Studies on Global Remote Interpreting: A PRISMA Systematic Review

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Abstract. This paper conducted a systematic review of remote interpreting based on PRISMA model. The paper is unfolded with introduction of remote interpreting (RI), which tells its history and future development as well as the methodology, which describes the detailed process of identification, screening and including of altogether 36 articles from core journals using PRISMA. Data was collected from research cases over the period 1996-2022. The finding parts show that current studies of remote interpreting is varied in different areas including health care, education, legal settings, technology, and political settings, whose aims and results are all distinguishing and prominent. In conclusion, it can be seen that remote interpreting, a seemingly new technology, has already experienced its infancy and established its foundation in different fields in our society. However, the study also indicates some limitation found in the current studies – for example, the lack of ethical care of interpreters, the adaptability for interpreters into this burgeoning technology, and a better integration of both humans and technology which are not studied in detail yet. Moreover, the review itself also shows some limitation, due to the fact it’s based on the articles from core journals only, to some degree making it less representative.

Keywords: Remote Interpreting, Systematic Review, PRISMA

1. Introduction

“Interpreting plays a crucial role in contemporary society because it empowers professionals in different areas to inform, guide, and hear different people in need and solve the problems in cases of language barriers” (Skaaden, 2018, p. 2). However, the development of burgeoning information and communication technologies as well as the increasing need of multi-lingual and multi-cultural interaction, have created adequate opportunities for remote communication at any one time and brought about selective methods of rendering interpreting services. Moreover, influenced by the pandemic, more and more useful and practical application have been put into practice in remote interpreting market. As Braun (2015) pointed out, remote interpreting can be divided into two primary types including telephone interpreting and video remote interpreting (VRI). According to the areas related, remote interpreting has made its way and gained popularity in supra-national institutions, legal settings, health care settings, and other settings.

With deeper probe into this seemingly new paradigm, its pros and cons are researched in detail to facilitate shared understanding. “For example, transmission signal can be guaranteed, the interpreter can see the speaker, text, images, video information, etc. more clearly.” “However, the feeling of "absence", which is triggered by the physical separation between the interpreter and the scene, and the feeling of "distance" and "loss of control" are also witnessed.” (Wang & Fan, 2021, p. 293). On account of these, different opinions or even some divergences may occur. For example, how much control the interpreter needs over the equipment, the contrast and comparison between remote interpreting and its counterpart, on-site interpreting in terms of pressure, fatigue, psychological conditions of interpreters and their interpreting quality. Therefore, loads of studies from different angles and perspectives have been carried out in order to get a quantitative and qualitative analysis of remote interpreting. Thus, these perspectives about the status quo, context analysis, different stakeholders, mechanism analysis, conducted results, and potential influences form the intention of this research, which aims to exploit a systematic review in order to understand how remote interpreting is studied so far and what new light the systematic review can shed on the future study in remote interpreting. To achieve this target, the following research questions (RQs) are defined:

RQ1. What studies are there aimed at investigating remote interpreting (e.g. quantitative analysis)?
RQ2. What can we conclude from these studies in terms of themes, research questions, methods and findings (e.g. qualitative analysis)?
2. Methodology

This paper adopted the Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines to finish this systematic review, and it referred to and also appreciated the overall structure and flow of the similar systematic review article by Abelha, et al. (2020). The selection of studies included in the review followed the main steps of the PRISMA Statement, “an evidence-based minimum set of items for reporting in systematic reviews” (Moher et al., 2009, p. 1): identification, screening, and eligibility.

2.1 Data bases and search strategies

The following databases were chosen for the identification phase, on account of their relevance and academic rigour: CNKI, Goole Scholar, Web of Science and Scopus over the period 1996-2022. Peer-reviewed studies with articles written in English are also referred to. To identify as many eligible studies as possible, Search terms were modified together with informatics and combined with Boolean operators as follows, with the terms remote interpreting* OR video remote interpreting* OR telephone interpreting as keywords for the topic (Abelha, et al., 2020, p. 3).

2.2 Selection of studies

We review Index, TAK (Title, Abstract and Keywords), and body text independently through the above mentioned criteria to decide paper eligibility to be included in the study.

2.3 Eligibility criteria

The eligibility phase involved full-text analysis of the studies to determine if they fit the review (Yonamine, et al., 2022, p. 4). The selection of the papers to conduct systematic review was finished in three steps. The first step of analysis was to screen the index of all articles. The second step was the analysis of the title, key words and abstract. The selection criteria were formulated based on the research questions (RQs), and the research results were organised as follows. Articles whose full text are not available were excluded. In the third step, articles based on their body text are retrieved for a synthetic and integrated check so as to decide inclusion. To correspond our specific RQs, we eliminated all articles that did not depict studies analysing the courses and outcomes of remote interpreting. (Abelha, et al., 2020, p. 3)

2.4 Composition of the Corpus of Analysis

The following cataloged studies, each marked with a number, were categorised by publication year and their databases. The search proceeded 274 articles in total in conformity with our criteria. However, the number was reduced to 36 after the eligibility phase. (Figure 1)

In the end of this paper, a link of appendix A is attached to present all the papers selected for this systematic review (n=36) as well as their relevant information: code number, database, (W=Web of Science; G=Google Scholar; S=Scopus; C=CNKI), publication year, journal name, title, author, sequence number.

3. Findings

3.1 What studies are there aimed at investigating remote interpreting (e.g. quantitative analysis)?

The years yielding more studies included in the review are 2020 and 2021, as illustrated in Figure 2. The past six years saw a relevant surging trend in the number of published articles related to remote interpreting.

22 core journals with papers dedicated to the issue under analysis are included in the review. (Figure 3)
Among the selected articles, topics of most concern are those of health care, legal settings, technology, education and political settings. (Figure 4)

![Fig. 4. Numbers of paper by field of knowledge.](image1)

The worldwide distribution of the studies clearly illustrates Europe as the most prolific continent considering its number of related studies during the last decades. Among all the articles included, 24 are on the basis of researches carried out in European countries, 7 in North America, 4 in Oceania, and 1 in Asia. A panoramic view of Europe clearly depicts a west-centred trend as supposed. By contrast, a smaller presence of Oceanian and Asian studies and none participation of African or Southern American studies could be witnessed as illustrated in Figure 5.

![Fig. 5. Worldwide distribution of the studies.](image2)

In summary, in Section 3.1.4, we summed up and dissected a distribution panorama of the related studies around the world. Europe and North America are the most outstanding continents producing more researches on the topics. UK in particular, was the most productive country by far, followed by USA, Australia and France. But obviously fewer related studies were conducted in Asia (only one from Vietnam) and none from Africa and South America.

### 3.2 What can we conclude from these studies in terms of themes, research questions, methods and findings (e.g. qualitative analysis)?

**Healthcare**


In Paper 1G, 2G, 3G, 7G, 1S, 2W, the interpreting mechanism in healthcare settings is evaluated in detail. With analysing pros and cons from different stakeholders’ perspectives, the studies are all aimed to address the potential challenges and improve the quality of interpreting output and then conclude the practical methodology for remote interpreting in healthcare settings. 1G is aimed to study people’s views on utilising VRI for senior citizens to conduct their home-based cognitive evaluation. The study shows pros for example, VRI helped to cut down expenditure and save the time for distance travel, thus delivering financial and practical benefits to the patients. The study also shows the limitations, including challenges in technical perspectives such as the way to better video and audio quality, the approach to placing the equipment optimally. The purpose of 2G is to examine how the audiovisual and spatial conditions in VRI influence communicative interaction. The result shows communication facilitated by remote interpreting is both enabling and constraining so that the use of nonverbal resources such as gestures, gaze and body orientation as well as specific turn-management behaviour is required. 3G intends to provide a framework of remote interpreting for public services, supposing it to be the most proper way to cope with the health inequalities resulted from the language barriers while involving in a paradigm to lower the risks of the virus spreading and resurfacing amid the current COVID-19 pandemic. 7G investigates a feedback report of university students who used RI as a tool in their online classroom via Skype, as well as their reflections and comments on remote interpreting in healthcare and legal settings in real life. It provided suggestions of how to address challenges of remote interpreting and improve its quality. 1S conducts process assessment through the implementing of VRI and TRI within primary care institution in the northern German metropolis of Hamburg with the approach of three-armed trial (VR vs TR vs control group or CG) and questionnaires. The study shows that the quality of VR communication is better than CG, which represents a promising approach. 2W delineates a new researching pattern of VRI which adopted mixed approaches integrating qualitative and quantitative data in evaluating encountered challenges with the use of VRI in clinical settings.

In Paper 6G, 4W, 16W, all the research are based on the perspective of interpreters themselves, including their real experiences and the assessment of their own performances in remote interpreting and the emerging barriers of this new trend. 6G, driven by the examples of an interpreting studies-based analysis, describes interpreters’ exposure to increased pressure, fatigue, as well as greater spontaneity if video remote interpreting is provided as an instant service. 4W analyses the contextual and potential factors that may influence and shape the performances and behavior of healthcare interpreters when they interpret over the telephone. 16W articulates the study of interpreters in different medical institutions evaluating their own satisfaction with the quality and efficiency of communication by using each modality in order to determine the adequacy of both videoconferencing medical interpreting (VMI) and...
telephonic interpreting (TI). It demonstrates that in the situations when TI does not suffice, especially due to some psychosocial or substantial barriers, VMI might deliver advanced and more effective communication services. In Paper 1W,12W,13W,15W,18W,19W,20W, the studies are conducted mainly on account of the specific LEP patient groups (limited-English-proficient) including migrants, ethnic minorities, refugees, or other vulnerable groups such as the disabled. 1W engages in the VRI communication experience of deaf patients. One of the themes is about their experiences and perspectives with VRI. The results are discussed together with interpreting and medical ethics to achieve better communication for deaf patients. 12W assesses the efficiency of providing remote interpreting services for limited English proficiency (LEP) patients experiencing outpatient and surgical procedures. 13W sketches out how remote interpreting can boost the communication and interaction process of ethnic minority women about maternal and child health issues in particular with medical professionals, with an overall target to exploit methodology to accelerate the exchange between the vulnerable like ethnic minorities and medical professionals. 15W fleshes out the meta-communication in the consultations with refugees in Australia, from which we learned that we should be cautious that newer technologies which render on-site interpreting superfluous is not likely to lead to a more constrained exchange environment for refugees. In the case of 18W, language discordant patients were randomised to usual and customary interpreting or Remote Simultaneous Medical Interpreting (RSMI). The result shows RSMI could play an important role as a multifaceted method to enhance depression diagnosis. It is well-documented that 19W assesses the effects remote interpreting exerted on LEP patients and their own feedback about satisfaction as well as dissatisfaction with this technology. It turns out that RSMI, especially used to provide services for LEP patients, can improve privacy and patient contentment. Thus, it is supposed to be regarded as an indispensable part of a multi-pronged approach to settling communication obstacles among various languages in medical settings. 20W pinpoints that it is promising and hopeful by using RSMI to enhance interaction quality and prompt communication process between patients with limited language proficiency and medical professionals to break down language barriers of millions of non-English-speaking or LEP patients and improve delivery of medical care for them.

Psychology, pedagogy, and education
In Paper 4G,5G,12G,3W,17W, the studies all highlight the approach to improving remote interpreting training and related pedagogy. 4G aims to provide a united theoretical and methodological configuration, which will contribute to probe into mechanics and components of TI, for study goals as well as its training program. 5G does with excerpts from a corpus of video remote interpreting activities in collaborative settings such as the customer services, the doctor-patient communication to explore how some particular communication phenomena which already existed in conventional on-site interpreting such as dyadic sequences, turn taking, and spatial distribution unfold in VRI and what implication they may exert on remote interpreting. This comprehensive integration promises to bring about approaches to improving video remote interpreting education that is more wholistic and integral. 12G analyses the targets, approaches, conclusions and recommendations to assess the implication and feasibility of remote interpreting (RI) in the European Parliament and other large multilingual settings, amid the background of an increasing number of languages calls for the extension of existing arrangements. 3W describes the new online setting encountered due to the pandemic and the unintended benefits brought by the transition, during which intensive focuses on remote interpreting pedagogy could be witnessed. 17W examines it is quintessential for us to incorporate the new technologies such as shared repositories and virtual conference tools like remote interpreting into the progress of PSIT education. In Paper 9G,8W,9W, some psychological factors of interpreters during their experiences of remote interpreting are analysed which includes motives, cognition, and attitudes. 9G pinpoints the motives for additions and expansions in RI, which highlights the multidimensional and complicated nature, both in semantic and pragmatic level, of additions and expansions in RI and explore their appropriateness. 8W is a case in point that illustrates in the context of simultaneous interpreting, whether the access and assistance of some visual materials through PowerPoint can improve the output accuracy and lessen the cognitive load of interpreters involved. In 9W, the study was carried out through a multi-faceted approach during the 2014 FIFA World Cup aimed at analyzing the viewpoint of interpreters who delivered remote interpreting in a conference via video.

Legal settings
10G,11G,6W,10W,11W,14W
In Paper 10G,11G,6W,10W,11W,4W, remote interpreting activities set in legal settings such as prisons, courtrooms, are articulated and analysed. 10G presents a panoramic view of the methods adopted by prison institutions all over the world to facilitate the communication between inmates from foreign countries who cannot communicate effectively and correction staff. 11G is aimed at evaluating the results of an experiment checking the viability and reliability of VRI in legal contexts. 6W shows an ethnographic study of asylum court interpreting with video links and remote participants whose result shows that it may be detrimental to the asylum seeker’s case due to some objective factors in remote interpreting such as the place management and turn-taking. 10W is the first to obtain some systematic and deep insights into the factors, which may mold the interpreters’ perceptions and cognition as might be supposed in order to lay a foundation of RI in legal contexts based on common configurations (e.g. courtroom video links, forensic video links, links to remote interpreters) and settings (e.g. police, court). 11W discusses different perspectives of participation into legal settings, judicial contexts in particular, which relied on
video conferencing technology and the tangible benefits it delivered, so as to create a new feasible paradigm that permits remote defendants stay in prison, while the interpreters are in the courtroom. 14W similar to 11W focuses on the pattern based on ethnographic observations and extensive video recordings recorded during pre-trial hearings in France of a remote defendant appearing from his prison and courtroom interpreting via video by the remote interpreter, which proves to be an epoch-making study in the area.

**Technology**
8G,13G,14G,15G,7W
In Paper 8G,13G,14G,15G,7W, remote interpreting and its related technology are explored. 8G conducted a survey in Australia of 465 remote telephone interpreters, aimed to summarise and analyse their attitudes about TI in terms of its the suitability, quality, sustainability and remuneration. Results revealed TI sometimes is being utilized in inappropriate conditions, and that interpreters’ dissatisfaction intensifies with the low remuneration. 13G highlights recent RI experiments and empirical studies carried out at the United Nations and European Union institution, after which their salient technical features were researched in detail that are valuable for further study in more depth. 14G seeks to provide evidence for the prominent role of multi-sensory integration in simultaneous interpreting so as to overcome deficiencies and barriers unleashed by the new environment. In 15G, the technical aspects of videoconferencing are examined, with emphasis on the standards for the transmission of audio streams and compressed video. The cost effectiveness of this technique for various kinds of meetings and its suitability are also touched upon. 7W reports on research assessing the educational opportunities that highly interactive and multimodal Virtual Learning Environments (VLE) provide for collaborative learning in remote interpreting.

**Political settings**
5W
5W reports on a case in a French Asylum proceeding during which the court had recourse to remote consecutive interpreting and thus put forwards the first naturalistic analysis of this controversial practice. Drawing on conversational analysis, it indicates that this kind of summary interpreting is framed as a separate interaction between asylum seeker and interpreter.

**4. Conclusion**
This paper conducted a systematic review of 36 papers aimed at exploring RI from 1996 to 2022, which are from 22 core journals and based on 5 distinguishing areas. This systematic review pinpoints that over a spell of nearly three decades, there have been more and more researches in RI oriented to totally various aspects. Among these studies, the methodology varies from normative study, case analysis to empirical research, the subject is variable from the stakeholders, the professions to environments, equipment and to interpreters themselves. However, the systematic review due to its scope, is based on the articles all selected from the core journals which means both papers not included in core journals, and those conference proceedings or books are all excluded in our review, which reveal the limitations of this study, making it a little bit less representative. “ In terms of future directions, as this study shows, some new and developing perspectives in RI are still needed to be further analysed in terms of the feasibility of facilitating of burgeoning technology such as high-end solutions like videoconferencing systems (HD and 3D “tele-presence” or “immersive” systems) and the merger of videoconferencing with 3D virtual reality technology to create “augmented reality” communication solutions as well as low-end solutions such as web-based videoconferencing services which were originally developed for the home market (e.g. Skype), and video calls using mobile devices and apps” (Braun, 2015, p. 377), also in terms of the assistance of multi-modal and multi-sensory approach, the relation between the physical separation and information fragmentation in alliance with its solution, and the adaptability as well as ethical care of the interpreters.

Appendix A. Codification of Papers Included in the Systematic Review
See the full list of literature in the appendix (link: https://www.kdocs.cn/l/cuOVfbOUkgKo)

**References**
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