telephone wires (Einthoven, 1906).

Following the technology development, in the 60s telemedicine stated its modern form. Commonly the first uses started for military and space proposes. There were also few individuals using these practices for “commercial reasons” (Craig & Patterson, 2005; Currell, 2000).

Some examples of the first uses of telepractice were given by Κασσιούρης (2007).

1960: transferred physiologic signals from astronauts via satellite by NASA.

1967: first telemedicine interaction between doctor and patient in Boston.

1972-1975: deliver health care to the Papago Indian Reservation in Arizona by NASA.

1976: Patient’s transmission biosignals through Canadian satellite.

1988: integration of telemedicine services through telepathology, teleradiology and teleducation.

1.2 Telemedicine Services

The services which can be provided by telemedicine, can be subdivided into four general categories and what's included in each of them is briefly discussed in this part of the work. Meanwhile, we want to underline that specific practice or any specific

circumstances are not discussed; instead general services that can be provided via telemedicine are presented.

The first category includes the primary care or the consultation of a patient. In this case the use of live, interactive video or the transmission of patient's data for later review, are some of the mechanisms which can be used. The second category covers the remote patient monitoring; in this case home telehealth, devices can be used in order to collect and send data (ATA, 2009).

Following, the third category includes the patient's medical and health information services. The use of the Internet for patients can be used ,in order to achieve specialized health information . Finally, the medical education is another category where health professionals and special medical education can attend seminars by distance (ATA, 2009).

Following to this work some telemedicine aspects which are considered important for a better understanding of it will be presented.

i. Telemedicine Areas–Physicians and Specializations

Telemedicine is not a separate medical specialty, but a service delivery model which every physician can provide its services. As follows, some of the specialties which have telemedicine applications are discussed.

Telenursing, telepharmacy, telecardiology, telepsychiatry, teleradiology, teledermatology, teledentistry, teleaudiology, teleophthalmology are some of them. Assessment, diagnosis and treatment are some of the services that provided, but surgery procedures (telesurgery) and care of emergency situations (teletrauma; teleburn) also included. Following, each of the above specialties are briefly discussed.

Telenursing: is defined as the delivery, management and coordination of care. Services provided via information and telecommunication technologies (CNO, 2005). Primer application is home care to patients who are unable to move, or live in remote areas, have chronic ailments and conditions that immobilize them.

Telepharmacy: is defined as the provision of pharmaceutical care through the use of telecommunications and information technologies to a patient at distance (NABP,

2005). Services beyond else include: medical prescriptions which can be delivered electronically in remote areas, drug therapy monitoring and patient counseling. Telepharmacy services can be accomplished through pharmacy, hospital, nursing home, or other medical care facilities.

Telecardiology: is defined as the utilization of telecommunication technology for cardiac disease diagnosis, treatment and patient care (Molinari et al., 2009). It is one of the oldest applications in telemedicine, and has been largely applied during the last 10-20 years (Hailey et al., 2004). In addition to the provision of care to patients with heart disease, it has a vital role in educating these patients on the nature of their condition, improving their compliance to medical therapy, and guiding them in practicing healthy life habits (Birati & Roth, 2011).

Telepsychiatry or Telemental Health: is a broad term referring to the provision of mental health and substance abuse services from distance (ATA, 2009). Services may include consultation, education and clinical programs (diagnosis, assessment, management), as well as routine follow-up meetings (Hoffman, 2011).

Teleradiology: is defined as the electronic transmission of radiographic images from one geographical location to another for the purposes of interpretation and consultation (ESR, 2004). Services may include the ability to send radiographic images (x-rays, CT, MRI, PET etc.) from one location to another (Kontaxakis et al., 2006).

Telepathology: facilitates the transfer of image-rich pathology data between distant locations for the purposes of diagnosis, education and research (Weinstein et al., 2006; Kumar, 2009).

Teledermatology: is defined as the practice of dermatology at distance services (Eedy & Wootton, 2001) and it may include exchange of medical information, diagnoses, consultation and treatment as well as education.

Teleaudiology: is defined as the audiology applications of telehealth and telepractice and can include the full scope of audiological practice. Both the American Academy of Audiology (AAA) and the American Speech Language Hearing Association (ASHA) have recognized the use of telehealth and telepractice for audiology clinical services, as well as for education and supervision (AAA, 2008; ASHA, 2005).

Teleophthalmology: is defined as the branch of telemedicine that delivers eye care through digital equipment and telecommunications technology. Applications of teleophthalmology include ophthalmic screening, diagnosis and monitoring; as well as distant learning services (Goldschmidt, 2012). Teleophthalmology may help reduce inequalities by providing low-cost screening tests for low-income and remote patients (Agency for Healthcare Research and Quality 2012; 2013).

Telesurgery or remote surgery uses robotic technologies, high-speed data connections and management information systems and allows physicians to operate surgical procedures. This method is considered as a kind of Telepresence; which is a set of technologies (telerobotics) that allows a person to feel as if he was present (Sandor et al., 2009)

Finally, other services can include health services in emergency cases like trauma or burn. Teletrauma allows assessment and treatment of trauma patients through, two-way videoconferencing with a remote trauma specialist. Remote trauma specialists can provide the same quality of clinical assessment and plan of care as a trauma specialist who is face –to- face with the patient (Collins, 2008). Burn specialists can provide the same services as in telerauma applications, but for patients with burns (Ontario Geriatrics Learning Center, 2013)

ii. Telemedicine Delivery Models

Professionals can provide their services through three basic and generally recognized models as AHRQ (2001) declares; namely are: synchronous, asynchronous and self-monitoring models.

Asynchronous model or store-and-forward model: as the name reveals this model does not require the client and the clinician to be available at the same time. This form of telepractice is basically the electronic transmission of clinical data from one location to another. Common modes of data transmission may include emails, discussion boards or blocks, shared workspaces and databases, streaming audio and video, slide shows or shared calendars, a telephone modem and fax machine.

Certain medical professionals, such as radiologists and dermatologists use almost exclusively this form of telemedicine. In some cases this method can more effectively be compared to synchronous model. For instance, in teleradiology, the

store-and-forward model has noted to be more practical than synchronous model (explained beyond) as it eliminates the need to schedule the telemedicine contact (Welz, Ligier, & Ratib, 1995).

Synchronous model or clinician interactive: describes a “face-to-face” meeting between client and clinician which is conducted in “real-time” for diagnosis and treatment. Common modes for connection include audio conferencing, chat, white boarding, instant messaging and application sharing. One example of synchronous service includes real-time direction and interpretation of videofluoroscopic studies, and assessment and treatment conducted via videoconferencing.

The last model is the self-monitoring or testing model. In this model, the client provides data to the clinician without any on-site facilitator. Data is usually collected in a client's home or residential care facility. This model was primarily used for clients with chronic illnesses who require close monitoring. Currently this model has not applied in SLP field. However, this does not exclude the development of future applications in speech-language pathology (ASHA, 2005). Asynchronous and synchronous models, both used in the SLP field but especially the second one.

iii. Delivery Mechanisms and Equipment

In general terms, delivery mechanisms which can be used, fall into one of the following categories: network programs, point-to-point connections, monitoring center links and web-based e-health patient service sites (ATA, 2009).

Networked programs link tertiary care hospitals and clinics with remote clinics and health centers. These kind of links require high-speed lines or the Internet for telecommunication links between sites. Point-to-point connections are used by hospitals and clinics that deliver services directly to independent medical service providers. In this case, private high speed networks are mainly used.

Monitoring center, links, used mainly to provide care to patients at home. Landline or wireless connections are used for direct communication between the patient and the center, although some systems use the Internet. Finally, web-based e-health patient service sites provide direct consumer outreach and services over the Internet. Under telemedicine, these include those sites which provide direct patient care (ATA, 2009).

Regarding the equipment and the software that can be used the variations are huge. The equipment can be totally different for those practitioners that use telesurgery and those that use teledermatology. The software variations can also be huge. For the purpose of this study, we will discuss further about this issue following to this work and we will analyze only the basic equipment and basic teleconference software, like those that are essential for telepractice.

iv. Telemedicine - Ethical Principles and Technological Safety

Practitioners who provide their services via telehealth technology they should take into consideration the ethical principles of telerehabilitation. Professionals from all specializations should engage those principles mainly for protection of the client, but also for their own protection.

Firstly, professionals should incorporate organizational values and ethics into policy and procedures documents for telerehabilitation. Professionals should also inform clients for their rights and their responsibilities. As in all medical and treatment procedures clients have also the right to refuse telemedicine services (ATA, 2010). It is the physicians obligation to ensure that the patient or caregivers are able to use the necessary telecommunication system and necessary instruments. The physician must try to ensure that the patient has understood the advice and treatment suggestions given and that the continuity of care is guaranteed (WMA, 2007).

Practitioners should also be able to establish proper patient-physician relationship that should be based on mutual trust and respect. Telemedicine should be employed primarily in situations in which a physician cannot be physically present within a safe and acceptable time period (WMA, 2007). During this work we emphasize plenty of times that telemedicine and telepractice should be the second option of service delivery model after the face-to-face session. Finally, they should be able to resolve ethical issues or policies which identify, eliminate, and reduce conflicts of interests associated with telerehabilitation's services (ATA, 2010).

Beyond these, professionals should be guided by some existing discipline and national clinical practice guidelines when guidelines or position statements for telerehabilitation exist from a professional organization or society, in order to secure the best practices for the clients (for instance SLP should follow American Speech-

Language Hearing Association guidelines, occupational therapists should follow the American Occupational Therapy Association etc.) (ATA, 2010).

Finally, it is really important for professionals to understand that in any case should adhere to all relevant laws, regulations, and codes for technology and technical safety. They should comply with state regulations for protection of client health information and to ensure the physical security of telehealth equipment and the electronic security of storage, retrieval, and transmission data (ATA, 2010).

v. Telemedicine Programs in Greece

In Greece the first attempts for telemedicine programs started in 1989 with a cooperation between the physics lab of the University of Athens and the Sismanoglio (Σεισμανόγλιο) Hospital of Athens. This first program had encouraging results. Due to these results the Greek Ministry of Health and Social Solidarity fund 12 telemedicine facilities around Greece.

Ten years from the first attempts and specifically from 1998 until today there are telemedicine centers for pulmonologist, urology, hypertension, herpetology, diabetic, lipid and dietary diseases. Telemedicine applications which are running in Greece at the moment are as follows, as presented by Γεωργίου (2010):

VSAT-Very Small Aperture Terminal- program: the aim is to provide telemedicine services through satellite receivers and electronic medical records.

ΤΑΛΩΣ program: the aim of this program is the design and development of a mobile medical device that will allow telediagnosis and support in ambulance, remote medical facilities and in patients at home and in Intensive Care Units (ICUs).

HERMES program: the initial aim of this program is the provision of emergency health care.

MEDASHIP program: the aim of this program is the connection of on-board ships with Hospitals in all Europe.

ΑΣΠΑΣΙΑ program (Ασκληπιείο Πάρκο Αθηνών: Σύνθεση Ιδεωδών και Ανάπτυξης): Ασκληπιείο- Asklepion Park is a conceivable area that has circumference approximately 8 km and encloses 8 hospitals (Αγία Σοφία, Αγλαΐα Κυριακού,

Γεώργιος Γεννηματάς, Λαϊκό , Σωτηρία, 401 Γενικό Στρατιωτικό Νοσοκομείο, 251 Γενικό Νοσοκομείο Αεροπορίας, Κέντρο Επαγγελματικής Προεργασίας και ψυχοκοινωνικό έργο). In this program are also included the department of medicine, dentistry and nursing from the University of Athens. The main purpose of the program is the unification of basic Athens areas through one telematic network.

Vodafone and e-Trikala program. In 2006 started a pilot program that aim had to support 5 regional Hospitals in the area of Makedonia. Approximately one year later the program expanded and included 17 district Hospitals. The program mainly supports patients with chronic diseases like hypertension, diabetes, etc. At the same time (2006) a pilot telemedicine program started in the city of Trikala. Patients have the opportunity to connect freely with the Vodafone Network and communicate with PDA equipment or SIM/GPRS cards with physicians of the Hospital of Trikala. The aim is the control and modification of a patient's medication.

E-health program: this program actually refers to a lab whose aim is the development of innovative computational methods and tools.

vi. Laws and Regulations in Greece

In Greece there are not existing laws or specific regulations regarding telemedicine services. We suppose that in medicine from the begging of the first telemedicine applications until today the same regulations and laws that exist in health services generally exist and in telemedicine practice. In other words, the physician which practices face-to-face and through telepractice probably has to obtain the same regulations and laws; these laws are those that exist in face-to –face sessions.

vii. Greek Physicians and Greek Population Perceptions about Telemedicine

In 2009 a completed survey, which aimed to investigate the intention of physicians to use telemedicine. Among 155 Greek physicians that employed in Imathia (Ημαθία) region the 98% of them were informed about telemedicine procedures, but only 8% had experience on that (Τσιαμήτρος, 2009).

In a survey completed on behalf of WHO in 2007, 27.1% of 1000 Greek participants feel comfortable to accept telemedicine services (cited by Ρουμेलιώτη, 2009). In another research conducted the period 2005-2007, based on 1000 participants among

18-80 years old, 26% stated that they want to use telemedicine services (Chronaki, 2007).

The aim of this part of the literacy review was to present basic information about telemedicine. We can summarize that telemedicine is an application or a service delivery model that has its roots in late 90s. It is not considered as a separate medical specialty, though many specialties work via telemedicine. There are three models that professionals can use and namely are: synchronous, asynchronous and self monitoring. The equipment that practitioners can use has huge variations and depends on the specialty of each professional. Specific regulations and laws exist and practitioners should follow them. In Greece first studies started in 1986 and at the moment there are some telemedicine applications.

As our topic is not telemedicine further information are not presented. After the presentation of the previous information telepractice is exclusively discussed as follows.

2. Telepractice

Basics of telepractice include definitions, history, equipment, regulations, licenses, settings, economical issues, but benefits and challenges are presented first. Following present areas of practice (population and disorders) and SLPs perception are given.

Telepractice as we already mentioned is defined by The American Speech-Language-Hearing Association (ASHA) as: “the application of telecommunications technology to the delivery of professional services (speech-language pathology services) at a distance by linking clinician to client, or clinician to clinician, for assessment, intervention, and/ or consultation (ASHA, 2005a).” ASHA explained that adopted the term telepractice rather than the terms telemedicine or telehealth in order to avoid the misinterpretation because these services are used exclusively by health care settings (ASHA, 2010).

Telepractice as a service delivery model differentiate from other services that are provided through the use of technology. Meaning that services like: “supervision”, “mentoring”, “pre-service” and “continuing education” or “e- education” are not considered as telepractice. ASHA underlined that even these activities are not included in ASHA's definition of telepractice and are best referred to as

telesupervision, distance supervision, e-supervision and distance education (ASHA, 2008).

At this point we should underline that this discrimination doesn't exist in telemedicine. In other words continuing education, mentoring, supervision and communication between clinicians are all included in the term of telemedicine. Hence, when a physician provides either mentoring or clinical assessment both considered as telemedicine. In telepractice area is not the same and when an SLP provides mentoring via teleconference equipment, this method is called telesupervision and when the clinician provides assessment intervention or consultation to the patient is called telepractice.

Telepractice as a term can be also included in the broader name of "telerehabilitation" (ASHA, 2010). We mentioned previously that telerehabilitation defined as "... the delivery of rehabilitation services via information and communication technologies..." (Brennan et al., 2010: ATA, Telerehabilitation SIG). Other terms such as: "telespeech" and "speech teletherapy" may be used as equal to the "telepractice" term (ASHA, 2010).

Telepractice as a service delivery model is not appropriate for all cases. Professionals first should consider a variety of factors before deciding to use this service delivery model and should be aware that any clinical service should be appropriate and based on the unique needs of the client. Speech language therapists that use telepractice application have the same responsibilities in delivering services as in all other delivery models. Following this part of the work, the history of telepractice, basic characteristics, area of practices, and SLPs perceptions are discussed.

2.1 Brief History

First telepractice services located in the mid-1970s at the Birmingham VA Hospital; where took part the first documented use of distance programs in speech- language pathology. The purpose of this program was to explore if "tele-communicology" is a possible solution for serving patients in remote areas (Vaughn, 1976). Speech therapists provided services through telephone and also used a teaching machine based on filmstrips and complementary materials such as workbooks and audio tapes for additional practice.

More than ten years later, in 1987, Mayo Clinic offered SLP assessments as part of its telehealth services. A retrospective analysis of 150 consultations found that only six telepractice assessments required face-to-face assessment because they lacked sufficient information in order for clinicians to make an accurate diagnosis (Duffy, Werven, & Aronson, 1997).

The same year Wertz and his colleagues used a closed television circuit and a computer-controlled video, laserdisc in order to evaluate 36 patients. The authors used two formal tests, namely Porch Index of Communicative Ability and Western Aphasia Battery and their results were the same as in a face-to-face assessment situation (Wertz et al., 1987, 1992).

In the late 1990s American Speech-Hearing Association started to examine if it is possible and successful for audiologists and speech language therapists to deliver their services through technological applications. In 1998, they published “ASHA's Telehealth Issues Brief” where they described activities that had taken place to date in the area of telepractice (ASHA, 1998).

In 2001 a staff team developed the “2001 Telepractices and ASHA: Report of the Telepractices Team” that presented an updated overview of telepractice, future activities and needs (ASHA, 2001). One year later in 2002, ASHA completed a survey of 1,667 ASHA members to investigate their awareness and experience in telepractice (ASHA, 2002). We will discuss about this study analytically, later in this study.

In 2003, ASHA awarded \$4,000 grants to three telepractice programs to develop materials that would inform members about their telepractice activities as referred by ASHA (2005a). Lately, ASHA has started the telepractice special interest group 18 which aims to provide resources and education related to telespeech and teleaudiology for their members. Today, several studies that investigate the validity of telepractice are published in different journals and it seems that is a well promised method (Palsbo, 2007; Hill et al., 2009, Hill et al., 2009a, Hill et al., 2009, Hoffman et al., 2010, Constantinescu et al., 2011).

2.2 Basics of Telepractice

i. Telepractice Full Definition

Telepractice is an innovative and alternative service delivery model that allows SLPs to provide their services in remote areas and in clients that for certain reasons are unable to move from their location. Usually SLPs and clients use synchronous delivery models and connected to each other in a real time. In other words clinician and client are connected virtually and interact in real time; they can see and listen to each other through video and audio in a virtual environment.

To make it even simpler for the reader, we can give an example. The easiest way for someone to understand this virtual environment is to consider that he speaks with someone using Skype. Two people communicate and interact with each other, but instead of a real environment they “have” a virtual environment. Thus, the two communicative participants are engaged in a virtual environment using a computer a camera and the Internet connection.

Back to the SLP session, clinicians can also use and asynchronous applications in order to be able to provide materials (records, cards, etc.) to the client. The delivery of the material can take place at the same time with synchronous telepractice; before the telepractice session or after the telepractice session. The situation is the same as when two people communicate via Skype in real time (synchronous model) and at the same time they can send to each other images by e-mail (data transfer- asynchronous model).

ii. Telepractice Delivery Settings

As we previously discussed ASHA adopted the term telepractice rather than the terms telemedicine or telehealth in order to avoid the misunderstanding because these services are used only in health care settings (ASHA, 2010). In this manner, regarding service delivery settings actually there is no limitation; as given by ASHA (2005a) possible connections may include:

- Hospital to hospital
- Hospital to health care facility or clinician's office

- Health care facility to client's home
- Health care facility to school
- School to client's home
- Clinician's office to client's home

iii. Telepractice and Equipment

As we discussed previously in this work (telemedicine part) the variations of the equipment that can be used is huge. But for the purpose of this work is only reviewed the equipment that SLPs exclusively need. To begin with, both clients and clinicians need basic equipment in order to get started. This basic equipment includes computer/laptop, web camera, and headset with microphone and high speed Internet connection. Apart from this basic equipment, is also needed a videoconferencing/teleconference tool.

Video conferencing or teleconference can be simply defined as a way for two or more people to communicate from distant locations through the use of technology and the use of the Internet. A different kind of technology like phones, smart phones, tablets or/and computers can be used. Meantime, based on Mulbach and colleagues (1995) videoconferencing differs from videophone calls as it's designed to serve a conference or multiple locations rather than simple individuals (Mulbach et al., 1995). In case of telepractice even telephones have been used in some studies, mainly in those that conducted in 90s. In addition, ASHA (2010) indicated that video phones can be used as video-conference equipment.

The best- known and free videoconferencing tool is Skype. Skype provides basic video and audio functionality, chat, and screen sharing, but clinicians and clients are not able to manipulate materials simultaneously. This may create certain limitations for therapy or cause difficulties (telepractice.net, 2011). Other free teleconferencing programs between else are “ichat” and “ooVoo” that both have the same limitations as Skype. In all three above options, additional modes of real-time interaction may be provided through applications such as screen sharing, whiteboards, online presentations, or text chat (telepractice.net, 2011; Steves, 2010).

More professional tools can be the Adobe Acrobat Connect that includes desktop and file sharing. This features also a whiteboard, which can be useful to scribble down various ideas (Steves, 2010). AT&T connect is another professional tool and offers secure conferencing features. It is a very expensive solution, which is only really suitable for large businesses that need a reliable way of hosting conferences.

In all cases, peripheral devices may be also used and may include recording devices or auxiliary video input equipment for computer interfacing, document camera presentation, or utilization of other specialized cameras with high resolution (Steves, 2010).

The selection of a videoconferencing tool depends on clinician's preferences and needs, but in the selection should take into consideration client's needs and capacities. Based on Sean Sweeney the selection of a web- based program can be based on five criteria that namely are: Free, Interactive, Visual, Educationally relevant and Speechie (SpeechTechie, 2012). Finally, we should underline that when SLPs select a video conferencing solution, the security of the system must be also considered. As we already discussed in "telemedicine laws and regulations section", telepractice sessions must be protected from unauthorized access.

iv. Telepractice and Licenses

In a previous part of this work (telemedicine part) is indicated that in Greece there are not specific regulations and laws regarding telemedicine and telepractice. The laws that exist in face- to- face practice are also exist in telemedicine practice. Regarding the speech language therapy field the issue, it seems more complicated. In Greece, after receiving their bachelor degrees SLPs can practice without the need of any other requirements. This means that graduated SLPs don't have practice license, as the government do not provide them any. Thus, professionals from other fields, such as linguistics, teachers or psychologists work in the field of speech therapy without having all the essential supplies.

Consequently, as there are no licenses for the Greek SLPs, obviously there are not specific regulations and laws regarding telespeech. In other countries like USA the issue with licenses is clearer compare to Greece, though even there we can pinpoint difficulties and barriers. Each state has the right to create and enforce its own laws for

the protection of clients (Brannon, 2012). Hence, different state has also different licensure laws. However, there are some USA states which do not have policies for telepractice (ASHA, 2014). In both cases, some difficulties arise, as clinicians there are not allowed to practice via telespeech in other states. In other words, if an SLP is licensed in Ohio he cannot practice in Alabama.

In case that a clinician ignores this regulation and provide telepractice services without license in the client's state, it's possible that the regulatory board fell back on the "operating without a license" penalty provision in every state law (Brannon, 2012). Nonetheless, some states provide intermediate solutions for the practitioners and SLPs can provide telepractice services for 30 days in another state without having a license. In this case SLP firstly must hold a license from another state that has equivalent licensure requirements. Secondly, they should provide services in cooperation with an SLP or audiologist who is licensed in the state where the temporary practice will occur.

Different models of licensure have been proposed in order to resolve this problem that we discussed above. At this point, five alternative models and their brief description are presented, as stated by Brannon (2012). The first model called Mutual Recognition Compacts and was created and promoted by the National Council of State Boards of Nursing. This model states that one professional can have one full license in his home state, but can practice physically and/or electronically in another state that has entered into a legal agreement with the provider's home state.

The second model was called Limited License model and was created by the Federation of State Medical Boards. This model states that, a provider must have a full license in the home state and obtain this additional license for each outside state of remote practice. Another model called Expedited License was created by the Federation of State Medical Boards, is based in one uniform application that it will contain professional's individual work data. Each professional has to have one license and each time that wants to practice in another state he will request the information which will be included in the platform.

The last model, called National License, is based on universal standards of practice and common criteria for each profession. Practitioners will be issued one license by the federal government. In this system, the government will establish and administer

national standards, qualifications, and discipline for each profession and will pre-empt state laws.

v. The First Steps in order to Start Practicing

After the clarification with the license issues the current laws and regulations, SLPs can be one step closer to provide services via telepractice. For the following steps SLPs should consider a few issues regarding this service delivery model. Firstly, we underline again that SLPs should consider telepractice just as a different service delivery that has the same responsibilities as the face-to-face session.

Professionals should follow the same Code of Ethics and the same Scope of Practice as in face-to face sessions. American SLPs, follow (Code of Ethics and Scope of Practice) as stated by ASHA (2003) and ASHA (2001a) respectively. Obviously they should give specific attention to the rules that apply exclusively in telepractice. Beyond else SLPs have the following ethical responsibilities as given by ASHA (2005a):

- Be educated and trained in the models of telepractice delivery.
- Inform clients how services via telepractice differ from services delivered face- to-face and disclose potential risks and limitations as well as benefits.
- Evaluate the effectiveness of services rendered via telepractice to ensure that methods, procedures, and techniques are consistent with the best available evidence and adhere to standards of best practices.
- Use transmission and recordkeeping methodologies that protect privacy and ensure confidentiality and security.

Following that, SLPs must be sure that have all the essential clinical standards in order to provide services via telepractice. This means that they should be comfortable with the technological equipment that they use and they also are aware of the client's knowledge and resources on technology. SLPs should be able to choose the appropriate candidates and match the appropriate technology to the clinical needs of the client. They should be able to assure the reliability and validity of diagnoses obtained via telepractice as well as the effectiveness of the telepractice intervention (ASHA, 2005).

Furthermore, practitioners should secure a comfortable environment for their telepractice session. Light, distracts, noise level, comfort, and safety need to be evaluated and modified as needed prior to beginning the session for both clients and clinicians (telepractice.net, 2011). Last but not least SLPs should have a plan and preparation regarding client's optimal positioning, test and therapy materials, and for placement of the video monitor and camera (Jarvis-Selinger et al., 2008).

To conclude, SLPs need to consider a lot of issues before they get start to practice via telepractice. Advanced research skills are really important in order for them to be informed about this delivery model and to prevent potential mistakes. Reeducation through seminars and online courses are also really important and helpful. Even for some clinicians it seems impracticability, in reality is not more complex than other delivery models but probably is just a different model, as surveys appears to have almost the same effectiveness as in face- to- face sessions (Palsbo, 2007; Hill et al., 2009, Hill et al., 2009a, Hill et al., 2009, Hoffman et al., 2010, Constantinescu et al., 2011).

vi. Telepractice and Economical Issues

The Greek Health System is a mixed system that has elements from both Bismarck and Beverage model. Beyond else, is worth to be refered that all health services that provided to the beneficiaries become against the rule without their economic burden at the place and at the time that the services delivered. Regarding SLP services Social Insurance Funds provide an amount of money to those clients who enjoy these services; the amount of money depends on few variations like patients age and needs, the type of the Insurance Fund etc.

The author didn't succeed to find any information about the telemedicine and/or telepractice cases. Hence, we cannot provide accurate information about this issue and we don't know if the cost of telemedicine and/or telepractice covered by the Social Insurance Funds in Greece.

In USA at least temporarily in most cases the cost of telepractice services is not covered (ASHA, 2005). Medicare under specific condition reimbursement some telemedicine practitioners, but SLPs are not included as eligible providers. Another USA medical program called Medicaid (for low- income people) in some states has

authorized reimbursement for telepractice. But also in this case SLP telepractice services are not included (ASHA, 2012)

2.3 Benefits and Challenges

i. Benefits of Telepractice

Services that previously were not available due to distance are now possible for the clients due to telepractice. This opportunity for clients, to have improved access to these services is the most commonly recognized benefit of telepractice (Buckwalter et al., 2002; Farmer & Muhlenbruck, 2001; Ricketts, 2000). Apart from distance there are also other important factors that can prevent client's access to health services; may include lack of clinicians and lack of transportation in a specific geographic area, and the most important potential handicap disability or reduced mobility.

Another important factor is the economic cost. The fact that telemedicine is considered as an economic solution strengthens this service model. We should explain that this practice is an economical solution, due to direct and indirect costs. Direct cost is the cost of travel and indirect cost is the lost work productivity associated with travel time for clients that is reduced. According to (Karp et al., 2000) even factors such as fatigue may also affect the client's desire to seek services or capability to benefit from services.

Additionally, clients may also decline services because they do not desire to disrupt their work schedules or the schedules of working family members that may provide transportation to distant health care facilities (ASHA, 2005a). Another benefit of telepractice is the opportunity for clients to receive services in their natural environment. Moreover, telepractice can be a very good solution in cases that patients want to ask the opinion of more than one clinician (Marcin et al., 2004).

Less obvious benefits for telepractice according to Brennan et al (2004) can include client's increased motivation due to the technological aspects of the treatment. We cannot deny the fact that for some clients telepractice may be a more interesting solution. Telepractice can provide access to a larger range of materials and technical capability that can enhance interest and successful outcomes (Farmer & Muhlenbruck, 2001; Karp et al., 2000; Marcin et al., 2004).

Finally, for some specific patients telepractice services can be the only solution or the best one. Specifically, for bilingual patients is an excellent solution as they can assess clinicians who they speak their first mother language or even their both mother languages (L1 and L2) (ASHA, 2005a).

ii. Challenges of Telepractice

One serious limitation of telepractice is the missing physical contact between the client and the clinician. For psychological perspective clients, may feel better when the clinician is sitting next to them. From the clinician's perspective in a face- to- face session physical contact can be used for cuing, reinforcement, tactile manipulation, and stimulation, and to assess strength and tone (ASHA, 2005a).

Another important limitation considers the eye contact between client and clinician. The client must look at the camera, rather than the screen image of the clinician in order to make eye contact and this can confuse clients and especially the young children. Telepractice interventions also occur in a static location due to technological equipment and connectivity requirements. Thus, makes it difficult to change the environment during a treatment session (ASHA, 2005a). Limitations regarding the technological equipment are not uncommon; visual or audio difficulties, network breakdowns may occur but in most cases are predictable.

2.4 Practice Areas- Clients Selection

Each client must receive the appropriate therapy in the proper place and at the correct time. Clinicians should take specific decision and design specific therapeutic plans for each of them. As it happens generally in the clinical practice and in telepractice, SLPs should consider and choose carefully the potential candidates.

In this part only general criterion that clients should have or not in order to be suitable candidates for telepractice application are discussed. In the following part of this work several studies that investigate, describe and compare mainly face- to- face sessions and telepractice sessions in different population (age and disorder) and under different clinical procedures (assessment and management) are presented.

A suitable candidate is the one that firstly has the proper telecommunication resources included computer, network and teleconference application. This candidate should

also be confident and comfort with the use of this technology including the ability to use keyboard if it is necessary. In a different way it is critical a family member or a caregiver to be able to use these applications and participate in telepractice sessions (ASHA, 2012).

On the other hand, a non suitable candidate is the one who has heard or visually handicapped as well as difficulties with auditory comprehension. Other factors like attention, cognitive ability, physical endurance and speech intelligibility can influence the success of the session and should carefully assess (ASHA, 2012).

Around the world, national and international agencies as well as professional organizations have approved the use of live videoconferencing as an appropriate model of service delivery (ATA, 2010). Recently professional organizations associated with non-medical treatments recognized this delivery model, known as telepractice, as an appropriate model of intervention (AOTA, 2010; ASHA, 2012).

In medical practice has been used to evaluate, treat, and monitor health conditions, including heart disease, diabetes, psychiatric problems (Jami & Danski, 2008) as well as dermatological disorders (Bownset al., 2006; Leggett et al., 2004; Loane et al., 2000;2001; Oztas et al., 2004). We already discussed in previous part several telemedicine specializations.

ASHA (2005a) states: "Telepractice is an appropriate model of service delivery for the profession of speech-language pathology. Telepractice may be used to overcome barriers of access to services caused by distance, unavailability of specialists and/or subspecialists, and impaired mobility. Telepractice offers the potential to extend clinical services to remote, rural, and underserved populations as well as to culturally and linguistically diverse populations".

In this part, several studies that aimed to provide evidence of this service delivery model are reviewed. In these studies, which participated both children and adults with speech and language disorders as well as voice and swallowing disorders and both assessment and management took part.

i. Adults Neurogenic Disorders

A study by Brennan and colleagues (2004) aimed to measure the performance of adults with acquired brain disorders on standardized SLP assessments conducted under two conditions: face-to-face and video-conference settings. For the purpose of the study forty patients assessed with story –retelling tasks (Story Retail Procedure). The two stories were selected randomly, and all participants tested in both conditions in randomized order. Additionally, the authors used a survey tool in order to measure the satisfaction of the patients.

The results of the study indicate that there are no significant differences in outcomes and a high agreement (93%) between the two conditions across all subject variables (e.g., age, gender, and experience with technology) established. Additionally, participants expressed a high level of interest in using telepractice in the future. The authors conclude that story retelling performance didn't affect by settings, but further research is necessary (Brennan et al., 2004).

Twenty- four post stroke patients diagnosed with aphasia and have been assessed simultaneous in face-to-face and telepractice conditions using the Boston Diagnostic Aphasia Examination (BDAE). A double- crossover agreement study was conducted and the results indicate that clients' functional communication could be assessed reliably using telepractice (95% agreement in each functional communication measure regardless of assessment site) (Palsbo, 2007).

Boston Diagnostic Aphasia Examination (BDAE) as well as Boston Naming Test (BNT) have been used in thirty- two patients in order to examine the severity of aphasia that they experienced (mild, moderate, severe). Patients were grouped according to the severity of their disability, and then they were randomly assigned to face-to-face and telepractice conditions. Two speech-language pathologists were randomly assigned to one of the two assessment conditions. The authors report inter-rater agreement to be, in most cases, above 90% and conclude that the efficiency of telepractice assessment was not influenced by the severity of aphasia. But we should underline that an exception on the ability to assess naming and paraphasias was noted (Hill et al., 2009).

Twenty – four patients with dysarthria assessed using both formal standardized and informal assessments via a purpose-built telerehabilitation system. Participant's assessment took part simultaneously via telerehabilitation and face-to-face conditions and the results of the study indicate clinically-acceptable inter-rater agreement of 80% to 100% between evaluators working in face- to- face and telepractice conditions with high intra- and inter-rater reliability of test items. The authors suggest that assessment of dysarthria using telepractice is feasible, but more research is necessary (Hill et al., 2009a).

In another study, the validity and reliability of assessing apraxia of speech using telepractice was investigated. Assessments administered face-to-face and through telepractice were scored simultaneously by two therapists; one worked remotely and the other worked in the face-to face condition. The results of the study indicate no significant differences between the subtest scores for the two environments. While considering the small sample size, the authors suggested that reliable and valid assessment of apraxia was feasible using telepractice (Hill et al., 2009b).

In 1983, Fitch used a minicomputer and a touch-tone telephone in order to improve auditory comprehension in a patient with global aphasia and apraxia. The treatment was based on response plates that contained four possible options. The Author indicates that SLP service via telecommuter is feasible. In 1986, Helm- Estabrooks and Ramsberger investigated the effectiveness of telephone delivery speech- language programs in a patient with non fluent aphasia. The authors applied hierarchically structured syntax treatment program with pre and post treatment performance measures and found that the patient had an improvement.

In 2010, nineteen participants (11 patients with aphasia and 8 caregivers) took part in a randomized controlled trial (RCT) evaluating the effectiveness of a post discharge education and support package for stroke patients and their carers were recruited for this study. The following batteries were used in order to measure the outcomes: Knowledge of Stroke Questionnaire, Stroke Self-Efficacy Questionnaire, Hospital Anxiety and Depression Scale, Stroke and Aphasia Quality of Life Scale, and the Caregiver Strain Index.

Participants received randomized either the telephone or face-to-face administration first and then for a period of 2 weeks separated the two administrations. The results

of the study indicate no significance difference between scores on any of the outcome measures that were administered by telephone and face-to-face (Hoffman et al., 2010).

In 2010, a twenty-eight year old patient with aphasia and apraxia received SLP therapy 4 times per week. Two sessions per week was in person and two sessions via Skype. Based on the authors, the outcomes were similar in these two conditions (Lasker et al., 2010). In 2012, two aphasic patients, trained in two relevant scripts participated in a three days per week intervention. Participants had both face-to-face and teleconference meetings and both participants had an improvement. The authors conclude that teleconference is a viable method for script training (Golberk, Haley & Jacks, 2012).

ii. Voice Disorders

Fifty-one participants with different voice disorders (vocal nodules, edema, vocal fold paralysis and vocal hyperfunction) were exposed to voice therapy under two conditions face-to-face or telepractice conditions (two groups). Outcome measures were rated using fiber-optic laryngoscopy, acoustic analysis, perceptual judgment and patient satisfaction rating. Participants in both groups have shown positive changes on all outcome measures and no significant differences between the two groups were reported (Mashima et al., 2003).

Thirty-four patients with Parkinson's disease (PD) treated for voice disorders via telepractice services. The data for pre- and post-treatment measures have shown significant progress with no significant difference between outcomes for participants assigned to face-to-face and telepractice conditions (Constantinescu et al., 2011).

Ten patients with PD (dysarthria mild to moderate-severity) treated using the Lee Silverman Voice Treatment (LSVT); patients received 16 sessions through Internet based telehabilitation application (eREHAB). The data for these patients have shown statistically-significant improvements in vowel prolongation, reading, conversational monologue, pitch range, loudness variability and level and breathiness. In addition, the applied satisfaction questionnaire indicates participant's 70% overall satisfaction with the online treatment (Theodoros et al., 2006).

The Lee Silverman Voice Treatment program has been used and by Howell and colleagues (2009) for the treatment of three individuals with PD. Each client received telepractice sessions and also seen in face-to-face session for every four Internet sessions. Patients' demonstrate significant progress over time for sustained phonation, reading, and conversational speech in both conditions, patients also maintain the progress or they improved based on assessment two months after the study.

iii. Swallowing Disorders

Ward and colleagues (2009) assessed simultaneously 10 post laryngectomy patients for swallowing, stoma and communication status by a remote clinician and by a second clinician at the patient's sight. A satisfaction questionnaire was also completed. The authors found high agreement between the two assessing clinicians and high satisfaction for both patients and clinicians. The authors emphasized that image quality obtained via the freestanding camera was rated as lower than direct observation, but it was sufficient to assess the stoma and the status of the voice prosthesis.

Ward, Sharma, Burns, Theodoros, and Russell (2011) examined the validity of conducting assessments with fourty clients diagnosed with dysphagia (various etiologies). Participants assessed simultaneously by a face-to-face speech-language pathologist and a telerehabilitation SLP via a videoconferencing telerehabilitation system. Dysphagia status was assessed using a Clinical Swallowing Examination (CSE) protocol, delivered via videoconferencing system and involving the use of an assistant at the patient's end of the consultation to facilitate the assessment. The results indicate acceptable clinical agreement in both face-to-face and remote conditions. While the authors supported the validity of conducting assessments through telepractice, they cautioned that complex diagnostic conditions should be evaluated in a traditional face-to-face setting.

iv. Fluency Disorders

Sicotte, Lehoux, For tier-Blanc and Leblanc (2003) examined the assessed the feasibility and the outcomes of delivering SLP services via telepractice to children and adolescents who stutter. Six participants that concluded in the study have shown

improved fluency. Specifically, stuttering ranged from 13% to 36% before treatment and 2% to 26% after treatment. All participants maintained at least part of their improved fluency during the six-month follow-up, when stuttering ranged from 4% to 32%. The authors conclude that their study demonstrates that full assessment and treatment of stuttering in children and adolescents can be accomplished successfully via telepractice.

v. Pediatric Population- Speech Language Disorders and Autism

Six children with speech disorders evaluated simultaneously in both face-to-face and remote locations scored the same test protocols. The assessment included single-word articulation, intelligibility in conversation, and oral-motor structure. The results of the study have shown high agreement (91%-100%) between clinicians' scores on different speech tests. Specifically, the authors display that the levels of agreement were 92% for single-word articulation, 100% for speech intelligibility and 91% of oral-motor tasks. In addition, the authors achieved high inter- and intra-rater agreement for all measurements that were scored online. They suggest that an Internet-based assessment protocol has potentials for assessing pediatric speech disorders (Waite et al., 2006).

Twenty -four children evaluated in two testing conditions with the Clinical Evaluation of Language Fundamentals, 4th Edition (CELF-4) (Semel, Wiig, & Secord, 2003). Each child was simultaneously assessed online and face-to-face. Assessments were administered by either an online or a face-to -face SLP, but were simultaneously rated by both SLPs. There was no significant difference between the raw scores on individual subtests when scored in the two conditions, inter- and intra-rater agreement was higher for scores analyzed remotely (Waite et al., 2010).

The same authors (Waite, Theodoros, Russell & Gahill, 2010a) assessed simultaneously in real-time both face-to-face and over Internet link twenty children. The assessments included eight subtests of the Queensland University Inventory of Literacy (QUIL), the South Australian Spelling Test, and the Neale Analysis of Reading Ability, 3rd edition (Neale-3). The authors had difficulties during the telepractice sessions: issues with audio latency, break-up, and echo were observed. Meanwhile, the results indicate that the percentage levels of agreement were adequate (above 80%) for most measures except for the non-word reading raw score of the

QUIL and the reading error classification component of the Neale-3. Finally, the authors conclude that some modifications to the technology may improve system effectiveness and usability.

Grogan-Johnson and colleagues (2010) compared the progress made by school children in speech language therapy under two conditions face- to- face and telepractice. The children were treated in two groups. In the first group, 17 children received telepractice treatment for 4 months and then subsequently conventional therapy for 4 months. In the second group, 17 children received conventional treatment for 4 months and then subsequently telemedicine treatment for 4 months. Students from both groups made significant progress and there was no significant difference in Goldman-Fristoe Test of Articulation (GFTA-2) score between students in the two treatment groups. An additional satisfaction survey indicates that the students and parents overwhelmingly support the telemedicine service delivery model.

In as systematic review conducted in 2010 which concluded eight studies that met the author's criteria and investigated the validity of telepractice by behavior analysts, psychiatrists, psychologists when they assist caretakers in the delivery services to 26 participants with Autism Spectrum Disorders (ASD). The services delivered included behavioral and diagnostic assessments, educational consulting, guidance and supervision of behavioral interventions and coaching/training in the implementation of a comprehensive early intervention program. The results suggest that telepractice is a promising service delivery approach in the treatment of individuals with ASD (Boisvert et al., 2010).

vi. Early Intervention Services

Kelso and colleagues (2009) provided early intervention services by a multidisciplinary team that included: occupational therapists, physical therapists, speech-language pathologists, and psychologists. Four families with at least one child younger than three years old received early intervention services over the Internet with a 2-way audio and video system. Satisfaction with this method of delivering services in a child's natural environment is reported by parents and early interventionists.

Heimerl and Rasch (2009) delivered 224 therapeutic sessions included, occupational therapy, physical therapy, speech-language pathology, and psychology via a telehealth service delivery model for children birth through two years old participating in early intervention programs. The researchers concluded that the services provided using telehealth technologies are a viable alternative when in-person services are not feasible.

Several studies whose aim is to compare face-to-face and telepractice service delivery models were presented below. The studies included both children and adults with different disorders (aphasia, PD, laryngectomy, dysarthria, speech disorders, fluency disorders, swallowing disorders, early intervention services).

The methodologies of these studies were different; researchers also used different materials and assessment tools, different therapeutic plans as well as different teleconference tools. We didn't present all the studies that exist in this topic, but some of them, as we tried to present those who seemed the most relevant, mirroring the research diversity existing about telepractice.

Most of the studies presented positive results, but most of the authors underline that more research is needed. Also, it is worth to discuss the fact that none of the authors made generalizations about their result and some of them indicate that telepractice can be a second solution when face-to-face session cannot occur.

2.5 SLPs Use and Perceptions

The first study regarding SLPs experience on telepractice was completed by ASHA in 2002. The study included ASHA members, both speech-language therapists and audiologists. In that study participated 1,667 practitioners 842 were audiologists and 825 were speech-language pathologists. In the survey many questions were included regarding telepractice issues. The tool that ASHA used to compromise by closed-ended questions regarding the amount of use of telepractice, type of client services, settings, technologies, and reimbursement of telepractice services. This tool also surveyed the participants' education or training and reasons for utilizing telepractice.

The results of the study indicated that 11% of respondents were engaged in the use of telepractice. Regarding the barriers, the highest response was that professionals need more information about this service delivery model. However, 43% the survey

respondents both audiologists and SLPs expressed interest in using telepractice in the future (ASHA, 2002). Almost ten years later in 2011 ASHA completed a membership survey and beyond other issues, two questions about telepractice included. Between 1.455 participants only 2.3% of them stated that use telepractice (ASHA, 2011).

Stellmacher (2011), investigated the perspectives of school based SLPs in Wisconsin on USA as well the perspectives of graduated and doctoral SLP students at the Wisconsin Public University. In the first part 108 school based SLPs responded to a self-administered questionnaire and 6 of them have used or currently use telepractice. Most common barriers as the participants stated were: lack of training, no need for telepractice and lack of stakeholder support.

In the second part, 103 SLP students participated in the study and a promising 41% reported exposure to telepractice in their programs, 64% stated that want to learn more and 33% they will learn more as part of their program. Based on the results of the study author concluded that there are limited SLPs that practice via telepractice and even SLP students have more educational opportunities than the practicing SLPs. In any case, still there is necessity for educational opportunities (Stellmacher, 2011).

One year after that, another research investigates the perspectives of school based SLPs on telepractice. A web based survey was conducted based on the part of the ASHA instrumental tool (survey 2002). The survey was placed in a password protected Google account, and disseminated to the 1900 members of the state's speech-language-hearing association membership listserv (electronic mailing list software applications). The responders were 175 and from them only 1.8% uses telepractice.

Regarding the use of telepractice in school settings, participants indicated the following reasons/benefits: student benefit (54), rural or other location (54), cost of travel/time (33), ease SLP shortage (30), collaboration (19), no reason to use it (15), benefits for SLPs (3), and benefits for families (1). Regarding the reasons against telepractice participants indicated the following reasons: student type/age (54), impersonal (53), lack of physical contact (24), effectiveness (23), technology standards or failures (18), lack of collaboration (15), cost (15), ethical concerns (11), lack of support (8), lack of standardized assessments (4), lack of training of SLPs (3) and family requests or lack of ability to handle telepractice (2) (Tucker, 2012).

To the authors' knowledge, there is no other study published in English or in Greek that investigates the current knowledge, use, perceptions or attitudes of SLPs in telepractice. Additionally, the author didn't succeed to find any information about the reality in Greece. Meaning that to our knowledge, there are no data that indicate the current knowledge, opinions and perspectives that Greek SLPs have in telepractice and/or the percentages of Greek SLPs that use telepractice. In general even we managed to find information about telemedicine we didn't find any information about telepractice or telespeech. Further discussion of all these studies above will take part in the fourth chapter of this study (discussion), where the results among this research and the other four will be compared.

CHAPTER II- METHODS

1. Aims of the Study and Research Questions

The purpose of this study was to investigate the current knowledge of Greek SLPs on telepractice. Aims of this study were to identify the amount of use of telepractice (experience), client's age (children/ adults) and disorder, and the type of client services (assessment/management etc.); As well as SLPs who used telepractice perceptions. It was also aimed to verify SLPs intentions (future use) and potential reasons to use it or not (benefits-barriers) as well as the differences that might exist between those SLPs who use and those who do not use telepractice also were examined (difference on: age, academic background etc.).

The research questions of this investigation as was given in Introduction were as follows:

What is the knowledge of Greek SLPs on telepractice?

What is the use (experience) of Greek SLPs on telepractice?

What are the perceptions of Greek SLPs on telepractice?

What are the intentions of Greek SLPs on telepractice?

What are the differences between those SLPs who use and those who do not use telepractice?

In this chapter the research methodology, which was used for this research project is discussed. Firstly, the research design, the instrumental tool as well as the validity and reliability of this tool are explained. Following, basic information about the participants and the study procedures, included data collection and data analyses, are outlined. At the end ethical consideration issues are described.

2. Research Design

A non experimental, transversal, descriptive method survey research design was selected for the purpose of this study. Information was collected via an online, distributed, self- administered questionnaire. The instrumental tool designed by the author and the Greek SLP Association –SELLE (Σύλλογος Επιστημών Λογοπαθολόγων Λογοθεραπευτών Ελλάδος - Association of Greek Sciences, Speech

Language Pathologists Speech Language Therapists) send the link of the survey, via newsletter to 925 members.

Non experimental methods were used to answer questions concerning the characteristics of a group of individuals. Non experimental designs provide a description of a subject population via a structured and objective gathering of information but do not have direct control over any variable in the study (Cooper & Schinder, 2001).

According to Babbie (1998) survey is the best way to collect data and describe a population that is too large for being observed directly. A survey is the collection of information on a wide range of cases (Floyd & Fowel, 2002). The survey in this study tried to include as many as possible participants in order to collect and provide plenty information and in that way to increase the reliability of the results. Specifically, the use of a descriptive survey allowed the researcher to describe the characteristics of a large number of responders and made it possible for responses to be easily gathered and counted.

Meantime, we should mention that descriptive surveys have several limitations. Beyond else, responders have limited opportunities to communicate with the researcher (Robinson & Lai, 2005) and survey methods which collect data via questionnaire can decrease the validity and reliability of the study if the questions are not well designed. Finally, this type of survey is inflexible as the questionnaire cannot be modified during the study in order to incorporate new variables (Babbie & Mouton, 2001).

This study had a single approach design which quantitative strategies were employed. Meantime, elements of qualitative research approaches were combined for the purposes of breadth and depth of understanding and corroboration (Johnson, Onwuegbuzie, & Turner 2007). The integration of quantitative and qualitative data maximizes the strengths and minimizes the weaknesses of each type of data. The integration of the data was based on embedding data, as the survey mainly composed of quantitative data and less with qualitative (Creswell & Plano Clark, 2011).

3. Instrumental Tool

The survey was created to gain demographic information as well as the participant's knowledge, use, perceptions and intentions on telepractice. For these purposes a self administered questionnaire was designed based on five basic steps: defining information needed, formulating the survey, piloting the survey, making changes as required and finally administering the survey (Pring, 2005). In this study one intermediate step before the final one was also included as the translation from English to Greek language was essential and took place in four steps as it will be explained later (WHO, 2013).

Firstly, based on literacy review the topic, the scientific questions and the population identified and targeted. Following, methodological issues and previous studies (articles and thesis) with similar topics and similar research design reviewed [Stegeman (2007); Robertson (2008); Grigsby et al., (2007) Foxcroft (2001); Schwartz & Drager (2008); Manley et al., (1991); Croteau & Vieru (2002); O'Donoghue & Dean-Claytor (2008), Deborah et al., (2007)] and non experimental, descriptive survey research design was selected.

In the second step, the questioner started to formulate in order to address the research questions. Closed- ended questions chosen for the biggest part of the survey, but semi-open questions were also included. Measurement tools were selected for the closed- ended questions and were included: multiple choice category scale (Section I questions -1, 3; section II- questions 1, 2 etc.) and a Likert scale (Section II- questions 1; section IV- question 1). Closed- ended questions and the two scales were selected by convenience as easily analyzed statistically (Jackson, 2009).

Semi - open questions were used for the participant's age, occupation's years and years of use of telepractice, in order more specific data to be collected. Semi-open questions were also used for the benefits and barriers that participants (both those who used and those who do not use telepractice) believe that telepractice have. Even these types of questions can be difficult to be analyzes statistically as the data are not uniformed and must be coded in some manner (Jackson, 2008); there were chosen because were useful for obtaining in-depth information about participant's opinions and intentions and thus allowed researchers to probe more deeply into these issues.

In the next step the details of the survey were addressed, specific attention was given to the sensitivity and bias, apprehensions were almost excluded (apart from Section I, Question 4, university types,: ATEI means the Highest Technological Education Institute and IEK means Vocational Training Institute), title formulated, provided initial directions, questions ordered and grouped and the cover letter was written (Dillman, 2000). As follows, questionnaire was translated from Greek to English based on four steps, namely: forward- translations, expert panel, backward-translations, pre-test and final version, as described by WHO (2013).

Before the description of the steps, it is important to mention that the formation of the questionnaire was a simultaneous process. As the author has Greek as mother language, but she studies in English and almost all the references that she used for this survey was in English, in reality the survey tool was designed in both languages in parallel way. However, for methodological issues and for prevention of mistakes, at the final steps of the design survey tool was formed in English and then the “four phases” process took part as described following.

Firstly, author’s four Greek colleagues (SLP) with Greek as mother tongue and with highly advanced English skills, as being familiar with the terminology were chosen for the forward translation (English to Greek). Specific instructions were given by the author which include: emphasizing on the conceptual equivalent of a word or phrase and not a word-for-word translation; fewer words are better; long sentences with many clauses should be avoided; avoid the use of any jargon; and avoid any terms that might be considered offensive to the target population (WHO, 2013).

In the second step, the author of this work and the four SLPs who translated the tool (Greek mother tongue, and highly English skills) evaluated the work in order to identify and resolve the inadequate expressions of the translation, as well as any difference between the forward translation and the original version (WHO, 2013). In the third step an independent English professor, with no knowledge of the survey tool translated back from Greek to English. The same approach and instructions as outlined in the first step were also given to the professor. The translated tool was equal to the original one so the final form was ready.

After the final form, in the third step the questionnaire was piloted in 10 SLPs via interview, that was conducted by the author. Convenience sampling were used, as all

10 participants were author's previous colleagues and fellow students. During the pilot studying information about words that participants did not understand as well as any word or expression that they found unacceptable or offensive were collected. Feedback indicated that only a few changes were necessary and the final form of the questionnaire, uploaded on the Google Drive forms and the link distributed by the Greek SLP Association SELLE in 925 Greek SLPs via newsletter.

The form of the questionnaire as had finally formed had five sections. In the first section were general questions and demographics; questions beyond else included: gender, age, highest degree, and years of employment. In the second section were questions that aimed to identify the knowledge that SLPs have on telepractice and in the third section, participants were asked about the amount of use of telepractice. In this section were also included questions regarding the client's age and disorder, and the type of client services (assessment/management etc.). This section was only for participants that already had used or they still use telepractice.

The fourth section it was also designed for SLPs that had already used telepractice and was asked them to provide their perceptions (benefits and barriers) about telepractice. The final section asked participants to provide information about their intentions on telepractice; meaning if they are planning to use telepractice in the future but as well as to give potential benefits and barriers.

Thus, the questionnaire was as follows:

Section I: General Questions- Demographics (7 questions).

Section II: Knowledge on Telepractice (2 questions).

Section III: Use of Telepractice (3 questions).

Section IV: Perspectives on Telepractice (2 questions).

Section V: Intentions of Use (2 questions).

3.1 Validity and Reliability

For a questionnaire to be characterized as a good measurement tool, it must be valid and reliable (Cooper & Schindler, 2001). Face validity, can be described as a sense that the questionnaire looks like it measures what it was intended to measure. Content

validity, refers to the degree to which the instrument in all respects assesses and measures the construct of interest (Institute for work and health, 2007). Construct validity, is the degree to which an instrument measures the theoretical construct that it is intended to measure (Miller, 2003) and criterion validity, refers to the use of a criterion to create a new measurement procedure for measuring the construct researcher are interested in (Athens Medical Society, 2012).

To ensure that questionnaire has face and content validity author examined carefully the content of the measure and the questions were phrased appropriately. The responding options checked multiple times and included items for all possible answers. In order for researcher to increase construct and criterion validity, studied and reviewed several articles and thesis with similar topics and similar research questions and she also piloted the tool. The validity further improved by ensuring that the quantitative data were collected during the research reviewed several times avoiding inaccurate reporting of the results.

Reliability in general is defined as the extent to which a questionnaire produces the same results on repeated trials (Miller, 2003). Three aspects of reliability exist; equivalence refers to the amount of agreement between two or more instruments that are administered at nearly the same point of time. Stability occurs when the same or similar scores are obtained with repeated testing with the same group of respondents (Millers, 2003) and internal consistency (or homogeneity) refers to the consistency among the questions or in other words in correlations of individuals (Institute for work and health, 2007).

In this survey researcher didn't repeat the survey mainly due to limitations of time, but also due to the extent of the work that was already considerable. The homogeneity validity was increased by the carefully literacy review, multiple stages in the creation of the instrumental tool, the corrections by the supervisor professor, and the pilot study that took part. Meantime, the validity of this study is not highly ensured and thus this is a limitation of this survey.

4. Participants

Non probability sampling method with a convenience sample was used for this survey as the participants were collected based on their membership on the Greek SLP organization SELLE.

The participants of this study were exclusive Greek SLPs, who work in Greece. Specifically, 75 Greek SLPs responded in the study and finally 74 of them were included in the survey. One of them didn't meet the criteria as he/she works in UK. The inclusion criteria were the responders to be speech language therapists and to work in Greece. Exclusion criteria stated as the opposite of the inclusion (non SLP or/and no working in Greece) as well as questionnaires that were returned after the deadline date and/or completed less than 70% of the questionnaire. Authors choose this specific percentage because the questionnaire formed by 17 questions so if a participant responded only to 6 questions (approximately -70%) the responses would be partly invalidated as not even the demographics will be completed. Analytic characteristics of the participants are presented as follows, namely: age, level of degree, institution of study, working experience, work settings and workplace. In order to facilitate the understanding of the sample, the total values as well as their distribution by gender are presented.

4.1 Characterization of the Study Sample

The sample under study consisted of 12 males and 62 females of various ages, academic background and experience. An initial descriptive statistics of the age (years) of the participants are summarized in Table 1.

Table 1- Descriptive Statistic of Age by Gender

Gender	Mean	Standard Deviation	Minimum	Maximum	Frequency
Male	31	2.7	26	36	12 (16.21)
Female	29.15	3.95	23	44	62 (83.78)
Total	29.45	3.83	23	44	74 (100)

It was observed that in the sample were people who would be characterized young, near the age of 30. Males are significantly fewer in number than females and they present a 2 year higher average age.

Descriptive statistics of qualification level by gender is presented in table 2. At the top of each cell are marked the absolute values and at the brackets are being expressed in percentage of the total sample.

Table 2- Level of Degree by Gender

Gender	Bachelor	Master	PhD	Total
Male	5 (6.76)	5 (6.76)	2 (2.7)	12 (16.22)
Female	49 (66.22)	13 (17.57)	0 (0.0)	62 (83.78)
Total	54 (72.97)	18 (24.32)	2 (2.7)	74 (100)

It seems that in males there are spread rates between the levels of Bachelor and Master and also there are two PhD holders. In females, the vast majority (66.22 % of total) holds a Bachelor degree and the rest (17.57 % of the total) are Holders of Master. If we analyze the percentages within each gender seems that in males, holders of Bachelor's and Master's represent the 42% while a 16% hold doctorate. In females these percentages are 79 % for Bachelor and 21 % for Master (and 0 % for PhD), which indicates a disparity in the study level of two genders.

The corresponding results in terms of higher education institution (University, TEI or abroad) per gender are outlined in Table 3.

Table 3- Institution of Study by Gender

Gender	Abroad	University	ATEI	Total
Male	1 (1.35)	5 (6.76)	6 (8.11)	12 (16.21)
Female	8 (10.81)	4 (5.41)	50 (67.57)	62 (86.48)
Total	9 (12.16)	9 (12.16)	56 (75.68)	74 (100)

The results show a similar pattern to previous, as indicated in Table 2. Namely, males' degrees are divided between University and ATEI. The majority of female's has ATEI degree (67.57 % of the total, or about 81 % only in females), followed by degrees from institutions abroad with percentage 10.81 % of the total or around 13% in females. Overall, 75.68 % hold a bachelor degree from ATEI with the rest equally divided in University and foreign bodies (from 12.16 %).

The following table illustrates the years of working experience by gender.

Table 4- Working Experience by Gender

Gender	0-5 years	6-10 years	Over 11 years	Means	SD	Frequency
Males	6 (8.10)	5 (6.75)	1 (1.35)	6.5	3.20	12 (16.21)
Females	35 (47.29)	23 (31.08)	4 (5.40)	5.5	3.54	62 (83.78)
Total	41 (55.40)	28 (37.83)	5 (6.75)	5.35	3.59	74 (100)

The results show that the average experience years are quite low to average 5.35 for both genders. The results in a way come in agreement with the average age of the participants, who are quite young.

The corresponding results in terms of work settings by gender are outlined in Table 5.

Table 5 - Work Settings by Gender

Gender	Clinic	Diagnostic Center	Hospital	Private Office	Uni/sity	School	Sessions at Home	Special School	Student Not working	Total
Males	1 (1.1)	0 (0.0)	1 (1.14)	9 (10.34)	2 (2.29)	1 (1.14)	2 (2.29)	1 (1.14)	1 (1.14)	19 (21.8)

Females	2 (2.2)	2 (2.29)	1 (1.14)	51 (58.62)	1 (1.14)	2 (2.29)	5 (5.74)	2 (2.29)	3 (3.44)	68 (78.1)
Total	3 (3.4)	2 (2.29)	2 (2.29)	60 (68.96)	3 (3.44)	3 (3.44)	7 (8.77)	3 (3.44)	4 (4.59)	87 (100)

The majority of the participants, for both genders, work in private offices (68.9% of total). The second most popular work setting is the session at home, which still has a big difference with the first one with 8.77% of the total. Universities, clinics, schools, special schools and diagnostic centers share almost the same views. In addition 4 participants (1 male and 3 females) do not work due to studying or other conditions. As it was observed the total responses were more than 74, as several participants indicated more than one work settings.

Completing the piece of descriptive statistics, indicate the workplace of participants by gender in Table 6.

Table 6- Workplace by Gender

Gender	Attica	Thessaloniki	Achaia	Larisa	Other
Male	5 (6.76)	0 (0.00)	1 (1.35)	0 (0.00)	6 (8.11)
Female	34 (45.95)	3 (4.05)	5 (6.76)	2 (2.70)	18 (24.32)
Total	39 (52.70)	3 (4.05)	6 (8.11)	2 (2.70)	24 (32.43)

It was observed that almost half of the speech language therapists working in Attica and immediately after in the province as indicated by the category “Other”.

5. Research Procedures

This research was conducted using systematic methods to ensure that the information obtained were reasonable. Hierarchically the author followed: literacy review and identification of the problem, research design and instrumentation, data collection, analyses of data and results, discussion and conclusions. Research design and

instrumentation were described above and data collection and analysis will be described as follows. Results, discussion and conclusions were presented respectively in the third, fourth and in the final chapters of this work.

5.1 Data Collection

Participants were recruited based on membership with the Greek SLP association. Author contacted the Greek SLP association SELLE (Σύλλογος Επιστημών Λογοπαθολόγων Λογοθεραπευτών Ελλάδος) and after explaining them the purposes of the study asked them to provide help and become the mediator between the researcher and the participants. Finally, the link to the online survey sent to (925) members, all over the country with a return rate of 8%. The link sent via newsletter on the 13rd of February and one month after that on the 13rd of March the survey ended.

5.2 Data analyses

Quantitative data were analyzed via the use of Statistical Package for the Social Sciences – IBM® SPSS® for Windows, version 17.0. Initially, in order to describe and characterize the sample, a descriptive analysis of the data, depending on the nature of the variables under study was taken. The following measures were calculated: absolute frequency (number of valid cases - No.); relative frequencies (percentage of valid cases -%); Descriptive statistics of central tendency (mean, median); dispersion (standard deviation); and yet, for some situations, the extreme values (minimum and maximum). In multiple response questions, the response rates presented (% of cases), are relative to the total number of valid cases. The second step involved the analysis of relationships between variables. For group's comparison, the Fisher's Exact Test or the Pearson chi –square Test were used when the responses were until 5 or more than 5 respectively.

All tests were applied with a confidence level of 95%, unless otherwise clearly marked, being the minimum level of statistical significance adopted from .05 ($p < 0.05$), and statistical significance values.

Qualitative data analysis involved the use of Content analysis as a method of analyzing the written, communication messages (Cole 1988) collected by the participants. As we didn't have enough data about the perceptions that SLPs have on telepractice and especially in Greece we used the inductive approach as recommended

by Lauri & Kynga's (2005). The three main phases that followed were: preparation, organization and reporting.

The preparation phase starts with selecting the unit of analysis (McCain 1988, Cavanagh 1997, Guthrie et al. 2004). In this study the unit of analysis was the main idea. Following, author tried to obtain a sense of whole data as was given by the participants (Tesch 1990, Burnard 1991). In the second phase qualitative organized by the author in three basic steps: open coding (notes and headings are written), creating categories and abstraction (formulating a general description of the research topic through generating categories (Robson 1993). In this study some categories were created, and then some of them were subsequently adjusted in sub-categories, because they were closely related. Finally, the results are given in the next chapter of this work.

6. Ethical Considerations

The aim of ethics in research is to ensure that no one is harmed or suffers any adverse consequences as a result of the research activities (Cooper & Schindler, 2001). The researcher, for this study received ethical clearance (at 17/12/2013) from the Ethics Committee of the University of Fernando Pessoa prior to the commencement of the study (see Appendix 1).

Survey research demands interaction with other individuals, which has the potential for a conflict of interests, therefore certain ethical considerations must be taken into account. Ethical issues that need to be considered include voluntary participation, protection from harm, anonymity, confidentiality and honesty with responders as well as with colleagues (Babbie & Mouton, 2001).

In this study all the previous elements were addressed. Specifically, author hadn't any personal data of the participants as the association sends the link via the newsletter and the author received only the responses via the Google Drive. It was individuals' choice if they wanted to complete the survey or not and this was clearly stated in the convey letter of the survey (see Appendix 2). It was also clearly stated the assurance of anonymity and confidentiality of data.

Apart from demographic characteristics and academic background (degree and type of university) no other personal data were asked from the responders. As the responder's names were unknown, questionnaires were placed in files and were

allocated based on numbers given by the researcher. In this study the risk associated with any harm was extremely limited, but questionnaires were extremely carefully designed in order to avoid feelings like embarrassment or loss of privacy during the research (Cooper & Schindler, 2001).

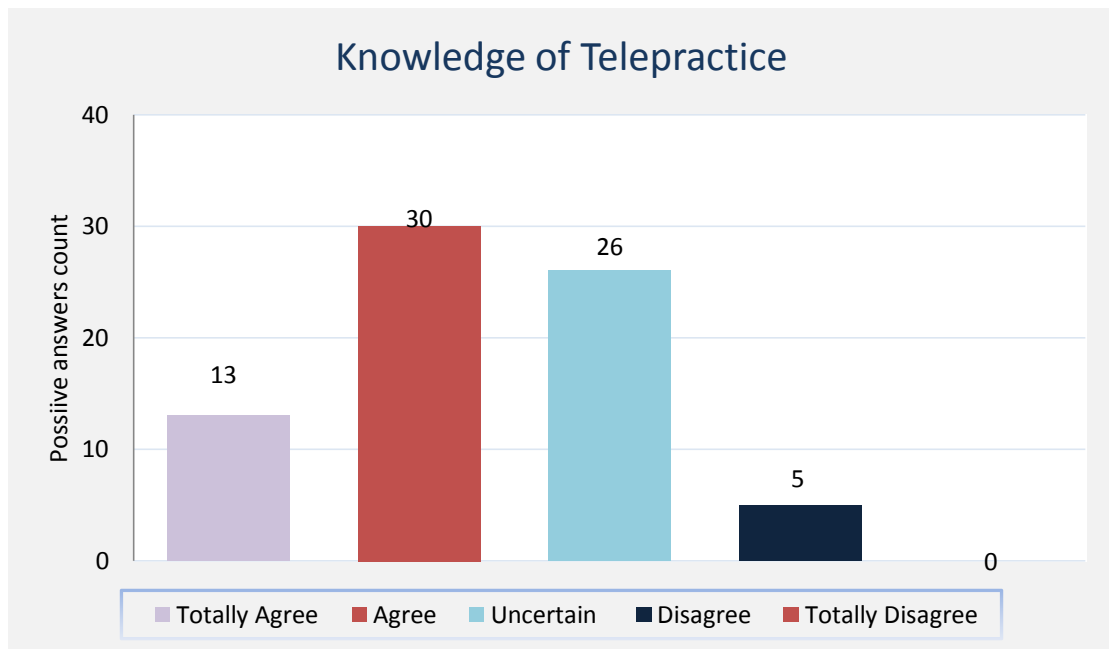
CHAPTER III- RESULTS

In this chapter graphs and tables are utilized to display the results of the study. The results described in this chapter are organized according to the stated research questions and the aims of this study as they were presented in previous chapters.

1. Knowledge of Telepractice

Knowledge of Greek SLPs on Telepractice was examined in two aspects: the identification of their knowledge level, as well as the identification of sources of knowledge related to this topic.

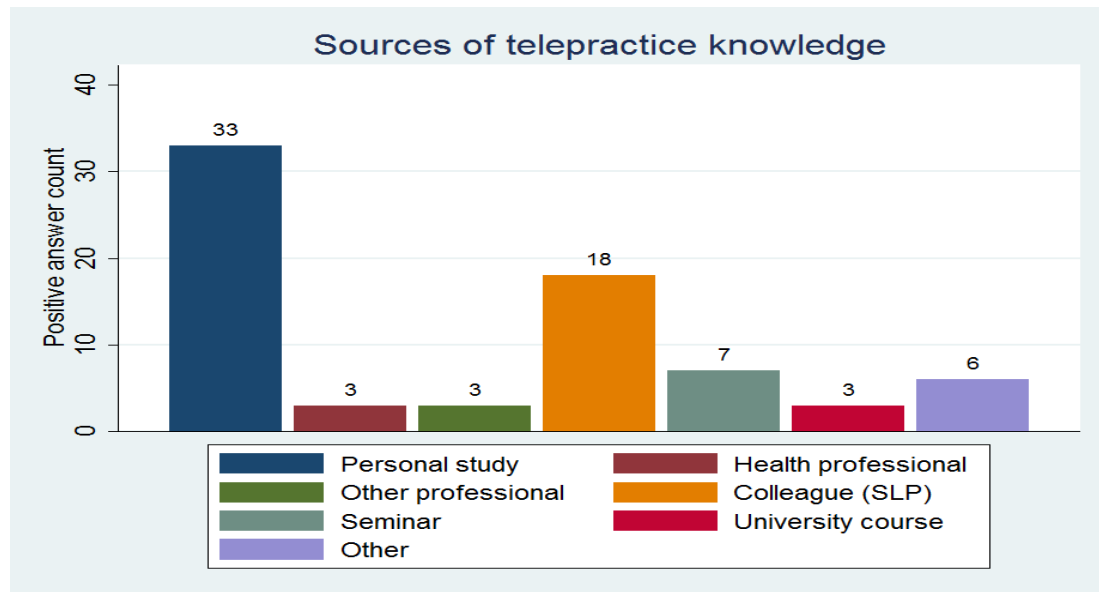
Knowledge of Greek SLPs about telepractice is illustrated in Graph 1.



Graph 1- Knowledge of Telepractice

In total 43 from 74 participants (58.10%) stated that know what telepractice is (30 statements of agreement and 13 statement of total agreement) and one third of the sample was uncertain (35.13%) about it. Five SLPs did not know what telepractice is but they still did not totally disagree with the statement.

Graph 2 illustrates the sources of telepractice knowledge.



Graph 2- Sources of Telepractice Knowledge

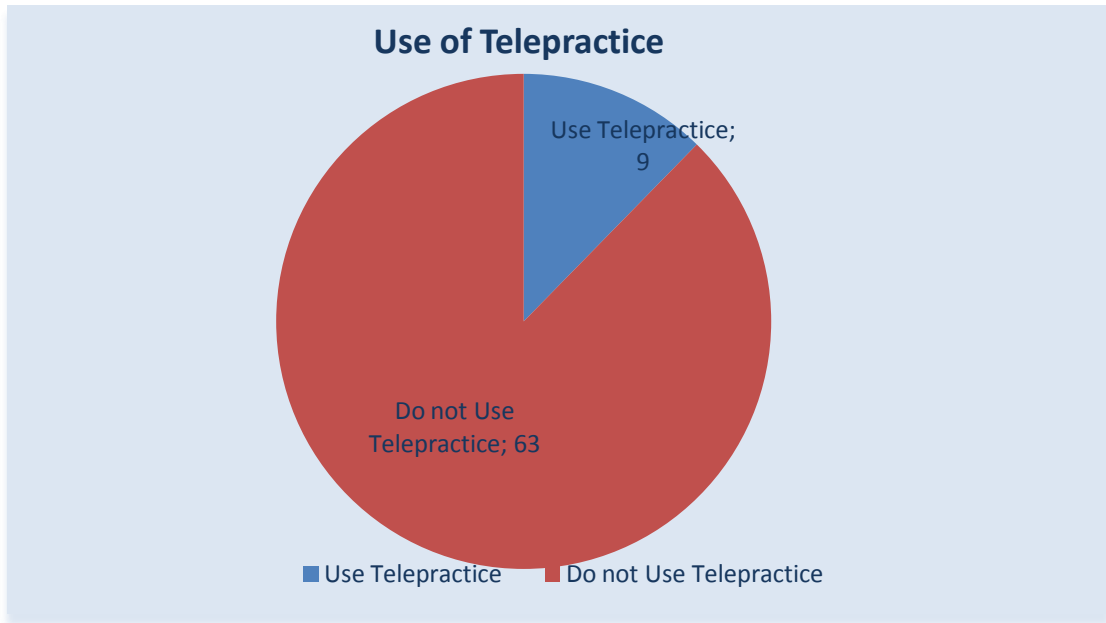
The main source of acquiring knowledge about telepractice was the personal study (33 positive responses). The second source was the knowledge gathering from another colleague (18 positive responses). Following, sources of knowledge were the seminars (7 positive responses) and “other” sources (6 positive responses). Lower classified sources were: from other health professionals or other professionals in general and from University courses with each of them gathering three positive responses.

At that moment it should be noted that many responders indicated more than one source of knowledge. (participant 13: From another colleague (SLP), Personal study (articles, books, etc.)) and therefore the answers were cumulative over the crowd of the participants who stated that they know about telepractice. In addition, we have to specify that in Greece, Higher Tertiary Education is provided by Universities, Highest Technological Educational Institutes (ATEI) and Academies which primarily cater for the military and the clergy. In the meantime, all of them can be called “Πανεπιστήμιον” meaning “University”. Thus, in the option listed as: “from University Course” all the above options are included.

2. Use of Telepractice

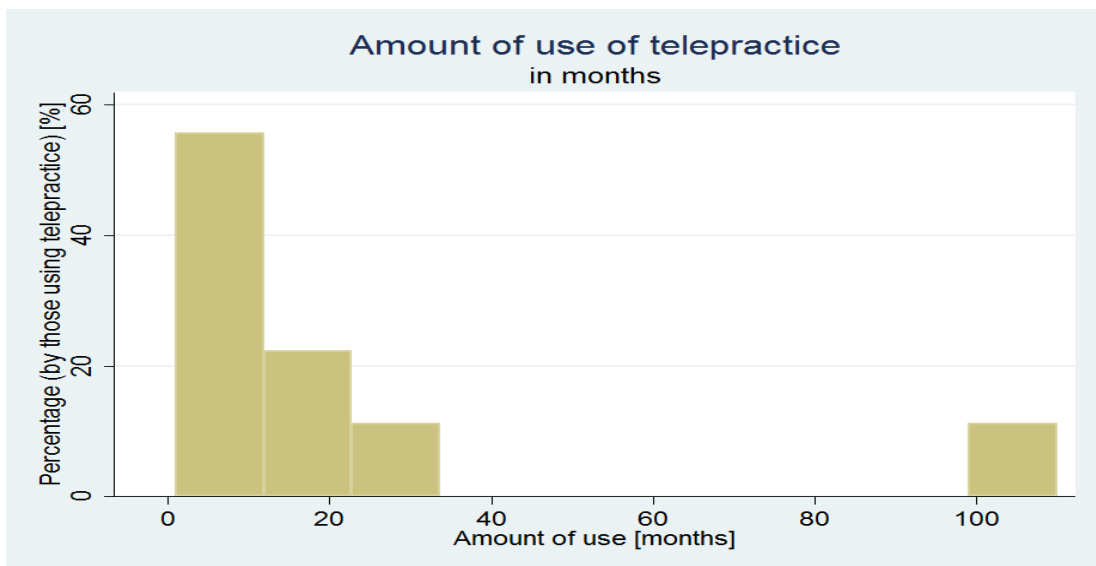
The use of Greek SLPs on Telepractice was examined in two aspects: the percentage of use in total and the amount of use per years. In addition, client's age and client's disorder were examined as well.

Graph 3 shows the use of telepractice.



Graph 3- Use of Telepractice

It is observed that 9 from the 74 participants have used or currently use telepractice. The following graph shows the amount of telepractice's use by months.



Graph 4- Use of Telepractice in Months

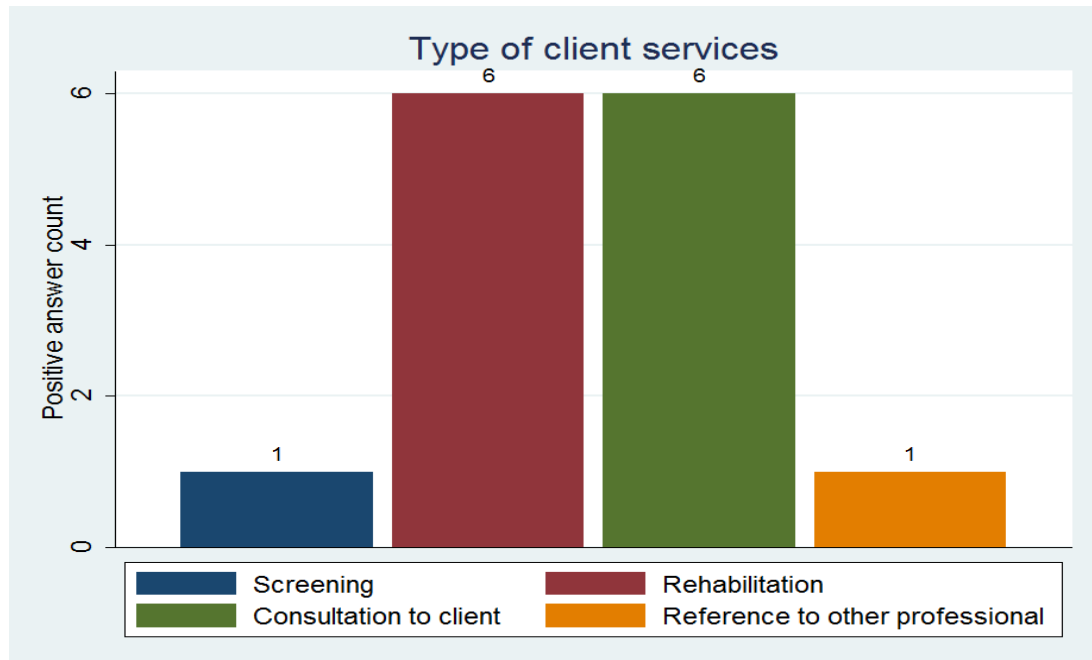
As it is apparent, the frequent use of telepractice’s duration was less than 10 months, and certainly under 40 months. There was an extreme case of an experience longer than 100 months. The following stem and leaf diagram can reflect more detailed information of Graphic 4.

```

0** | 01,04,04,07,11,13,19
0** | 24
0** |
0** |
0** |
0** |
1** | 110
    
```

Reading the results of the stem and leaf diagram is observed that 7 participants have experienced up to 19 months. Specifically, two participants have experience of 4 months and remaining 5 participants having from 1,7, 11, 13 and 19 months respectively. Also, one of them has 24 months experience and finally one participant 110 months.

The type of services provided to patients is illustrated in Graphic 5.

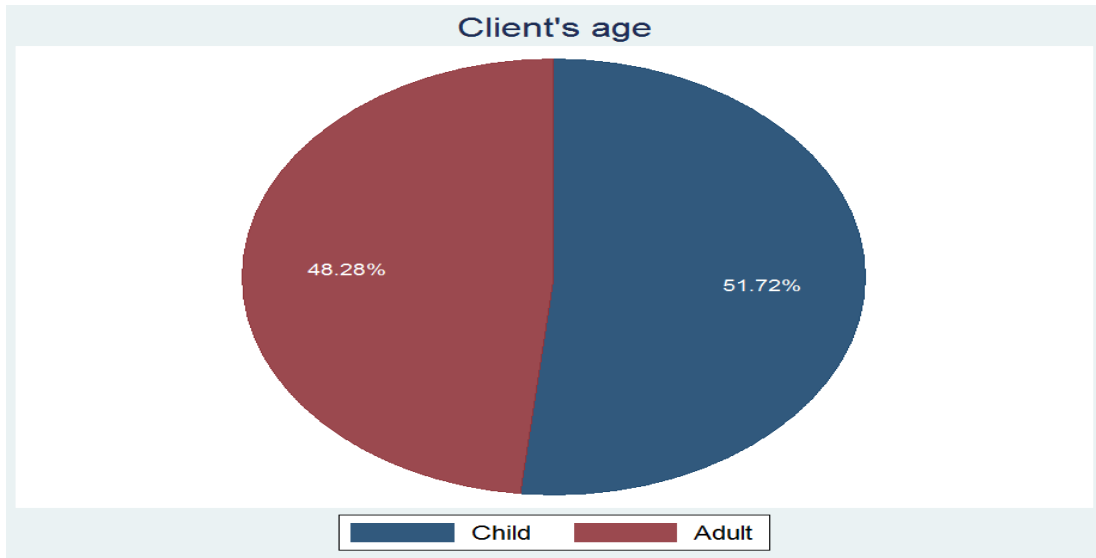


Graph 5- Type of Services

The two most frequent types of services provided through telepractice were: consultation and treatment (rehabilitation) with 7 and 6 views each. Significantly less

was the reference to other professional and the screening with 1 view each.

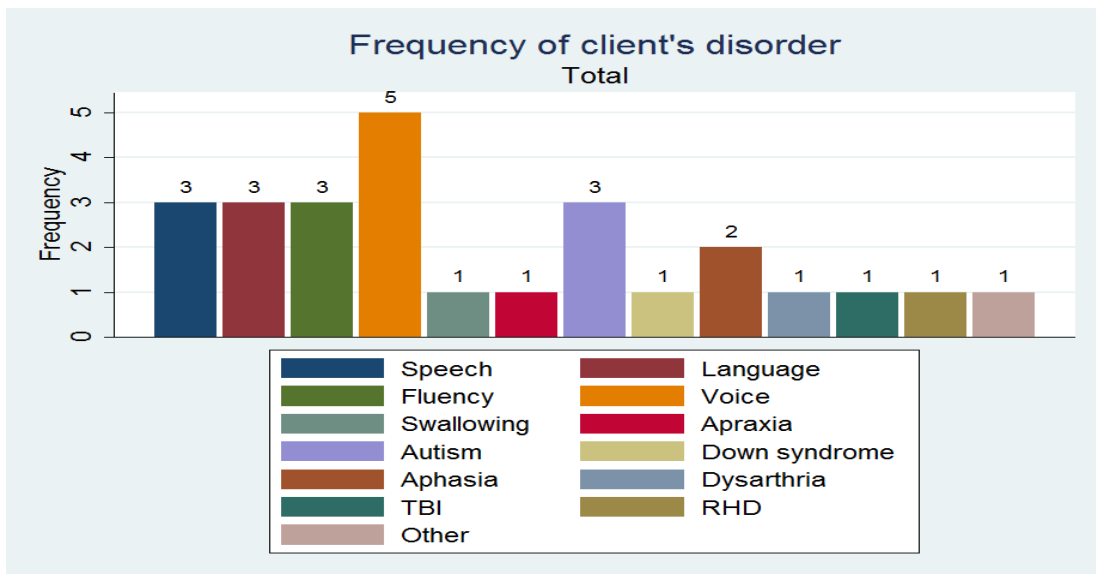
The age of patients is divided into 2 groups, in children and adults.



Graph 6- Client's Age

The cases where the client was an adult were slightly lower than those relating to a child. Specifically, there were 15 children's cases against 14 adults or 51.72% and 48.28%, respectively (Graph6).

Graph 7 summarize the disorders in which telepractice has been used.

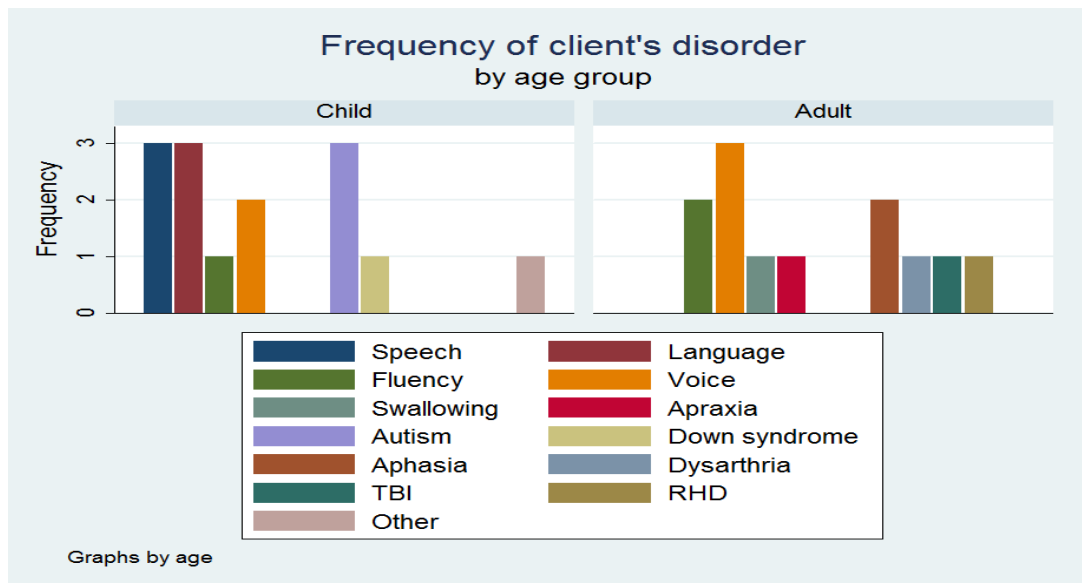


Graph 7- Disorders which Telepractice Used

Something that is observed was a relatively large range of disorders in which

telepractice applied. It frequently applied in cases of voice disorders (5 cases) and quite often in speech, language and fluency disorders, as well as in autism (3 case each). In addition, 2 times it was applied to aphasia and in all other disorders was applied once.

There is interest in the analysis of the previous results relating to the age group, below in Graphic 8.



Graph 8- Disorders by Age Group

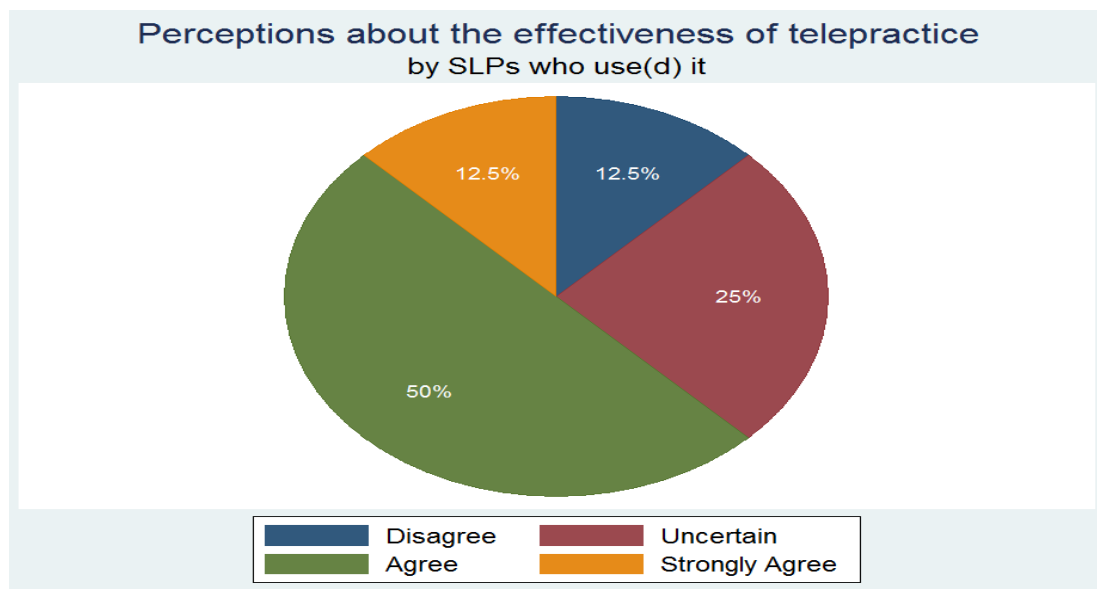
It is remarkable (and probably expected) that some disorders displayed more often in children and some others in adults .It must be noted here that the term "displayed" is not referred to the onset of a disorder, but that in the specific disorders telepractice was used. Thus, in children telepractice often used for speech disorders, language disorders and autism (3 views), while in adults was used often for voice disorders (3 views).

Second disorder (according to the frequency of telepractice use to deal with it) was the “voice disorders” in children (2 views). While for adults were the fluency disorders and the aphasia (2 times). In addition, swallowing disorders, apraxia, dysarthria, TBI and RHD displayed once in adults and not at all in children. Similarly, in children appeared once Down syndrome, something that did not appear in adults.

3. Perceptions of Telepractice Use

The perceptions of Greek SLPs of telepractice were examined firstly in the aspect of effectiveness and as follows in the aspect of potential benefits and barriers. The sample was subdivided in users and non users and each group was presented differently. The presentation of the results was based in the sequence that questions listed on the instrumental tool (Appendix 3).

The perceptions about the effectiveness of telepractice, based on speech language therapists who have used it are reflected in Graphic 9.



Graph 9- Perceptions about the Effectiveness of Telepractice

It is observed that 62.5% of those who have used telepractice perceived telepractice as an effective method. A 25% were uncertain and finally a 12.5% found it ineffective.

The benefits and the limitations of telepractice as given by those SLPs who have used telepractice were illustrated in table 7 and 8 respectively.

Table 7 - Benefits of Telepractice (SLPs who use it)

Categories	Subcategories	Responses	Examples
1. Remote Areas-Distance		6	<i>Helping people living in remote areas, without a speech therapist (pr 698).</i>
2. Economical Solution	i. Cost ii. Time	6	<i>More income with minimum cost (for the SLT) (pr 12). Flexibility and time saving (pr 24).</i>
3. Field's Benefits	i. Alternative ii. Growth iii. Promote Sciences	3	<i>Dynamic growth and in other cities (pr 12). Promote sciences (pr 23). Alternative method (pr 28).</i>
4. Client's Benefits	i. Mobility ii. Embarrassment	2	<i>Facilitate/Help patient / client with mobility disabilities or difficulties due to distance (pr 23). It possibly reduces embarrassment that some patients may feel during the first sessions (pr 56).</i>
5. SLP's Benefits	i. Distance-Learning ii. Experience	2	<i>Distance learning (pr 28). Experiences (pr 28).</i>

Table 7 illustrates the benefits of telepractice as given by the SLP users. The benefit that collected the most responses was the provision of services in remote areas (mainly islands and villages) as well as the elimination of distance between client and clinician (6 responses). Both referred to the same idea that underline that distance cannot be a problem anymore. Second category with equal responses with the first (6) was related to economical issues, which includes the reduced cost and the time saving due to transportation, as well as due to a possible lower session cost.

Following, all the other categories replaced three or less times by the participants. The majority referred to the SLP field. The subcategories were “growth of the field”, “science promotion” and “alternative method”. In all three subcategories, participants indicated a similar idea that underline that via telepractice speech language therapy field introduces a new era of practice.

The rest categories referred to the client’s benefits or to the SLP’s benefits via telepractice, with equal responses (2). In the first case, the subcategories were: “mobility impairments” or “embarrassment”. In other words telepractice can be beneficial for patients with mobility impairments or similar conditions as well as for patients who feel more comfortable in their houses and may feel embarrassment if they visit the clinician in his office, as stated by the participants.

In the other case, participants indicated as well two subcategories. The first one is the distance learning and the second the “experience”. In this last subcategory it was understood that participant probably means that clinicians earn experience due to increase clientele or due to clinical practice through a different service delivery model.

Table 8 - Limitations of Telepractice (SLPs who use it)

Categories	Subcategories	Responses	Examples
1. SLPs Practical Limitations	i. Techniques Exercises ii. Material iii. Poor Practice iv. Restricted Age and Disorders	9	<i>Possible poor assessment at all stages of evaluation and treatment (e.g. Misdiagnosed short tether to an articulation problem or alteration of voice quality in a dysphonia (participant 56). Restricted disorders and age group (pr 73).</i>
2. Relationship Contact –Indirectness		6	<i>Lack of physical human contact, an element that it may be significant to the Greek society (pr 56).</i>
3. Tech Problems		4	<i>Poor connection (Participant means Internet connection) (pr 28).</i>

4. Other Limitations	i.Control ii.Movement	3	<i>As relates specifically to the children, they work better and following rules/directions outside of their place ,(speech language therapy is the science of communication verbal and not, and this in the narrow confines of the computer screen , sitting in a chair in a row is only a small part of language use) (Pr 67). Lack of moving freely (pr 28)</i>
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The first category was referred to the practical limitations for the SLPs (9 responses); the limited range of exercises that can be applied via telepractice, the poor practice, meaning the limited clinical procedures like assessment, and the restricted age and disorders included in this category. In this last subcategory participants underlined that it is difficult or impossible to use telepractice to all clients or disorders.

The second limitation as is given by the SLPs users were the indirectness, the lack of physical contact between client and clinician and the poor therapeutic relationship (6 responses). All the above ideas included in the same category as were similar and all of them underline that as client and clinicians are not in the same room their contact is limited.

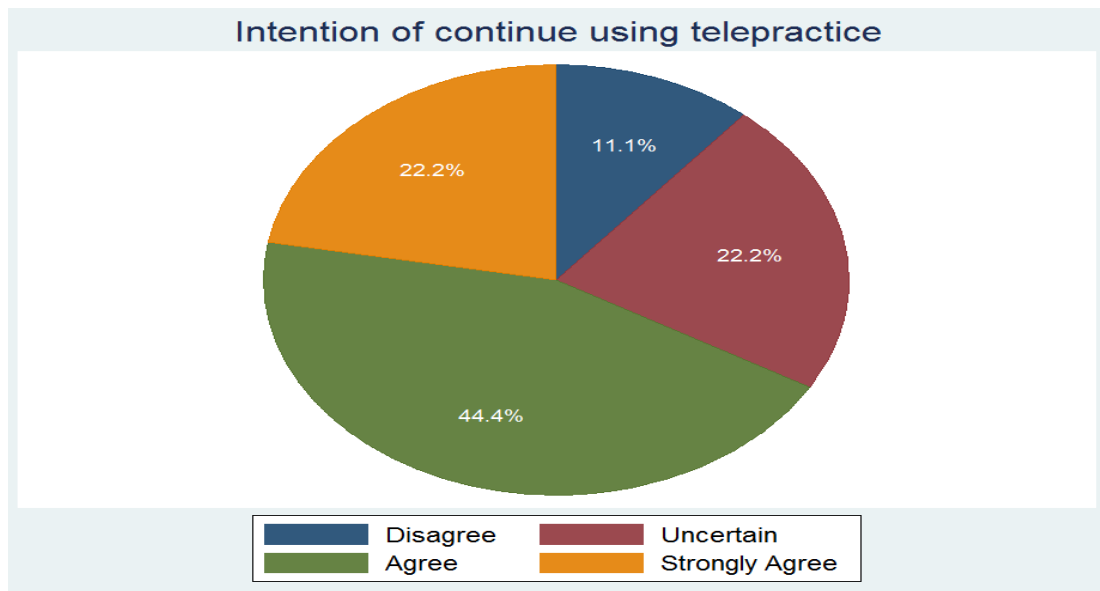
A technological problem that may arise was third in the list (4 responses). In this category, poor Internet connection and the necessity of computer knowledge were included (participant 24: “The patient must know the use of computers”).

Last classified limitation according to the ideas that SLPs gave was the lack of movements as both client and clinician have to stay during all the session in front of the screen and the limited control that clients have on clinicians, as he/she at home. Both of them listed in the category “other limitations”.

4.Intentions of Telepractice Use

The intentions of Greek SLPs on telepractice were examined based on their willingness to continue use it or to use it in the future, in case of users and non users respectively. In this part potential the potential benefits and barriers of telepractice as given by the non users were presented as well.

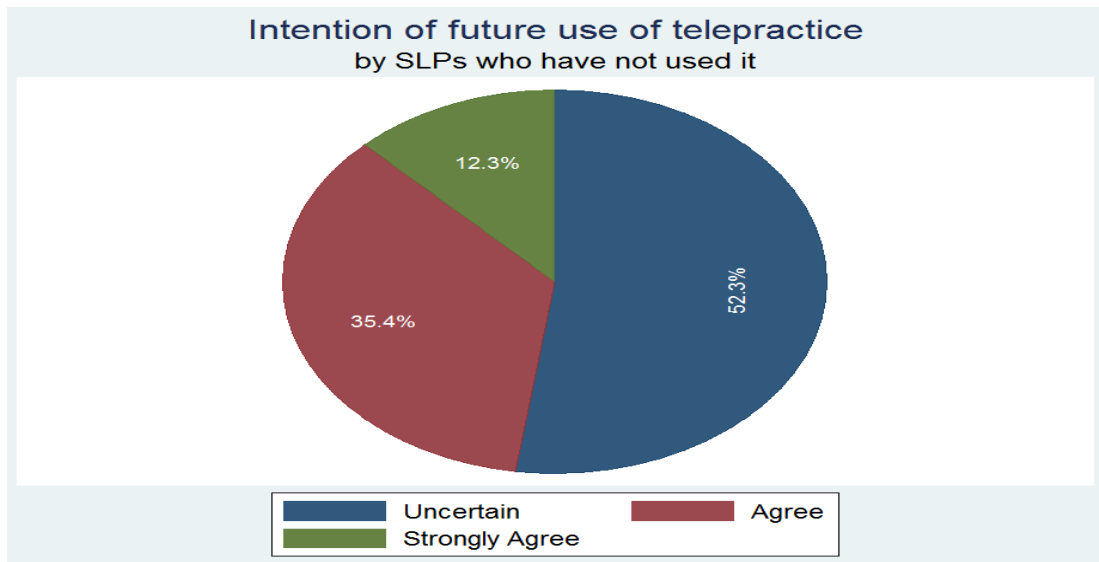
The intention of continuing to use telepractice is below.



Graph 10- Intention of Continuing Use Telepractice

The results were positive for the intention of continuing the use of telepractice. Specifically 66.6% stated that intent to continue use it while 22.2% were uncertain. Finally, 11.1% were negative in the future use of telepractice.

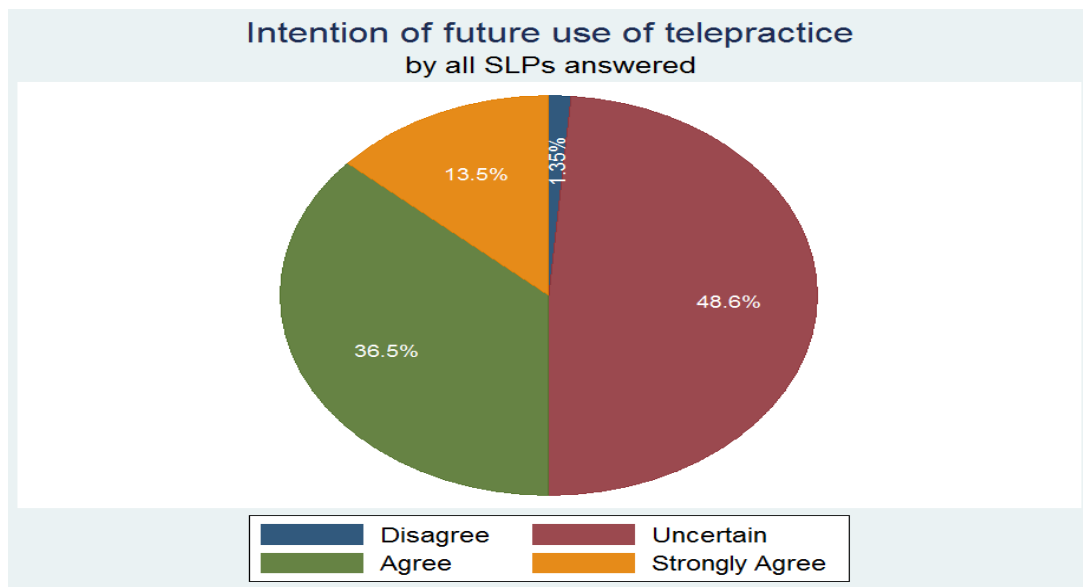
The intention of the use of telepractice of these clinicians who do not yet use it is illustrated in Graph 11.



Graph 11- Intention of Future Use (SLPs who do not use it)

The results were almost equal in the middle. That means that 52.3% were uncertain and the remaining 47.3% were positive to very positive in using it. It is important that there was not even one negative response.

If we include in the results and the responses of those speech language therapists, who already use telepractice the “image” will be reversed.



Graph 12
Intention of Future Use (by all SLPs)

A little less than half (48.6 %) were unsure and exactly half positive to very positive (50%). Plus 1.35 % occurs which has a negative view on the future use of telepractice.

Finally, table 9 and 10 illustrates the potential benefits and limitations of telepractice as given by the non users.

Table 9- Benefits of telepractice (SLPs who do not use it)

Categories	Subcategories	Responses	Examples
A. Client's Benefits	1. Mobility Impairments 2. Comfort Environment & Involvement 3. Enjoyable 4. Observation 5. Selection of any SLP	58	<i>Useful for clients with mobility impairments (pr 7). Sessions take place in patient's home so he may feel more comfortable (pr 14). Kids get excited about computers and probably the sessions will be more enjoyable for them (pr 51). Very good method for observing (the client) secondary behaviors in cases of fluency disorders (pr 41). The possibility of a parent to choose the speech language therapist who wants independently of how far he is (pr 43).</i>
B. Remote Areas-Distance		41	<i>Help people in remote areas(pr 10).</i>
C. Economical Solution	1. Cost 2. Time	40	<i>It may be a more economical solution (pr 29). Save time due to transportation (pr 38).</i>
D. SLPs Benefits	1. Easy Procedures-Follow up 2. Immediacy-Prevention 3. E supervision – 4. Seminars v. Easy sessions 5.SLP comfort vii.Clients number	33	<i>Easier reassessments (pr 5). Prevention of emotional disorders arising from speech and language disorders that have not been treated on time (pr 42). Counseling/Supervision to speech language therapist by leading to the object colleagues (pr 31). The possibility for more</i>

			<i>sessions/ repetitions in a given time (pr 6). Flexible working hours (pr 65). Increased the number of the clients independently of the location (pr 3).</i>
E. Field Benefit	1. New Technologies 2. Innovative	2	<i>Adoption of new technologies (pr 30)</i>

The highest category on the list was the client's benefits (59 responses), were 5 subcategories included: comfortable environment and direct involvement of the caregivers in the SLP sessions, the possibility of selection on any clinician regardless of the city who works, the observation of client faces, especially in cases of fluency disorders and the "enjoyable" sessions, meaning that plenty of people likes technology and the material that can be found is better (participant 57: More interesting and educational material can be used for children).

For those ideas, specific attention, has to be addressed in the idea listed as "observation". Here, participants gave a very interesting aspect of telepractice; that in a way comes in contrast with a limitation listed below as "pragmatics". In the first case, the use of telepractice perceived as beneficial for some cases, like fluency disorders, as clients can see their faces on the screen and in that way they observe their secondary behaviors. In the second case (pragmatics), the participants indicated that via a teleconference tool clients cannot achieve eye contact, thus this is a limitation.

Second category on the list was the provision of services in remote areas and the elimination of distance (41 responses) and with only one response less listed the category "economical solution" where the subcategories "reduced cost" and "time saving" were included.

As follows with 33 responses came the SLPs benefit were participants indicated plenty ideas. From the above ideas it is really interesting to analyze further few of

them, as the rest are easily understood from the examples. Firstly, in “immediacy and prevention”, participants illustrated an aspect of telepractice that we didn’t find in the bibliography. Specifically, they point out that telepractice can be a direct and quick way to do a screening or an assessment and in that way to prevent some conditions that can be arise from a specific disorder (... and the sessions take place immediately, participant 71).

In addition, the subcategory “easy sessions”, illustrated more than one idea that all together lead to the conclusion that some SLPs perceive that via telepractice the sessions can carry out easier (...sessions can be broken up into smaller sessions, participant 64).

Finally, the benefits for the SLP field listed last with only two responses. Here another interesting and unexpected idea was that telepractice is innovative and introduces both clinicians and clients in new technologies.

Table 10- Limitations of Telepractice (SLPs who do not use it)

Categories	Subcategories	Responses	Examples
A. Physical Contact-Relationship and Indirectness		60	<i>It is difficult to develop a proper relationship between client-clinician (pr 3). No physical contact (pr 9). Lose personal contact with patients (pr 59).</i>
B. Cincian’s Practical Limitations and Professional Issues	1. Clients Disorder 2.Techniques-Exercises 3.Poor Practice	45	<i>It cannot cover a wide range of disorders (autism, SLI, etc) (pr 29). Difficulty in maneuvers/exercises that requires touch (pr59). Risk of inadvertent mistakes (by the clinician)(pr20). Clinician is tens to become counselor (pr 64).</i>
C. Tech problems		27	<i>Incomplete software for telepractice session (pr34).</i>
D. Clients Practical Issues	1.Distraction-Attention 2.Pragmatics 3.Game	20	<i>The stimuli that a child may has, in front of a computer, can distract his attention more easily (pr 40).</i>

	Activities		<i>Difficult to achieve eye contact (pr 33). Clients miss the concept of game during the sessions (pr 17).</i>
E. Attitudes	1.Unknown 2.Difficult 3.Willingness	15	<i>Unknown to the most people (pr44). The willingness of parents to be directly involved in treatment process (pr 65).</i>

The first limitation (category A) given by the non users with very high response rate was the poor relationship, the poor physical contact and the indirectness (60 views).

As follows, participants illustrated the possible limitations from the clinician’s perspective (45 views). They indicated the limited exercises and procedures that they can apply as well as the limitation on the age and disorder that clients experience. In addition, in this category ethical and professional issues included (category B). This idea, was given only from one participant (of all), who stated: “Ethical issues that may arise in cases that telepractice used by people who do not have proper training” (participant 36).

Following in the list (category C) were the technological problems (27 views), that beyond else include Internet connection [(participant 14: Technical problems (e.g. Poor Internet connection) can intervene during the sessions so session's flow cannot be guaranteed 100%.)], poor audio and visual quality (participant 19: Technical problems - audio-video) and poor knowledge of computer use (participant 16: in Greece computer is not well known in older people).

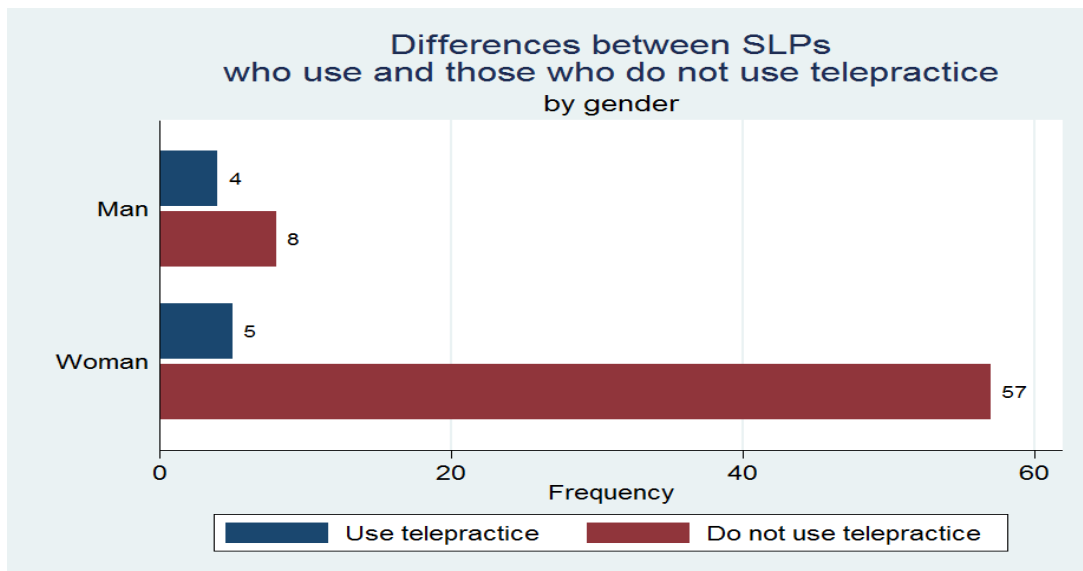
From the client ’ s perspective (category D, 20 views), those limitations that underlined were the distraction and attention that a patient can have in front of a computer, the willingness to involve in telepractice issues and the limitation in game activities, meaning that kids cannot play during the session. Finally, there is one last category that can be referred to both clients and clinicians and it is related to the attitudes regarding telepractice (15 views).

5. Differences between Those who Use and Those who Don't

It is interesting to investigate the differences between the speech language therapists who have an experience on telepractice and those who have not used it yet. Since only one person has clearly a negative attitude (Graph 9) will be included in the group of those who are uncertain. Thus, any difference between those who are positive to very positive and those who are unsure or negative was examined.

The differences between these two subcategories (positive on telepractice and negative or unsure on telepractice) were examined based on the following aspects: gender, age group, degree level, institution, qualification year, work settings and workplace.

The correlation between gender and use of telepractice is below.



Graph 13- Use of Telepractice by Gender

The number of SLPs who have used telepractice was almost identical for the two genders. It is important, though the fact that all males are much less than females, as seen by those participants who do not use telepractice.

Statistical control of Fisher for a correlation between two categorical variables was preferred against the χ^2 statistical test because there are a smaller number of 5 observations (in the case of males using telepractice) and it is known that this control is appropriate for such cases. The results are summarized in Table 11.

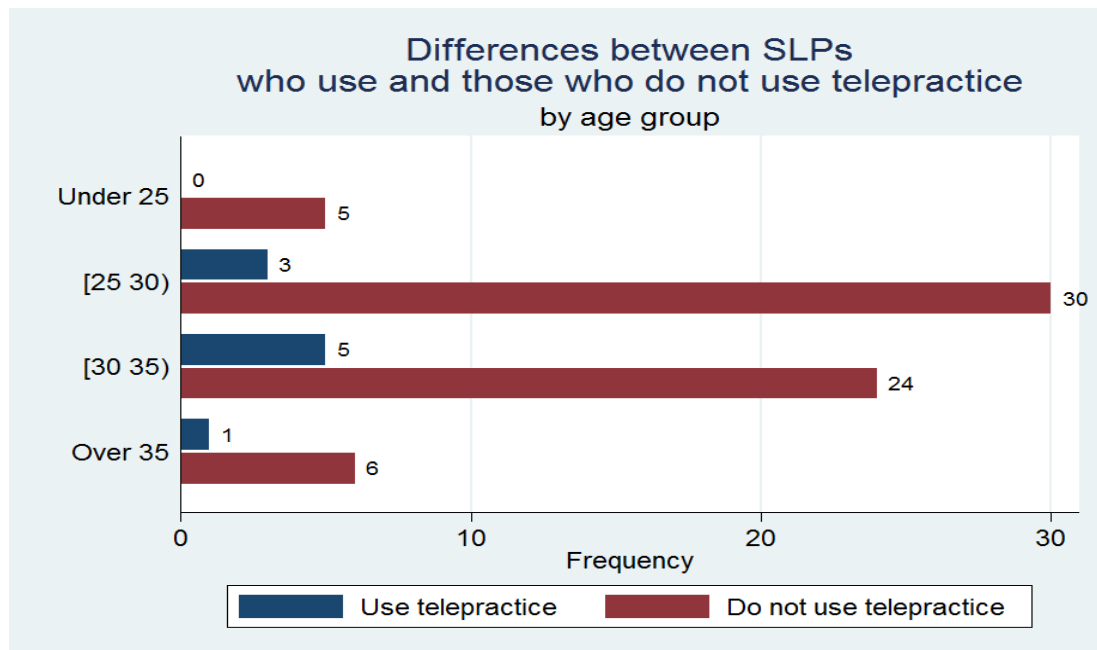
Table 11- Correlation between Use of Telepractice and Gender

Gender	Do not use	Use	Total
Male	8 (10.81)	4 (0.54)	12 (16.21)
Female	57 (77.02)	5 (0.67)	62 (83.78)
Total	65 (87.83)	9 (12.16)	74 (100)

Fisher's exact = 0.033

The value of the test was less than **0.05** so it may be said that there is a statistically significant correlation between gender and the use of telepractice. Specifically, it seems that females tend to use telepractice less than males.

Dividing the population of speech language therapists in 4 age groups (under 25, 25 to 30, 30 to 35 and above 35) the results were as follows:



Graph 14- Telepractice use by Age Group

From graphic 14 there was evidence that the age group which tends to use more telepractice is from 25 to 35 years. However, at the same time, the same age group indicated that they didn't use telepractice. Statistical control Fisher gave a quantitative answer.

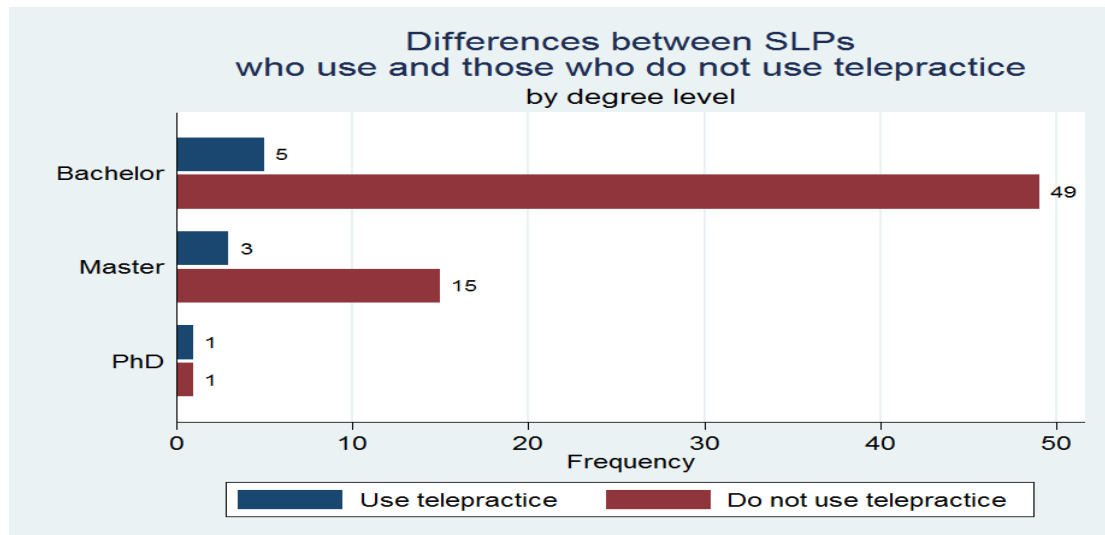
Table 12- Correlation between Use of Telepractice and Age Group

Aged group	Do not use	Use	Total
Under 25	5 (0.67)	0 (0.0)	5 (0.67)
[25 30)	30 (40.54)	3 (0.40)	33 (44.59)
[30 35)	24 (32.43)	5 (0.67)	29 (32.43)
Above 35	6 (0.81)	1 (0.13)	7 (0.94)
Total	65 (87.83)	9 (12.16)	74 (100)

Fisher's exact = 0.697

The result indicated that the control cannot be argued that there was a statistically relation between use of telepractice and the age group of the SLPs. This was probably due to the fact that in the two age groups covering the range from 25 to 35 were the most participants (table 1). Thus, it is expected that those who have used and those who did not use telepractice, to be in that group and not for any other reasons.

As follows, the differences depending on the level of the degree of speech language therapists are examined.



Graph 15- Telepractice use by Degree Level

The results shown that most users (or not) of telepractice hold a Bachelor and then a Master degree. Still, as it can be seen in Table 2 these two categories account for 87.3% of all participants, so it was expected the most of the answers to placed there. The Fisher statistical test helped to clarify the picture.

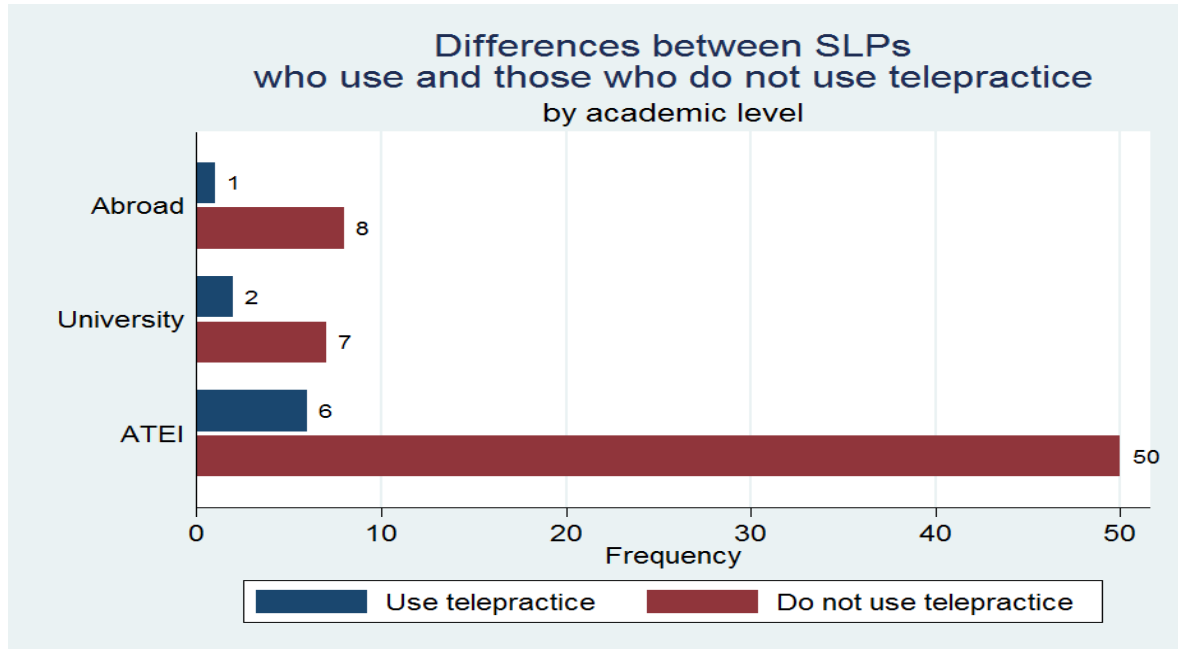
Table 13- Correlation between Use of Telepractice and Degree Level

Degree Level	Do not use	Use	Total
Bachelor	49 (66.21)	5 (0.67)	54 (72.97)
Master	15 (20.27)	3 (0.40)	18 (24.32)
PhD	1 (0.13)	1 (0.13)	2 (0.27)
Total	61 (82.43)	9 (12.16)	74 (100)

Fisher's exact = 0.130

The value was greater than 0.05, but was close to the value 0.1 or otherwise at the 10 % level of confidence. This was an indication that perhaps there was a correlation between the use of telepractice and the degree level. It seems that as higher the degree is, the greater is the use of telepractice in relation to the holders of each degree. Thus, from the 9.25 % that was in the Bachelor, increased to 16.7 % at Master's and still above 50 % at PhD.

The study institution in relation to the use or not use of telepractice is shown below.



Graph 16- Telepractice use by Institution

Graph 15 didn't give a clear illustration. More answers were from those users or non-users who hold a degree from ATEI, with the second most often those who hold a University degree. Again, these two categories accounted for 88% of the total (table 3), so the result was expected. Then, the quantitative results of the Fisher test are presented.

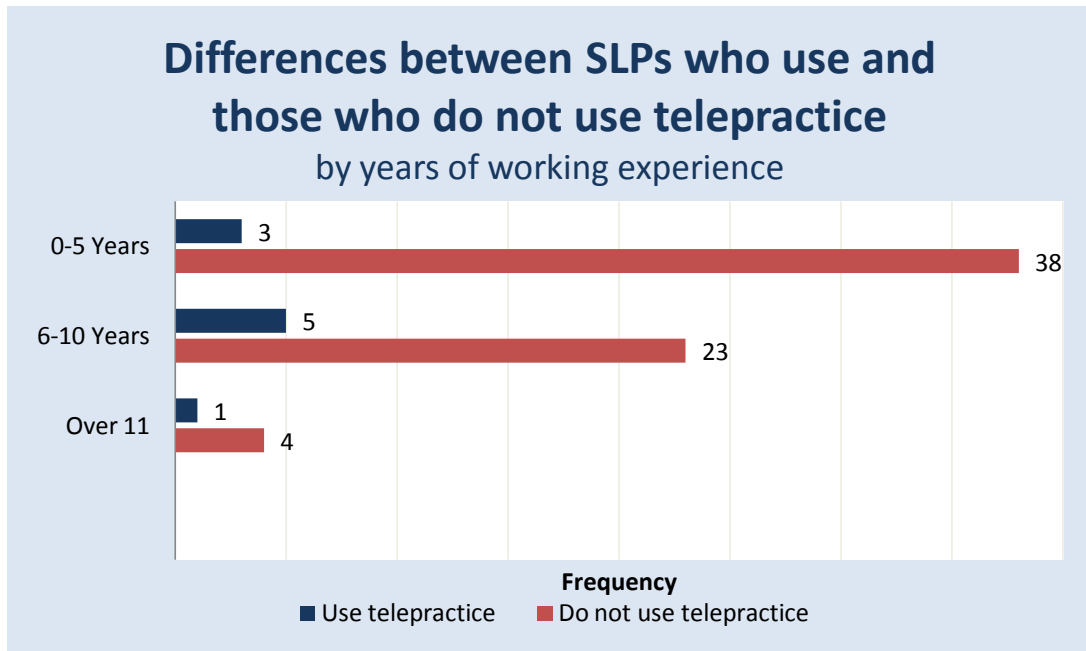
Table 14- Correlation between Use of Telepractice and Institution

Institution	Do not use	Use	Total
Abroad	8 (10.81)	1 (0.13)	9 (12.16)
University	7 (0.94)	2 (0.27)	9 (12.16)
ATEI	50 (67.56)	6 (0.81)	56 (75.67)
Total	65 (87.83)	9 (12.16)	74 (100)

Fishers exact 0,599

The results lead to the conclusion that there was not sufficient statistical evidence that supports the existence of a correlation between the use of telepractice and the level of degree.

The experience's years in relation to telepractice use are shown below in Graph 17.



Graph 17- Telepractice Use by Working Experience

The results show that most users as well as the non users of telepractice have worked as SLPs from 0-5 and 6 - 10 years. As in the previous cases, these two categories account for the 93.23% of all (table 4) so it was expected that the most of the answers where placed there. The Fisher statistical test has helped to clarify the “picture”.

Table 15- Correlation between Use of Telepractice and Years of Experience

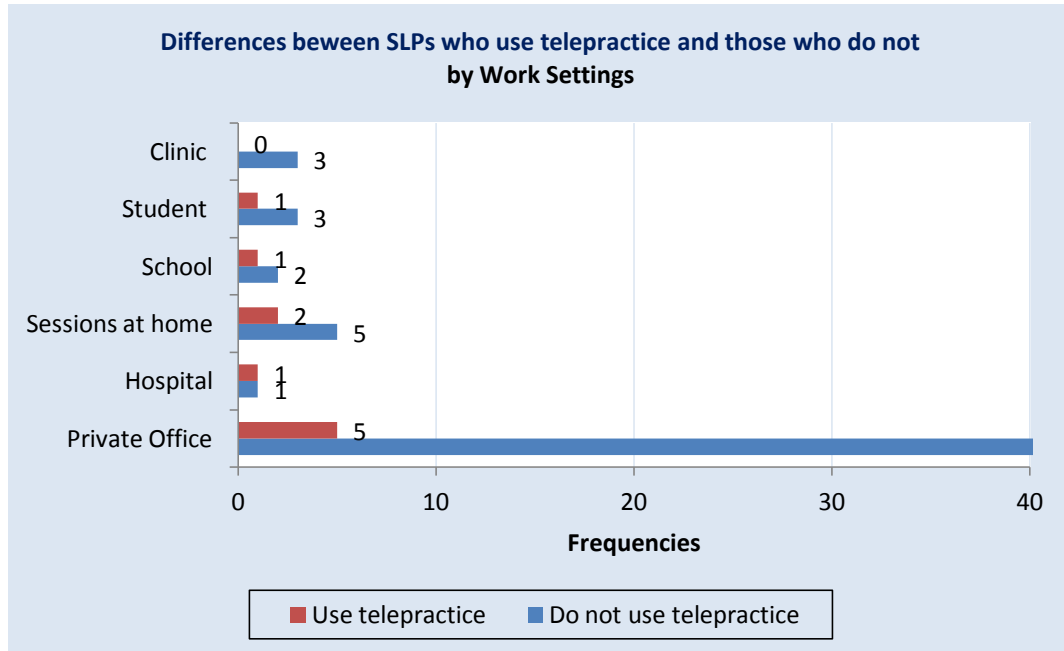
Experience Years	Do not use	Use	Total
(0-5]	38 (51.35)	3 (4.05)	41 (55.40)
[6-10)	23 (31.08)	5 (6.75)	28 (37.83)
Over 11	4 (5.40)	1 (1.35)	5 (6.75)
Total	65 (87.83)	9 (12.16)	74 (100)

Fishers Exact= 0,170

The results once more lead to the conclusion that there was not sufficient statistical

evidence that supports the existence of a correlation between the use of telepractice and the years of experience.

The work settings in relation to the use or not of telepractice are shown below.



Graph 18- Telepractice Use by Work Settings

Graph 18 illustrates that the majority of the SLPs users and non users have worked in private offices and as follows were those SLPs who have worked privately at home. Once again these two groups count for the most participants of the study (77.73%-table 5). Thus, Fisher test took part in order to examine the case.

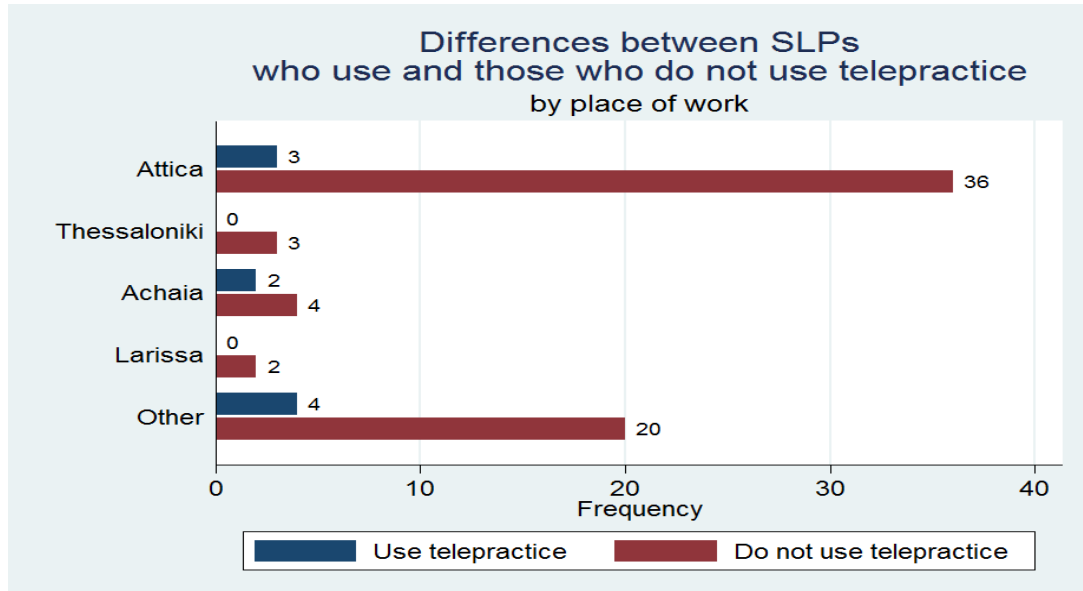
Table 16- Correlation between Use of Telepractice and Work Settings

Work Settings	Do not use	Use	Total
Private Office	55 (74.32)	5 (0.67)	60 (81.08)
Hospital	1 (0.13)	1 (0.13)	2 (0.27)
Sessions a Home	5 (0.67)	2 (0.27)	7 (0.94)
School	2 (0.27)	1 (0.13)	3 (0.40)
Student/Not Working	3 (0.40)	1 (0.13)	4 (0.54)
Total	66 (89.18)	10 (13.15)	76 (100)

Fishers exact= 0,328

It is observed that there was not sufficient statistical evidence that supports the existence of a correlation between the use of telepractice and the work settings.

Finally, the illustration of the workplace in relation to the use of telepractice is as follows.



Graph 19- Telepractice Use by Workplace

Graph 18 illustrates that both most users and non-users of telepractice working in Attica and immediately after in the region (outside the perfection of Attica) (response “other”). Similarly, to the previous, these two categories cover 85% of the total (Table 6) and therefore the statistical test Fisher expects to show something similar.

Table 17- Correlation between Use of Telepractice and Workplace

Workplace	Do not use	Use	Total
Attica	36 (48.64)	3 (0.40)	39 (52.70)
Thessaloniki	3 (0.40)	0 (0.0)	3 (0.40)
Achaia	4 (0.54)	2 (0.27)	6 (0.81)
Larisa	2 (0.27)	0 (0.0)	2 (0.27)
Other	20 (27.02)	4 (0.54)	24 (32.43)
Total	65 (87.83)	9 (9)	74 (100)

Fishers Exact=0.268

As someone would expect, the results of the statistical test do not indicate the existence of a correlation between the telepractice use and the workplace.

Thus, we have to conclude that between the two sub categories, users and non users there were not exist any particular differences. One surprised exception was the gender of the clinicians, which indicated that there is a statistical significance (**0.33**) and females tend to use telepractice less often.

CHAPTER –IV DISCUSSION

Introduction

A description of the study results is given in the following discussion. The discussion is presented with the same sequence as the stated objectives and aims of the study, same as it is and in the result chapter. The study results were analyzed and were compared based on similar research on the area. Specifically, the study results were compared with the ASHA survey (2002), ASHA member survey (2011), Tucker (2011) and Stellmacher (2011) studies. We have to underline that caution must be exercised in comparing all these studies due to different methodology, population, size of sample and questions posed.

1. Knowledge of Telepractice

The first research question “What is the knowledge of Greek SLPs on telepractice”, the responders stated that 59% considered that know what telepractice means (13 participants strongly agree and 30 participants agree with the statement). The findings reveal that near three fifths of the participants knows what telepractice means. It seems that SLPs are well informed about “new technologies” in the field. The result, is zestful, as in reality we didn’t expect that a so high percentage of SLPs know about telepractice. One reason for this expectation was the fact that in the Highest Technological Institutions, where the most SLPs graduated (76%), currently there are not courses that address telepractice issues. The results about the sources of the knowledge are very interesting and are discussed below.

i. Sources of Knowledge

The majority of the participants suggested that have learned about telepractice from personal study (40%) while a very small number indicated that have learned about telepractice in their academic programs (4%).

We have to underline that from the participants that have learned about telepractice in their academic programs 2 of them were graduated from Universities (participants 34 and 73) and one graduated from ATEI (participant 71). It is difficult to explain for which specific reason only one participant graduated from ATEI indicated that learned about telepractice in her program. This participant is a female at the age of 24. There

are also other participants at the age of 24, graduated from ATEI (participants 45 and 74) and even younger (age of 23 participants 63 and 46). Thus, our first hypothesis, which stated that a new course introduced in the ATEI curriculums and the rest participants didn't attend it as were older, was rejected, as participant 71 is not the youngest.

The only possible assumption, we can make is that this one participant, have learned about telepractice from a specific professor who referred to telepractice in his class without telepractice to be the goal of the course. In other words, professors during their classes sometimes discuss with their students issues related to their field that are not necessarily address the goals of a specific course. Thus, it is a possibility that a specific professor during his class discussed about telepractice and that's why participant 71 indicated that response.

In general, the findings come in contrast to the study of Stellmacher (2011) where 14% of the SLP professionals have received training on telepractice and beyond 103 SLP students, the 41% reported exposure to telepractice in their programs and 33% stated that they will learn more as part of their program. Thus, it is obvious that at least in some USA University curriculums there are courses that address telepractice issues. On the other hand in Greece it seems that in ATEI there are not yet disciplines on telepractice and probably there are few Universities that they have.

Second, most common source of knowledge is "another colleague" with 25% of participants indicated it. We notice this as a pleasant result as it seems that SLPs exchange opinions and ideas. Third most common source was seminars and congresses with 10%, a result that it is also pleasant for us. Firstly, because it seems that there are seminars that address this kind of issues and secondly because of the SLPs attendance.

Finally, from 74 participants 11 illustrated "other" sources of knowledge than those listed in the instrumental tool. Two of them, they were uncertain about what telepractice means so they didn't provide any specific sources but they just "clicked" on the box "other". The rest 6 responders learned about telepractice through the Internet or personal research. These participants didn't "click" the box "personal study" instead preferred to write in the box that they learned about it via the Internet.

One hypothesis about this discrimination is the following: the optional box was “personal study, articles, books etc”. Thus, responders probably considered that they had to check this box only if they had made a research about telepractice, so indicating that learned about it via the Internet they pointed out that they didn’t learned through articles or any other academic sources.

2. Use of Telepractice

The second research question “What is the use (experience) of Greek SLPs on telepractice”, the participants stated that 9 out of 74 have used or use telepractice (12.16%). We have to underline that from those 9 participants one have used telepractice from 2005, one have used from 2010, three from 2012 and the rest four from 2013. In addition, among nine participants who have use telepractice only three use telepractice until today (meaning February 2012, when the data collected), where the rest had used for a specific period of time.

Firstly, it was unexpected that even one participant has used telepractice since 2005. At that period even, in the USA telepractice was quite new, as ASHA has started to engage in telepractice in the late 90s (ASHA, 1998). In addition, in Greece the first SLP department founded in 1996 so we suppose that at that moment the field was totally new in Greece and telepractice probably totally unknown.

In 2002 in a study that conducted by ASHA participated 1,667 practitioners, 842 were audiologists and 825 were speech-language pathologists; the results indicated that 11% of respondents were engaged in the use of telepractice. In 2011 in another ASHA study the results revealed that among 1.455 participants only 2.3% of them currently uses telepractice (ASHA, 2011). Based on Stellmacher (2011) from 108 school based SLPs who responded to a self- administered questionnaire, 6 of them have used or currently use telepractice. In another research, which aimed to investigate the perspectives of school based SLPs on telepractice participated 175 SLPs and from them the 1.8% stated that use telepractice (Tucker, 2012).

In total, it is observed that the percentages of telepractice use from 2002 until today (2013-2014) are low but fluctuated. Meantime, compared to those studies which have more participants in Greece still the percentages of telepractice’s use consider high enough. We suppose that Greek SLPs seems to use telepractice for two main reasons.

First, probably it is due to geographical inequalities in Greece. Specifically, due to many islands as well as remote areas that Greece has, clinicians found the way to service these areas. This hypothesis partly confirmed from the responses which given by the SLPs on the telepractice benefits (table 7 and 9).

The second explanation is that SLPs have started to use telepractice due to economical reasons. In other words SLPs can reduce the travel cost, to save time and mainly to increase the number of their clients. This hypothesis is based on the fact that 7 out of 9 users have started to use it since 2012, when Greece was into the crisis. In addition, is also reinforced by the responses that SLPs gave as the benefits of telepractice (table 7 and 9).

i. Clients Age

The results indicate that there was not a specific preference between adults or children as it was almost equal to the percentages (48.28 % adults and 51.72% children). In the ASHA survey (2011) the responders indicated the exact age group of the clients and eventually the majority of the SLPs have use telepractice with children, but adults are also common.

- Two years of age or younger (37%)
- 3-5 years old (54%)
- 6-11 years old (51%)
- 12-17 years old (49%)
- 65-84 (62%)
- 85 years old or older (60%) (ASHA, 2011).

The findings in a way come in contrast with the beliefs that some non users have as many of them believe that telepractice is not indicated for children (4 participants: 3,5,52,64) or in general, it is not indicated for all clients (2 participants: 14,26) a response that none of the users provided as limitation of telepractice.

ii. Clients Disorders

The results show that SLPs have used or currently use telepractice with a wide range of disorders. The majority has used/use with voice (19.23%), speech/articulation

(11.53%), language disorders (11.53%) and pervasive developmental disorders (11.53%). The number was smaller for clients with aphasia (7.69%) and even smaller for the rest disorders. Specifically, apraxia, swallowing disorders, Down syndrome, dysarthria, traumatic brain injury and right hemisphere damage had 3.84% each. Finally, none of the SLPs have used or use telepractice with cerebral palsy.

The findings are not very different from the ASHA survey (2002), where participants indicated that provide their services in a wide range of areas as well. Specifically, in motor speech disorders (57%), articulation/phonological disorders (55%), autism/pervasive developmental disorder (49%), cognitive, communication disorders (49%), mental retardation/developmental disability (49%), fluency disorders (46%), learning disabilities (44%), dysphagia (42%), and specific language impairment (42%).

The main difference that can be underlined is the fact that disorders like learning disabilities or mental retardation that were common in the ASHA survey (2002) didn't examined in our survey but, may included in the response "other", but as this response displayed only once we didn't analyze further.

The findings of Tucker study (2012) were also quite common as SLPs illustrated that provide their services to the students who experience: language disorders (71.4%), articulation/phonology (1%), and fluency (28.6%), with one each for learning disabilities, autism spectrum disorders, and attention deficit (14.2%).

We have to specify that when we refer in "not very different" results, we do not mean common or equal results. Firstly, in all three studies the "categorization" of the disorders is different. For instance, in our survey dysarthria, and apraxia are listed separately in the instrumental tool while in the ASHA study (2011) are grouped together as motor speech disorders. Furthermore, in the other two studies (ASHA, 2002; Tucker, 2012), learning disabilities were listed while in our survey was not listed. Finally, in Tucker's study (2012) as participants were only school based SLPs there was not included any disorders that adults face (aphasia etc).

The percentages are different from study to study, but in general articulation, language and motor speech disorders are holding a high position. Following, by fluency disorders, autism and learning disabilities. Lows in the list are the neurological disorders, including beyond else dysphagia, aphasia and brain damage.

The fact that SLPs have used more often telepractice with developmental disorders compare to neurological ones probably is due to several reasons. The prevalence, the nature of the disorders, the specific therapeutic goals that must be addressed as well as specific methodologies and strategies that must be implemented in each case and the specialization of each SLP are some of those reasons that probably led to this result.

iii. Clients Services

The finding of the research reveals that higher in the list were the *rehabilitation* and the *counseling* of the clients (45% each). Second were *screening and referral to other professional* (10% each). It is interesting to point out that assessment and diagnosis didn't appear even once as provided services. In addition, participants didn't indicate any other services beyond those listed; when at the same time non-users illustrated follow -up and prevention/screening as potential benefits of telepractice use (table 9).

The finding in the ASHA survey indicated that: “the most common types of patient care delivered via telepractice were *counseling* (76%) and follow-up (71%); followed by equipment check (34%), prevention (27%), *treatment* (23%), *screening* (18%), bilingual/multicultural services, e.g., Interpreter online (13%), and assessment (11%)” (ASHA,2002).

The results are different and it seems that Greek SLPs provide much less services; still there are few similarities between the two studies (services: in italics). Counseling is the first service that all SLPs provide to the clients via telepractice. Additionally, assessment is last classified in the ASHA survey while in our survey didn't list it at all. Thus, it seems that SLPs prefer to provide treatment than assessment or diagnosis via telepractice. We made two hypotheses for this.

Firstly, the assessment is really important for a clinician as it can lead to a good therapeutic plan. Another reason that we can think is the fact that prior to telepractice services clinicians have to ensure that the client has all the essential supply and the technological equipment to do the telepractice session. Thus, probably they believe that in the first session, which usually the assessment takes place, is better to be face – to- face.

3. Perceptions of Telepractice

The third research question “What are the perceptions of Greek SLPs on telepractice” a large proportion of telepractice users perceive this method as effective (62.5%). A 25% is uncertain and finally a 12.5% find it ineffective. This result is a little bit confusing as from those SLPs who indicated experience on telepractice (9 users) only 3 currently use it. To be more specific 5 out of 9 users believe that telepractice is an effective method, 4 are uncertain and 1 disagree, but finally only three of them currently use it. Our explanation is that probably those users they do not have clients at that specific time that are interesting in involving them on telepractice sessions or they are not eligible.

Another interesting result is the fact that one fourth of the participants are uncertain about the effectiveness of telepractice. In one of the two cases the answer can be easily given. Participant 56 has used telepractice only to provide consultation. Thus, he cannot be sure about the other clinical procedures like assessment, treatment etc so he cannot indicate if telepractice is effective or not. The other uncertain participant (60) has used telepractice to provide rehabilitation/ treatment, but he is using it from 09.09.2013 until today (means February 2014) thus in this 5 months probably he didn't have enough time to form a complete opinion about it.

In overall seems that SLPs users have a positive experience with telepractice. In Stellmacher (2011) study SLPs who participated, also indicated a positive experience on telepractice use with a percentage at 80%.

i. Benefits and Barriers

In the first chapter, we discussed the potential benefits and limitations that telepractice has as given in the bibliography. We refer again briefly: access to services by distance (Buckwalter et al., 2002; Farmer & Muhlenbruck, 2001; Ricketts, 2000), lack of clinicians and lack of transportation in a specific geographic area, client's potential handicap, disability or reduced mobility, reduced economic cost, the opportunity for clients to receive services in their natural environment and in cases that patients want to ask the opinion of more than one clinician (Marcin et al., 2004).

As well as client's increased motivation due to the technological aspects of the treatment (Brennan et al, 2004). The fact that telepractice can provide access to a larger range of materials and technical capability that can enhance interest and successful outcomes (Farmer & Muhlenbruck, 2001; Karp et al., 2000; Marcin et al., 2004). Finally, for bilingual clients, who can assess clinicians that they speak their first mother language or even their both mother languages (ASHA, 2005a).

On the other hand limitations include: the missing physical contact between the client and the clinician. For psychological perspective clients may feel better when the clinician is sitting next to them. From the clinician's perspective in a face- to- face session physical contact can be used for cuing, reinforcement, tactile manipulation, and stimulation, and to assess strength and tone (ASHA, 2005a).

Another, important limitation considers the eye contact between client and clinician. In addition, telepractice interventions also occur in a static location due to technological equipment and connectivity requirements (ASHA, 2005a). Finally, limitations regarding the technological equipment are not uncommon; visual or audio difficulties, network breakdowns may be occurring.

In the research almost all participants responded to a semi- open question related to barriers or benefits of telepractice. A very small number didn't provide any information (3 participants) as they didn't know anything or were uncertain about what telepractice means. In any way it is interesting that the majority succeeds to

provide some potential barriers or benefits, and in most cases their responses were logical and come into agreement with the bibliography.

The most interesting fact is that the majority of the SLPs provided their opinion based on the client's side. In other words, in most cases they indicate the potential benefits and barriers that the patients could face via telepractice and not the benefits and barriers that SLPs could face. The question as stated in the instrument tool asks for participants to provide three benefits and three barriers of telepractice, thus they could respond based on their own needs and not based on the needs of the clients. For us this fact, it is really important as it seems that the SLPs are not common professionals, but they are clinicians that always have to care about the patients and their therapeutic outcomes.

ii. The Barriers

Participants illustrated in total 189 barriers of telepractice (167 the non users and 22 the users). Some of the most interesting responses were: "As relates specifically to the children, they work better and following rules/directions outside of their place (speech language therapy is the science of communication verbal and not, and this in the narrow confines of the computer screen, sitting in a chair in a row is only a small part of language use)" (Participant 67). "Ethical issues that may arise in cases that telepractice is used by people who do not have proper training" (participant 36) and "Patients mutilation interest and motivation during the sessions because of static and non-live interaction" (participant 55).

We summarized the potential barriers as given by the users and non users.

Table 18- Barriers given by Users and Non- Users

Categories & Subcategories Users	Responses	Categories & Subcategories Non Users	Responses
A. SLP's Practical Limitations 1. Techniques Exercises 2. Material 3. Poor Practice 4. Restricted Age and Disorders	40.90%	<i>A. Physical Contact-Relationship and Indirectness</i>	35.93%
B. Physical Contact-Relationship and Indirectness	27.27%	<i>B. SLP's Practical Limitations and Professional Issues</i> 1. Client's Disorders 2. Techniques Exercises 3. Poor Practice	26.94%
C. Tech Problems	18.18%	C. Tech Problems	16.16%
D. Other Problems 1. Control 2. Movements	13.63%	D. Client's practical Issues 1. Distraction Attention 2. Pragmatics 3. Game Activities	11.97%
		E. Attitudes 1. Unknown 2. Difficult 3. Willingness	8.98%

Most of the responses between the two subcategories were similar. In other words the ideas that were given from all participants were close. All the barriers/ limitations as given by the non users were given and by the non users (in italics) with only exceptions the last category (C. Other Problems) which includes two subcategories: “control-clients home” and “movements”. There are and limitations which given only by the non users but that was expected as non users were more compare to users.

However the results, in relation to the ASHA survey (2002) are quite different. This happened because the participants respond to close ended questions. Thus, the

possible barriers were given by the researchers while in our survey the SLPs responses to semi- open questions. The participants subdivided into those who use telepractice and those who don't and they gave the following responses:

Barriers of users (ASHA, 2002)

- Close ended questions:

1. Cost of technology (19%),
2. Lack of professional standards (14%),
3. Reimbursement policies (10%),
4. Lack of data on efficacy cost- effectiveness (9%),
5. Licensure laws that prohibit interstate practice (6%),
6. Concern about patient confidentiality (6%),
7. Concern about malpractice liability (5%),
8. Other factors (76%).

Barriers of non-users (ASHA, 2002) - Close ended questions:

1. Cost of technology (14%),
2. Lack of professional standards (13%),
3. Lack of data on efficacy cost-effectiveness (11%),
4. Reimbursement policies (7%),
5. Concern about malpractice liability (7%),
6. Concern about patient confidentiality (6%),
7. Licensure laws that affect interstate practice (5%),
8. Other factors (76%)

As it is observed in both lists above the barriers are the same, as the responses were given by the researchers. Following that, the participants in the ASHA survey (2002) indicate "other" possible barriers. In this case, there are a few similarities with our findings (bold sentences). In the meantime, it is important to underline, that the SLPs in the ASHA survey pointed out that there is no need for telepractice (see below in italics) a response that none of the Greek SLPs gave. Users indicated the following "other" barriers (semi-open question):

- Lack of time (34%),
- **Various limitations of clients, whether they are due to, lack of technology, or specific to the nature of their disability (13%),**
- The preference for face to- face contact on some level (13%),
- **Lack of technological equipment and resources (12%),**
- *The feeling of practitioners that there was no real need to expand the operations of their telepractice (7%),*

- Need more information about expanding their telepractice before beginning to do so (6%).

Non users indicated the following “other” barriers:

- **Need more information about telepractice (22%),**
- **Telepractice would be detrimental to the quality of service with a preference for face to- face contact (16%),**
- **Inappropriate for the type of services practitioners delivered (14%),**
- Lack of time to implement such a technology (8%),
- *Believed that their current operations were sufficient and they did not need telepractice (8%),*
- **Lack of technology for the practitioner as well as the patient is a barrier (8%),**
- *The school setting is a barrier to telepractice since the students are very accessible, thus making telepractice unnecessary (6%),*
- **The decision to use telepractice was not up to them (5%).**

As it is observed, there are 5 common ideas between the two studies for both users and non users. The technological problems indicated as an important limitation (**Technological problems- Lack of technological equipment and resources - Lack of technology for the practitioner as well as the patient is a barrier**). Second similar idea between the studies is that telepractice cannot be used for all clients and all disorders (**Restricted Age and Disorder- Various limitations of clients, whether they are due to, lack of technology, or specific to the nature of their disability**)

The third common idea referred to the poor clinical procedures that can be applied via telepractice (**Poor Practice-Mistakes - Telepractice would be detrimental to the quality of service with a preference for face to- face contact**). Another similar idea referred to the popularity of the telepractice, meaning that it is quite unknown in most people (**Unknown- Difficult Need more information about telepractice**).

Finally, the last one referred to the readiness that client’s have to engage on telepractice use (**Willingness- The decision to use telepractice was not up to them**).

The similarities were more with the survey conducted by Tucker (2012). In this study all 170 participants (users and not) first requested about their general attitudes toward telepractice using a 5-point Likert scale. The majority of school based SLPs illustrated:

- The need for procedures and guidelines
- Confidentiality
- Informed consent
- Ethical considerations
- Technology procedures
- Student selection criteria

In converse, the greatest disagreements occurred with statements relating to:

- Telepractice assessment
- Establishment of rapport via telepractice
- Effectiveness of telepractice as compared with in-person speech-language therapy

As follows 170 participants (users and non users) express their perceptions through semi-open questions. They illustrated the following barriers:

- 1. Student Type/Age (54%)**
- 2. Impersonal (53%)**
- 3. Lack of Physical Contact (24%)**
- 4. Effectiveness (23%)**
- 5. Technology standards or failures (18%)**
- 6. Lack of collaboration (15%)**
7. Cost (15%)
- 8. Ethical concerns (11%)**
9. Lack of support (8%)
- 10. Lack of standardized assessments (4%)**
- 11. Lack of training of SLPs (3%)**
- 12. Family requests or lack of ability to handle telepractice (2%)**

In this case responders of both surveys indicate almost the same barriers (bold sentences). As it is observed from 12 limitations indicated the 10 outlined the same ideas and seems that SLPs have the same worries about the clinical application of telepractice. Meantime, we have to point out that the participants gave as potential barrier the cost. Even they didn't explain further, we suppose that American SLPs believe that telepractice is not cost effective as the insurances didn't cover the cost

(ASHA, 2012). However, they also indicated cost as potential benefit, as it is provided below in this work.

Finally in Stellmacher's study (2011) all SLPs participants indicated that the most common factors preventing the use of telepractice were: "the lack of training", "no need for telepractice" and "lack of stakeholder support".

At that point we have to underline that participants in all other three studies (ASHA, Tucker and Stellmacher), indicate that there is no reason for telepractice use while Greek SLPs they didn't provide this idea. Even those who had negative perceptions about telepractice they indicated at list one potential benefit.

Meantime, based on all these three studies, seems that in total the potential limitations of this service delivery model were similar and come in agreement with the bibliography. Of course we didn't expect to be equal as each study has a different methodology regarding the instrumental tool and also the participants who included. It is really important to underline that those participants have different training, beliefs, experiences and attitudes in the face of new methodologies and of course beyond clinical are different persons with unique personality.

iii. The Benefits

Participants indicated in total 178 benefits of telepractice. Characteristic examples of benefits are: "Very good method for observing (the client) secondary behaviors in cases of fluency disorders" (participant 41), "innovative" (participant 68), "Possibility of videotaping" (participant 52), "Dynamic growth and in other cities" (participant 12).

We summarized the potential benefits as given by the users and non users.

Table 19- Benefits given by Users and Non- Users

Categories & Subcategories Users	Responses	Categories & Subcategories Non Users	Responses
<i>A. Remote Areas-Distance</i>	31.57%	A. Client's Benefit <i>1.Mobility Impairments</i> <i>2.Comfort Environment & Involvement</i> <i>3.Enjoyable</i> 4.Observation <i>5.Selection of any SLP</i>	33.33%
<i>B. Economical Solution</i> <i>1.Cost</i> <i>2.Time</i>	23.56%	<i>B..Remote Areas-Distance</i>	23.56%
C.Field's Benefit 1.Alternative 2.Growth 3.Promote Sciences	22.98%	C.Economical Solution <i>1.Cost</i> <i>2.Time</i>	22.98%
D.Client's Benefits <i>1.Mobility</i> 2.Embarrassment	18.96%	D.SLP Benefit <i>1.Easy Procedures-Follow up</i> <i>2.Immediacy- Prevention</i> <i>3. E-supervision –</i> <i>4.Seminars</i> <i>5.Easy sessions</i> <i>6.SLP comfort</i> <i>7.Clients number</i>	18.96%
E.SLP's Benefit 1.Distance Learning 2.Experience	18.96%	<i>E.Field's Benefits</i> <i>1.New Technologies</i> <i>2.Innovative</i>	1.14%

Both non users and users indicated 5 same categories and from the 8 subcategories that non users outlined the three listed and by the non users (in italics). The subcategories: “alternative”, “growth of the field”, “promote science”, “embarrassment”, “distance learning” and “experience” didn’t indicate by non users but instead they outlined other interesting barriers. As and in barriers of telepractice the ideas that non users SLPs gave were more; this is expected as there are 9 users and 65 non users.

Compared to the other four similar researchers (ASHA, 2002; ASHA 2011; Stellmacher, 2012; Tuckers, 2012) that conducted, only in Tucker's study (2012) participants requested to provide their opinion on telepractice benefits. We have to specify that the limitations (given above) and the benefits (given below) of this study were focused only to school settings.

- 1. Student Benefit (54%)**
- 2. Rural or other location (54%)**
- 3. Cost of travel/time (33%)**
- 4. Ease SLP Shortage (30%)**
5. Collaboration (19%)
6. No reason to use it (15%)
- 7. Benefits for SLPs (3%)**
- 8. Benefits for Families (1%)**

Even though the participants are exclusively based school SLPs again we can underline plenty similar ideas (bold sentences). Specifically, the provision of services in remote areas, the reduced cost and the time saving due to transportation were indicated in both studies for both users and non users. In addition the "Student Benefit" is almost equal to the "Client's Benefit" and the "Benefits for Families" is similar to subcategory number 2: "Comfort Environment & Involvement (of caregivers)". The "benefits for SLPs" is equal to both studied and the "easy SLP shortage" it is similar to "client's number".

4. Intentions of Future Use

In the forth research question "What are the intentions of Greek SLPs on telepractice" both users and non users seem that they have positive intentions.

i. The intentions of users

The results in this question come in agreement with the perceptions that SLPs have about telepractice. In other words 66.6% intent to continue use telepractice (62.5% perceive as an effective method) while 22.2% is uncertain (25% is uncertain about the effectiveness) and 11.1% is negative in the future use of telepractice (12.5% find it ineffective).

Still it is strange the fact that users perceive telepractice as effective and intent to use it in the future but only 3 beyond them use it until today (February 2014). We provide again our hypothesis, that it seems that the decision of using telepractice or not, it is not only up to them. In other words clients, parents or caregivers have an active role in this decision and they may do not want to use it or they may do not have the proper computer knowledge and the proper equipment to do it.

In any way these percentages appear to be a little bit higher than in the ASHA survey (2002) where 53% of the telepractice users expressed their desire to expand the use of telepractice as a tool to deliver services to their clients (ASHA, 2002).

ii. The intentions of non users

The intention of non users is not very different, even a 52.3% is uncertain about future use and the remaining 47.3% is positive to very positive in using it. It is important to underline again that there is not even one negative response. The results are similar in the ASHA survey (2002), with 43% of non users express interest in using it in the future as well as in the Stellmacker (2011) survey, 67% participants report interest in education or training on telepractice issues.

In both cases (users and non users) it seems that they have positive intentions on telepractice issues. We perceive this result as very pleasant and we clarify the reason for this. It is not pleasant because we support telepractice in that way but because SLPs they do not reject or they do not deny new ideas and applications. It is very same the way of their thinking. They can first use this delivery model and then to decide if it is beneficial for them and for their clients.

5. Differences between Those who Use and Those who Don't

In the research we attempted to identify the differences that may exist between those SLPs who use telepractice and those who don't. Our research question attempted to identify a specific difference between them. For instance, younger clinicians may be more familiar with technology so it will be easier for them to use telepractice compare

with older clinicians. Or on the other hand older clinicians may have more experience and therefore they may find it easy to do a session via telepractice.

We analyzed and correlated the use of telepractice with gender, age, academic degree (level), years of experience, work settings and workplaces and despite the gender, none of the rest presented a statistical significance difference. Regarding the gender in relation to telepractice use, Fishers test revealed that the value of the test was less than 0.05 (= **0.033**) so it seems that there is a statistically significant correlation between gender and the use of telepractice. Specifically, it seems that females tend to use telepractice less than males.

This result in reality was a big surprise for us, as we didn't expect that it will be possible to exist a correlation between the gender and the telepractice use. Less surprised is the fact that may exist a correlation between the use of telepractice and the degree level. As it was presented in previous chapter, even the value was greater than 0.05, was close to the value 0.1 or otherwise at the 10 % level of confidence. It seems that as higher the degree is, the greater is the use of telepractice in relation to the holders of each degree. Thus, from the 9.25 % that is in the Bachelor, increased to 16.7 % at Master's and still above 50 % at PhD.

If we perceive as fact that indeed there is also a significant difference and in the degree level we can explain and the correlation with the gender. To be clearer, males are subdivided almost equal to those who hold a bachelor degree and those who hold a master degree and there are also two PhD holders (table 2). In contrast, in females the majority holds a bachelor degree, as follows a master degree (13 from 62 females) and none a PhD. Thus, if we assume that males have a higher title than females and that the higher the level of education greater the telepractice use, we can explain the statistical significance in the gender. To specify even more, the statistical significance in the gender, it may appear due to the level degree and as males have higher degrees, it appears and greater use of telepractice.

Concluding the discussion part, we can finally clearly express our positive feelings about the results of this study. From the analysis of the first research question we started to be excited for the rest responses which in most cases were unexpected for us. This fact makes it very interesting as in reality the analysis; it is not only about statistics but about critical thinking.

It is even more excited that the majority of the SLPs responses in the semi open questions were brain wave and they gave their grateful ideas. The qualitative analysis it may was the most interesting part as we had to understand and decode the ideas behind the words and explain them from the perspective of each participant and not based on our thoughts. Finally, the results of the study are pleasantly compared with the results of the other studies. There are both similarities and differences between them, but this part makes the research process eventful.

Finishing this chapter, we summarize survey's major findings. Participants of this study are 74 Greek SLPs. The majority, are females (83%), in the age range of 30, graduated from ATEI (76%), holds a bachelor degree (73%) and work mainly in private offices (64%) in the perfection of Attica (53%).

The findings of the current study show that beyond 74 participants:

- 43 know what telepractice means
- 33 get that knowledge from personal study
- 9 have used/use telepractice
- 6 have used it to provide rehabilitation and 6 to provide consultation
- 5 have used/use it with children
- 4 have used/use it with adults
- 1 user does not want to continue to use telepractice
- 50 non users want to use telepractice in the future
- No statistical differences founded in the sample when subdivided in users and non users, except the correlation between gender, where seems that females use it less than males.

CHAPTER V – CONCLUSIONS

The main implications based on the main findings of the study are presented in this chapter. As follows, limitations of this study and recommendations for future research are provided. The last chapter of this work will be concluded by providing the conclusions of all this work based on the researcher's views.

To the researcher knowledge this study is the first one that investigates the knowledge, the use, the perceptions and the intentions of Greek SLPs on telepractice.

The findings are unexpected, promising and quite interesting and conclude that the majority of the participants considered to have knowledge on telepractice even their academic programs didn't provide any courses regarding the provision of services via telepractice. In addition, this study has allowed to realize that there is effectively a percentage (though still small) of Greek SLPs which use, have used or currently use telepractice. The services which they provide are mainly consulting and rehabilitation/ treatment for both adults and children with variety disorders. Most of the SLPs users intent to continue using telepractice. Similarly, the non users have positive perceptions about telepractice and a high percentage has also positive intentions.

Regarding the barriers and benefits of telepractice the responders have more or less common beliefs. Their ideas were also similar to other studies (especially Tucker, 2012) and similar to the information that can be found in the literature. In overall the most common potential barriers are the poor physical contact, the poor relationship, the difficulty in application of specific exercises and the technological problems. The most common benefits are the provision of services in remote areas and in people with mobility impairments as well as the reduce cost and the time saving.

From the begging of this work we outlined that this study is important due to the clinical implications that arise. We stated that "if SLPs use or are willing to use telepractice can engage them to a new era of practice and in this case population, even in remote and isolated areas can enjoy their services and the benefit is equal for

clients and clinicians”. This statement may seem excessive to someone or for some SLPs may perceive that we advertise telepractice or that we believe that all SLPs must use it. However, this is not the truth.

In the majority of the Greek islands and villages there is a lack of health professionals and due to this plenty of the citizens they do not enjoy the services that need. Thus, for the Greek reality the provision of telepractice services in remote areas is a really important issue and it seems that the majority of the SLPs realize this.

A characteristic example is one participant (66), who even totally disagrees with telepractice, can recognize that it can be beneficial to the remote areas. The participant wrote: “I find most effective direct contact with the adult or child (especially a child), all tend to be impersonal and to remove personal contact, and it’s not “all technology” but possibly one advantage I find is to help people in remote areas with no access, otherwise I’m not in favor”.

Thus, we perceive the findings as promising in the field of the speech language therapy in Greece as clients who live in remote areas can enjoy their services. At the same time clinicians save time and increase their incomes. A factor that can be considered really important for the Greek reality due to crisis.

At that point, we have to mention that the provision of services in those clients with mobility impairments is also important. Meantime, someone can argue that in these cases the clinician can make the session in the client’s home but this cannot happen and for those clients who live in remote areas. This is the reason that we do not give equal importance to those two cases (mobility and remote areas).

Another important implication that arises from the findings is the necessity for guidelines. We believe that it is necessary Greek SLP organizations to provide recommendations to the Greek SLPs who currently use or planning to use telepractice. It is really important every and each SLP who has used, use or attempt to use telepractice to be very well informed and educated in this, in order to be sure that he/she provide the best services to the clients. Telepractice is more than a meeting via Skype or related tools. It is a real session than commands all that things that a face- to-face session commands.

Beyond the clinical implications, important academic implications arise from this research. As SLPs already have started to use telepractice, Higher Educational Institutions, have to introduce new disciplines in their curriculums and address issues regarding new service deliver models. Different and simplified professors could introduce new topics on their existing disciplines.

In that way not only SLPs will be better informed and they will have the proper education in order to practice but it will be a motivation for further research in the area. Greek SLPs do not have any data that provide information about the perceptions that clients, families and caregivers have about telepractice and so they do not know if there is a willingness from them to be involved on this.

Not only that, but currently there is no Greek data which compare face- to- face session and telepractice sessions. We hope that this study will pave the way for new research on the area and more data will be available soon for the clinicians.

In this study the instrumental tool was designed by the researcher and was first used for the purposes of this study. Even we piloted that the validity of the research could not be the same as it could be if the tool has been used and for another research. Thus, we perceive this as a limitation of the study. In addition, as this was an exploratory study the questionnaire covers a range of topics related to telepractice but didn't have a depth look on each and every topic. Even we are satisfied with the findings as all objectives and aims were examined, we perceive this as a limitation of the study. Finally, we have to point out that if the response rate was higher it will be easier for us to make generalizations.

Further research is necessary and beyond else it is important the instrument tool to investigate the geographical location of the services. In other words it will be beneficial to investigate in which specific areas the services are provided. Additionally, a new research has to investigate the technology issues; meaning the teleconference tools that clinicians use as well as the material that they use. Another, important aspect is the cost and the reimbursement. In this study, participants consider as a benefit the reduced session cost, but in reality we do not know if the sessions cost

is lower. In addition, we do not know if insurances public or private pay for telepractice services.

To conclude all this work, we believe that nothing can be characterized as traditional when we speak about science. Innovative applications appear every day to ensure us that nothing can be remaining the same. We cannot reject or we cannot promote something if we do not try it first; but at the same time we must have in mind that it is not possible everything to be suitable for everyone. Telepractice is new, innovative and alternative. But at the same time none can guarantee that is an effective solution for every situation. More investigation is important to justify that it is an option for some of them.

We hope that this exploratory study will pave the way for new academic research and for new clinical applications, which might change Greek reality for a good reason.

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Appendix 1- Ethical Approval

Greek SLPs Knowledge of Telepractice



Universidade Fernando Pessoa
www.ufp.pt

Handwritten signature

Exmo. Senhor
Prof. Doutor Luís Martins
Diretor da FCS

Porto, 17 de Dezembro de 2013

Exmo. Senhor Prof. Doutor,

A Comissão de Ética, depois de recebida o projeto de Mestrado em Terapêutica da Fala, de Theodora Christina Pitsikali, subordinado ao tema "New Era in Service Delivery Models: Greek SLPs Knowledge and Perceptions of Telepractice", considera nada haver a opor ao mesmo.

Com os melhores cumprimentos.

A Vice-Presidente da
Comissão de Ética



Fundação Ensino e Cultura "Fernando Pessoa"

INSC. 000 011 000 - "Fundação Ensino e Cultura" - Ministério da Educação e Ciência
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MARTINS

Appendix 2- The Cover Letter

Cover Letter and Instrumental tool

Dear Speech- Language Therapist,

Have you ever thought that instead of traditional face- to- face session you can make a session from long distance via Skype or a related teleconference application? My name is Pitsikali Theodora –Christina and I am a second year master student at University Fernando Pessoa (Porto, Portugal) in the department of speech- language therapy. I am studying the knowledge, use, perceptions and intentions that Greek Speech- Language Therapists have on telepractice.

The information obtained from this survey will aid in my completion of my Master thesis with titled: “New Era in Service Delivery Models: Greek SLPs Knowledge and Perceptions of Telepractice” that I will submit in partial fulfillment of the requirements for the degree of master in Speech -Language Therapy- Specialization in Adult Language.

I would like to ask you to collaborate with the study by completing the following questionnaire which will take approximately 5 minutes.

The questionnaire contains 17 questions that subdivided in 5 sections as follows:

- Section I: General Questions- Demographics (7 questions).
- Section II: Knowledge on Telepractice (2 questions).
- Section III: Use of Telepractice (3 questions).
- Section IV: Perceptions of Telepractice (2 questions).
- Section V: Intentions of Use (3 questions).

All information obtained will be anonymous and your participation is strictly voluntary. If you choose to participate in this mail distributed survey, please take the next few minutes to complete the following questionnaire and do not forget to submit it at the end.

If you have any questions regarding my study or your participation please contact me at this e-mail address or by phone on:

I sincerely appreciate your participation and I would be pleased to share the findings of my survey upon completion if you so desire. I have to inform you that you should continue with this survey only if you totally understood and agree with the above explanations regarding your participation. If you continue with the survey, it will be assumed that you gave us your informed consent to participate on this investigation. In case that you agree to collaborate, please complete and return that survey to me.

Some Help for you! Please Follow!

1. Complete the form by choosing/clicking on each box (click with the mouse or your keyboard). Be careful. Is not necessary you to create anything. When you click each box an “x” appears automatically.
2. You should choose/click only one box.
3. In cases that you can choose/click more than one option/box it says: complete all that apply.
4. In the semi-open questions please use your keyboard and type your response, inside the boxes.
5. When you finish just click on submit

Thank You for Your Collaboration

Yours Sincerely,

Pitsikali Theodora- Christina

Athens, 2014

Appendix 3-The Questionnaire

Questionnaire

“Long Distance Sessions via Telepractice: Knowledge –Use- Perceptions and Intentions”

I. General Questions- Demographics

Please answer based on the instructions.

1. My gender is:
 Male Female
2. My age is year.
3. My highest degree is:
 BA MA/MSc PhD Post Doctoral
4. I took my highest degree from:
 University T.E.I College IEK Abroad
5. I am working as a speech- language therapist for year/s.
6. At that moment I am working in (complete all that apply):
 Hospital School Special School Private office University
 Clinic Other Please indicate:
7. I am working on the perfection of (complete all that apply):
 Attica Thessaloniki Iraklion Achaia Larissa
 Other Please indicate:

II. Knowledge on Telepractice

Please indicate your level of agreement with the statement in question 1.

Continue with question 2 only if you: “Strongly Agree”, “Agree” or you are “Uncertain” with the statement in question 1.

1. I know what telepractice is.
 Strongly agree Agree Uncertain Disagree Strongly Disagree
2. I get that knowledge from (complete all that apply):
 University course (during my academic years)
 Seminars- Congress
 From another colleague (SLP)
 From another health professional (physician, nurse etc)
 From another professional (computer engineer etc)
 Personal study (articles, books etc)
 Other Please indicate:

III. Use of Telepractice

Please answer in this section ONLY if you have used/use telepractice.

1. I have used/I use telepractice from:

The / 20 (month& year) until the /20 (month& year)

2. I have used/I use telepractice to provide (complete all that apply):

- Screening
- Evaluation/Assessment
- Diagnosis/ Differential diagnosis
- Rehabilitation/Treatment
- Consultation to client/caregiver
- Reference to other professional/service
- Other Please indicate:

3. I have used/use telepractice with (complete all that apply):

Children with (complete all that apply):

- Speech disorders
- Language disorders
- Fluency disorders
- Voice disorders
- Swallowing disorders
- Apraxia
- Pervasive Developmental Disorder (Autism)
- Down syndrome
- Cerebral palsy
- Other Please indicate:

Adults with (complete all that apply):

- Speech disorders
- Language disorders
- Fluency disorders
- Voice disorders
- Swallowing disorders
- Aphasia
- Dysarthria
- Apraxia
- Other Please indicate:

IV. Perceptions of Telepractice

Please answer in this section ONLY if you have used/use telepractice.

Based on your experience indicate your level of agreement with the statement in question 1 and type (inside the boxes) for question 2.

1. I believe that telepractice is an effective method.

Strongly agree Agree Uncertain Disagree Strongly Disagree

2. I believe that three potential benefits/advantages and three potential barriers/limitations of telepractice are:

Benefits/Advantages

Barriers/Limitations

V. Intentions of Use

Please if you have used/use telepractice, based on your experience indicate your level of agreement with the statement in question 1.

If you do NOT use telepractice complete your intentions in answer 2 and 3(type inside the boxes).

1. I would like to continue to use telepractice.

Strongly agree Agree Uncertain Disagree Strongly Disagree

2. I would like to use telepractice in the future.

Strongly agree Agree Uncertain Disagree Strongly Disagree

3. Even I haven't experienced on telepractice, I believe that three potential benefits/advantages and three potential barriers/limitations of telepractice it could be:

Benefits/Advantages

Barriers/Limitations

Thank you for your time and your collaboration

Appendix 4- Sample of Piloting

Ερωτηματολόγιο

Συνεδρίες Εξ Αποστάσεως Μέσω Τηλεπρακτικής: Γνώσεις- Χρήση- Αντιλήψεις και Προθέσεις

I. Γενικές Ερωτήσεις- Δημογραφικά

Παρακαλώ απαντήστε βάσει των οδηγιών.

8. Το φύλο μου είναι:

Ανδρας Γυναίκα

9. Η ηλικία μου είναι: έτη.

10. Το ανώτατο πτυχίο μου είναι:

Πτυχίο Μεταπτυχιακό Διδακτορικό Μεταδιδακτορικό

11. Έλαβα το ανώτατο πτυχίο μου από:

Πανεπιστήμιο Τ.Ε.Ι Κολλέγιο ΙΕΚ

Εξωτερικό

12. Εργάζομαι σαν λογοθεραπευτής/τρια για έτος/έτη.

13. Τη δεδομένη χρονική περίοδο εργάζομαι (συμπληρώστε όλα όσα ισχύουν):

Νοσοκομείο Σχολείο Ειδικό Σχολείο Ιδιωτικό Γραφείο

Κλινική Πανεπιστήμιο Άλλο

Παρακαλώ προσδιορίστε:

14. Εργάζομαι στην περιφέρεια του/της (συμπληρώστε όλα όσα ισχύουν):

Αττικής Θεσσαλονίκης Ηρακλείου Αχαΐας Λάρισας

Άλλο Παρακαλώ προσδιορίστε:

II. Γνώσεις στην Τηλεπρακτική

Παρακαλώ προσδιορίστε το επίπεδο της συμφωνίας σας με τη δήλωση στην ερώτηση 1.

Συνεχίστε με την ερώτηση 2 μόνο εάν “Συμφωνείτε Απόλυτα”, “Συμφωνείτε” ή είστε

“Αβέβαιος” με τη δήλωση στην ερώτηση 1.

1. Γνωρίζω τι είναι η τηλεπρακτική.

Συμφωνώ απόλυτα Συμφωνώ Αβέβαιος Διαφωνώ Διαφωνώ Απόλυτα

2. Απέκτησα αυτή τη γνώση από(συμπληρώστε όλα όσα ισχύουν):

Πανεπιστημιακό μάθημα (κατά τη διάρκεια των ακαδημαϊκών μου χρόνων)

Σεμινάρια -Συνέδρια

Από κάποιον συνάδελφο (λογοθεραπευτή)

Από κάποιον άλλο επαγγελματία υγείας (ιατρό, νοσηλεύτη κτλ)

Από κάποιον άλλο επαγγελματία (μηχανικό υπολογιστών κτλ)

Προσωπική μελέτη (άρθρα, βιβλία κτλ)

Άλλο Παρακαλώ προσδιορίστε:

III. Χρήση Τηλεπρακτικής

Παρακαλώ απαντήστε ΜΟΝΟ εάν έχετε χρησιμοποιήσει/χρησιμοποιείτε τηλεπρακτική.

1. Έχω χρησιμοποιήσει/ χρησιμοποιώ τηλεπρακτική από:

Το/Τον / 20 (μήνας& έτος) μέχρι /20 (μήνας& έτος).

2. Έχω χρησιμοποιήσει/ χρησιμοποιώ τηλεπρακτική για να παρέχω (συμπληρώστε όλα όσα ισχύουν):

Δοκιμασία ελέγχου/ Screening

Αξιολόγηση/ Εκτίμηση

Διάγνωση/ Διαφοροδιάγνωση

Αποκατάσταση/ Θεραπεία

Συμβουλευτική σε πελάτη/φροντιστή

Παραπομπή σε άλλο ειδικό/υπηρεσία

Άλλο Παρακαλώ προσδιορίστε:

3. Έχω χρησιμοποιήσει/ χρησιμοποιώ τηλεπρακτική με (συμπληρώστε όλα όσα ισχύουν):

Παιδιά με (συμπληρώστε όλα όσα ισχύουν):

Διαταραχές Άρθρωσης

Διαταραχές Λόγου

Διαταραχές Ροής

Διαταραχές Φώνησης

Διαταραχές Κατάποσης

Απραξία

Διάχυτη Αναπτυξιακή Διαταραχή (Αυτισμό)

Σύνδρομο Νταουν/Down

Εγκεφαλική Παράλυση

Άλλο Παρακαλώ προσδιορίστε:

Ενήλικες με(συμπληρώστε όλα όσα ισχύουν):

Διαταραχές Άρθρωσης

Διαταραχές Λόγου

Διαταραχές Ροής

Διαταραχές Φώνησης

Διαταραχές Κατάποσης

Αφασία

Δυσαρθρία

Απραξία

Άλλο Παρακαλώ προσδιορίστε:

IV. Αντιλήψεις για την Τηλεπρακτική

Παρακαλώ απαντήστε ΜΟΝΟ εάν έχετε χρησιμοποιήσει/χρησιμοποιείτε τηλεπρακτική. Βάσει της εμπειρίας σας προσδιορίστε το επίπεδο της συμφωνίας σας με τη δήλωση στην ερώτηση 1 και πληκτρολογήστε (μέσα στα κουτάκια) για την ερώτηση 2.

1. Πιστεύω ότι η τηλεπρακτική είναι μια αποτελεσματική μέθοδος.

Συμφωνώ Απόλυτα Συμφωνώ Αβέβαιος Διαφωνώ Διαφωνώ Απόλυτα

2. Πιστεύω ότι τρία πιθανά οφέλη/πλεονεκτήματα και τρία πιθανά εμπόδια/μειονεκτήματα της τηλεπρακτικής είναι:

Οφέλη/Πλεονεκτήματα

Εμπόδια/Μειονεκτήματα

V. Πρόθεση Χρήσης

Παρακαλώ εάν έχετε χρησιμοποιήσει/ χρησιμοποιείται τηλεπρακτική, βάσει της εμπειρίας σας προσδιορίστε το επίπεδο της συμφωνίας σας με τη δήλωση στην ερώτηση 1. Εάν ΔΕΝ χρησιμοποιείται τηλεπρακτική συμπληρώστε τις προθέσεις σας στην ερώτηση 2 και 3 (πληκτρολογήστε μέσα στα κουτάκια).

1. Θα ήθελα να συνεχίσω να χρησιμοποιώ τηλεπρακτική.

Συμφωνώ Απόλυτα Συμφωνώ Αβέβαιος Διαφωνώ Διαφωνώ Απόλυτα

2. Θα ήθελα να χρησιμοποιήσω τηλεπρακτική στο μέλλον.

Συμφωνώ Απόλυτα Συμφωνώ Αβέβαιος Διαφωνώ Διαφωνώ Απόλυτα

3. Ακόμα και αν δεν έχω εμπειρία στην τηλεπρακτική πιστεύω ότι τρία πιθανά οφέλη/πλεονεκτήματα και τρία πιθανά εμπόδια/μειονεκτήματα της τηλεπρακτικής θα μπορούσε να είναι:

Οφέλη/Πλεονεκτήματα

Άμεση πρόσβ
Ευκολία για ό
Ανέξοδη διαδ

Εμπόδια/Μειονεκτήματα

Απρόσωπο σε
Πιθανά προβ
Δεν υπάρχει ε

Σας ευχαριστώ για το χρόνο και τη συνεργασία σας