Satisfaction in providing health care regarding family doctor: A systematic review of the literature

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Abstract

Health care has been improving its services to better serve its patients. The scientific development, new equipment, new medication, with new treatments put into practice, provide a more efficient follow-up of the patients, including better results. Although all these improvements, user satisfaction emerges as one of the main objectives of care services to increase healthcare quality. A way to ensure user satisfaction lies in the trust, and communication that exists between users and providers. More specifically, family doctors appear as one of the main providers where these aspects can be more important.

This study performs a systematic review, complemented by an analysis of the parameters alongside bibliometric analysis, so that is possible to connect and analyze all the scientific papers related to the theme providing a more complete overview of the information published so far.

The treatment of the documents selected was done via PRISMA methodology, following the guidelines previously established, obtaining a sample of 42 papers, with a time range from 2000 until 2022. These papers were analyzed using HistCite, Gephi, and VOSviewer. Concluding, The United States of America was the country most studied, without any research on Africa or Oceania. Users' satisfaction was considered to be high or relatively high in most research. Inside the sample collected the paper by Kersnik (2000) is considered the main paper. Although in this area of study one of the main documents and authors is Baker (1990), and one of the main sources is Social Science & Medicine.

Keywords: User satisfaction; Health care; Family doctor; PRISMA methodology; Systematic review.

Resumo

Os cuidados de saúde têm melhorado os serviços para melhor servir os pacientes. O desenvolvimento científico, novos equipamentos, nova medicação, novos tratamentos postos em prática providenciam um mais eficiente acompanhamento dos pacientes, incluindo melhores resultados. Apesar destas melhorias, a satisfação do utente emerge como um dos principais objetivos dos serviços de saúde para aumentar a qualidade dos cuidados de saúde. Uma forma de assegurar a satisfação do utente reside na confiança, na comunicação que existe entre utentes e prestadores. Mais especificamente, o médico de família aparece como um dos principais prestadores onde estes aspetos podem ser importantes.

Este estudo realiza uma análise sistemática, complementada por uma análise dos parâmetros juntamente com uma análise bibliométrica, para que seja possível ligar e analisar todos as publicações científicas relacionadas com o tema providenciando uma visão geral da informação publicada até ao momento.

O tratamento dos documentos selecionados foi feito através da metodologia PRISMA, seguindo diretrizes previamente estabelecidas, obtendo uma amostra de 42 artigos, com um intervalo de tempo de 2000 até 2022. Estes documentos foram analisados usando HistCite, Gephi, e VOSviewer. Concluindo, os Estados Unidos da América foi o país mais estudado, sem nenhuma pesquisa em África ou Oceânia. A satisfação dos utilizadores foi considerada alta ou relativamente alta na maioria das pesquisas. Dentro da amostra recolhida o artigo de Kersnik (2000) é considerado o artigo principal. No entanto, nesta área de estudo um dos principais documentos e autores é Baker (1990), e uma das principais fontes é Social Science & Medicine.

Palavras-chave: Satisfação do utente; Cuidados de saúde; Médico de família; Metodologia PRISMA; Revisão sistemática.

Table of contents

List of figures

List of tables

List of acronyms

AMSTAR	Assessment of Multiple Systematic Reviews
BIREME	Biblioteca Regional de Medicina
CRM	Customer Relationship Management
GCS	Global Citation Score
GRADE	Grading of Recommendations Assessment, Development, and Evaluation
IMC	Integrated Marketing Communication
ISSN	International Standard Serial Number
LCS	Local Citation Score
LCR	Local Cited References
MOS	Medical Outcome Study
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
QUOROM	Quality Of Reporting Of Meta-analyses
R-AMSTAR	Revised Assessment of Multiple Systematic Reviews
SCI	Science Citation Index
WOS	Web Of Science

1. Introduction

1.1. Context

The present work lies in the realization of a dissertation that relies on the user satisfaction of healthcare providers: a systematic review.

The possibility of improvement in multiple areas is only possible by studying and therefore acquiring knowledge about a subject. The study can be done using several sources from different authors and by merging their studies, progress can be accomplished. In a time where the accessibility to information is increasing day by day, exists more data, stats, and all kinds of relevant and irrelevant studies, followed by a need for humankind to follow up on this progress. With all this information the reader is confronted with many options to retrieve and select data.

In a way to summarize all the data collected, literature reviews appear as one of the best candidates to help the reader achieve a better understanding. They are proving to be a tool if organizations are trying to maximize their results. Literature reviews can form the basis for high-quality medical education research, and at the same time increase relevance, originality, generalizability, and impact (Maggio, et al., 2016).

Medicine is a science that is constantly changing, with research being made continually, always making discoveries and investigating new ideas, coming to new results, and redefining ideas and concepts. There is a need to continuously keep in sync with the research made by every researcher. Even with the mass of data that is produced, it is challenging to keep up to date. A job where healthcare providers often need to do some introspection to best take care of their patients. Reviews seem to be a good option to crystallize all the produced information available. With the option to access a good review, it is possible for a reader to access the unbiased data followed by the evidential hierarchy, providing the option to the reader to choose which seems adequate or more credible on its own (Dutta, 2019).

1.2. Motivation

Humanity is facing a worldwide pandemic situation due to covid-19. As result, all countries have become conscious that healthcare providers are one of the main resources in health care worldwide.

Healthcare providers such as hospitals, doctors, and nurses, all work to accomplish the best possible results, being the patients their main concern. Satisfaction has been noticed as an important indicator of quality in health care services in areas like primary care, cardiovascular, cancer treatments, pain management, and mental health. Results suggest that satisfaction is intimately connected with the treatments and completion of treatments, on the other hand, dissatisfaction increases the failure to complete treatments (Woodward, et al., 2017).

Even so quality is a reference to the patients who request health care service, therefore “Policy makers, clinicians, and hospital administrators are focusing on patient experience as an important domain to assess the quality…” (Martsolf, et al., 2016).

The interaction between health care providers and users of health services is fundamental to achieve a high quality of service. This interaction involves aspects like cooperation, comprehension, and trust, among others, so the management of the resources is very important and must highlight not only the technical skills but also the attitudinal competencies (Dorigan, 2021).

In contrast, the lack of interaction such as the language barrier, when the two intervenients do not share the same native language, proved to be an important factor for dissatisfaction of the patient in terms of healthcare quality, related to the provider. Besides this barrier, healthcare providers still are required to deliver high-quality healthcare to their patients, to allow patients to be treated equally. The language barrier is associated with unequal treatment, which can lead the patient to poor healthcare quality service, resulting in an unequal outcome. Such experience led these patients to visit more healthcare services that made the patient go through adverse events. Patients with the language barrier as limitation, are proven to have more adverse events when compared with patients who do not encounter this limitation, of not sharing the same native language (Shamsi, et al., 2020).

“Although demonstration of the doctor’s trustworthiness through certification and regulation may sometimes be important to some patients, personal experience of the doctor is of more direct relevance to most patients, and therefore trust can be regarded as a feature of the relationship between doctor and patient. The relationship is important in patients’ satisfaction, and continuity of care plays a key role in this process” (Baker, et al., 2003). The authors stated that patient trust as well as satisfaction increases if they see their regular doctor, but it can also decrease if they consult a doctor they don’t trust. So, the patients with a family doctor seem to be more satisfied with their health service, due to the trust deposited in the continuity follow-up by their doctor (Baker, et al., 2003).

Patients interviewed about their visits to family doctors’ appointments, demonstrate the importance of verbal and non-verbal communication: moments like the opportunity to ask questions, receipt of information, being taken seriously, individualized care, and emotional state after (Marcinowicz, et al., 2009).

1.3. Objective

Healthcare services have been improving throughout the decades. That improvement can be verified by the quality of the services delivered to its users. An increase in the quality of the services provided goes through a better understanding of which factors influence satisfaction. With this in perspective, in a way of improving the quality of healthcare, it is needed to understand the level of satisfaction of those who seek these services.

We can observe an increase in the number of articles and articles’ reviews from the last five decades until today. Although it can be verified as a significant increase, none of these reviews refers to users’

satisfaction in healthcare services when they seek a family doctor. Family doctors are one of the main providers in health care services, being many times responsible for detecting something wrong with the patient, having the needed knowledge to follow up, and indicating the most adequate therapeutic. In a way to improve the quality of the provided service by the family doctor, it is important to increase literacy in terms of satisfaction of the users. Thus, identifying an existing gap in the literature, this dissertation will work on a literature review about satisfaction in providing health care, related to family doctors.

This dissertation will assess and analyze the literature concerning satisfaction related directly to family doctors trying to identify users' satisfaction level when using this service. To do so, a systematic review will be developed, providing an answer to the questions:

- What is the satisfaction level with family doctors?
- Which variables of the patients are considered the most?
- Are the methodologies used to evaluate satisfaction too different from each other?

Is expected that the dissertation will sum up all the articles that are proposing to, in concern of the main topics, trying to:

- Fill the gap in the literature
- Analyze the available literature

1.4. Methodologies

Literature reviews in this field, like this dissertation, can help improve or maximize some services, resources, or management leading to being more productive or organized. After a careful search of the literature, it is possible to observe that users' satisfaction concerning family doctors is non-existent in terms of literature review, despite the various papers referring to the theme. With this into account, this paper will be based on literature research alongside these terms, users' satisfaction, and primary services related to family doctors.

The existence of articles referring to satisfaction of users related to the family doctor, and since there is any review, a methodology adopting a strategy that allows to analyze variables like demographics or social, and to relate articles between each other's, in terms of citations, for example, will be the best option to reach outcomes and draw conclusions. Additional to the selection of the articles, the criteria to select those articles will be defined so that the information treated may be insightful.

Considering the methodology selected it is expected that doing a literature review will help to achieve the objectives of this study and to answer the questions previously defined.

1.5. Document structure

This dissertation is divided into seven chapters:

- Chapter 1 – Identifies the problem and the expected outputs of this work;
- Chapter 2 – Defines keywords and reviews the literature in the field;
- Chapter 3 – Presents the methodology;
- Chapter 4 – Proceeds with the data collection;
- Chapter 5 – Analysis of the data retrieved, present the results and discuss them;
- Chapter 6 – Performs a bibliometric analysis through the software;
- Chapter 7 – Draw conclusions and recommendations for future work.

2. Literature review

2.1. Definition of healthcare quality

According to the World Health Organization, quality of care can be defined as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes, It is based on evidence-based professional knowledge and is critical for achieving universal health coverage.” (World Health Organization).

When talking about health care quality, this can have various definitions, but with the knowledge that the services related to this, should be:

1. “Effective – providing evidence-based healthcare services to those who need them;
2. Safe – avoiding harm to people for whom the care is intended; and
3. People-centred – providing care that responds to individual preferences, needs and values.” (World Health Organization).

To fulfill and achieve the benefits that are intended for the quality of healthcare services, these must be:

1. “Timely – reducing waiting times and sometimes harmful delays;
2. Equitable – providing care that does not vary in quality on account of gender, ethnicity, geographic location, and socio-economic status;
3. Integrated – providing care that makes available the full range of health services throughout the life course;
4. Efficient – maximizing the benefit of available resources and avoiding waste.” (World Health Organization).

Even though there are other definitions according to several authors:

“…the application of medical science and technology in a manner that maximises its benefit to health without correspondingly increasing the risk” (Donabedian, 1980);

“…providing patients with appropriate services in a technically competent manner, with good communication, shared decision making and cultural sensitivity” (Schuster, et al., 1998);

“…doing the right things right and making continuous improvements, obtaining the best possible clinical outcome, satisfying all customers, retaining talented staff and maintaining sound financial performance” (Leebov, et al., 2003)

These definitions point to the efficiency of the services, never discarding the security, and minimizing the risks. In addition to this, it is possible to observe that the definitions made in previous years in comparison to recent years have come conscious throughout the time that satisfying the patients is an objective that should be fulfilled to meet the healthcare quality of the service, being people-centered.

2.2. Definition of satisfaction

Some theories have been constructed over the years concerning the meaning of satisfaction and what this means to the consumers of services. As stated by Chen et al. (2020) “Customer satisfaction is the state of pleasure or disappointment formed by the comparison of the perceived effect of a product or service with the expected value.” (Chen, et al., 2020).

One cannot forget that the experience lived by the user is also an important item that will be considered when using a service. Users’ satisfaction is also seen as a cumulative feeling that occurs during the process of users' experiences and interactions, but the quality that users are expecting to receive from a service is also depending on the perceived quality and the difference between both of them (Soltani-Nejad, et al., 2020).

Researchers have concluded that satisfaction is a multidimensional concept and complicated to be defined independently of the area that is been studied (Hawthorne, 2006) (Heidegger et al., 2006). According to Ofili (2014), Hawthorne (2006), and Gill, et al. (2009) have summarized some theories has it follows:

1. “Satisfaction is derivable when there is alignment between patients’ perspective on what constitutes satisfaction in health care and the providers view” (Fox, et al., 1981);
2. “Linder-Pelz argued that satisfaction is a function of the patients previous expectation, personal belief and values towards health care delivery” (Linder-Pelz, 1982);
3. “Donabedian theory stipulates that interpersonal aspect of care plays very important role in determining the satisfaction patients derive from health care. For a patient to be satisfied with health care delivery he should have a positive judgment towards every aspect of the quality of care delivered especially as it concerns interpersonal side of health care” (Donabedian, 1980);
4. “Fitzpatrick & Hopkins argue that patients’ satisfaction in health care services is influenced by their individual social environment. Patients measure the satisfaction they derive from health care services against the perceived comfort or discomfort they feel with respect to the services” (Fitzpatrick, et al., 1983);
5. “Ware et al., suggest that patient health care satisfaction is a function of their personal preferences and expectation as far as health care is concerned.” (Ware, et al., 1983).

After a careful reading of these theories, there is an aspect that is underlying in all of them: expectation. We can also conclude that these expectations are influenced by other aspects such as interpersonal aspects, personal values, and individual social environment.

According to the research that has been made, different authors use different terms when referring to the users of healthcare services. For the present study, a better understanding and cohesion, there is a need to distinguish who is the user: is a consumer, a customer, or a patient.

As claimed by Batbaatar et al. (2015) after consulting the Oxford Online Dictionary, have come to the conclusion that “consumer” and “customer” could be interpreted as a user that acquires services or products. When talking about healthcare, using the term “patient” is more appropriate “due to its

specific meaning as a user who is under an influence of professionals, informed, supported, and treated for his or her own sake." (Batbaatar, et al., 2015).

Although the different definitions, there is a propensity to "regard patients as consumers of a service, and, as such, aims to provide 'consumer satisfaction'." (Booth, et al., 1992).

After resuming the definitions of customer satisfaction and healthcare quality, we can observe that these terms are bonded by the expectation of the customer when reaching out to services from any healthcare service, connected with the effectiveness and efficiency that these services have to be to meet these expectations from their customers.

About the interpersonal aspects, personal values, and the individual social environment that the customer seeks to be satisfied with, the care services try to fulfill this satisfaction by focusing on being safe, people-centered, and integrated.

2.3. Customer satisfaction with health care

After defining these two terms, a search through the literature is going to be made, with the purpose to understand what literature reviews have been made so far related to customer satisfaction and health care.

To search the literature, it has been defined the inclusion criteria: articles review, articles available online with open access, articles index from the database of Web of Science (WOS), and PubMed from the year 2000 until December 2021, and related to worldwide healthcare.

The result of the research will be presented below and was done with the keywords Customer satisfaction AND Health care, Customer satisfaction AND Healthcare, in WOS, which presented 16 and 17 article reviews correspondingly and were selected only articles considering the inclusion criteria. As well articles reviewed searched on Google Scholar, with the keywords "customer satisfaction", "healthcare", and "review" were considered as long as the subject were meaningful according to the research.

The articles presented were selected according to the proximity of the theme. Articles with subjects, like as instance "equine veterinary" and "healthcare services marketing" are not exposed, and the articles with a different language, that is not English or Portuguese.

1. Welch (2009) proposes to examine the patients' satisfaction literature for the past 20 years, doing a qualitative review. Variables like acuity and demographics were considered in the study, and comes to the conclusion that five major elements of the Emergency Department experience correlate with patients' satisfaction: timeliness of care, empathy, technical competence, information dispensation, and pain management;

2. Gill & White (2009) intend to review patients' satisfaction literature through a critical review. There are no variables to consider in this study, with the conclusion that the construct has little standardization, low reliability and uncertain validity;
3. Coțiu (2013) tries to critically analyze empirical studies conducted on patients' satisfaction, to identify and discuss definitions and determinants of it, while suggesting areas for further research through a critical review. Variables such as aspects of caring, interactions, medical outcomes, facility procedures, background, and attention are taken into consideration. The conclusion reports that a considerable number of determinants have been identified, still of a commonly agreed theoretical framework demands further research and conceptualisation in order to ensure future development in the field;
4. Ofili (2014) explains what constitutes satisfaction from the perspective of the consumers and the method(s) that can be adopted by healthcare providers/researchers to unveil factors that are responsible for customer satisfaction. The author does a qualitative research and concludes that this method is an effective and efficient approach to adopt, this method should be combined with qualitative research method and the sample should have the right size. These conclusions derive by using variables like age, education, and level of health;
5. Batbaatar, et al., (2015) review a conceptual framework of patients' satisfaction and bring the concept for further operationalisation procedures. There are no variables presented in this systematic review method, a meta-narrative review. It is concluded that there is a need to attempt to define the patients' satisfaction concept from other perspectives or to learn how patients evaluate the care rather than struggling to describe it by consumerist theories;
6. DiGiacinto, et al., (2016) identify characteristics that increase patients' satisfaction. It is not referred what kind of methodology the authors selected. The variables pointed were perception, expectation, length of wait times, provider interaction, comfort level, and ancillary information, which brought to the conclusion that factors that improved patients' satisfaction are decreased wait time, decreased perceived length of wait time, and increased communication through written information or increased face-to-face time with provider;
7. Salehi, et al., (2018) conclude that customer satisfaction is a multidimensional concept, and the impact of each factor depends on culture, speciality, and demographic variables; each hospital should measure and evaluate patients' satisfaction regularly. The systematic review has the purpose to design a model for patients' satisfaction and defining priority factors that impact patients' satisfaction with healthcare services. The variables when talking about patients are expectations, health status, demographics, and socioeconomic. There are also variables from the health system like service quality, hospital features, staff satisfaction, and insurance.
8. Dorigan (2021) identifies that the constructs' perceived value of service and quality precedes patients' satisfaction and loyalty. Also, that Customer Relationship Management (CRM) strategy was related to patient loyalty, and the health managers should encourage the development of attitudinal skills by team professionals, in order to add value to the service offered and provide increased patients' satisfaction and loyalty. This conclusion comes with

the principal objective to synthesize the main strategies to promote the customer satisfaction and loyalty in healthcare organizations through an integrative review. The study relies on variables such as perception of quality service, the effectiveness of treatment, patient experiences, reputation, perception of the service value, and trust.

3. Methodology

3.1. Literature review

What is a literature review? Many definitions can be found in what is a literature review. Some authors emphasize the various aspects of a literature review when giving their definitions, depending on the areas.

For example:

“Typically, the literature review forms an important chapter in the thesis, where its purpose is to provide the background to and justification for the research undertaken.” (Bruce, 1994).

“The literature review is where you identify the theories and previous research which have influenced your choice of research topic and the methodology you are choosing to adopt.” (Ridley, 2012).

“A literature review is a written document that presents a logically argued case founded on a comprehensive understanding of the current state of knowledge about a topic of study. This case establishes a convincing thesis to answer the study’s question.” (Machis, et al., 2016).

It is possible to observe after careful reading of these definitions, that besides the time interval, 1994 until 2016 of the definitions above, every time a literature review is done, one of the main purposes that a literature review serves, is to study the background studies and present the point where the subject/topic is in the present day. Also intends to promote collective reflections and stimulate debates around each theme (Patriotta, 2020).

3.2. Types of reviews

Since the beginning of the studies made from literature reviews until now, numerous authors have suggested various types of literature reviews. The type of literature review that research must select to answer the main question of the study should have into account, the number of articles, news, and information that is relevant to the case. It should depend as well, on the number of reviewers that are selected for the research, and if these researchers are independent of the area of each other. Must have into account if there is data to be treated, and if there is a need to use meta-analysis for example. To be possible to establish the type of literature review to be made, besides the characteristics, the purpose of the study has to be defined, as well as the quality of execution (Snyder, 2019).

Besides all these characteristics already exist some guidelines, like Snyder (2019) claims, to conduct the different types of literature reviews such as narrative or integrative reviews, systematic reviews, and meta-analysis or integrative reviews.

While there are different possibilities to do the literature review, these approaches have different attributes, as can be seen below in Table 1. In the table, there are presented the types of reviews alongside their features not meaning that other types of reviews are not useful and cannot be combined.

For example, when Ernst (2008), did a systematic review, the main goal was to summarise and evaluate critically, all the random clinical trials of B Serrata extracts. Serves the true purpose of a systematic review which is to synthesize and compare evidence.

An example of a semi-systematic review is what Ogunmakinde, et al., (2021) studied with the purpose to identify concepts and theories to explore their potential contributions to the construction industry.

Tafesse, et al., (2016) in their scientific paper attempted to clarify and synthesize the multiple thoughts and concepts created around integrated marketing communication (IMC) by doing a comprehensive integrative framework, critically reviewing three alternatives and widely used IMC frameworks.

Besides these three types, we can also find, by searching through articles that are inserted in scientific journals, and chapters of books that there are more alternatives used nowadays to treat the scientific papers and all the information that can be useful to do a literature review.

Table 1 - Types of literature review - Table adapted from: (Snyder, 2019)

Approach	Systematic	Semi-systematic	Integrative
Typical purpose	• Synthesize and compare evidence	• Overview research area and track development over time	• Critique and synthesize
Research questions	• Specific	• Broad	• Narrow or broad
Search strategy	• Systematic	• May or may not be systematic	• Usually not systematic
Sample characteristics	• Quantitative articles	• Research articles	• Research articles, books, and other published texts
Analysis and evaluation	• Quantitative	• Qualitative/quantitative	• Qualitative
Analysis used	• Statistical methods	• Similar to qualitative research • Few exceptions, combined with statistical methods	• Not specific
Advantages	• Bias can be minimized • Provide reliable findings	• Knowledge of complex areas • Transparent	• Combine perspectives and insights
Disadvantages	• More time consumed • Intensive resources (Stewart & Tierney, 2002)	• Not possible to review every article	• More creative collection of data

3.3. Alternatives to collect and treat papers

One of the main cores of a literature review is to better treat and analyze all the information available. So to be possible for researchers to do it, several tools have been developed in recent years. Assessment of Multiple Systematic Reviews (AMSTAR), Grading of Recommendations Assessment, Development, and Evaluation (GRADE), and Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) are very good examples of some of these tools.

AMSTAR is a tool whose main goal is to analyze the methodological quality of systematic reviews. AMSTAR is considered a satisfactory tool when measuring properties like inter-rater reliability, validity, and applicability. Beyond these properties, AMSTAR has been originally developed to be applied to Systematics Reviews of randomized controlled trials. Even though the original plan, some authors have been using AMSTAR for all kinds of Systematic Reviews, despite this limitation (Pieper, et al., 2018).

A good example of the correct use of AMSTAR is what Dosenovic et al., (2018) in "Comparison of methodological quality rating of systematic reviews on neuropathic pain using AMSTAR and R-AMSTAR" did. Since systematic reviews are having a much bigger impact on the decision-making in the neuropathic pain field, it is important to reduce the present methodological flaws, to improve the validity of conclusions. Therefore, the authors used AMSTAR and (revised AMSTAR) R-AMSTAR to produce comparable quality ratings.

Another evaluation tool to use in systematic reviews is GRADE, which grades the quality of evidence of the main outcomes. The quality of this evidence can be divided into high, moderate, low, and very low. Factors that determine the quality of this evidence are the risk of bias, inconsistency, indirectness, and imprecision, among other factors. One main feature where this tool is distinguished from others is the capability to do a priori definition of the outcomes as well as their relevance, the possibility to distinguish the quality of the evidence, and the strength of recommendations (Davoli, et al., 2014).

Limitations or disadvantages found when using GRADE rely on the basis of the researcher's interpretation. This interpretation can diverge due to items like inconsistency, imprecision, and publication bias that are used to classify evidence that is graded by this tool (Gopalakrishna, et al., 2014).

"Shenfu injection for heart failure based on the AMSTAR-2, PRISMA, and GRADE tools" is an article that aims to evaluate the methodological quality, reporting quality, and evidence quality of systematic reviews and meta-analyses on the efficacy of Shenfu injection. In this article, GRADE was used to evaluate the quality of results (Li, et al., 2021).

PRISMA was originally developed, in 1999, under the name of Quality Of Reporting Of Meta-analyses (QUOROM) with the purpose to optimize the research done in studies by reporting meta-analyses of randomized controlled trials. In the year 2009, QUOROM was renamed to PRISMA 2009 statement and the guidelines were updated to make it possible for PRISMA to follow up with the practical advances in the field of systematic reviews. Suffering its last update, following the same logic, to follow up with the progress made in systematic reviews, PRISMA statement was updated and published in

several journals such as BMJ, PLOS Medicine, Journal of Clinical Epidemiology, Systematic Reviews, and International Journal of Surgery, in order to increase the range of the new PRISMA 2020 statement.

One advantage of using PRISMA is that PRISMA recognizes the process of defining guidelines to be iterative. Another advantage identified when using this method, is that PRISMA not only has the objective to study the benefits or harms of a health care service but can be applied to embrace other aspects: policymaking, and cost-effectiveness (Moher, et al., 2010). It also provides details regarding the background and development. It guarantees transparency and complete reporting of systematic reviews and meta-analyses.

Despite these aspects, researchers must realize that the items referred to in PRISMA may not be enough, depending on the subject. One may need to adjust or add other items (Liberati, et al., 2009).

An example of a paper using PRISMA is “Compliance of systematic reviews in ophthalmology with the PRISMA statement” done by Lee, et al., (2017) when the author proposes to evaluate the reporting quality of systematic reviews and meta-analyses on topics in ophthalmology to determine compliance with the PRISMA guidelines. The study concludes that the use of PRISMA is recommended before journal submission.

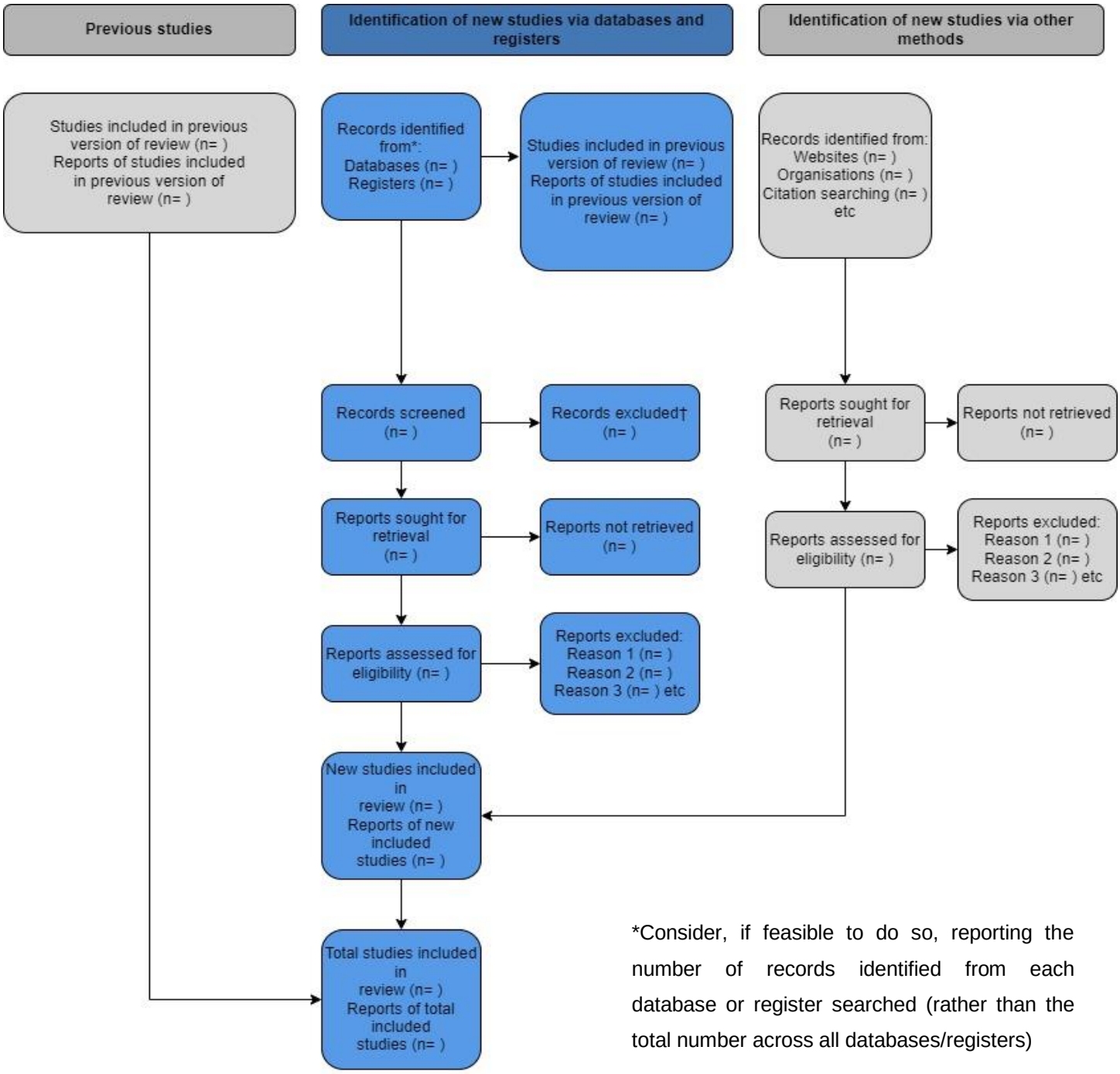
3.4. PRISMA methodology

With the raising in the number of systematic reviews, these methods and tools have been seeing an increase in their use. Although the variety of methodologies, we can see that PRISMA methodology became one of the preferred and most used by authors because it enables readers to understand the methods used in the various studies that were collected and treated by the PRISMA statement, as well as to understand the conclusions draw by them without any bias.

One of the main steps included in the PRISMA methodology is the inclusion and exclusion criteria, which will be defined in the next sub-chapter, which help authors to identify the papers to analyze in their studies, examples of inclusion criteria and exclusion used by authors, can be seen in papers such as Lee, et al., (2017) with the conditions of the inclusion criteria being: systematic reviews and/or meta-analyses published between January 2010 and December 2015. Using these criteria, any non-systematic reviews were excluded. Dorigan (2021) when reviewing the strategies to promote the customer satisfaction and loyalty in healthcare organizations considered the inclusion criteria as articles available online, indexed on the database of WOS, Scopus, and Biblioteca Regional de Medicina (BIREME), published between the period of 2015 and 2019, with a combined search of standardized descriptors in the Descriptors of Medical Science and Medical Subject Headings: patients’ satisfaction and hospitals, and with a non-standardized descriptor patient loyalty.

To develop PRISMA, there is a checklist presented in annexes (Table A) to guide authors and a diagram (Figure 1) that will allow authors to select the studies for their review after the retrieval of the studies in the databases selected, these could be excluded in a first step if they do not match the

inclusion criteria defined by the author, after this selection, the author excludes the studies that do not match the theme that is being reviewed.



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers)

†If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools

Figure 1 - PRISMA diagram

From: (Page, et al., 2021)

4. Data collection

To collect all the papers referring to the subject being treated in this dissertation, the PRISMA methodology will be adopted, as previously referred, to build the PRISMA statement that will identify the papers in the databases such as WOS, and PubMed. Followed by a screening of the papers selected, and removing the papers that are duplicated, the next step is to exclude papers that are not related to the theme because they do not comply with the inclusion criteria or correspond to the exclusion criteria. Meanwhile considering the PRISMA checklist (Table A) all the steps will help to ensure a complete collection of the papers. This checklist takes into consideration the title, abstract, introduction, methods, results, discussion, and other information.

A flow diagram, like the one represented in Figure 2, will help us to follow up on all these steps when using the PRISMA methodology. This procedure is:

1. Identifying the keywords to elaborate the search of papers through the database (WOS and PubMed) and after this first collection of papers, remove the duplicate ones;
2. Screen all the papers retrieved from the initial search, by removing the articles that by reading the titles and abstracts of the papers do not interest to the review being made or even if the text of the article is not relative to the theme;
3. In the final step of this collection, after reading them integrally, the papers that are not directly related to satisfaction with the family doctor, do not have input or output data, have merged results or other aspects will be removed.

Considering the first step, after identifying the keywords to do the search and collection of papers to be reviewed, a search through the database WOS and PubMed will display the number of potential papers that are available for this review, searching on the topic: ("patient satisfaction*" OR "client satisfaction*" OR "consumer satisfaction*" OR "customer satisfaction*") AND family physician. The total of results presented in WOS is 715 papers and on PubMed is 2371 papers that were exported to an excel file allowing to remove the duplicated ones, having a total of 2154 papers. After this first collection, a filter using the exclusion and inclusion criteria will take place.

Exclusion criteria terms are:

- articles that are not available on the internet;
- articles that are written in different languages from English or Portuguese;
- other articles will be excluded if they are not related to the main theme, the satisfaction of the patient with the family doctor.

On other hand, the inclusion criteria are defined by

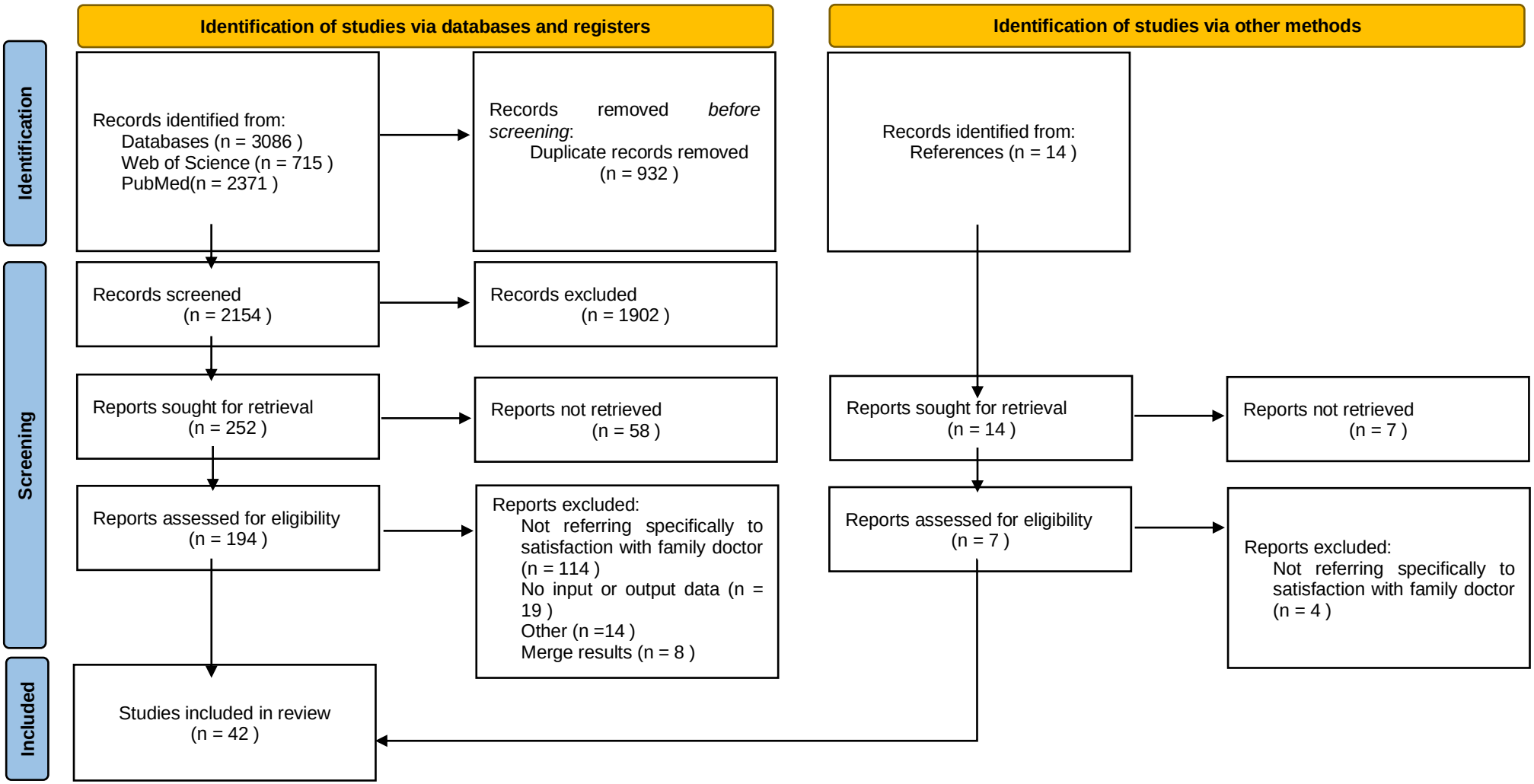
- data range from January 2000 until March 2022;
- preferentially, articles with a considerable impact factor;

For the total papers screened, 2154, after the application of the inclusion and exclusion criteria the total of papers excluded was 1902, obtaining 252 possible to retrieve for final analysis. Among those it was not possible to retrieve 58 papers, making a total of 194 papers to read integrally and include in the review if they explore the theme under study.

After careful reading, some papers were excluded due to the incompatibility of the review being made. This incompatibility, when checking the papers that were extracted from databases derives from many reasons such as the paper not only being related to family doctor, refers to perception instead of analyzing the satisfaction itself, or the article analyses the satisfaction related to a treatment received in primary health care. Papers with merge results, where the results are not separated or distinguished from the family doctor data, were also excluded. When input or output data was missing, meaning that the results were not presented or demonstrative. Therefore, the data refers to preferences and not satisfaction, when the paper is not referring simultaneously to satisfaction and family doctor or even if the results are unclear were allocated to the category “Other” to be excluded from the review. A total of 155 papers were excluded after this procedure. Reaching a final sample of 39 papers to include in the review when analyzing via databases.

The same process was made to the studies extracted from references of the papers selected previously, identification of these studies was made with a total of 14 identified, and the papers were then retrieved, reaching a total of seven papers assessed for eligibility. It was possible to identify four papers that were not referring specifically to satisfaction with the family doctor. Added only three more papers to the total obtain on studies identified by the database, achieving a total of 42 papers to include in this review.

Figure 2 - PRISMA Statement



5. Results and discussion

Of the papers collected, these will go through an analysis first where we can benchmark a lot of factors and variables, and draw some conclusions. To perform the analysis, all the papers were described in an excel file, exhibited in Table B where all the data was collected by reading them integrally and registered as follows:

- Journal;
- Impact Factor – collected when available in the database of WOS;
- Quartile (Best in last year registered) – collected in Scimago Journal & Country Rank;
- Author;
- Year;
- Country;
- System – If the health system studied is representative of a public or private system;
- Objectives;
- The scale used on the questionnaire;
- Number of eligible patients;
- Number of surveys made;
- Number of doctors evaluated;
- Type of questionnaire;
- Analysis – which kind of analysis was made to treat the results collected;
- Variables of the patients – which variables were collected from the patients that enter each questionnaire;
- Conclusions.

5.1. Analysis of the data

Some topics were submitted for analysis, to fully understand and better visualize all the data collected. The factors submitted to analysis were, the quartile of the papers collected, the impact factor of those papers, the year which the paper was published, the country where the studies were made, the system of the health institution being evaluated, the scale used in the survey, eligible number of patients versus the number of surveys, number of doctors that were evaluated, number of doctors versus eligible patients and their respective percentages, type of survey that was used to obtain the users' satisfaction, which analysis of the data was made, variables were considered when making the surveys, this means which characteristics were obtained from the patients and reflected in the survey.

5.1.1. Analysis of quartile

The first topic of analysis was the quartile of each paper. All the papers were submitted to a search through the database of the Scientific Journal Rankings website (SCIMAGO , 2022), where you can search by posting the journal title or even the International Standard Serial Number (ISSN), which is an 8-digit code used to identify journals that were media-printed and electronic (INTERNATIONAL STANDARD SERIAL NUMBER - INTERNATIONAL CENTRE, 2022). To make sure there were no mistakes when choosing the correct journal, every paper had the ISSN retrieved to perform a search of the quartile of the journal. The quartile selected to be analyzed was based on the last year (2021)

and it was registered the quartile related to healthcare, in cases where the journal has more areas of research.

Only two papers of the 42 collected didn't have a quartile score when searched through SCIMAGO. A total of 13 papers (31%) were published in a journal, where the respective journal has been classified as quartile 1, other 16 papers (38%) had their journal classified as quartile 2. Eight papers (19%) were published in journals of quartile 3 and three papers (7%) in journals of quartile 4. Being the best quartile, quartile 1, and an acceptable quartile, quartile 2, this means that the representation of the collected papers that are in good journals is quite good having more than half being published in good journals. This could represent that we have a reliable representation due to the journals being prestigious in their area of study. Having three papers in quartile 4 and two undefined show us confidence in the data collected and respective analysis, representing nearly only 15%.

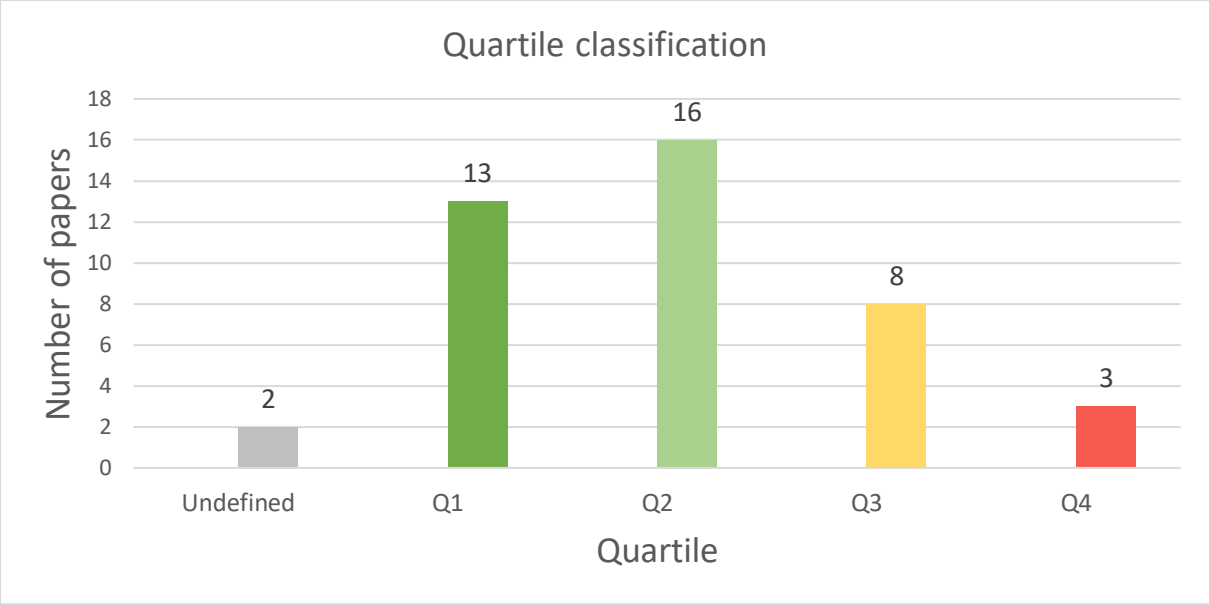


Figure 3 - Quartile classification

5.1.2. Analysis of impact factor

Even though we can consider having some good results in terms of the quartile of the collected papers, the impact factor doesn't seem to be excellent. If we consider over seven is excellent, between seven and three is good, and between three and one is average. As it can be seen in Figure 4 most of the papers collected were published in journals with an impact factor of 2 (14 papers) and the average of the papers collected has an impact factor of 2.69, but this average value only happens to be, due to high impact factor of one paper being 21.87. Only eight papers are above the impact factor of three, which can be considered a good impact factor representing a percentage of approximately 19%.

Having an impact factor not so high means that the journal is not being cited in relation to their papers published, in a timeline of the previous two years. This means that could have been a decrease in interest to write papers in this specific area, the journal is not publishing as much as it should have, or even seen the publications having a decrease justifying a drop in their impact factor.

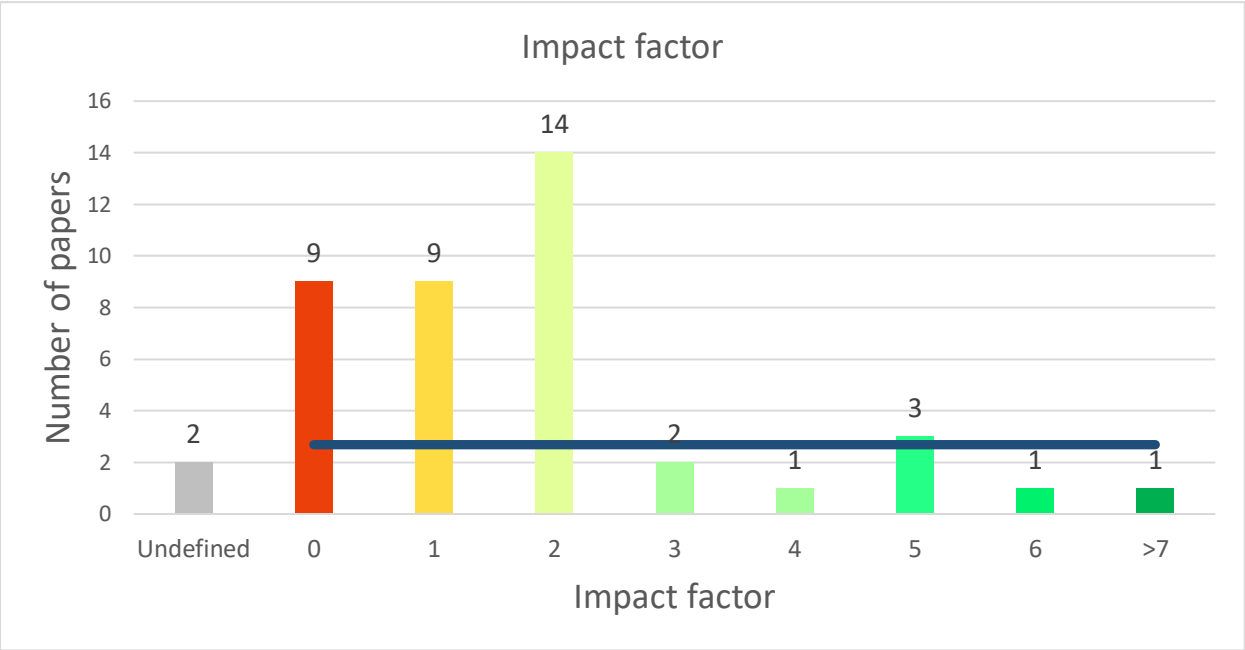


Figure 4 - Impact factor classification

5.1.3. Analysis of publication year

When analyzing the publication data of the papers, we can have a bigger picture if there have been more studies in the past years than before, if this is a subject that has been increasing in terms of relevance or if more resources have been allocated to study the users' satisfaction of the family doctor. According to Orsal (2018), evaluations between satisfaction levels and health awareness are crucial to determine the type of intervention made by primary health care services. Also, health literacy is an important factor in terms of community health in addressing problems such as health inequalities. The existing papers analyzing the satisfaction of the users regarding family doctors are not fulfilling the gap to have a better evaluation, considering there was a total of 42 papers collected in a timeline of 22 years. This represents an average of almost two papers published per year.

As we can see from Figure 5, a higher number of publications happens in the years 2003 and 2015, representing five papers each. In the early 2000's we can see a relatively high number of papers being published, which could be translated as increased interest and investment in the research for a better understanding of some factors that contribute to satisfaction, even though most of the years afterward have two papers published related to the theme. Although the number of papers published is low, 2013 and 2014 are one of the worst years, having two years in a row without papers published. In 2015 happens an increase of papers published, counting a total of five, and being followed by a

regular amount of papers published, representing approximately 31% of the total papers collected. However, in the last four years, only one paper was published, a possible explanation for this breakdown comes from the pandemic situation, due to the lockdown of most organizations/institutions, the investment in research and their financial situations had encountered more difficulties to be realized or have been allocated to the covid-19 pandemic situation, which can justify the low quantity of papers in the last three years.

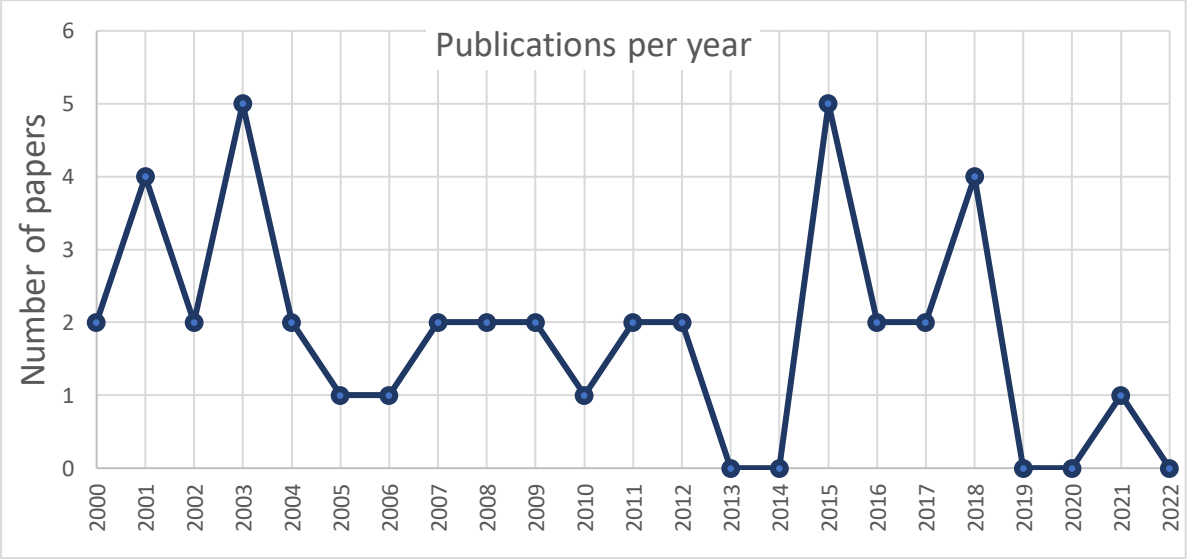


Figure 5 - Papers published per year

5.1.4. Analysis of country and systems

In terms of data related to countries and systems, it was conducted an analysis to quantify the various countries where the surveys took place as well as the system, either if it's a public system, private, or both. Performing this analysis gives us a perspective of which countries and continents carry out more studies through the satisfaction of the users towards the family doctor. It was carried out a cross-data analysis of the countries where the surveys were performed, and the system being evaluated.

Top of the list we can observe, in Figure 6, the United States of America as being the country with more papers published with a total of seven, representing nearly 17% of the total papers collected. The United States appears at the top, with no surprise at all due to its scientific community being one of the largest in the world. Although when comparing in terms of continents, it is easy to see that the American continent has the lowest representation out of the three Asia, America, and Europe, only being represented by the United States and Canada. It is already stated by some authors that the American countries need to stimulate the development of new studies concerning factors that influence users' satisfaction to provide solutions to their expectations and needs of users, as stated by Grandón (2017).

Following the United States of America, we can observe Iran, Poland, and Slovenia with five papers each, but it should be noticed that the five papers produced in Poland were all under the authorship of the same researcher, Marcinowicz, and the documents produced in Slovenia four out of the five papers have been produced by Kersnik. Together Iran, and Israel represents 75% of the Asian countries, with nine papers from both countries. Counting a total of fourteen countries being evaluated in all those papers collected, it can be seen that half of the sample is contributing with one paper or two papers, in the case of England.

When observing the percentages from the continents, we can notice how big the percentage from the European continent (45%) is in comparison to other continents which seems to be an easy percentage to justify due to the resources allocation, and financing in terms of research in European countries.

As it can be stated Africa does not appear represented in the graphic, the lack of papers produced in this continent can be a consequence of most African countries being poor, and do not have the financial resources to do such studies or even having many developing countries which represents a lot of work to being developed in terms of health, like uncover some barriers in the health system to integrate some policies in their system (Ampomah, et al., 2020).

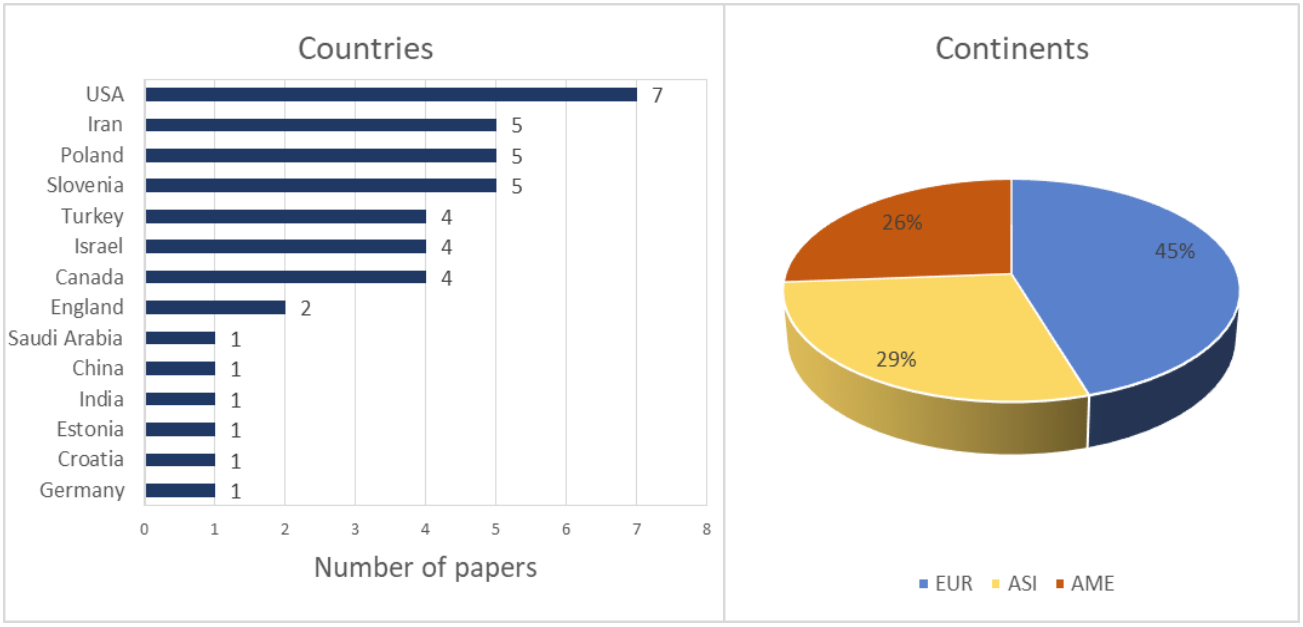


Figure 6 - Papers per country and percentage per continent

Also, this section studies and analyzes which system the papers approach. Alongside this analysis, to understand what system was evaluated in which country, a cross-data analysis took place. Regarding the system evaluated, the higher percentage belongs to public health care systems, where the satisfaction of its users towards the family doctor was assessed with a total of 18 out of 42, corresponding to 43%, represented in Figure 7. On the lower percentage (2%) we have the private sector being evaluated, although we have six papers that evaluated both sectors in the same research. Most papers fail to identify either if the system that is taking part in the study it's public or

private, even though they may identify the institution or healthcare where they are performing and realizing their studies, some of them (40%) don't identify the health system.

After collecting the information, and cross-data of the countries and systems being evaluated it is possible to analyze, in Table B, a country that is well known for having a private health system, the United States of America, is the country with more papers related to the theme, it has three studies performed in a public system and the other five papers didn't identify if the system was public or private. The studies performed in Canada didn't specify most of them, only one was specified to be in a public system. Germany, Iran, Poland, and Slovenia analyzed both systems, giving a wider perspective of both systems and a better view of what can change so that satisfaction can increase.

Would be interesting if some studies were performed in countries such as Denmark, the Netherlands, or Japan because those are countries that are well known to have good healthcare performances, and measuring the satisfaction of their users could be a good way to evaluate and measure their performances concerning family doctors.

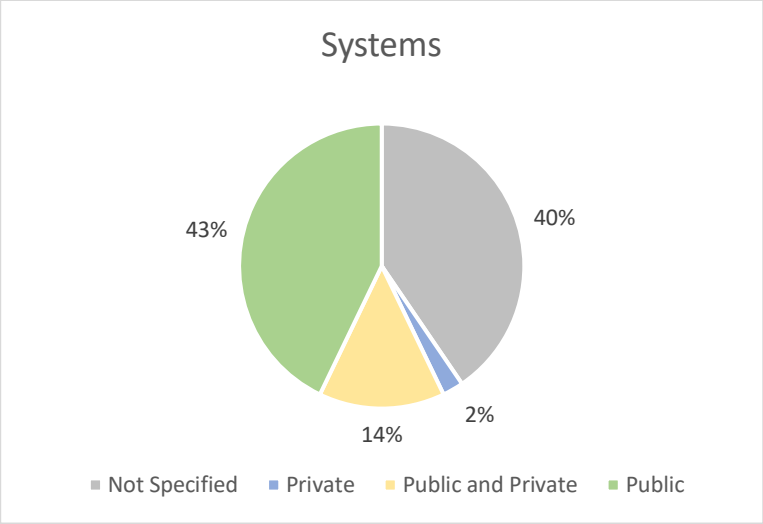


Figure 7 - Percentage by system

5.1.5. Analysis of surveys

With a large option of questionnaires existing nowadays, each research team must choose the best survey adapted to their reality. This subchapter will analyze which type of survey was performed to evaluate the users' satisfaction with the family doctor, the scale used to analyze the answers obtained by the participants, and which analysis was performed to treat the data collection and translate it into results.

More than half of the researchers approach the survey with similar ideas in terms of which survey they should make. Almost two-thirds of the sample (59%), represented in Figure 8, performed their own survey to collect the data to accomplish their studies, these surveys were made in various forms. Most of the own surveys were adaptations from other surveys (interviews or questionnaires), that the author didn't identify, or even surveys that were validated by local groups/institutions. Nevertheless, there

was a research done by Nijjar (2011) where the author correctly identifies from where his survey was adapted, using a modified survey from Group Health Association of America 9. Similarly, four papers have made their own survey although these four papers have the questions from their surveys validated through Patient Evaluation of General Practice Care (EUROPEP) tools, which is a standardized international instrument measure of patient evaluations. If one adds these two types of surveys, considering they are composed through their own selection of questions, we have a total of 29 papers, having a representation of 69% of the sample.

Additionally, another way to collect the data that was different from the most common type of survey was the interviews (face-to-face using open answer questions) that some researchers have made. Conducting an interview as a way to collect the data, implies that the treatment of data is open to the perception of the researcher, to interpret those answers and not treat data as raw as possible, maybe leading to a misinterpretation of the same.

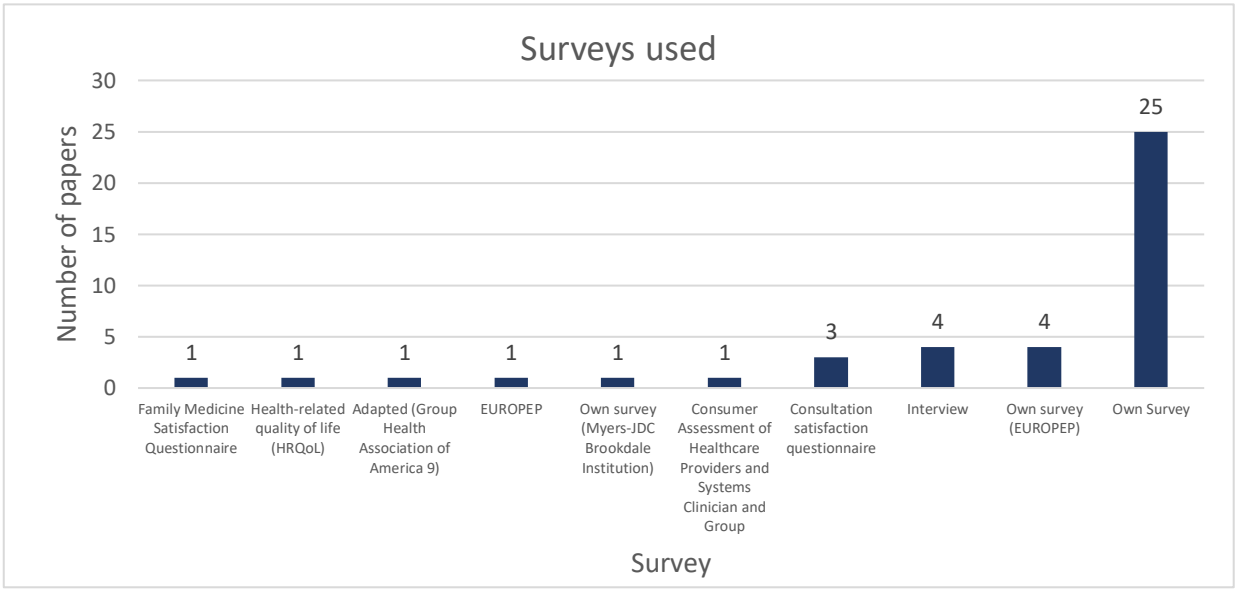


Figure 8 – Frequency of surveys used

Regarding the scale to analyze the data of the surveys, as it is possible to visualize in Figure 9, the most used scale was the Likert scale with a representative 71% of the sample, if sum up all Likert independently from the point scale used. The Likert scales were differentiated between each other according to the point scale answers possible in the respective study, ranging from 4, 5, 7, 9, and 10-point scale range or even a 0-100 point scale. The Likert scale is well known when it comes to analyzing surveys like users' satisfaction and treating those data to present it and reach conclusions. Only a few exceptions didn't use Likert as a scale, the exceptions used Medical Outcome Study (MOS) 9 Item as a scale being represented in 3 papers. There was a unique case in which these two scales were scrambled. The paper written by Barzilai (2001) assessed the patients' outcomes using the MOS 9 Item scale, followed by a subscale which was measured afterward with a Likert type scale.

The remaining only 9 papers (21%) did not specify the type of scale used in their survey. Some of these papers that didn't mention a scale are the interviews, and others used questions with open answers.

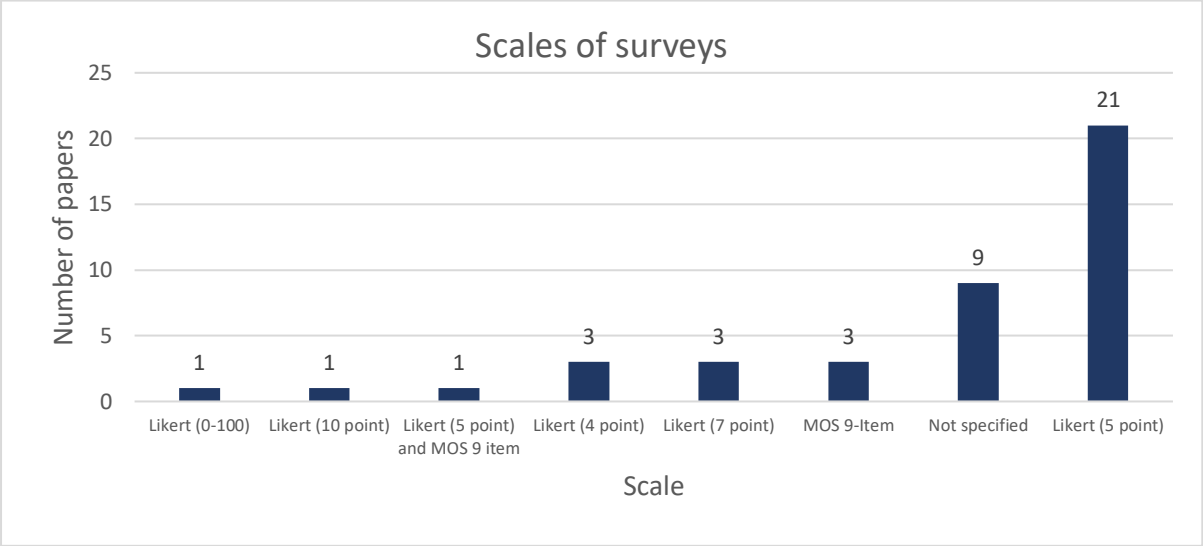


Figure 9 - Number of papers by scale

In terms of how the data was treated, Figure 10, here is where the studies are more distinct from each other. A good amount of the papers, six papers, didn't identify which analysis they used to translate the data collected from the surveys to specific data.

The most part uses statistical analysis (29%) however this percentage represents papers that failed to correctly identify the specific analyses used in the paper to treat their data.

When considering statistical analysis, related to examining users' satisfaction, this could be considered the most reliable analysis to use, when it is expected to convert degrees of satisfaction without a subjective perception of the researcher. It is possible to visualize in Figure 10, that there is a various range of analyses and different from each other. Not meaning that one is better than the other because most of them are in fact statistical analyses.

Qualitative analysis having four papers represented in the sample, which corresponds to 10%, is connected to the interviews that were performed and surveys that had open answers. Being this analysis an interpretation of the comments of the users missing a numerical classification of the answers as well as numerical scales. Therefore, this analysis is much more subjective and open to the perspective of the researcher.

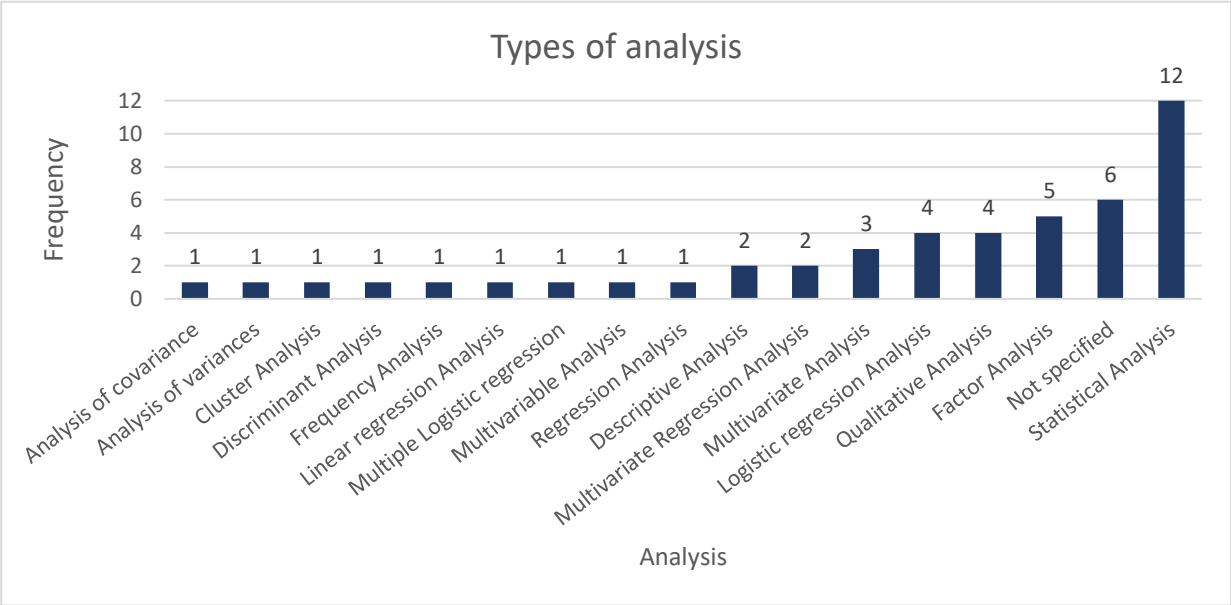


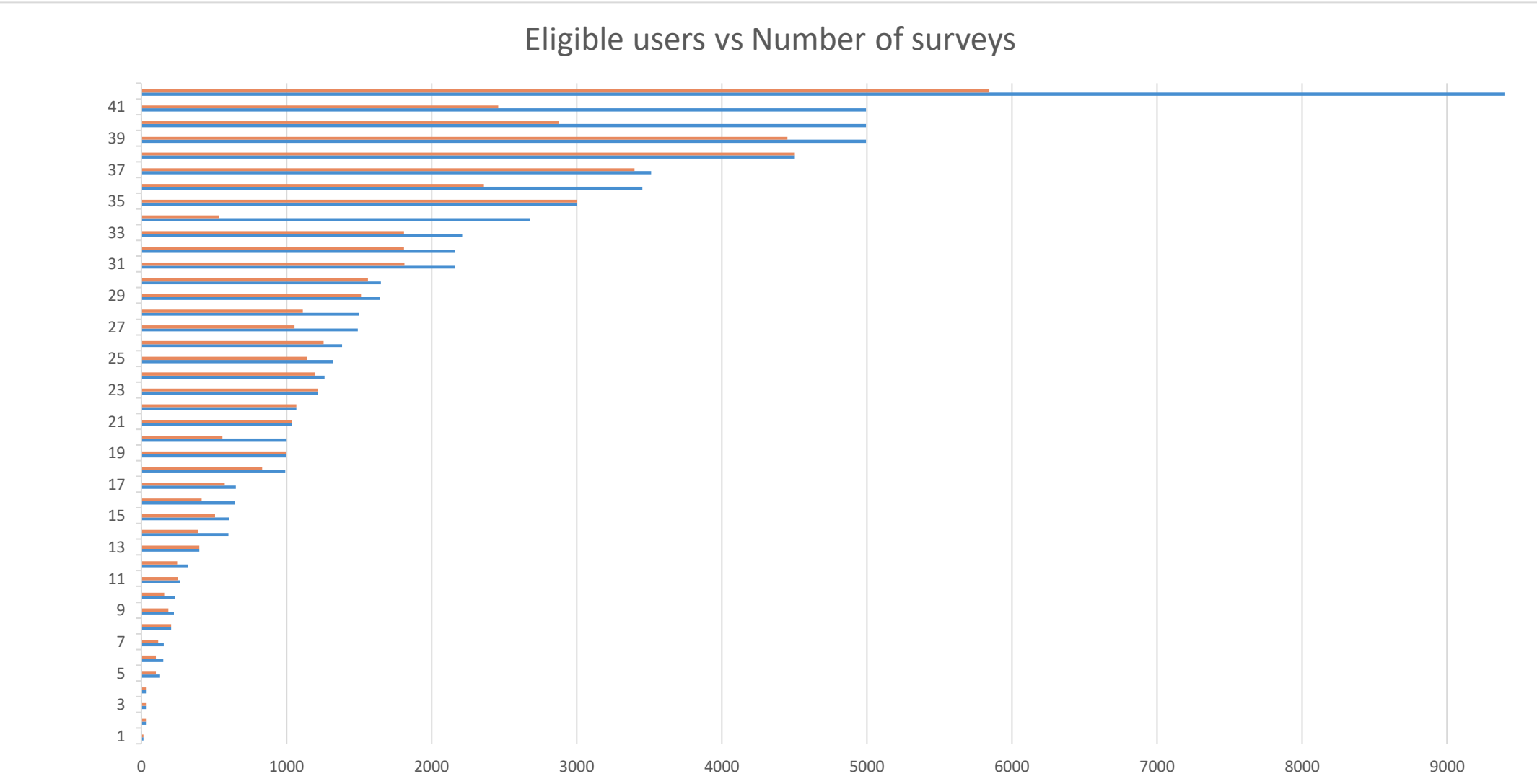
Figure 10 - Frequency of the analysis used

5.1.6. Analysis of users

In this next sector, data related to the users was analyzed, the number of users eligible to perform the survey, to understand how many of these really answered, trying to understand what the total response rate of each research was. Figure 11 is a representation of that analysis. As a complement to this analysis, the information about the inquired users was registered as shown in the figure. Given that, each variable was then quantified to understand which one's researchers consider the most when grading satisfaction.

The figure represented below (Figure 11) is organized in a crescent order concerning the number of eligible users. The maximum value for the eligible users is 9397, and on the opposite side, the minimum value is 15. It was calculated the average number of eligible users, of all the sample, reaching a value of 1650, above this average value, we have 13 papers. On top of that, the maximum number of surveys obtained was 5844 with a minimum of 15, scoring an average value of 1267, also having 13 papers above this value, meaning 31% of the sample. These two criteria are important to establish a great level of reliability of the research, as is an important factor to have a significant representation of the group that constitutes the sample. With this goal, having a higher number of users the closest to reality results are going to be.

The ratio calculated between these two aspects is important as referred earlier. It was calculated the response rate for each paper, trying to understand how the research performed, either if they had a good, normal or bad response rate. The average score of the response rate is 83%, having more than half of the sample above this average value (26 papers).



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
%	100%	100%	100%	100%	77%	66%	76%	100%	83%	69%	93%	76%	100%	66%	84%	64%	88%	84%	100%	56%	100%	100%	100%	95%	87%	91%	71%	74%	92%	95%	84%	84%	82%	20%	100%	68%	97%	100%	89%	58%	49%	62%
Nr of surveys	15	36	36	36	100	99	117	204	186	158	249	246	400	394	509	415	574	832	999	560	1039	1068	1217	1199	1141	1257	1055	1112	1513	1561	1812	1809	1809	535	3000	2362	3400	4504	4454	2881	2459	5844
Nr of eligible patients	15	36	36	36	130	150	153	204	224	230	268	322	400	600	608	644	650	991	999	1000	1039	1068	1217	1263	1319	1382	1493	1500	1645	1650	2160	2160	2212	2675	3000	3453	3515	4504	4994	4994	4994	9397

Figure 11 - Eligible users versus number of surveys

In total 12 papers (29%) achieved a 100% response rate, however from these 12 papers, a few of them failed to identify if the total of responses was equal to their user's selection or otherwise, didn't mention how many users were selected to enter the study and only mentioned how many surveys were made. Due to this misinformation, it was considered that the response rate was 100%. In addition to this, other papers where the response rate was also 100%, the surveys were conducted through an interview directly with the patients, face-to-face. The lowest percentage recorded was the paper by Hojat, et al. (2011), having a 20% response rate. This could be a translation of how the survey was delivered to the users, mailing the questionnaires to the users' addresses, and expecting the user to mail them back.

Performed as a complement to analyze the data related to users, an analysis of variables on which researchers based their work was made. As it is shown, a frequency graphic (Figure 12) was prepared to quantify the different variables used and how many researchers used the same. Variables can be seen as a helpful tool to help researchers draw conclusions regarding the common points of the group being evaluated. To help us understand which are more frequently retrieved by the researchers, the variables were divided into two categories: participant's profile and participant's health data. Participant profile is a category that concerns the basic information about the participant such as gender, age, place of residence, socio-economic status, relationship status, occupation status, education, ethnicity, and nationality. When consulting participants' health data variables like chronic health condition, the number of visits, health condition, place of treatment, health insurance, and smoking status are considered.

Easily spotted, the most common variable considered to analyze the data is the age, and sex of the participants, having a presence in 98% of the sample. Only one paper didn't consider the gender of the user, and other distinct paper didn't consider the age. Following these variables, place of residence, socio-economic status, and relationship status were present in nearly 35% of the papers. With a smaller representation and shown to be less important to researchers comes smoking status, only appearing in two papers, health insurance in six papers, and place of treatment in seven. Even though there are more variables, not presented in the graphic, they are of small relevance due to having a sporadic presence in only one paper. This could be related to the objectives of the different papers, because some researchers besides the evaluation of the users' satisfaction, also analyzed other aspects related to healthcare.

A variable that should be more considered in studies concerning users' satisfaction is the number of visits. The number of visits should be a variable with more weight to reach higher reliable data. As shown before continuity of care is an important factor in users' satisfaction. Having data collection without the perception of the frequency that the user visits the family doctor can be a blind spot to understanding some conclusions in terms of satisfaction. Only ten papers (24%) consider the number of visits out of 42. In a general perspective, all the variables related to health data retrieved from the participants have a low representation when compared to the participants' profile. The most representative variable in participants' health data is chronic health condition, this variable is only presented in 12 papers. Considering the fact that the researches are focused on satisfaction in health

the variables that concern the patients' health data should be higher represented and taken into account.

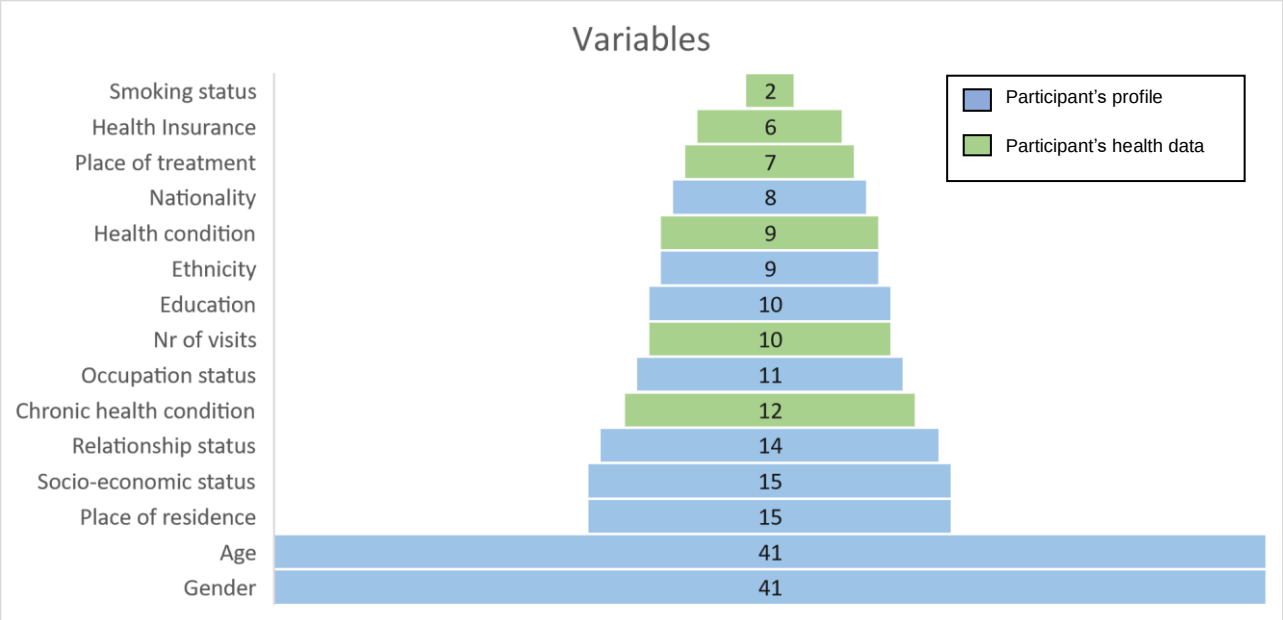


Figure 12 - Variables of the participants

5.1.7. Analysis of family doctors

After analyzing the users, an analysis of the family doctors that participate in the study occurs. Under this analysis will be performed a graphic (Figure 13), that will quantify how many doctors were under the evaluation of the users' satisfaction. To understand the ratio between the number of doctors evaluated and the number of users eligible to perform this study, another graphic was produced (Figure 14), and in the table addressed with the graphic is also calculated a percentage representative of the ratio itself.

As is displayed in Figure 13, half of the papers (21) didn't identify how many doctors were being evaluated in their research. It is a bad aspect of the research, to not identify the number of doctors that entered the survey because the reader does not know how many doctors were under the evaluation of the study, and it is not possible to identify which percentage of the healthcare these doctors represent. Performing an analysis of the rest of the graphic, the maximum of doctors being evaluated was 206, the minimum was 1 with an average value of 52 being possible to identify that only six papers are above average. With a frequency more than usual, with 138 doctors being evaluated four times and 36 doctors being evaluated in three papers, this is representative of different studies but where the population selected to perform the survey is the same as well as the number of doctors under evaluation.

In Figure 14, where the relation between the eligible patients and the doctors evaluated is demonstrated, it is easy to identify that a lower eligible patient to perform the study usually translates into a high percentage, and with the increase in the number of patients, the lower does the percentage

gets. The lowest percentage obtain is 1%, in various papers, and the highest percentage is 60% where 60 patients were evaluating 36 family doctors.

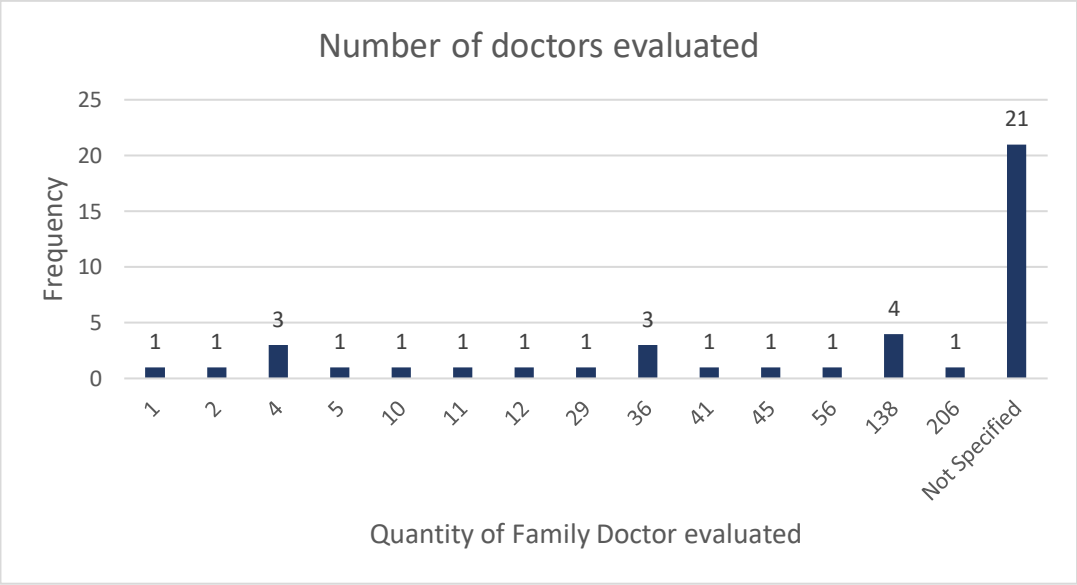
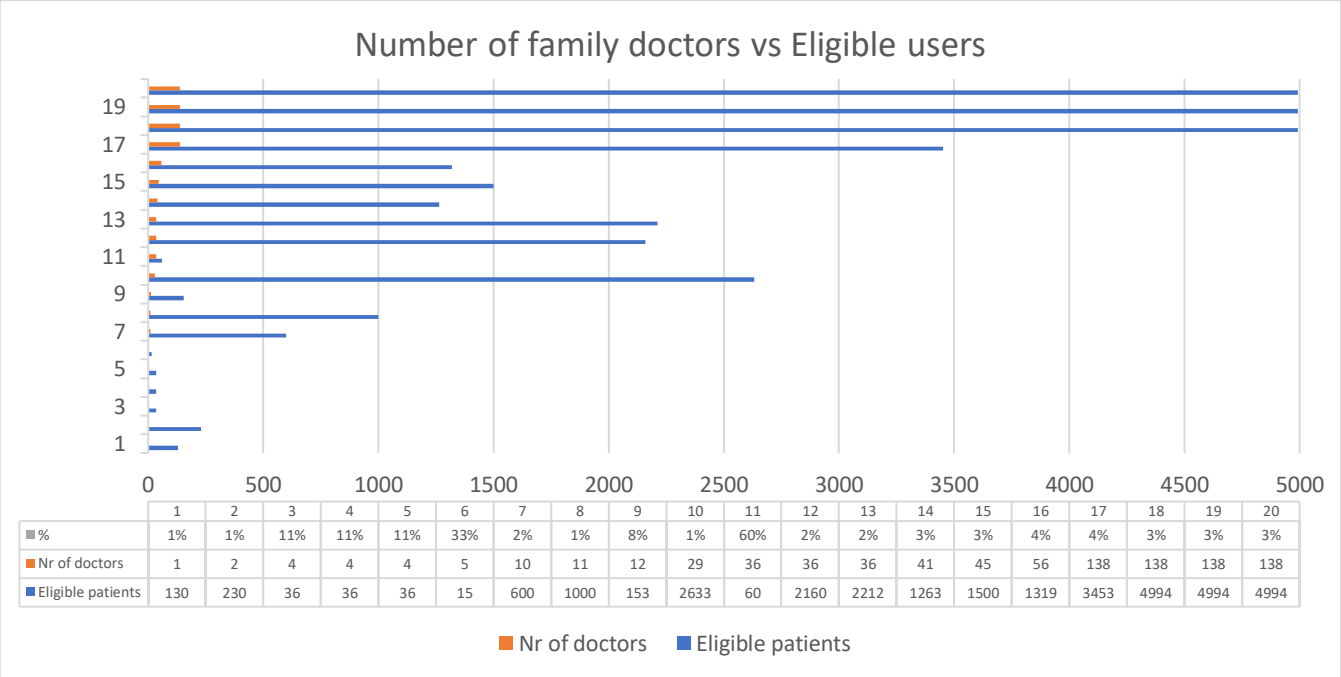


Figure 13 - Number of doctors evaluated



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
%	1%	1%	11%	11%	11%	33%	2%	1%	8%	1%	60%	2%	2%	3%	3%	4%	4%	3%	3%	3%
Nr of doctors	1	2	4	4	4	5	10	11	12	29	36	36	36	41	45	56	138	138	138	138
Eligible patients	130	230	36	36	36	15	600	1000	153	2633	60	2160	2212	1263	1500	1319	3453	4994	4994	4994

Figure 14 - Family doctors versus eligible users

5.1.8. Analysis of users' satisfaction

As the main goal of this dissertation is to study the satisfaction of its users directed to the family doctor, the last analysis to be performed is an analysis of the collected papers and respective values retrieved in terms of users' satisfaction. To do so a table (Table C) was drawn with information collected by the different papers concerning the author with the respective year in which the paper was published, the papers' name, the scale that was used in the survey performed in each paper, the values retrieved as well as the items under evaluation, and the satisfaction level that each author concluded respecting the values obtained.

It can be noted that most part of the papers ended up concluding that satisfaction level was high or relatively high, regardless of the used scale. Although, two papers have classified the users' satisfaction as low and dissatisfied. The research done by Honarvar, et al. (2016) has reached the conclusion the respondents were dissatisfied, being the main reasons "…a perceived lack of family physician competence and lack of time spent listening and exam the patients (46.5%), unavailability of family physicians when needed (20.2%), complexity of the referral systems (18.6%), prolonged waiting time (14.4%), high turnover rate of family physicians (7.3%), and discriminative approach to the clients (5%). The last complaint refers to more attention by family physician toward clients who are not covered by family physician program" (Honarvar, et al., 2016).

With a low classification appears the paper of Rouhani, et al. (2012), an explanation for this level of dissatisfaction is the monopolistic position of the minister of health and consequently, the market lowers the quality of its services or increases the cost for patients, where therefore people are charged more than the legal amount and are paying for services to which they do not have access.

Even though most papers reached the conclusion that to classify satisfaction levels, some papers failed to present which was the degree of satisfaction of the users inquired. These cases are registered in the table with a satisfaction level as "Undefined". Whereas two papers did their research without translating the answers obtained into quantitative or qualitative values, and those papers are not classified at all in the table (Table C).

6. Bibliometric analysis

This chapter will conduct a bibliometric analysis of all the studies, to complete this systematic review. With the aim of performing a bibliometric mapping, a first analysis through the software HistCite, this software will generate a chronological map of the bibliography collected, followed by an analysis using Gephi and VOSviewer software. After doing these three analyses, it should reach a bigger representation of how the papers collected are connected, and how many times they are referenced or cited by other studies.

Bibliometrics is known as the process of extracting data that is measurable through statistical analysis of research studies (Agarwal, et al., 2016). As stated in Agarwal, et al. (2016) bibliometrics was firstly used as a method to systematically count the number of publications besides their subject area, creating a background for future metric works. As for now, it can be seen as a great methodology if well applied, to understand the background of the research being made and to quickly analyze some metrics related to those papers, like the number of publications, citations, h-index, impact factors, and other metrics available depending on the software used.

According to Zupic, et al. (2015) it exists two main uses for bibliometric methods. The first one is a performance analysis and the second is science mapping. While performance analysis aims to assess the research and the performance of the author and institution in the respective paper, science mapping seeks to “reveal the structure and dynamics of scientific fields” (Zupic, et al., 2015). These methods when applied allow a subjective evaluation of literature due to their quantitative accuracy.

6.1 – Analysis of fundamental data

As mentioned before, the databases used to collect the papers were WOS and PubMed, to proceed with the bibliometric analysis when using the HistCite software, the articles collected had to be extracted from the database (WOS) as a plain text format file. Within the total sample (42 papers) only one paper was not available on the WOS, reducing the sample to 41 papers to be treated in HistCite. This missing paper was also searched in the PubMed database but was also not available. Due to the unavailability of this paper in both databases, the extraction of the final sample was done in WOS to initiate the analysis in HistCite. Even though 41 papers were available to be selected and ready to export, these were from different databases (6 from PubMed and 35 from principal collections of WOS) not allowing to export all the papers with the detailed information needed for the software HistCite to perform a good analysis when running both types of papers. For this performance to go as expected, were prepared two sets of extractions. One set with all the documents which can run on HistCite and have a general reading of the bibliometrics available in both extractions, and another with only the documents that were retrieved from the principal collections of the WOS database, where it is possible to read other bibliometric parameters such as local citations scores and cited references.

The first analyze running through HistCite was the authors. Table 2 was drawn to demonstrate the bibliometric analyse of the authors who have done the research. This table presents a total of 149 authors involved in these 41 papers, and can give us a better understanding of who was the author

with more papers, Marcinowicz in co-authorship with Chlabicz, gathered a percentage of 12,2%, presenting five papers together. Although this was not the only author that recorded more than one paper in this final sample. With the contribution of four papers (9,8%), we have authors like Kersnik. Grebowski participates with three papers (7,3%), and Akbari, Flocke, Goodwin, Stange, and Zyzanski have each one of them two papers (4,9%). The rest of the authors only participated in one paper, meaning a percentage of 2,4%.

Author	Records	Percentage (%)
Marcinowicz	5	12,2
Chlabicz	5	12,2
Kersnik	4	9,8
Grebowski	3	7,3
Akbari	2	4,9
Flocke	2	4,9
Goodwin	2	4,9
Stange	2	4,9
Zyzanski	2	4,9
…	1	2,4

Table 2 - Authors with the most records

Running an analyze of the journals where these researches were published, we reach a total of 35 journals. Despite the fact most of the papers do not have similar journal publishers, some of them have been published through the same journal. Examples of this situation occur in journals like Annals of Family Medicine, Canadian Family Physician, Family Practice, International Journal for Quality in Health Care, International Journal of Preventive Medicine, and Journal of Family Medicine and Primary Care, where two papers were published. See Table 3.

Journal	Records	Percentage (%)
Annals of Family Medicine	2	4,9
Canadian Family Physician	2	4,9
Family Practice	2	4,9
International Journal for Quality in Health	2	4,9

Care		
International Journal of Preventive Medicine	2	4,9
Journal of Family Medicine and Primary Care	2	4,9
Academic Medicine	1	2,4
BMC Health Services Research	1	2,4
Croatian Medical Journal	1	2,4
Eastern Mediterranean Health Journal	1	2,4
Evidence-based Complementary and Alternative Medicine	1	2,4
Family Medicine	1	2,4
Global Journal of Health Science	1	2,4
Health & Social Care in the Community	1	2,4
Health Policy	1	2,4
Healthmed	1	2,4
Hong Kong Medical Journal	1	2,4
Israel Journal of Health Policy Research	1	2,4
JAMA Internal Medicine	1	2,4
Journal of Evaluation in Clinical Practice	1	2,4
Journal of Family Practice	1	2,4
Journal of General Internal Medicine	1	2,4
Journal of the American Board of Family Medicine	1	2,4
Journal of the American Board of Family Practice	1	2,4
Konuralp Tip Dergisi	1	2,4
Life Science Journal-acta Zhengzhou University Overseas Edition	1	2,4
Military Medicine	1	2,4
Patient Education and Counselling	1	2,4

Preventive Medicine	1	2,4
Primary Health Care Research and Development	1	2,4
Scandinavian Journal of Primary Health Care	1	2,4
Swiss Medical Weekly	1	2,4
The European Journal of General Practice	1	2,4
Women & Health	1	2,4
Zdravstveno Varstvo	1	2,4

Table 3 - Journals with the most records

A brief analyze of the keywords was also made. This analyze took place in HistCite, which has the feature to display the words that most occur in titles and keyword lists of each research that contemplates the collection. This analysis is represented in Table 4, where are displayed the top 10 and as it is possible to visualize the word “satisfaction” appears in 30 papers (73%) followed by “family” with a presence in 25 papers (61%).

Word	**Records**	**Percentage (%)**
Satisfaction	30	73
Family	25	61
Patient	20	49
Care	19	46
Patients	16	39
Primary	12	29
Health	11	27
Physician	11	27
Practice	7	17
Physicians	6	15

Table 4 – Top 10 Keyword with most records

Before analyzing the local and global citations, the graphic bellow display the number of publications versus the number of citations. Is evident to visualize that number of citations has a continuous growth throught the years, in contrast the number of publications doesn't seem to follow any trend continuously. With this being stated it is possible to assume that they don't have any direct correlation between each other. In the first 3 years the number of citations is low, seeing an increase in the year afterwards where it was stabled during 3 years and saw a good rise in a period of 4 years. During 9 years number of citations stay around the same reaching its peak in 2 years in a row, being 2020 and 2021 with 87 citations and 88 respectively.

When analyzing the data related to publications, the first 4 years is where some good amount (37%) of this sample were published, were was possible to register the highest publications (5 papers) per year. During 8 years number of publications was very similar from year to year, registering only 1 or 2 papers. It is when we approach a gap of 2 years withouth any publication. We then can visualize a considerable good amount of papers being published, when framed with the low collection sample, even though in 2020 there was no publication.

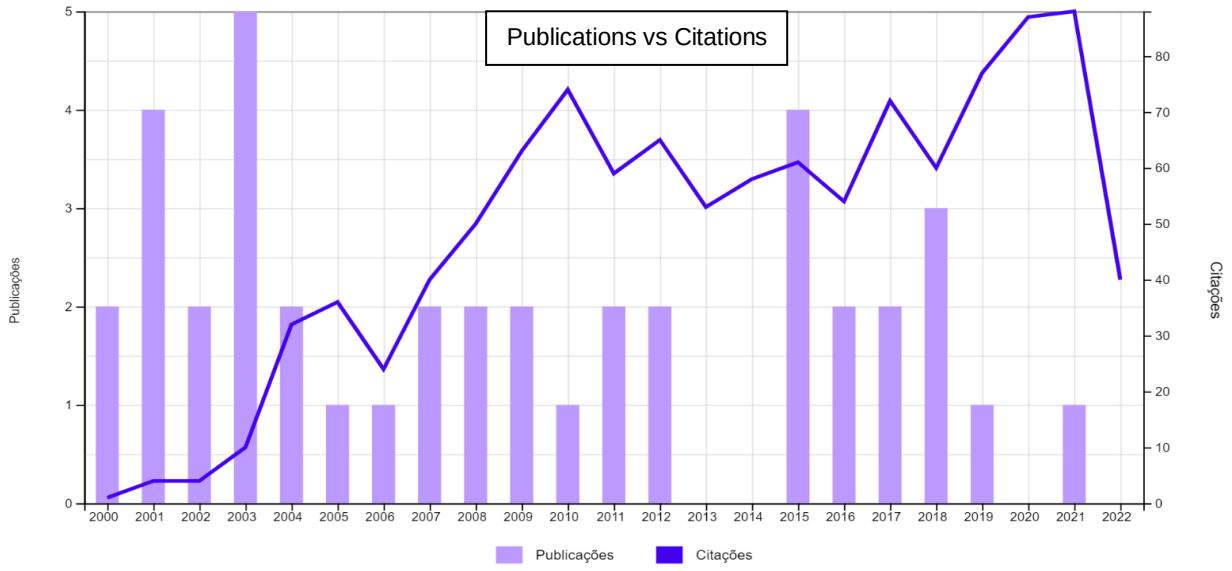


Figure 15 - Publications versus citations

A preselection of parameters was made in HistCite, selecting a customized view of the same with the objective to visualize and comprehend the values needed to perform the analysis pretended. The parameters selected in Histcite are as it follows: LCS which stands for Local Citation Score is the number of times a paper is cited by other papers that were collected in this review; GCS which stands for Global Citation Score shows the frequency the paper is cited in WOS; LCR which stands for Local Cited References and shows the number of references that are citing these papers collected. The graphic can be interpreted by having each paper in each node, represented by a circle, the size of the circle is related to the number of citations, meaning that the bigger the circle the most cited the paper.

The proximity of the circles also has to be considered, indicating that the closeness the circles are the more related they are.

After adding the file exported with the sample with all the documents (41 papers) available to be retrieved, Table 5 was obtained with the respective graphic representation of Figure 16. To overview the data related to the papers and their respective citations, for a better understanding of their influence, a table presenting GCS will be displayed. This table and graphic are a representation of the 20 papers with the best GCS. It is possible to visualize that there are some very good scores, reaching a total of 1084 in GCS, having the paper by Nutting, et al. (2003) achieved 220 in GSC, which could be considered the most influential one. Only 2 other papers have reached a GCS over 100, and the rest of the papers are represented with scores bellow 100.

Following this analysis, we will go through the 35 articles that were available in the principal collections of WOS and where it's possible to see in detail the LCS of these articles. The total LCS of all articles is a score of 13, this could be considered to be a normal score since the final sample is small (35 papers), the papers most of the time even thought they all study users' satisfaction regarding their family doctor, in some researches, this was not the main goal of the paper which could guide to have a parallel objective but still a fundamental objective different from each other. Also, a fact that could contribute to this LCS being so low is the different regions where these studies are done, it is normal that some papers do not reflect or compare their situations with other papers in here portrayed since most of the countries have different health care, leading to a lot of differences between them. The table (Table 6) is represented bellow and the respective graphic is in Figure 17.

Analyzing the articles with the highest LCS, we can easily identify the paper by Kersnik (2000) as having a value score of five. The paper of Kersnik (2001) has a score value of three, both of the principal referenced papers had their research conducted in Slovenia. The other five papers with an LCS had a score of one, with no other having any score.

It is easy to see that the papers that have a bigger representation in LCS are researches done by the same author (Kersnik). When analyzing in detail the papers that reference Kersnik (2000) it was possible to identify that 60% (three papers) are researches done in a geographic area with great proximity to each other, Slovenia and Poland, giving the possibility to authors to either compared the results achieved in their studies with similar realities and to use the same approach, methodology, and tools in their studies, knowing from the start that these are viable to apply in their field of study. However, the remaining papers (two papers) that reference the same author do not have similar realities, both of the papers used this reference to compare the satisfaction of its users when it comes to the family medicine system in different countries. When it comes to the other paper (Kersnik, 2001) that has an LCS of three, the references to this paper were to compare measures applied, and the overall satisfaction of its users, even though the countries where the research took place were Estonia, Iran, and Turkey.

GCS representation

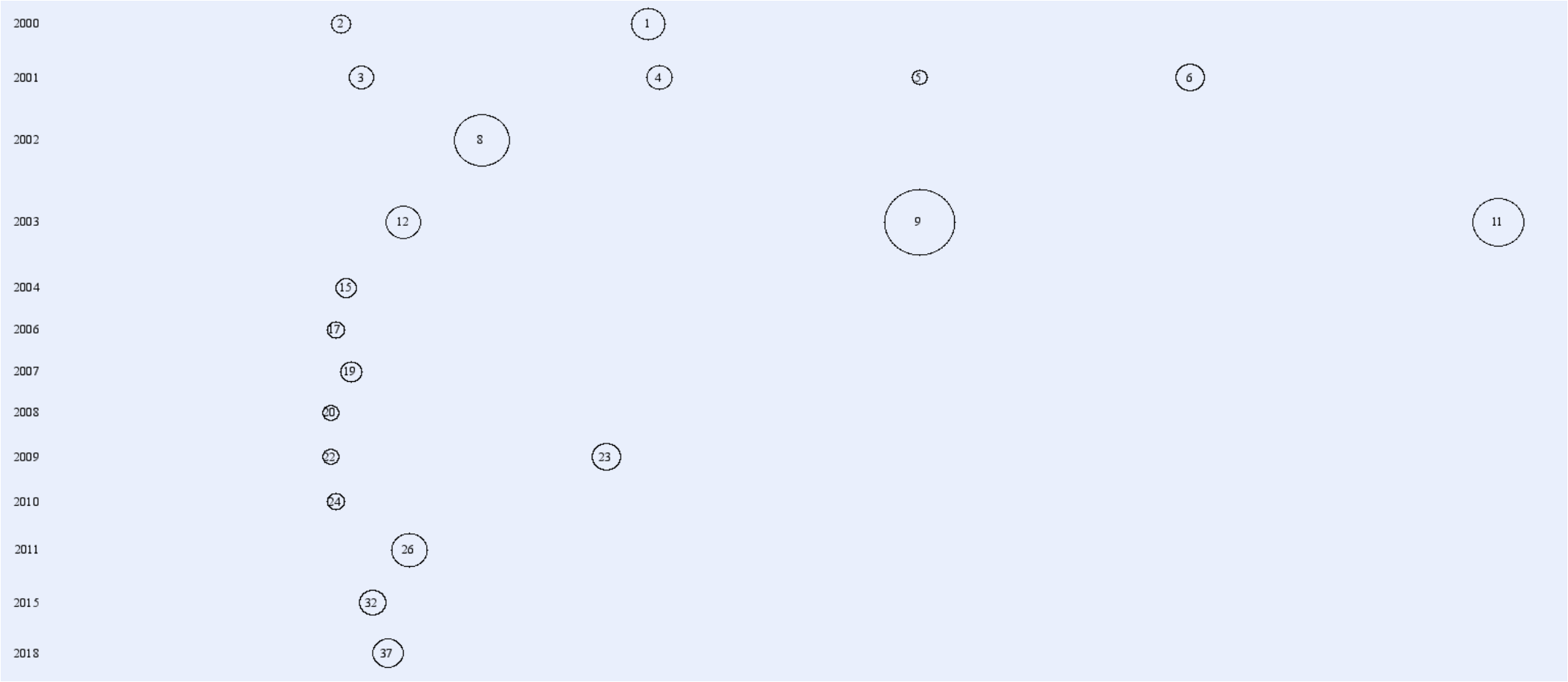


Figure 16 - GCS of top 20 papers in HistCite

Node	Author (Year)	Journal	GCS
1	Kersnik, J (2000)	*International Journal for Quality in Health Care*	52
2	Himmel, W, et al. (2000)	*Journal of General Internal Medicine*	18
3	Katic, M, et al. (2001)	*Family Practice*	27
4	Kersnik, J (2001)	*Health Policy*	31
6	Barzilai, D, A, et al. (2001)	*Preventive Medicine*	39
7	Kersnik, J, et al. (2002)	*Swiss Medical Weekly*	12
8	Flocke, S, A, et al. (2002)	*Journals of Family Practice*	134
9	Nutting, P, A, et al. (2003)	*Annals of Family Medicine*	220
11	Baker, R, et al. (2003)	*Scadinavian Journal of Primary Health Care*	116
12	Miedema, B, et al. (2003)	*Canadian Family Physician*	55
15	Polluste, K, et al. (2004)	*Croatian Medical Journal*	19
17	Shmueli, A, et al. (2006)	*Evidence-Based Complementary*	16
19	Howard, M, et al. (2007)	*Annals of Family Medicine*	22
20	Marcinowicz, L, et al. (2008)	*International Journal for Quality in Health Care*	13
22	Marcinowicz, L, et al. (2009)	*Health & Social Care in the Community*	13
23	Marcinowicz, L, et al. (2009)	*BMC Health Services Research*	37
24	Marcinowicz, L, et al. (2010)	*Journal of Evaluation in Clinical Practice*	15
26	Hojat, M, et al. (2011)	*Family Medicine*	60
32	Kuang, L, et al. (2015)	*Family Practice*	33
37	Jerant, A, et al. (2018)	*JAMA Internal Medicine*	44

Table 5 - GCS of the top 20

LCS representation

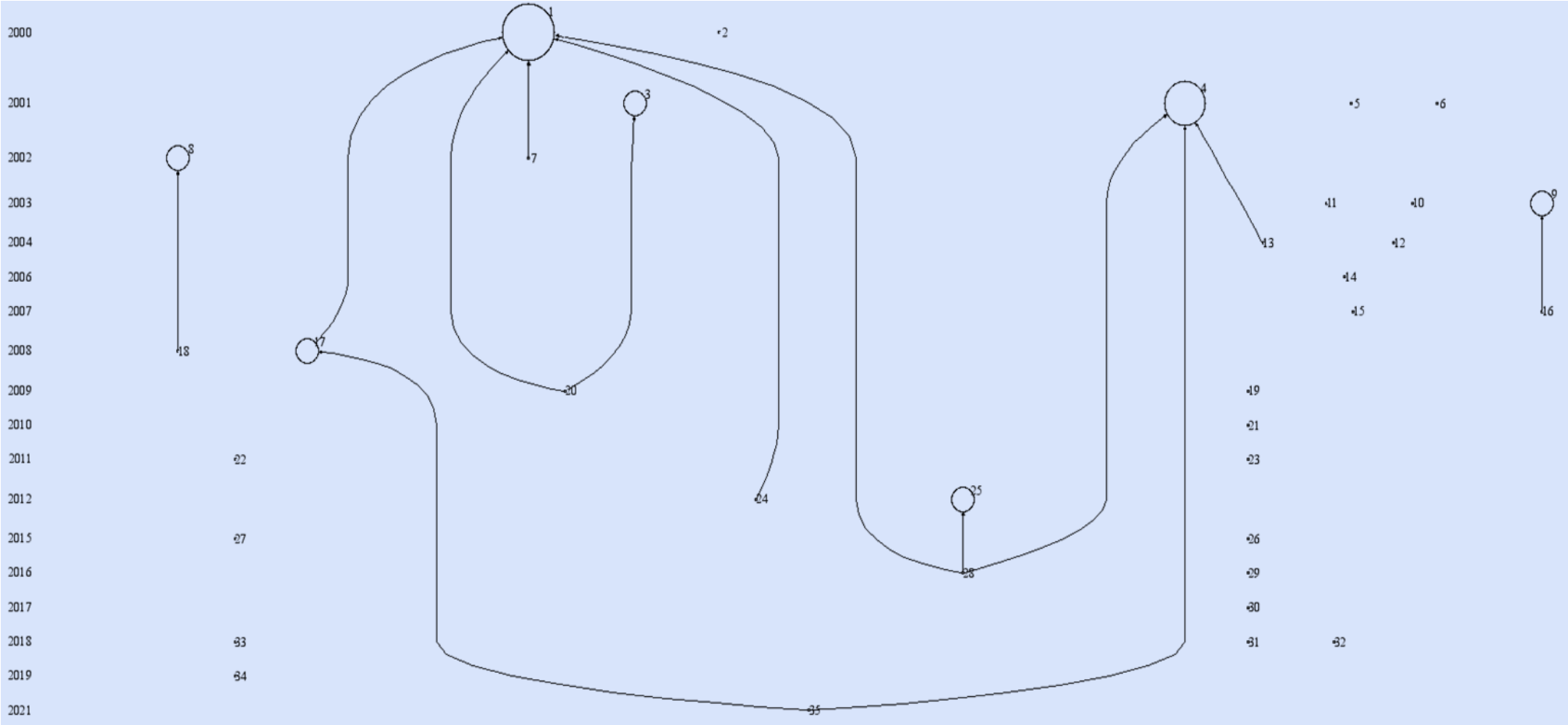


Figure 17 - LCS of top 20 papers in HistCite

Node	Author (Year)	Journal	LCS
1	Kersnik, J (2000)	*International Journal for Quality in Health Care*	5
2	Himmel, W, et al. (2000)	*Journal of General Internal Medicine*	0
3	Katic, M, et al. (2001)	*Family Practice*	1
4	Kersnik, J (2001)	*Health Policy*	3
5	Laidlaw, T, S, et al. (2001)	*Academic Medicine*	0
6	Barzilai, D, A, et al. (2001)	*Preventive Medicine*	0
7	Kersnik, J, et al. (2002)	*Swiss Medical Weekly*	0
8	Flocke, S, A, et al. (2002)	*Journals of Family Practice*	1
9	Baker, R, et al. (2003)	*Scadinavian Journal of Primary Health Care*	1
10	Miedema, B, et al. (2003)	*Canadian Family Physician*	0
11	Boon, H, et al. (2003)	*Canadian Family Physician*	0
12	Callahan, E, J, et al. (2004)	*Journal of the American Board of Family Practice*	0
13	Polluste, K, et al. (2004)	*Croatian Medical Journal*	0
14	Shmueli, A, et al. (2006)	*Evidence-Based Complementary*	0
15	Gross, R, et al. (2007)	*Women & Health*	0
16	Howard, M, et al. (2007)	*Annals of Family Medicine*	0
17	Marcinowicz, L, et al. (2008)	*International Journal for Quality in Health Care*	1
18	Hochman, O, et al. (2008)	*Military Medicine*	0
19	Marcinowicz, L, et al. (2009)	*Health & Social Care in the Community*	0
20	Marcinowicz, L, et al. (2009)	*BMC Health Services Research*	0
21	Marcinowicz, L, et al. (2010)	*Journal of Evaluation in Clinical Practice*	0
22	Nijar, U, K, et al. (2011)	*Journal of the American Board of Family Medicine*	0
23	Hojat, M, et al. (2011)	*Family Medicine*	0
24	Baltaci, D, et al. (2012)	*HealthMED*	0
25	Rouhani, S, et al. (2012)	*Life Science Journal*	1
26	Zelko, E, et al. (2015)	*Zdravstveno Varstvo*	0
27	Kuang, L, et al. (2015)	*Family Practice*	0
28	Honarvar, B, et al. (2016)	*International Journal of Preventive Medicine*	0

29	Lankarani, K, B, et al. (2016)	*International Journal of Preventive Medicine*	0
30	Fararouie, M, et al. (2017)	*Eastern Mediterranean Health Journal*	0
31	Jerant, A, et al. (2018)	*JAMA Internal Medicine*	0
32	Akpinar, Y, et al. (2018)	*Primary Health Care Research and Development*	0
33	Shapiro, E, et al. (2018)	*Israel Journal of Health Policy Research*	0
34	Orsal, O, et al. (2019)	*Patient Education and Counseling*	0
35	Kirac, F, C, et al. (2021)	*Konuralp Medical Journal*	0

Table 6 - LCS of all the papers in the sample

After performing this citation analysis, either local or global, it will be interesting to see the proximity of the papers collected among them. For this purpose, an analysis of these papers will be held using Gephi, a software that explores networks, with graphic visualization (Bastian, et al. 2009).

To proceed with the data collected from the papers, and transport it to Gephi, the extracted file from WOS had to be prepared using Bibexcel. Once the file is prepared and uploaded in Gephi, this will provide a random network of the papers. To organize this network, Force Atlas 2 algorithm, which is an iterative process, will place the nodes with common connections closer, and for the ones who don't share any information between them the opposite will happen, and this will place the nodes further to the center of the network. Afterward, a ranking of these papers was applied, in which a "Degree" of the same was selected. "Degree" means the number of times that a paper is connected to another, being composed by "In-Degree" which means the number of times that another paper is quoting a particular paper, plus the "Out-Degree" which is the number of times that a paper is quoting other paper. Followed by an application of community detection, modularity. Modularity will distinguish classes of articles, by clustering them. The graphics obtained are represented in Figure 18, on the left is represented the random network, and on the right side, it can be seen the final graphic. To notice each paper is represented by a node (circle) that presents different sizes depending on the number of citations and "Edges" in the sample. A smaller circle means that the paper has fewer "Edges" in the network presented. Only some labels of nodes are presented in order to achieve a smoother reading and visualization of the graphic.

The number of nodes obtained for analysis is 27, with 79 "Edges". From the total sample, possible to be extracted and treated in this software, 35 papers, now remains 77% of that sample, leaving out eight papers due to not having any connection to the others. Starting by analyzing the clusters obtained, there are four being represented as: cluster 0 represents 11%, cluster 1 represents 15%, cluster 2 represents 44% and cluster 3 represents 30%. The analysis will pass by interpreting values such as "Degree", "In-Degree", "Out-Degree", and weight of "Edges".

Cluster 0 englobes three papers being the smallest representation of the four clusters. This cluster scores a value of seven when it comes to “In-Degree”, 12 in “Out-Degree” and scoring a total of 19 in “Degree”. When analyzing the “Edge” weight, we reach a total weight cluster of 20. Inside this cluster, the article that obtained the highest value in the “Degree” parameter was Honarvar, et al. (2016). The paper written by Honarvar, et al. (2016) registered the highest “Edge” score of 12 with the other two papers reaching the score of four. Although, a score of 12 in “Edge” score could be considered a medium value when considering the whole sample.

Cluster 1 is composed of four papers with a score of 14 for “In-Degree”, and a value of five for “Out-Degree”, reaching a total “Degree” of 19. Regarding the “Edge” weight the total score of the cluster is 34. The highest value of “Degree” in this cluster is 11 by the paper of Marcinowicz, et al. (2009). When it comes to the weight of the “Edge” this paper had registered 26 being the highest in this cluster, and also in the whole sample.

Cluster 2 is a cluster compound with 12 papers being the cluster with most papers in this division of clusters, scoring 47 “In-Degree”, 44 “Out-Degree” and a total of 91 “Degree” value, the highest value among the four clusters registered. Concerning the “Edge” weight this cluster has the highest value among the four clusters with a total of 97. When looking in detail at the articles that are part of this cluster, two papers reach values of 14 and 15 “Degree” ((Baltaci, et al., 2012) (Kersnik, 2000). Observing the “Edge” weight of each paper in particular, the same papers achieved the highest value 16 and 24 respectively. Comparing all the papers of the final sample Kersnik (2000) reach the top scores even when looking at the parameter of the “Degree” or the “Edge” weight.

Cluster 3 is represented by eight papers. It had registered a total of 11 “In-Degree”, 18 “Out-Degree”, and 29 “Degree”. When analyzing the “Edge” weight this cluster obtains a value of 31, and the paper of Barzilai, et al. (2001) has a total of 13, being the maximum value. The highest “Degree” value is ten achieved by the paper of Flocke, et al. (2002).

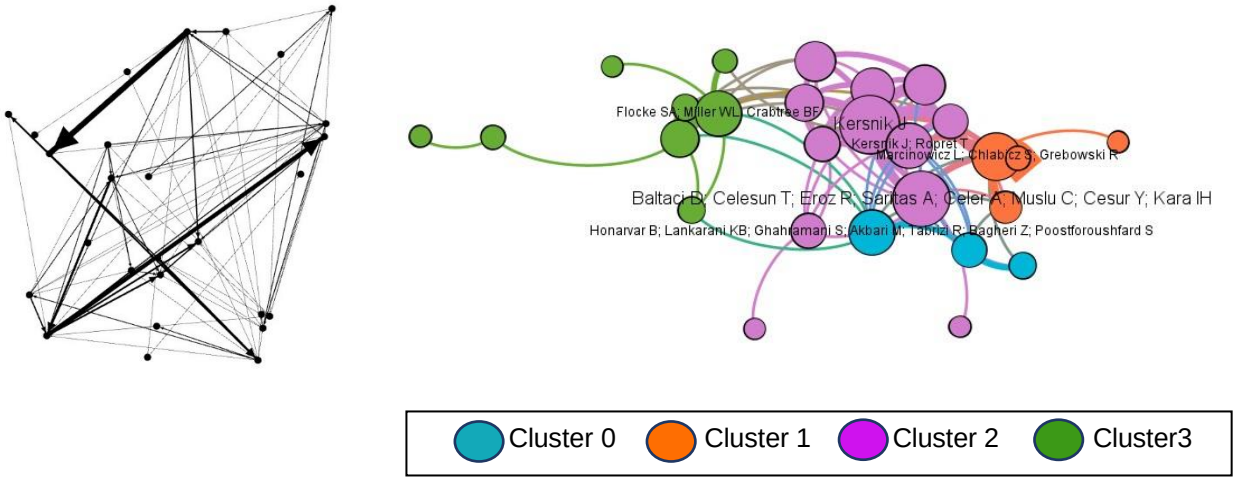


Figure 18 - Randomized network and network clustered in Gephi

6.2 – Co-citation analysis

In this sub-chapter, an analysis of co-citations will take place. To perform a full analysis of co-citations, VOSviewer software will help to run those, by performing a co-citation analysis of papers, sources, and authors. A theoretical approach to understanding what is a co-citation analysis will open this sub-chapter as well as a brief explanation of VOSviewer functionalities.

Co-citation analysis is considered a meta-analytical tool that shows the relation between researches. This analyse can give authors a wider perspective on how the papers are connected with each other's (Shah, et al. 2019). Co-citation for itself is defined as a paper that is cited simultaneously by two other papers (Eto, 2013). This definition allows a more complete analysis and understanding of the relations established between various researches, which could be seen when obtaining a graphic representation of the networks generated. In terms of understanding how strong or weak connection a co-citation has, citing Small (1973) "strong co-citation links must rely both on the notion of subject similarity and the association or co-occurrence of ideas.".

As a helpful tool to perform this analysis, VOSviewer can generate a cartography analysis to give a visualization of the network. This software has been gaining more and more utility in the world of bibliometric studies (Shah, et al. 2019). In this program just like Gephi, circles represent either the paper, author, or source, and their respective sizes change depending on the number of citations that each one has. These circles are placed together if they are related to each other, and the opposite happens if they are not related. To generate the co-citation network the same file that was used in Gephi is the same that is going to be uploaded in VOSviewer. As mentioned before, a first co-citation analysis of the papers will take place followed by sources, and concluded with the authors. In this step, a minimum number of citations of a cited reference had to be chosen. Under this analysis, a method had to be selected, between no normalization, association strength, fractionalization, and Lin/Log modularity. Association strength was selected as being the method that is normally used.

6.2.1 – Papers

From a total of 841 cited references, if the minimum of citations selected was one, then 841 references meet the threshold, when the minimum of cited references was two, we reach a total of 68, if the minimum selected was three we would have 17 if four was selected we would have seven and if the minimum selected were five we would have a total of five. Knowing those options, with the purpose to do a more effectively analysis, a minimum of two citations of a cited reference was selected, selecting the 68 cited references to appear on the citation network. In this citation network, there are presented four clusters, with 516 links and with a total link strength of 618 as can be seen in Figure 19. To analyze each cluster a table with the top five most cited by cluster was done to evaluate which has the most links and the one with the highest link strength.

In cluster 1, it is gathered a total of 23 items being the cluster with the most papers. It also registered a total of 63 citations being the cluster with the most citations among the four. Two papers have recorded the highest number of citations, being the papers made by Baker (1990) and Grol, et al.

(1999) with a total of six citations each. The first author referred, besides having one of the papers with the most citations also appears four times inside this cluster having papers written in 1990, 1995, and 1996. Even so, the paper with the most number of links and also the highest link strength is the paper of Grol, et al. (1999) having a total of 36 links and 52 link strength recorded. This is the paper with the highest number of links and the highest link strength not only in this cluster but in all the sample. Cluster 1 has a time range from 1990 until 2003.

Cluster 2 has 17 items with a timeline that starts in 1983 and goes until 2006. Having a total of 36 citations, making it the cluster with the second most citations, this cluster has as main papers with most citations the papers by Patton (1990) alongside Sitzia (1997) counting three citations for each paper. Inside this cluster two authors have registered two papers, being them Coulter, and Fitzpatrick. In this cluster, different from the previous one, the paper with the most links is not the same with the highest link strength. Sitzia (1997) has 24 links, the highest number, and Patton (1990) has the highest link strength, 36.

Cluster 3 is the cluster alongside cluster 4 that has the lowest number of papers, 14. Counting a total of 35 citations. Whereas this cluster has registered three papers from Stange, and other three papers from Stewart. As a curiosity, inside this cluster, there is one article in which the software did not capture the title. This cluster presents a timeline from 1988 until 2011. The articles that registered the most citations (four) inside this cluster were Rubin, et al. (1993) and Stange, et al. (1998). Although the paper with the most links, 24, only has two citations, being the paper by Hall, et al. (1988). Not registering the highest number of links but also close to it, 22, the paper of Rubin, et al. (1993) has a link strength of 29, the highest strength link inside this cluster.

Cluster 4, with the same amount of papers (14) has the lowest number of citations recorded by the cluster, achieving only a total of 33 citations. In this cluster there was a paper that outstands from the others, Kersnik (2000) has five citations, with 35 links and a link strength of 38. It is the only author who has more than one paper in this cluster. The collected papers in this cluster varied from 1990 with the most recent year being 2015.

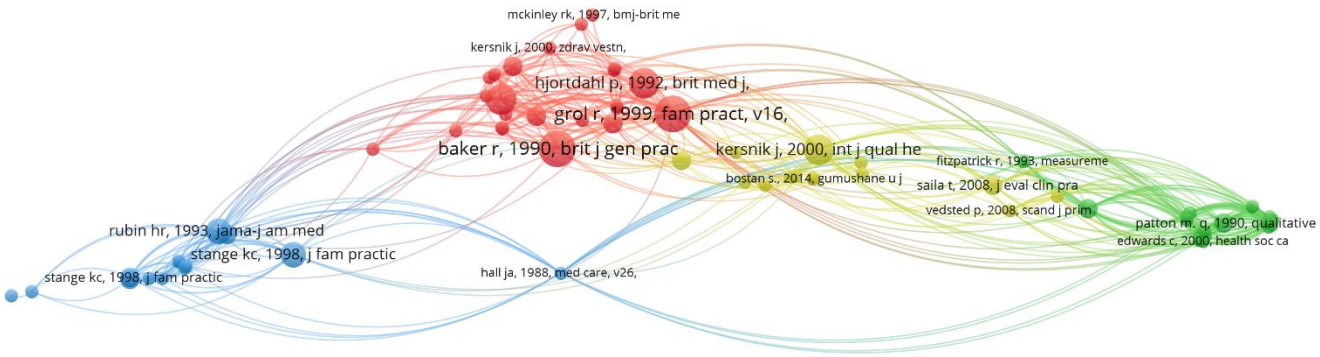


Figure 19 - Papers co-citation analysis through VOSviewer

6.2.2 – Sources

When analyzing the sources, there was a total of 461 in which was possible, like the previous analysis, to choose a minimum number of citations of a source. If a minimum of one was selected, then 461 would enter the graphic, if a minimum of two was chosen, then 109 would meet the threshold, if the minimum was three, a total of 55, if it was four, 37 would meet the threshold, and so on until a maximum choice of 20 minimum citations of a source. For a better understanding and reading of the graphic, in this situation a minimum of three was selected, having then a total of 55 sources meet the threshold. The graphic generated in VOSviewer can be seen below (Figure 20), where it has a total of five clusters, with 706 links and a total link strength of 3461.

Cluster 1 is the one that has more source items among all the clusters, having a total of 23, also registering as the one with the most citations by cluster with a total of 168. Inside the cluster as the top five, it can be observed that International Journal for Quality in Health Care has the highest number of citations (26), links (45), and link strength (320) is the one with the highest values in all three parameters observed.

Cluster 2 has gathered ten items with a total of 61 citations. Also, in this cluster, there is one source that registered the top parameters observed in this analysis. Journal of General Internal Medicine has registered 14 citations while the second source with more citations only has eight, representing almost double, 38 links and 284 of link strength.

A total of ten items configured cluster 3, having a total of 139 citations. In this cluster the source with the most citations (41) also represents the source with more links (51), being the source with more links in the whole sample, but does not represent the highest link strength (553). The source with the most citations is Social Science & Medicine, and the one with the highest link strength is the Journal of the American Medical Association. By observing the top five it is possible to see this cluster has three sources with the bigger values when it comes to link strength, 492 registered by The Journal of Family Practice, and 512 by Social Science & Medicine.

Cluster 4 has a total of nine items with 68 citations. The source that is on top of this cluster is distinguished by the outstanding values that presents when compared to the sources inside this cluster. 32 citations, 48 links, and 462 link strength are what compose the bibliometrics value of the Family Practice Journal. It is normal that these values are high as Family Practice Journal is an international journal for practitioners, teachers, and researchers in fields like family medicine, general practice, and primary care worldwide.

Cluster 5 is the one with the lowest number of sources, having only three. Reaching a total of 44 citations, Medical Care Journal collects a high number of 35 citations inside this cluster, 49 links, and the highest value in terms of all the sample achieving a total link strength of 564. This journal is oriented to all aspects of the administration and delivery of healthcare.

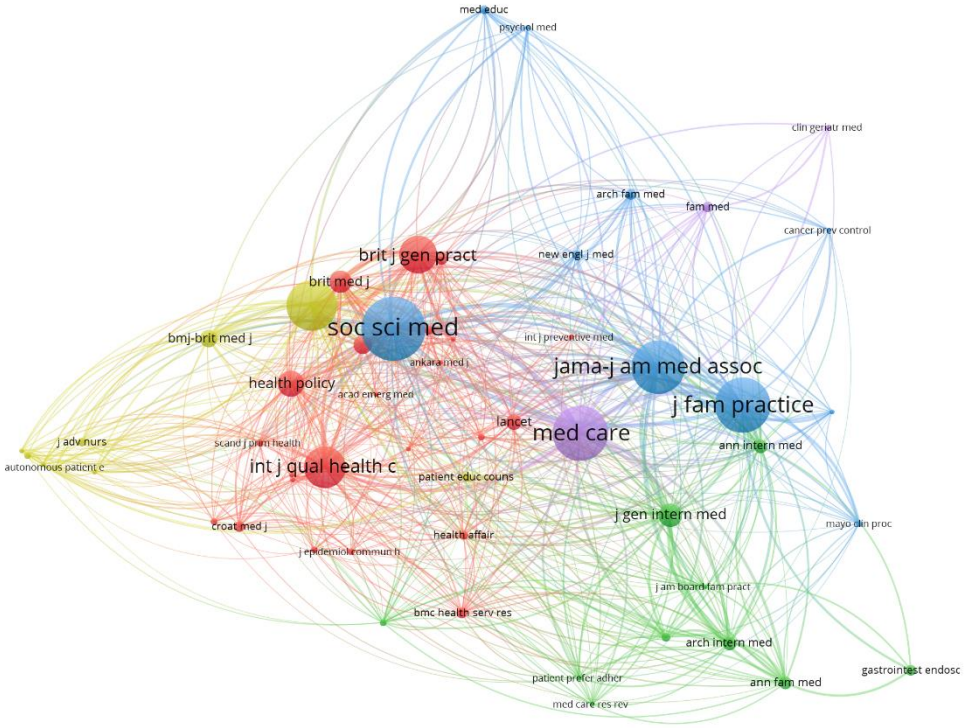


Figure 20 - Sources co-citation analysis through VOSviewer

6.2.3 – Authors

As the last analysis, the co-citation analysis of authors. A total of 694 entered the analysis, and this would be the case if the number of minimum citations selected was one. As if the minimum selected was two, a total of 103 authors would enter the generated graphic and respective analysis. When selecting a minimum of three, 45 meet the threshold. If it was four as the minimum selected then 23 would meet the requirements, until a maximum possible to be chosen of 12. Like the selections made before, to facilitate the graphic visualization and respective analysis, a minimum of three citations were chosen, meeting 45 authors in the final analysis. Besides the graphic generated with five clusters, there is one cluster that does not has a connection to the others, and for that reason, it will not be displayed in the respective graphic (Figure 21). As a first analysis, there is a total of six clusters, with 216 citations, 301 links, and 801 link strength.

Cluster 1 has a total of 13 authors, reaching 63 citations being the cluster with the most authors and most citations among the six. Stange appears as the author with the most citations, 12, and the one with the highest link strength, 106. Although the one with the most links in this cluster, a total of 30 is Hall, also appears to be the author with the most links in the all sample as well. Composing this top five, we have Stewart with seven citations, 12 links, and 56 link strength; Rubin with four citations, 20 links, and 51 link strength; and Bertakis with four citations also, 14 links, and 46 link strength.

Cluster 2 gathered ten authors with a total of 58 citations. Here, Baker appears as the author with the most citations, 18, and this represents the author with the most citations in the whole sample. Also, Baker is the author with the highest link strength (117) when comparing all the authors presented. Regarding the author with most links inside the cluster, Baker appears with no surprise, collecting a total of 28 links. Grol has registered nine citations, 25 links, and 76 link strength. Svab registered five

citations, 12 links, and 45 link strength. Calnan recorded five citations, 20 links, and 43 link strength. With five citations as well, Hjortdahl appears with 18 links, and 39 link strength.

Concerning cluster 3, nine authors have entered the cluster reaching a total of 43 citations. When analyzing this cluster, Kersnik is the author who gathers the higher values either in citations (12), links (25), or link strength (67). Following Kersnik, comes Donabedian with six citations, 23 links, and 50 link strength. Startfield has six citations, ten links, and 23 link strength. Akturk presents four citations, nine links, and 12 link strength. With three citations, 20 links, and 31 link strength appears Emanuel.

Cluster 4 registered the same amount of authors as the previous cluster, nine authors. This cluster presents 37 citations, where the author with the most citations is Coulter with ten. The same author recorded the highest number of links (23) and the highest link strength (79) in this cluster. Bellow comes Fitzpatrick with five citations, 19 links, and 44 link strength. Sitzia follows with four citations, 13 links, and 31 link strength. Patton and Coyle have registered the same amount of citations, three, and the same link strength, 29, however, Patton has 13 links and Coyle has 12.

Cluster 5 only presents three authors, representing 12 citations. Ware represents 50% of the total citations of the cluster, being the one with the highest amount of links (17) and with the highest link strength 36. Polluste recorded three citations, with nine links and 19 link strength. To complement this cluster, the author Hulka has registered three citations, with seven links and 13 link strength.

To finalize the sample cluster 6, being the author which is not represented in the graphic bellow. This cluster is composed only by Grunfeld recording only three citations and not having any connection to the other authors, registered zero links, and zero link strength as expected.

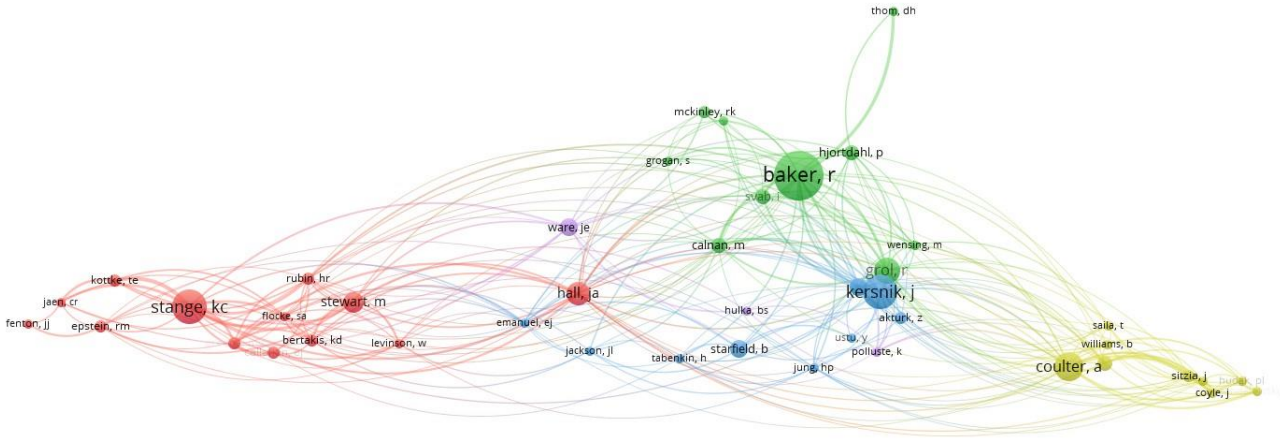


Figure 21 - Authors co-citation analysis through VOSviewer

6.3 – Overview of bibliometric analysis

This sub chapter will conclude the chapter on bibliometric analysis by drawing conclusions from the various analysis made before. This overview will resume the principal parameters analyzed, such as the timeline of the papers published, the results obtained by citations, as well as which were the authors or sources more influential in the network designed by this final sample.

This sample englobed a total of 41 papers, with the exception that when introduced the software due to the limitations of this to read data from different databases the sample had to be reduced to 35 papers. The final sample has a timeline between 2000 and 2022. In this final sample is possible to conclude that the authors with more papers in it, are Marcinowicz and Chlabicz with five papers representing 12,2% having Kersnik with four papers, representing 9,8%. It was possible to see that no journal outstands in terms of records from this sample, having six journals with two papers published, being Annals of Family Medicine, Canadian Family Physician, Family Practice, International Journal for Quality in Health Care, International Journal of Preventive Medicine, and Journal of Family Medicine and Primary Care. Regarding which keyword was the one that occurs more often in the titles and keywords list "Satisfaction" appears at the top of the list marking his presence in 30 papers with a percentage of 73% followed by "Family" in 25 papers (61%), and "Patient" in 20 papers with 49%.

In concern to the number of publications and citations, it was possible to visualize and conclude they are not correlated, because contrary to the visualized growth of the number of citations the number of publications does not seem to follow any trend. In this analysis, it was possible to see that there were three years without the publication of any paper, 2013, 2014, and 2020. Although the number of citations has seen an increase in the past three years, the years 2020 and 2021 reached in a row the highest values of citations with 87 and 88. This growth could be associated with the increase of interest or increase of investment in the health field aggregated with the pandemic situation.

When analyzing the GCS and LCS it was possible to state that the paper with the top three values in this sample are Nutting, et al. (2003) with a GCS of 220, Flocke, et al. (2002) with a GCS of 134, and Baker, et al. (2003) with a GCS of 116. Reducing the sample to 35 papers from now on due to the disposal of data not being able to be read by the software, the LCS scores were as follows. Kersnik with the two papers in this sample was able to collect the highest values when it comes to LCS, with the paper "An evaluation of patient satisfaction with family practice care in Slovenia" published in 2000 registered a score of five LCS and "Determinants of customer satisfaction with the health care system, with the possibility to choose a personal physician and with a family doctor in a transition country" published in 2001 had a score of three LCS.

When retrieving the local network of the sample, and viewing the connections of the papers within the final sample, Gephi enables the possibility to see the connections and proximity between them. When running the analysis the sample was split into four clusters, with a total of 27 nodes and 79 "Edges". It was possible to see during the analysis that the paper with the highest "In-Degree" value was also the one that registered the highest "Degree" value, being Kersnik (2000) with a score of nine and 15

respectively. About the “Out-Degree” the paper with the highest score was Baltaci, et al. (2012) with a 12 “Out-Degree” score. And the paper with the best “Edge” weight was Marcinowicz, et al. (2009).

The last bibliometric analysis was to perform a co-citation analysis of the papers, sources, and authors through VOSviewer. In concern to the papers' co-citation analysis, there was not a paper that outstood from the others, having two papers with six citations which was the highest value recorded in terms of citations. These papers were the ones written by Baker (1990) and Grol, et al. (1999). Not only Grol had the paper with most citations tied up with Baker but also had the paper with the most links and highest link strength within the whole sample, registering 36 links and a value of 52 link strength, being able to be considered the most influential paper in this co-citation analysis.

When going through sources co-citation analysis, it was possible to observe that Social Science & Medicine had 41 citations, being the highest value registered. Not only this source has the most citations per source, but also was the source with the most links inside this sample, having 51 links. Nonetheless, Medical Care source have registered the highest link strength, having a score of 564, showing its influence among other sources.

Although having the paper with the most citations, when it comes to analyzing the authors, Baker appears as the first of the authors with the most citations, having a total of 18 citations, despite this Baker also registered the highest link strength with a total of 117 but did not register the most links by author, being Hall with 30 links the one having most links.

7. Conclusion and future work

In the last chapter, it is now important to conclude all the previous work by doing a summary of the results obtained, conclusions drawn by the papers, which were the limitations attached to the realization of this dissertation as well as future work that should be developed.

7.1 – Conclusions

The objective of this dissertation was to assess and analyze the literature concerning satisfaction related directly to family doctors trying to identify users' satisfaction level when using this service, through a systematic review. In the first moment of this review, the main goal was to identify a gap to be fulfilled in the literature. With this goal in mind, a definition of the terms applied in the review was done, to guide and clarify the main terms applied during the research. It was also studied the methodology to apply, so it was possible to choose the best way to achieve the main goal, types of reviews, and alternatives to collect papers were reviewed and synthesized. It was decided that a systematic review using the PRISMA methodology was the best way to accomplish the objectives. A collection of the papers was done, to be applied through PRISMA reaching a final sample of studies to include in the review of 42. This final sample was described in an excel file so it could be possible to perform a benchmark of factors and variables. After this first analysis, a bibliometric analysis took place under the software HistCite, Gephi, and VOSviewer. HistCite allowed to view and assess the LCS and the GCS of the sample. Gephi explored the network of these papers, while VOSviewer guide the co-citation analysis of the sample.

The classification of the papers took an important role in this review, and in a first overview of the analysis from the collected papers that composed the final sample, it was possible to see that a great percentage of the sample was covered by papers that were published in journals of quartile 1 and quartile 2, with an average impact factor of 2.69. The timeline selected for the collection of papers was from 2000 until 2022, having as a bigger representation the year 2013, and 2015 with five papers each. The United States of America was the country that registered the most researches, which does not come as a surprised due to the wide range of institutions and investment in the most varied types of scientific areas. When analyzing the survey, it was concluded that 59% of the surveys were made by researches being adaptations from other satisfaction surveys which were not identified. The most common used scale was a Likert-type scale with 5 points. When looking at which analysis was more used to process and evaluate the data, statistical analysis despite of embrace multiple analyses were described by the authors as the analysis used. As an analysis of the variables that were considered in the surveys, was possible to see after the gathering of data, that gender and age are the variables that almost every author considers when performing a satisfaction survey, in a way to stratify the sample.

When going through the main conclusions drawn by papers, it is possible to see that the vast majority of papers conclude that the user's satisfaction was considered high or relatively high. Having only two papers where the satisfaction level was the opposite of high. These two papers may look like a

coincidence, but both have done their research in Iran. In the paper of Honarvar, et al. (2016) what stands out the most, as a reason for dissatisfaction, was a perceived lack of the family physician's competence, lack of time spent listening to the patient and examining the patient. While in the paper of Rouhani, et al. (2012) the level of dissatisfaction was a consequence of governmental posture and attitude in terms of healthcare, decreasing the quality of the same.

Finalizing this dissertation, a bibliometric analysis was performed to understand which authors, papers, or sources were more influential, which had more records within the sample, and realized how the papers connect with each other. The author Marcinowicz and Chlabicz in co-authorship have registered the most number of papers in the final sample, with five records.

Analyzing the publications and citations, it is possible to assume they do not have a direct relation, when looking at the year 2020 where there weren't publications, the number of citations has reached the second highest value registered so far. In terms of which paper is more cited in this sample, through the software HistCite, was possible to see that Nutting, et al. (2003) has a GCS score of 220. When analyzing the LCS, Kersnik (2000) comes in first with a score of five, being the most cited by other papers inside the sample. When using Gephi it was also Kersnik (2000) who scored the highest value in the parameter "Degree", with a score of 15. Although it was Marcinowicz, et al. (2009) who registered the paper with the highest "Edge" weight, 26. By last, the co-citation analysis wich allowed to identify wich paper, source and author are the most influent inside the whole sample, including references. The papers of Baker (1990) and Grol, et al. (1999) registered the most citations, having six each. The most cited source was Social Science & Medicine with 41 citations. When looking at authors Bakker was the one who was cited the most, 18 times.

In conclusion of this work, it is possible to assume that the satisfaction of the users towards family doctors is registered to be high. A lot of variables have to be considered, as this could be different from country to country, as well as system to system. Even when talking about the authors it was possible to verify that the concept of satisfaction is different among them. The questions applied were not identical to each other diversifying the approaches of each author, not allowing a possible comparison between them. It was observed that the surveys used various types of questions such as open answered questions, fill-out forms, and even interviews, which made it difficult to compare the possible results. The countries that are part of the sample are situated in the European continent, Asia, and America, however, there is no representation of the African continent and Oceania. From these two continents missing, both seem to be interesting to have research for different reasons. According to common sense these are different continents, and as it is well known the African continent includes most of the world's poorest countries (undeveloped countries) so it would be interesting to have some research done there.

7.2 – Future work

After all the work, a perspective of what should be done in the future appears as an important theme to be debated but it is also important to consider some limitations found along the way. For instance, the number of papers is relatively small having a short diversification in terms of geographic allocation. Continents like Africa or Oceania are not represented in the sample, beside these continents, there seems to be a small diversity inside the representation in Europe, Asia, or America, having the sample concentrated in the same countries, like the United States of America, Poland, Slovenia, and Iran for example. So the first recommendation for future work is to expand the research to fully understand more realities.

Another factor that limits the research is the fact that papers from different databases have their information detailed in different ways, not enabling the software to read the data and processing all in a single file. An idea to solve this could be the uniformization of the extract papers to be equal, independently of the database.

For future work like this review, it is important as described before to keep on doing research that studies the users' satisfaction related to the family doctor to fully understand more and more how users feel about it. Notably, there is a scarcity of research approaching this theme, however, to increase users' satisfaction it is needed to increase the supply of research about it. Better knowledge about how the users feel can lead the services to improve their quality and efficiency.

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Annexes

Table A - PRISMA checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
Information sources	6	Specify all databases, registers, websites, organizations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	

Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or	

		data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	

Results of individuals studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	
	23b	Discuss any limitations of the evidence included in the review.	
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	

OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	
Competing interests	26	Declare any competing interests of review authors.	
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	

Table B - Extracted excel file data sample

Title	Journal	Impact Factor	Quartil (Best in last year)	Author	Year	Country	System	Objectives	Scale	Type of Survey	Analysis	Conclusions
A Brief Instrument to Measure Patients' Overall Satisfaction With Primary Care Physicians	Family Medicine	1.756	Q2	Hojat, M; Louis, DZ; Maxwell, K; Markham, FW; Wender, RC; Gonnella, JS	2011	England	Not specified	Develop and examine the psychometrics of a brief instrument to measure patients' overall satisfaction with their primary care physicians	Likert (7 point)	Own survey	Factor analysis	Empirical evidence supported the validity and reliability of a brief patient satisfaction scale that has utility in the assessments of educational programs aimed at improving patient satisfaction, medical services, and patient outcomes in primary care settings.
An evaluation of patient satisfaction amongst family practice patients with diverse ethnic backgrounds	Swiss Medical Weekly	2.193	Q3	Kersnik, J; Ropret, T	2002	Slovenia	Public	Examine the impact of patients' ethnic diversity on the patient satisfaction rates	Likert (5 point)	Own survey	Factor analysis and Multivariate regression analysis	The providers shuld address the needs of amembers of society. Undergaduate and postgraduate curricula have to address communication skills emphasising cultural differences
An evaluation of patient satisfaction with family practice care in Slovenia	Internatiol journal for quality in health care	2.038	Q2	Kersnik, J	2000	Slovenia	Public and Privates	Describe the level of patient satisfaction with family pratice in Slovenia	Likert (5 point)	Own survey (EUROPEP)	Factor Analysis	Patient satisfaction shown to be relative high and can be compared with other European countries. Were demontrated areas that need improvement such as shorten the waiting times and greater emphasis on communications skills
Analysis of the relationship among health awareness and health literacy, patient satisfaction levels with primary care in patients admitting to primary care health centers	Patient Education and Counseling	2.94	Q2	Orsal, O; Duru, P; Orsal, O; Tirpan, K; Culhaci, A	2018	Turkey	Public	Examine the relationships between health literacy, primary care satisfaction levels and health awareness of the patients who were admitted to primary care centers	Likert (5 point)	Own survey	Statistical analysis	In the province of Eskisehir, the health literacy level of 7 out of 10 patients, who admitted to the primary care institution, is inadequate or problematic. As health awareness of participants increases, their level of health literacy also increases. As well their satisfaction with family physicians due to the increase of health literacy
Association of Clinician Denial of Patient Requests With Patient Satisfaction	JAMA Internal Medicine	21.873	Q1	Jerant, A; Fenton, JJ; Kravitz, RL; Tancredi, DJ; Magnan, E; Bertakis, KD; Franks, P	2018	USA	Not specified	To examine how patient satisfaction with the clinician is associated with clinician denial of distinct types of patient requests, adjusting for patient characteristics	Likert (10 point)	Consumer Assessment of Healthcare Providers and Systems Clinician and Group	Statistical analysis	Clinician denial of some types of requests was associated with worse patient satisfaction with the clinician, but not for others, when compared with fulfillment of the requests

Cancer follow-up care. Patients' perspectives	Canadian Family Physician	3.275	Q2	Miedema B, MacDonald I, Tatemichi S.	2003	USA	Public	Assess family physicians' and specialists' involvement in cancer follow-up care and how this involvement is perceived by cancer patients	Not specified	Healthcare Providers and Systems Clinician and Group	Not Specified	Cancer follow-up care is increasingly becoming part of family physicians' practices. Family physicians need to develop an approach that addresses patients' needs, particularly in the area of emotional support
Continuity of primary care: to whom does it matter and when?	Annals of Family Medicine	5.602	Q1	Nutting PA, Goodwin MA, Flocke SA, Zyzanski SJ, Stange KC.	2003	USA	Not specified	Examined patients' ratings of the importance of continuity of care with their family physician	MOS 9-Item	Own survey	Analyses of variances	Continuity of physician care is associated with more positive assessments of the visit and appears to be particularly important for more vulnerable patients
Determinants of customer satisfaction with the health care system, with the possibility to choose a personal physician and with a family doctor in a transition country	Health policy	2.98	Q1	Kersnik, J	2001	Slovenia	Public and private	Determine customer satisfaction with a reformed health care system, with the possibility of free choice of a family physician and patient satisfaction with the family physician in Slovenia and their major determinants	Likert (0-100)	Own survey (EUROPEP)	Multivariable analysis	Higher patient satisfaction with family doctor was the most powerful predictor of patients' satisfaction with health care system.
Does health habit counseling affect patient satisfaction?	Preventive medicine	4.018	Q1	Barzilai, DA; Goodwin, MA; Zyzanski, SJ; Stange, KC	2001	USA	Not Specified	Whether physician discussion of behavioral risk factors decreases patient satisfaction with the outpatient visit	Likert (5 point) and MOS 9 item	Own survey	Logistic regressions	Discussion of health behavior change is not associated with dimished patient satisfaction. In fact, the approach of the family doctor to the theme is associated with greater satisfaction
Evaluation of patient satisfaction with family physicians after implementation of family medicine in Turkey	HealthMED	0.435	Q4	Baltaci, D; Celesun, T; Eroz, R; Saritas, A; Celer, A; Muslu, C; Cesur, Y; Kara, IH	2012	Turkey	Public	Evaluate level of patient's satisfaction with family physician after family medicine implementation at primary care settings in Turkey	Likert (5 point)	Own survey (EUROPEP)	Statistical analysis	Patient satisfaction was improved, compared to before implementation of family medicine, and additionally lower than north European countries, but similar with some of the south European ones
Evaluation of primary health care reform in Estonia from patients' perspective: Acceptability and satisfaction	Croatian Medical Journal	1.351	Q3	Polluste, K; Kalda, R; Lember, M	2004	Estonia	Public	To analyze the population's view of the primary health care reform five years after the formal implementation of the reform investigating the acceptability of the primary health care system, patients' preferences, and satisfaction with their family doctors	Likert (4 point)	Own survey	Logistic regression analysis and statistical analysis	During the five-year-period most of the Estonian population has accepted the new primary health care system and the satisfaction rate has increased
Exploration of the relationship between continuity, trust in regular doctors and patient satisfaction with consultations with family doctors	Scandinavian Journal of Primary Health Care	2.581	Q2	Baker, R; Mainous, AG; Gray, DP; Love, MM	2003	USA and UK	Not specified	To determine the influence of longitudinal continuity and trust in patients' regular family doctors on patient satisfaction with consultations	Likert (5 point)	Consultation Satisfaction Questionnaire	Linear regression analysis	Consulting the regular doctor, trust and satisfaction with consultations are associated, and patients who consult a doctor they trust report the highest levels of satisfaction with consultations.
Exploring negative evaluations of health care by Polish patients: an attempt at cross-cultural comparison	Health and Social Care in the Community	2.821	Q1	Marcinowicz, L; Grebowski, R; Chlabicz, S	2009	Poland	Not specified	Determine how Polish patients verbally express negative opinions of their healthcare services, and to compare the patterns of opinion-giving behaviour between patients in Poland and Western Europe	Not specified	Interview	Qualitative analysis	In their spontaneous utterances, the respondents gave detailed suggestions about what changes might be instituted to increase the level of patient satisfaction with their health care, whereas the findings of quantitative studies are often difficult to put into practice

Family medicine and patients' satisfaction in Iran	Life Science Journal	0.165	Q4	Rouhani, S; Mohammadpour, RA	2012	Iran	Public and private	The assessment of patients' satisfaction, as an outcome quality indicator	Likert (5 point)	Own survey	Statistical analysis	Respondents were more satisfied with those items related to the physician than those related to the regulatory aspects of referral system or the duty of health authorities
Family practice and the quality of primary care: a study of Chinese patients in Guangdong Province	Family Practice	2.267	Q1	Kuang L, Liang Y, Mei J, Zhao J, Wang Y, Liang H, Shi L.	2015	China	Public	Examined the relationship between use of family practice physician for primary care and the quality of primary care.	Likert (4 point)	Own survey	Multivariate analysis	Provided evidence that family practice has the potential to provide higher quality primary care
Health care access and satisfaction in Judean and Samarian communities: opportunities for improving care	Israel Journal of Health Policy Research	2.385	Q2	Shapiro, E; Zigdon, A; Nissanholtz-Gannot, R	2018	Israel	Public	Contribute towards filling that gap, with important implications for improving population health	Not specified	Own survey (Myers-JDC Brookdale Institution)	Descriptive analysis	Health care system problems among Israelis living in Judea and Samaria include not just quantity, but quality of services offered. There is a need for improvement not only in health care resources, but also in the level of access and satisfaction in this region.
Patient Perceptions and Expectations From Primary Health-care Providers in India	Journal of Family Medicine and Primary Care	0.567	Q2	Ardey R, Ardey R.	2015	India	Private	Assess indices of Patient Satisfaction at the level of the family physician which is usually the first point of contact between the patient and the health-care system.	Not specified	Own survey	Descriptive statistical analysis	These results show that private health-care providers are still the first choice for any form of medical care. However, there was definitely a gap between the increasing expectations of the patients for more information, better Patient–Provider interaction, more control over the treatment process and better amenities even at the Primary Care level.
Patient satisfaction with care for urgent health problems: A survey of family practice patients	Annals of Family Medicine	5.166	Q1	Howard, M; Goertzen, J; Hutchison, B; Kaczorowski, J; Morris, K	2007	Canada	Not specified	Compared patients' satisfaction with care received for an urgent health probem from their family physician	Likert (7 point)	Own survey	Analysis of covariance	Satisfaction was highest for patients receiving care from their own family physician or their physician's after-hours clinic
Patient Satisfaction with Family Medicine System: A Cross-Sectional	Konuralp Medical Journal	-	-	Kirac, FC; Uyar, S; Kirac, R; Soyler, S	2021	Turkey	Public	Determine the satisfaction levels with family medicine services of individuals who have received service from family physicians in the central districts of Turkey/Kahramanmaraş during the last year and to examine them in terms of various variables	Likert (5 point)	Family Medicine Satisfaction Questionnaire	Factor analysis	As a result of the study, it was determined that satisfaction with family medicine is generally high. In order to increase the quality of the family medicine system, which is one of the most important elements of primary health care services, patient satisfaction should be continuously evaluated and improvements should be made by detecting the disruptions in service
Patient Satisfaction with Family Physician Colonoscopists	Journal of the American Board of Family Medicine	2.657	Q1	Nijjar, UK; Edwards, JA; Short, MW	2011	USA	Public	Assess both patient satisfaction with colonoscopy performed by family physicians and physicians' technical competence in colonoscopy.	Likert (5 point)	Adapted (Group Health Association of America 9)	Statistical anlysis	Family physicians can perform colonoscopy with a high level of accuracy, safety, and patient satisfaction.

Patient Satisfaction with Family Physicians in Canada	Journal of Medical Marketing	0.108	Q4	Crane J., Crane B. E., Crane F. G.	2015	Canada	Public	Attempt to specifically assess patients' satisfaction with family physicians in Canada and to identify key variables affecting that satisfaction	Likert (5 point)	Own survey	Frequency analysis and regression analysis	It appears from this study that family physicians are doing a good job, overall, in satisfying their patients, with 72 per cent of respondents indicating their satisfaction with their family physician. appears to confirm that both the quality of cure and the quality of caring are equally important to the patients and that both must be present in order to ensure satisfaction
Patient satisfaction with healthcare provided by family doctors: primary dimensions and an attempt at typology	BMC Health Services Research	2.655	Q1	Marcinowicz, L; Chlabicz, S; Grebowski, R	2009	Poland	Not specified	Identify particular healthcare dimensions that determine a patient's satisfaction or dissatisfaction; and secondly to attempt to typologise the patients' responses based on their evaluation of healthcare	Not specified	Interview	Not specified	To improve the quality of healthcare, family doctors should take special care to ensure the quality of their interactions with patients.
Patient Satisfaction With the Family Physician Program in Sabzevar, Iran	Global journal of health science	0.24	Q3	Ghorbani A, Raeissi P, Saffari E, Reissi N.	2015	Iran	Public	Measure patient satisfaction with family physician services and determines factors affecting the level of satisfaction in order to propose appropriate suggestions for providing medical services based on patients' expectations.	Likert (5 point)	Own survey	Statistical analysis	The level of patient satisfaction with family physician services was moderate, which mostly arose from the components of the family physician program and services such as the waiting time, costs, welfare facilities, accessibility and the service-providing team rather than patients' personal characteristics.
Patients' recommendation of doctor as an indicator of patient satisfaction	Hong Kong Medical Journal	0.32	Q3	Kersnik, J	2003	Slovenia	Public and private	To determine whether patients' recommendation of their family doctor to others correlates with patient satisfaction scores	Likert (5 point)	Own survey (EUROPEP)	Multivariate analysis	The study confirmed high overall patient satisfaction with family doctors as evidenced by patient satisfaction scores, which is in agreement with the findings of other researchers
Patients' satisfaction with their family physicians' communication skills: a Nova Scotia survey	Academic Medicine	6.893	Q1	Laidlaw TS, Kaufman DM, Macleod H, Sargeant J, Langille DB.	2001	Canada	Not specified	Assess patients' satisfaction with their family physicians communication skills	Likert (5 point)	Interview	Not Specified	Patients from Nova Scotia are satisfied with the car provided by their family physicians. As well as the communication skills
Patients' views on the professional behaviour of family physicians	Family Practice	2.267	Q1	Katic, M; Budak, A; Ivankovic, D; Mastilica, M; Lazic, D; Babic-Banaszak, A; Matkovic, V	2001	Croatia	Public	Explore patient satisfaction with family physicians through evaluation of some characteristics of physician behaviour	Likert (5 point)	Own survey	Factor analysis and discriminant analysis	The patients were satisfied with the physician's behavior and that the physicians fulfilled the basic elements of professional behavior
Patients' satisfaction regarding family physician's consultation in primary healthcare centers of Ministry of Health, Jeddah	Journal of Family Medicine and Primary Care	-	-	Bawakid K., Rashid O. A., Mandoura N., Shah H. B. U., Ahmed W. A., Ibrahim A.	2017	Saudi Arabia	Public	Assess the level of patients' satisfaction and the factors contributing to patients' satisfaction toward family physicians consultation, visiting primary healthcare centers working under Ministry of Health, Jeddah	Likert (5 point)	Consultation satisfaction questionnaire	Multiple regression analysis	Satisfaction with the family physician's consultation is acceptable but needs improvement. Lower satisfaction was reported among males, patients living at a distance from primary healthcare centers and who had less knowledge about the presence of family physician in their nearest primary healthcare center
Physician-elder interaction in community family practice	Journal of the american board of family practice	1.636	Q2	Callahan, EJ; Stange, KC; Zyzanski, SJ; Goodwin, MA; Flocke, SA; Bertakis, KD	2004	USA	Not specified	Determine whether outpatient visits by elders seeing community family physicians differ in length or content from visits by younger patients; socioemotional preferences predict visit content; and satisfaction correlates with visit content differentially across age	MOS 9-Item	Own survey	Not Specified	Older patient visits differ from those of younger patients. However, there was little association of visit content with patient satisfaction

Public or non-public family medicine–patients perspective of the quality of primary care in Białystok, Poland	European Journal of General Practice	1.689	Q1	Chlabicz S, Marcinowicz L.	2005	Poland	Public and private	Compare patients' opinions and satisfaction with the care of qualified family physicians in public and non-public institutions	Likert (5 point)	Own survey	Qualitative analysis	From the patient's perspective, the quality of family physician care in non-public practice is better than in public institutions
Quality of life and patient satisfaction with family practice care in a roma population with chronic conditions in northeast slovenia	Zdravstveno Varstvo	1.25	Q3	Zelko, E; Svab, I; Pavlic, DR	2015	Slovenia	Not specified	To show how the presence of chronic diseases and satisfaction with family physicians were associated with the Health-related quality of life of a Roma population	Likert (5 point)	Health-related quality of life (HRQoL)	Statistical analysis	High satisfaction with their FPs is not associated with the observed quality of life variables
Relationships between physician practice style, patient satisfaction, and attributes of primary care	Journal of Family Practice	0.493	Q3	Flocke, SA; Miller, WL; Crabtree, BF	2002	USA	Not Specified	Empirically derive physician interaction styles and to explore the association of style with patient reports of specific attributes of primary care, satisfaction with care received, and duration of the visit	MOS 9-Item	Own survey	Cluster analysis	Person-focused interaction style appears to be the most congruent with patient reported quality of primary care
Satisfaction and Dissatisfaction Toward Urban Family Physician Program: A Population Based Study in Shiraz, Southern Iran	International Journal of Preventive Medicine	0.524	Q2	Honarvar, B; Lankarani, KB; Ghahramani, S; Akbari, M; Tabrizi, R; Bagheri, Z; Poostforoushfard, S	2016	Iran	Not specified	Detect correlates of people's satisfaction and dissatisfaction about urban family physician program	Not specified	Own survey	Statistical analysis	Overall, the majority of the people are not very satisfied with the urban family physician program. This shows the need for a multi-disciplinary approach including training, improvement of infrastructures and referral system, continuous supervision, and frequent monitoring of user's and provider's feedback about this program. According the results, the family physician program should be improved prior to extending this program to other provinces in Iran
Satisfaction levels with family physician services: a pilot national health programme in the Islamic Republic of Iran	Eastern Mediterranean Health Journal	1.628	Q3	Fararouie M, Nejat M, Tabatabaie HR, Kazerooni PA, Akbarpoor M.	2017	Iran	Public	Measure the rate of user satisfaction with services provided by family physicians to the rural and urban population of the second most populated county in Fars province	Likert (5 point)	Own survey	Not specified	This study suggests that satisfaction is higher among rural residents and that better quality services from family physicians are needed in both rural and urban communities
Satisfaction Rate Regarding Health-care Services and Its Determinant Factors in South-West of Iran: A Population-based Study	International Journal of Preventive Medicine	0.524	Q2	Lankarani, KB; Maharlouei, N; Akbari, M; Yazdanpanah, D; Akbari, M; Moghadami, M; Joulaei, H	2016	Iran	Public	Evaluate clients' satisfaction regarding health-care services and its determinant factors in South-West of Iran	Likert (5 point)	Own survey	Statistical analysis	Results of the present study demonstrated a high level of satisfaction with the health-care system and family physician in Shiraz, Iran. Moreover, dissatisfaction with family physicians, socioeconomic status, scarcity and cost of drugs, and existing chronic disease(s) were important predictors for dissatisfaction with the health-care system
Satisfaction with Family Physicians and Specialists and the use of Complementary and Alternative Medicine in Israel	Evidence-based complementary and alternative medicine	2.63	Q2	Shmueli A., Shuval J.	2006	Israel	Not specified	Explore the differences between users and non-users of complementary and alternative medicine in satisfaction with several dimensions of the conventional care experience, and to estimate the importance of these domains by type of physician in seeking non-conventional medical care	Likert (7 point)	Own survey	Logistic regression	Lower satisfaction with family physicians and specialists is significantly associated with consulting complementary and alternative medicine providers. However, with complementary and alternative medicine becoming a mainstream medical care specialty in its own, lower satisfaction with conventional medicine specialists becomes the most important factor
The association between inquiry about emotional distress and women's satisfaction with their family physician: Findings from a national survey	Women & Health	1.739	Q2	Gross, R; Tabenkin, H; Brammli-Greenberg, S; Benbassat, J	2007	Israel	Not specified	Assess the rate of inquiry about emotional distress by family physicians and explore the association between physician's inquiry about ED and women's satisfaction with care.	Likert (4 point)	Own survey	Multivariate analysis and Multiple logistic regression	Inquiry about emotional distress not only improves the appropriateness of care but is also associated with higher satisfaction with the physician

The patient's view of the acceptability of the primary care in Poland	International Journal for Quality in Health Care	2.038	Q2	Marcinowicz, L; Konstantynowicz, J; Chlabicz, S	2008	Poland	Public	Determine how the time factor affected the patients' perception of the acceptability of the primary health care system and to assess their satisfaction with family physician care	Not specified	Own survey	Not Specified	Generally, patients are satisfied with primary care reform and implementation of the family physician system
The relation between good communication skills on the part of the physician and patient satisfaction in a military setting	Military Medicine	1.437	Q3	Hochman, O; Itzhak, B; Mankuta, D; Vinker, S	2008	Israel	Public	Assess the correlation between patients' view of the consultation and the assessment of an auditing physician on the same consultation	Likert (5 point)	Consultation Satisfaction Questionnaire	Statistical analysis	Good communication skills may enhance patient satisfaction
Understanding patient satisfaction with family doctor care	Journal of Evaluation in Clinical Practice	2.431	Q2	Marcinowicz L, Chlabicz S, Grebowski R.	2010	Poland	Not specified	Explore how satisfaction is understood from the perspective of patients receiving care from family doctors.	Not specified	Interview	Qualitative analysis	Because patients have differing concepts of satisfaction with health care provided by family doctors, quality assessments should focus on components of satisfaction whereas questions about satisfaction itself should be avoided
Visiting family physicians and naturopathic practitioners. Comparing patient-practitioner interactions	Canadian Family Physician	3.275	Q2	Boon H, Stewart M, Kennard MA, Guimond J.	2003	Canada	Not specified	To explore similarities and differences in patient visits with family physicians and naturopathic practitioners	Not specified	Own survey	Qualitative analysis	Overall, there were more similarities than differences in visits to the two types of practitioners
Why do patients with minor complaints choose emergency departments and does satisfaction with primary care services influence their decisions?	Primary Health Care Research and Development	1.458	Q2	Akpinar, Y; Demirci, H; Budak, E; Baran, AK; Candar, A; Ocakoglu, G	2018	Turkey	Public	Identify the reasons why patients with minor complaints choose emergency departments as a first contact of care and whether dissatisfaction with primary care services influences their decisions	Likert (5 point)	EUROPEP questionnaire	Statistical analysis	The frequency of admission to EDs as a first contact of care was extremely high in the absence of a referral system. Patients who did not have family doctors in the settlement where they live put an extra burden on the EDs
Will German patients accept their family physician as a gatekeeper?	Journal of general internal medicine	5.128	Q1	Himmel, W; Dieterich, AD; Kochen, MM	2000	Germany	Public and Private	Examine preferences for future gatekeeping arrangements, looking at the managed care in the USA and the possible introduction of gatekeeping in the near future in Germany	Likert (5 point)	Own survey	Logistic regressions	A vast majority of the population would accept their family doctor as entry point and coordinator of all other health services. Since patient satisfaction strongly influenced preferenes for gatekeeper arrangements

Table C - Patients' satisfaction levels

Author (Year)	Paper	Scale	Values retrieved	Items evaluated	Satisfaction Level
Howard, M; Goertzen, J; Hutchison, B; Kaczorowski, J; Morris, K (2007)	Patient satisfaction with care for urgent health problems: A survey of family practice patients	Seven point	6,1	Adjusted Mean Satisfaction Score	High
Shmueli A., Shuval J. (2006)	Satisfaction with Family Physicians and Specialists and the use of Complementary and Alternative Medicine in Israel	Seven point		Overall satisfaction	High
			5,600	1993 - Users	
			6,026	1993 - Non-users	
			6,050	2000 - Users	
			6,052	2000 - Non-users	
Kersnik, J (2001)	Determinants of customer satisfaction with the health care system, with the possibility to choose a personal physician and with a family doctor in a transition country	0-100	86,4 points	Overall satisfaction score	Relatively high
Jerant, A; Fenton, JJ; Kravitz, RL; Tancredi, DJ; Magnan, E; Bertakis, KD; Franks, P (2018)	Association of Clinician Denial of Patient Requests With Patient Satisfaction	0-10	23,2	Patients' satisfaction score	Undefined

Akpinar, Y; Demirci, H; Budak, E; Baran, AK; Candar, A; Ocakoglu, G (2018)	Why do patients with minor complaints choose emergency departments and does satisfaction with primary care services influence their decisions?	EUROPEP	68,1%	Satisfaction of patients	Undefined
Orsal, O; Duru, P; Orsal, O; Tirpan, K; Culhaci, A (2018)	Analysis of the relationship among health awareness and health literacy, patient satisfaction levels with primary care in patients admitting to primary care health centers	EUROPEP	25,75	Patients' satisfaction: Doctor-patient relantioship	Undefined
Crane J., Crane B. E., Crane F. G. (2015)	Patient Satisfaction with Family Physicians in Canada	Five-point scale	72%	Satisfaction of patients	Satisfied
Kersnik J. (2013)	Patients' recommendation of doctor as an indicator of patient satisfaction	Five-point scale	86,6 points	Mean patients' satisfaction score	High
Chlabicz S, Marcinowicz L. (2005)	Public or non-public family medicine--patients perspective of the quality of primary care in Białystok, Poland	Five-point scale		Rate of family physician care (positive)	Undefined
			29,3%	Non-public	
			18,7%	Public	
Fararouie M, Nejat M, Tabatabaie HR, Kazerooni PA, Akbarpoor M. (2017)	Satisfaction levels with family physician services: a pilot national health programme in the Islamic Republic of Iran	Five-point scale		Satisfaction with services using family physicians	Undefined
			3,6%	Totally dissastified	
			8,8%	Dissastified	
			22,6%	Moderate	
			26,6%	Satisfied	
			38,4%	Tottally satisfied	

Polluste, K; Kalda, R; Lember, M (2004)	Evaluation of primary health care reform in Estonia from patients' perspective: Acceptability and satisfaction	Four-point scale		Satisfaction with family doctor	High
			1,0%	No opinion	
			12,0%	Not satisfied	
			50,0%	Quite satisfied	
			37,0%	Very satisfied	
Gross, R; Tabenkin, H; Brammli-Greenberg, S; Benbassat, J (2007)	The association between inquiry about emotional distress and women's satisfaction with their family physician: Findings from a national survey	Four-point scale		Satisfaction with family physician	High/Very High Satisfaction
			96%	Professional level	
			94%	Attitude	
			90%	Spends enough time	
			93%	Really listens	
Hojat, M; Louis, DZ; Maxwell, K; Markham, FW; Wender, RC; Gonnella, JS (2011)	A Brief Instrument to Measure Patients' Overall Satisfaction With Primary Care Physicians	Likert	61,3	Patients' satisfaction	High
Kersnik, J; Ropret, T (2002)	An evaluation of patient satisfaction amongst family practice patients with diverse ethnic backgrounds	Likert		Overall satisfaction	High
			83,6	Native	
			85,8	Non-native	
Kersnik, J (2000)	An evaluation of patient satisfaction with family practice care in Slovenia	Likert	86,1 points	Satisfaction score	Relatively high

Baltaci, D; Celesun, T; Eroz, R; Saritas, A; Celer, A; Muslu, C; Cesur, Y; Kara, IH (2012)	Evaluation of patient satisfaction with family physicians after implementation of family medicine in Turkey	Likert	70,9%	Level of satisfaction	Relatively high
Baker, R; Mainous, AG; Gray, DP; Love, MM (2003)	Exploration of the relationship between continuity, trust in regular doctors and patient satisfaction with consultations with family doctors	Likert	0,45	General satisfaction	Undefined
Rouhani, S; Mohammadpour, RA (2012)	Family medicine and patients' satisfaction in Iran	Likert	67,9%	Customer satisfaction	Low
Kuang L, Liang Y, Mei J, Zhao J, Wang Y, Liang H, Shi L. (2015)	Family practice and the quality of primary care: a study of Chinese patients in Guangdong Province	Likert	3,10	Patients' satisfaction	Satisfied
Kirac, FC; Uyar, S; Kirac, R; Soyler, S (2021)	Patient Satisfaction with Family Medicine System: A Cross-Sectional	Likert	3,09	General satisfaction	Satisfied
Nijjar, UK; Edwards, JA; Short, MW (2011)	Patient Satisfaction with Family Physician Colonoscopists	Likert	4,6	Patients' satisfaction	High
Ghorbani A, Raeissi P, Saffari E, Reissi N. (2015)	Patient Satisfaction With the Family Physician Program in Sabzevar, Iran	Likert	4,2	Participants total satisfaction	Moderate to high level
Laidlaw TS, Kaufman DM, Macleod H, Sargeant J, Langille DB. (2001)	Patients' satisfaction with their family physicians' communication skills: a Nova Scotia survey	Likert	3,72	Patients' satisfaction	Satisfied

Katic, M; Budak, A; Ivankovic, D; Mastilica, M; Lazic, D; Babic-Banaszak, A; Matkovic, V (2001)	Patients' views on the professional behaviour of family physicians	Likert	85,3%	Satisfaction with physician	High
Bawakid K., Rashid O. A., Mandoura N., Shah H. B. U., Ahmed W. A., Ibrahim A. (2017)	Patients' satisfaction regarding family physician's consultation in primary healthcare centers of Ministry of Health	Likert	59,3%	Satisfaction with family physician	Satisfied
Himmel, W; Dieterich, AD; Kochen, MM (2000)	Will German patients accept their family physician as a gatekeeper?	Likert	66%	General satisfaction	High
Zelko, E; Svab, I; Pavlic, DR (2015)	QUALITY OF LIFE AND PATIENT SATISFACTION WITH FAMILY PRACTICE CARE IN A ROMA POPULATION WITH CHRONIC CONDITIONS IN NORTHEAST SLOVENIA	Likert	3,9	Satisfaction with family physician	High
Lankarani, KB; Maharlouei, N; Akbari, M; Yazdanpanah, D; Akbari, M; Moghadami, M; Joulaei, H (2016)	Satisfaction Rate Regarding Health-care Services and Its Determinant Factors in South-West of Iran: A Population-based Study	Likert		Satisfaction level	High
			3,1%	Very dissatisfied	
			24,2%	Dissatisfied	
			9,5%	Neither	
			47,5%	Satisfied	
			5,6%	Very satisfied	

Hochman, O; Itzhak, B; Mankuta, D; Vinker, S (2008)	The relation between good communication skills on the part of the physician and patient satisfaction in a military setting	Likert		Correlation between quality assessment scores and CSQ scores	Undefined
			0,105	History taking	
			0,113	Physical examination	
			0,172	Discussion	
			0,228	Program	
			0,614	Communication	
			0,493	General impression	
Barzilai, DA; Goodwin, MA; Zyzanski, SJ; Stange, KC (2001)	Does health habit counseling affect patient satisfaction?	Likert and MOS 9 item		Satisfaction according to health habit	Undefined
			1,1	Exercise	
			1,03	Diet	
			0,96	Alcohol history	
			1,5	Tobacco history	
			1,74	Tobacco couseling	
			0,86	Contracemption, condom use	
			0,69	Substances use history	
			0,62	Alcohol couseling	
			0,97	Passive tobacco exposure	
			1,49	STD prevention	
			3,45	Couseling about HIV	
			0,01	Substance use counseling	

Nutting PA, Goodwin MA, Flocke SA, Zyzanski SJ, Stange KC. (2003)	Continuity of primary care: to whom does it matter and when?	MOS 9-Item		Satisfaction with physician	Undefined
			4,11	Low - Regular doctor	
			3,96	Low - Not regular doctor	
			4,36	Medium - Regular doctor	
			4,1	Medium - Not regular doctor	
			4,66	High - Regular doctor	
			4,04	High - Not regular doctor	
Callahan, EJ; Stange, KC; Zyzanski, SJ; Goodwin, MA; Flocke, SA; Bertakis, KD (2004)	Physician-elder interaction in community family practice	MOS 9-Item		Satisfaction with physician	Undefined
			4,4	Young patients	
			4,6	Older patients	
			4,5	Oldest patients	
Flocke, SA; Miller, WL; Crabtree, BF (2002)	Relationships between physician practice style, patient satisfaction, and attributes of primary care	MOS 9-Item		Association of physician style with patients' satisfaction	High
			4,38	Biopsychosocial	
			4,39	Biomedical	
			4,49	Person focused	
			4,3	High physician control	
Boon H, Stewart M, Kennard MA, Guimond J. (2003)	Visiting family physicians and naturopathic practitioners, Comparing patient-practitioner interactions	Nine-item Perception		Patients' satisfaction with previous care	Undefined
			1,73	Professional competence	
			1,82	Personal qualities	
			1,56	Cost and convenience	

Miedema B, MacDonald I, Tatemichi S. (2003)	Cancer follow-up care, Patients' perspectives	Not specified		Dissastifaction with family physician	Undefined
			36%	Breast	
			26%	Prostate	
			35%	Colorectal	
			21%	Other	
Marcinowicz, L; Grebowski, R; Chlabicz, S (2009)	Exploring negative evaluations of health care by Polish patients: an attempt at cross-cultural comparison	Not specified	-	-	-
Shapiro, E; Zigdon, A; Nissanholtz-Gannot, R (2018)	Health care access and satisfaction in Judean and Samarian communities: opportunities for improving care	Not specified		Patients' satisfaction measures	Undefined
			44%	Professional Level - Very Satisfied	
			45%	Professional Level - Satisfied	
			12%	Professional Level - Not Satisfied	
			47%	Attitude - Very Satisfied	
			44%	Attitude - Satisfied	
			9%	Attitude - Not Satisfied	
			25%	Hours - Very Satisfied	
			53%	Hours - Satisfied	
			22%	Hours - Not Satisfied	

Ardey R, Ardey R. (2015)	Patient Perceptions and Expectations From Primary Health-care Providers in India	Not specified		Satisfaction with family doctor	High
			13%	Interpersonal skills - Good	
			35%	Interpersonal skills - Very Good	
			52%	Interpersonal skills - Excellent	
			90,36%	Time given by doctor (male) - Very Good	
			60,71%	Time given by doctor (male) - Excellent	
			91,36%	Time given by doctor (female) - Very Good	
			59,09%	Time given by doctor (female) - Excellent	
			1%	Explanation about the treatment plan - Fair	
			7%	Explanation about the treatment plan - Good	
			33%	Explanation about the treatment plan - Very Good	
			59%	Explanation about the treatment plan - Excellent	
			4%	Explanation of the purpose and necessity of any tests required - Unsatisfied	
			96%	Explanation of the purpose and necessity of any tests required - Satisfied	
			1%	Opportunity to ask questions - Fair	
			11%	Opportunity to ask questions - Good	
			48%	Opportunity to ask questions - Very Good	
			39%	Opportunity to ask questions - Excellent	
			1%	Explanation about medicine and side effects -	

				Fair	
			10%	Explanation about medicine and side effects - Good	
			33%	Explanation about medicine and side effects - Very Good	
			56%	Explanation about medicine and side effects - Excellent	
Marcinowicz, L; Chlabicz, S; Grebowski, R (2009)	Patient satisfaction with healthcare provided by family doctors: primary dimensions and an attempt at typology	Not specified	58,8%	Evaluation of family physician	Undefined
Honarvar, B; Lankarani, KB; Ghahramani, S; Akbari, M; Tabrizi, R; Bagheri, Z; Poostforoushfard, S (2016)	Satisfaction and Dissatisfaction Toward Urban Family Physician Program: A Population Based Study in Shiraz, Southern Iran	Not specified		Satisfaction towards family physician	Dissatisfied
			84,2%	Less Satisfied	
			15,8%	Very Satisfied	
Marcinowicz, L; Konstantynowicz, J; Chlabicz, S (2008)	The patient's view of the acceptability of the primary care in Poland	Not specified		Satisfied patients	Satisfied
			81,2%	Survey I	
			85,1%	Survey II	
			86,4%	Survey III	
Marcinowicz L, Chlabicz S, Grebowski R. (2010)	Understanding patient satisfaction with family doctor care	Not specified	-	-	-