

Satisfaction in providing health care regarding family doctors: 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.*

1. Introduction

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).

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). 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). 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).

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. 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.

2. Literature Review

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;
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).

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.

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.

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.

3. Methodology

It is possible to observe after careful reading of some 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).

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.

As main core 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. Although the variety of methodologies, we can see that Preferred Reporting Items for Systematic reviews and Meta-Analyses (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.

4. Data Collection

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.

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 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. Quartile

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%.

5.2. 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. 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.

5.3. Publication Year

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.

5.4. Country and Systems

Top of the list the United States of America is 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).

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, 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.

5.5. Surveys

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%) 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.

Regarding the scale to analyze the data of the surveys, 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.

In terms of how the data was treated, 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. 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.

5.6. 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).

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.

5.7. Family Doctors

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.

5.8. Users' Satisfaction

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. Whereas two papers did their research without translating the answers obtained into

quantitative or qualitative values, and those papers are not classified at all.

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.

6.1. Fundamental Data

The first analyze running through HistCite was the authors. It 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%.

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.

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. The word “satisfaction” appears in 30 papers (73%) followed by “family” with a presence in 25 papers (61%).

To overview the data related to the papers and their respective citations, for a better understanding of their influence it is possible to conclude that there are some very good scores, reaching a total of 1084 in Global Citation Score (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.

Concerning the Local Citation Score (LCS), the analysis will go through 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.

To see the proximity of the papers collected among them, an analysis will be held using Gephi, a software that explores networks, with graphic visualization (Bastian, et al. 2009). 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%.

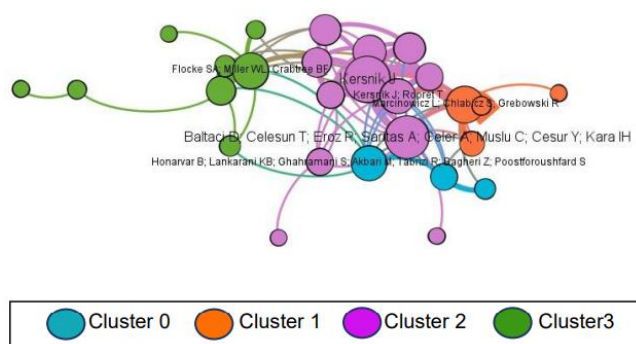


Figure 1 - Network clustered in Gephi

6.2. Co-citation

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. 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.”.

Regarding the co-citation analysis of the 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 2. 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.

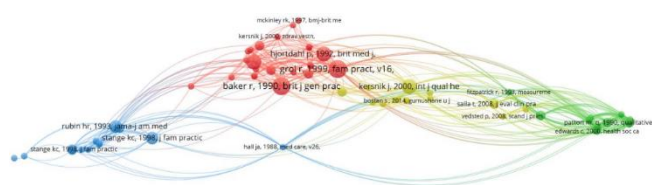


Figure 2 - Papers co-citation analysis through VOSviewer

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 3), where it has a total of five clusters, with 706 links and a total link strength of 3461.

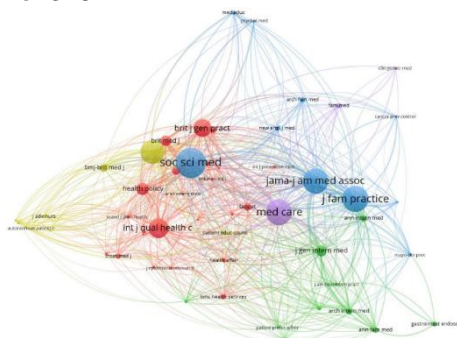


Figure 3 - Sources co-citation analysis through VOSviewer

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 4). As a first analysis, there is a total of six clusters, with 216 citations, 301 links, and 801 link strength.

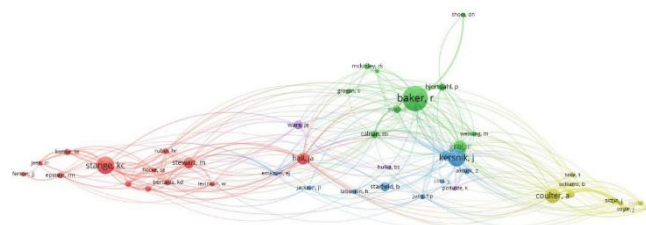


Figure 4 - Authors co-citation analysis through VOSviewer

6.3. Overview

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 Kernik 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%.

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 Marciniowicz, 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. Conclusions and future Work

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.

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.

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.

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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