TÉCNICO LISBOA

Determinants of inpatient satisfaction: a systematic review and meta-analysis

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Declaration

I declare that this document is an original work of my authorship and that it fulfils all the requirements of the Code of Conduct and Good Practices of the Universidade de Lisboa.

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Abstract

Nowadays, one of the main goals of any health care organization is to guarantee their patients' satisfaction as a way to maintain patients and attract new ones. This importance is noted in the literature, where currently, there are numerous articles published addressing the identification of determinants that influence patient satisfaction.

The present dissertation aims to systematically identify and review the extent of evidence regarding determinants of inpatient satisfaction between 2012 and 2022, through the application of the PRISMA method. A meta-analysis is also conducted to statistically assess the evidence obtained. The work conducted concludes that 2021 was the year with more publications in the field of inpatient satisfaction. China, the USA, and Ethiopia were the most studied countries. The most studied healthcare system was the National Health Insurance model. The most used method to analyse inpatient satisfaction survey answers and associating variables according to the sample was the logistic regression. The most relevant journal is Patient preference and adherence. Of the 19 determinants analyzed, five were associated to inpatient satisfaction in 100% of studies: interpersonal care, technical care, pain management, the outcome of care and emotional status. For the other determinants, there was no clear-cut as results vary from study to study.

Regarding the meta-analysis, four questions were hypothesized. No significant correlation was found between each one of the determinants and the type of healthcare system, the country, and the medical speciality. A correlation was only found significant between the methodology used and patient income and education.

Keywords:

Patient satisfaction, inpatient, determinants, meta-analysis, systematic review

Resumo

Atualmente, um dos principais objetivos de qualquer organização de saúde é garantir a satisfação dos seus utentes como forma de manter os utentes e atrair novos. Essa importância é evidente na literatura, onde atualmente existem inúmeros artigos publicados com o objetivo que identificar os determinantes que influenciam a satisfação do paciente.

A presente dissertação visa identificar e rever sistematicamente a extensão da evidência sobre os determinantes da satisfação dos pacientes hospitalizados entre 2012 e 2022 através da aplicação do PRISMA. Uma meta-análise também é realizada para avaliar estatisticamente as evidências obtidas. O trabalho realizado conclui que 2021 foi o ano com mais publicações na área da satisfação dos pacientes hospitalizados. A China, EUA e Etiópia foram os países mais estudados. O sistema de saúde mais estudado foi o modelo do Seguro Nacional de Saúde. O método mais utilizado para analisar as respostas da pesquisa de satisfação dos pacientes internados e correlacionar as variáveis de acordo com a amostra foi a regressão logística. A revista mais relevante é "*Patient preference and adherence*". Dos 19 determinantes analisados, cinco estão associadas com a satisfação do paciente internado em 100% dos estudos: relações interpessoais, cuidado técnico, gestão da dor, resultado dos cuidados e estado emocional do paciente. Para os restantes determinantes não houve definição clara porque os resultados variaram de estudo para estudo.

Em relação à meta-análise, foram hipotetizadas quatro questões. Não foi encontrada correlação significativa entre cada um dos determinantes e o tipo de sistema de saúde, o país e a especialidade médica. A correlação só foi significativa para a metodologia utilizada, rendimentos e escolaridade do paciente.

Palavras-Chave:

Satisfação dos Pacientes, pacientes hospitalizados, determinantes, meta-analise, revisão sistemática

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List of Abbreviations and Acronyms

PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
WHO	World Health Organization
GP	General Practitioner
KPI	Key Performance Indicator
NHI	National Health Insurance
USA	United States of America

1 Introduction

This first chapter is split into three sections. Section 1.1 presents the context and the motivation for the topic being studied while a brief overview is made regarding the topics and the concepts discussed; section 1.2 includes the objectives to be achieved and Section 1.3 presents the dissertation's structure.

1.1 Context and motivation

Globalization – the process of cooperation between people, companies, and countries all over the world, has been a growing trend over the last decades. Supported by the advancements in technology and by the ease of information exchange, globalization has exposed economies to a very intense competitive environment (Amzat & Razum, 2021). Nowadays, there is an increasing variety of choices, and consumers have become more demanding, buying into purpose, transparency, and innovation more than ever. Consumers are constantly increasing their expectations regarding every service and product they acquire (Curtis et al., 2021).

In today's global ecosystem, healthcare is no exception to the globalization of services. The presence of multi-national companies in the healthcare sector has been increasing, as well as the growth of international mobility of health workers. The healthcare service is rapidly changing and it is now one of the fastest growing services (Ungureanu et al., 2019). Therefore, there are important external forces involved in the healthcare industry, mainly concerning the changes in patient populations and their needs, higher life expectancy, higher patient expectations and the requirements to measure quality. In response to these forces, innovations regarding both how healthcare is delivered and how hospitals are structured have been emerging (Allen, 2022).

Currently, one of the main goals of any healthcare organization is not only to meet but also to exceed the expectations of patients. Healthcare facilities, hospitals and other medical organizations need to ensure that their patients are pleased with the care experience that they receive (Betts & Balan-Cohen, 2017). Consequently, healthcare organizations around the world have been adjusting their strategic plans to achieve leading satisfaction levels (Hendry et al., 2018). Companies operating in this industry expect to promote a culture of continuous improvement of the service, given the customers' needs, as a way to offer outstanding service to their patients, better than any other competing provider (Busse et al., 2019).

The healthcare industry has changed the way of approaching and delivering care. Many providers made a variety of strategic changes to their structures (Rivers & Saundra, 2008). Patients have become the centre of the overall process and new organizational models are being applied to provide patient-centred services, designed to respect patient preferences, needs and values. Patients are increasingly acting as consumers, as a result of easier access to information and technology, and the growth of "retail" models of healthcare that prioritise patient comfort and satisfaction (Nilsen et al., 2020).

Healthcare delivery is complex because human health disorders are naturally complex and may express in its way across patients (Allen, 2021). The demographic heterogeneity of patients amplifies

the complexity. Healthcare professionals can provide the same service, but the patient may experience it differently as a function of their current condition. Thus, there is a need to provide highly customized care, based on an intimate and particular understanding of the patient (Vogus & McClelland, 2016).

In some countries, upscale satisfaction levels have been tied to financial incentives, which allow the improvement of several aspects within medical facilities and care providers (Oben, 2021). Moreover, customers' views and perceptions have an impact on the overall success of healthcare organizations since they are used as indicators recognized by managers for making organizational changes and improvements in performance (Roberts et al., 2021).

Providing patient satisfaction and quality service should be recognised as a key strategy and a crucial element of long-run success and profitability for health care providers (Allen, 2021). Ensuring service quality is beneficial not only for patients but also for the health care provider as well. Patients who perceive they are content with service experiences are likely to exhibit favourable behavioural intentions that are beneficial to the long-term success of the health care provider (Cioplan, 2019). In opposite, patient dissatisfaction may lead to unfavourable actions, such as negative word-of-mouth, a decrease in attendance or switching to an alternative care provider. Therefore, the need to assess patient satisfaction has become imperative (El-Haddad et al., 2020).

Patient satisfaction in healthcare is recognized internationally as important for patient-centred, high-quality healthcare delivery. Its measurement requires the development of agreed standards and observable metrics. In fact, to measure patient satisfaction, the affecting factors should be available to find a reliable scientific method (Vaz, 2018). However, the identification of patient satisfaction determinants has been addressed in a large number of studies and new studies keep arising and being explored regarding the subject. Studies that have already addressed the issue often present contradictory and inconclusive results and potential determinants diverge across studies. These limitations may be explained by a lack of consensus on how to define satisfaction, its complex nature and subjectivity (Eiriz & Figueiredo, 2005). Variations may also be due to the different healthcare systems around the world: the Beveridge model, the Bismarck model, the national healthcare insurance model and the out-of-pocket. Each system devises its own set of arrangements to meet the medical needs of populations and has distinct policies, guidelines and priorities which can influence patient satisfaction (Cioplan, 2019). Furthermore, satisfaction is a multidimensional concept that can be influenced by various factors which have not been consensually established yet. Additionally, given the subjectivity of this field, the variety of patient satisfaction definitions leads to the use of numerous measurement methodologies and instruments, which diminishes the comparability of studies (Batbaatar et al., 2017). As a consequence, there is a need to present findings in the literature in an organized, methodically, and detailed approach.

1.2 Objectives

In the increasingly competitive market of healthcare activities, all stakeholders must focus on achieving high excellent, ratings of patient satisfaction (Martin, 2017). Accordingly, the factors influencing satisfaction should be defined so that can be used as a way to improve satisfaction and to access areas that should be tackled first while in service improvement perspective.

This importance is noted in the literature, where there are currently numerous articles addressing the identification of determinants that influence patient satisfaction. This intensive research has been done by several authors, across many journals and countries. However, only some reviews have been published in this context. Some reviews conducted the analysis and presented the results separating outpatient and inpatient data (Crow et al., 2002; Sarfraz et al., 2020). Some reviews were made regarding patients as a broad term, meaning there is no identification nor separation of the patients' hospital staying nature included in the study – outpatient or inpatient (Al-Abri & Al-Balushi, 2014; Batbaatar et al., 2017; Naidu, 2009). Only one review assessed determinants that influence inpatient satisfaction exclusively in public hospital settings (Salehi et al., 2018). This segmentation is important since inpatients stay at the hospital longer than outpatients and the factors that influence satisfaction are likely different.

There is still a clear gap in the patient satisfaction determinants literature. Specifically, there is a lack of reviews concerning the determinants that influence inpatient satisfaction - the patients that are admitted to the hospital to stay overnight. Furthermore, there is a lack of reviews that assesses both public and private hospital studies. In addition, existing reviews regarding inpatient satisfaction determinants have only used articles until the year 2019. However, many research articles and satisfaction assessment studies have been published in 2020 and 2021. In fact, the year with the most publications in the field was 2021, being also the year with the highest number of publications in 10 years. This may be a result of the Covid-19 pandemic where a decrease in patients satisfaction and reduced likelihood to recommend providers was reported (Maher et al., 2021; Shirazi et al., 2020; Stericycle, 2020), raising the need to improve and step up the assessment of patient satisfaction, leading scholars to focus on the issue. Therefore, it is also important to explore what recent studies have concluded these last years.

A further gap exists of reviews that address the type of healthcare system operating in the country and its influence on patient satisfaction determinants. This is particularly relevant because patient satisfaction represents not only but also their degree of satisfaction with their perception of a hospital's quality management regarding the services provided. If currently there are four main healthcare systems in the world each one operating differently, it is important to evaluate which determinants influence patient satisfaction in each type of healthcare system. These determinants can then be converted as performance indicators of the health system and can have a major influence on the national decision-makers to understand the characteristics and processes that contribute to the relative levels of patient satisfaction. While improving and excelling the factors that make patients satisfied, patients are more likely to follow treatment and care plans and attend follow-up appointments, which results in better health outcomes. In addition, providers that manage to keep patients satisfied will increase patient loyalty, attract new patients, increase their staff satisfaction and strengthen their market reputation.

The present dissertation aims to systematically identify and review the extent of evidence regarding determinants of inpatient satisfaction between 2012 and 2022, articles published in the past ten years so that it is based on the recent literature. To facilitate transparent and complete reporting of systematic reviews and meta-analyses the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement was employed (Page et al., 2021). It consists of a 27-item checklist that

details reporting recommendations for each item and a four-phase flow diagram: Identification, where the keywords are entered in chosen databases; Screening of the titles and abstracts; Eligibility, where the full-text articles are checked for the inclusion and exclusion criteria and Inclusion, where the studies are added to the final sample.

Secondly, the present work aims at identifying the influence of the type of healthcare system, the medical speciality, and the country on the determinants of patients' satisfaction. To achieve this, a meta-analysis is conducted. A set of questions was constructed to extrapolate relevant relationships between variables from the present study, as a way to incorporate further information for future researchers.

1. Is the evidence regarding each one of the determinants related to the type of healthcare system?
2. Is the evidence regarding each one of the determinants related to the country?
3. Is the evidence regarding each one of the determinants related to the medical speciality?
4. Is the evidence regarding each one of the determinants related to the methodology?

To achieve these objectives, first, it is important to contextualize and theoretically analyse previous literature reviews. It is pertinent to present the concept of satisfaction, an overview of the healthcare market and the types of reviews. Results and discussion are presented, followed by conclusions, limitations, and recommendations for future studies.

1.3 Dissertation outline

This dissertation is structured into seven chapters:

- **Chapter 1: Introduction** – presents the contextualization of the subject being explored, objectives and the motivation for its study;
- **Chapter 2: Overview of the healthcare sector** – presents an overview of the world healthcare sector, describing the main healthcare systems, the drivers of transformation in healthcare, along with the definition of quality in healthcare and patient satisfaction;
- **Chapter 3: Literature review** – presents the reviews that have already been developed regarding patient satisfaction determinants and existing gaps in the literature;
- **Chapter 4: Reviews** – presents the importance of reviews, types of reviews, their definitions and significance;
- **Chapter 5**: **Methodology** - explains the process of performing a systematic review, the data collection and report using the PRISMA method and the meta-analysis methodology;
- **Chapter 6**: **Results and discussion** – presents the results obtained and their discussion;
- **Chapter 7**: **Conclusions, limitations, and recommendations for future studies** – the final chapter presents the conclusions of the present work, and the limitations inherent to the study and provides possible insights for future studies.

2 Overview of the healthcare sector

Healthcare is a complex and heterogeneous industry consisting of multiple sectors. It has a pivotal role in the economy and well-being of every country (Rivers & Saundra, 2008). While the mature economies begin to focus on tailored or customised healthcare practices, the emerging economies are dealing with healthcare issues at a community or population level (Trienekens & Zuurbier, 2008). However, sooner or later, all economies will be tackling the same challenges. Given its importance, it is crucial to present an overview of the healthcare sector, as well as linked topics.

This chapter is divided into three sections. Section 2.1 presents the importance of the healthcare sector, its evolution throughout the years and some background history and describes the four existing healthcare systems; section 2.2 provides an overview of the drivers of transformation in the healthcare industry; section 2.3 introduces the topic of healthcare quality, as well as some definitions. In section 2.4 a brief introduction to satisfaction is presented as well as pertinent definitions; section 2.5 assesses specifically the patient satisfaction concept.

2.1 Describing the Healthcare Sector

Healthcare is a dynamic but delicate sector. The healthcare sector consists of businesses that provide medical services and goods, or otherwise facilitate the provision of curative, preventive, rehabilitative and/or palliative healthcare to patients (WHO, 2017). It is fundamental to both society and the economy (Godbole & Lamb, 2018). It provides employment opportunities to many individuals directly or indirectly associated with the healthcare sector (Ungureanu et al., 2019). The key goals of all healthcare systems are resumed in figure 1 (Allen, 2021; Godbole & Lamb, 2018)

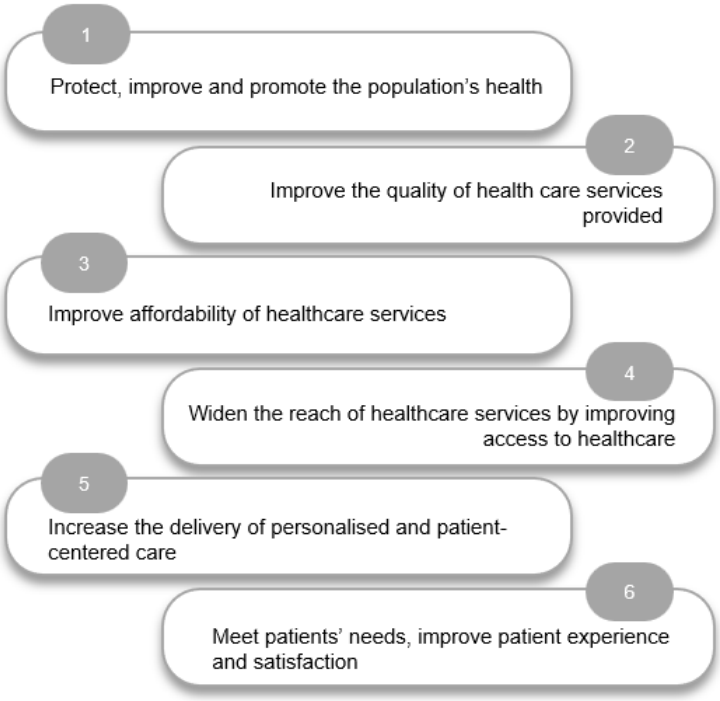

Figure 1. Key goals of all healthcare systems

In addition, all these goals are to be achieved while optimizing costs and improving efficiency and productivity (Antony et al., 2019).

The World Health Organization (WHO) defines a health system as: “The people, institutions and resources, arranged together under established policies, to improve the health of the population they serve while responding to people’s legitimate expectations and protecting them against the cost of ill-health through a variety of activities whose primary intent is to improve health. It is a set of elements and their relationship in a complex whole, designed to serve the health needs of the population.” Accordingly, there are four major health care systems: the Beveridge Model, the Bismarck model, the National Health Insurance model, and the out-of-pocket model. While in theory these systems have individual strategies and different policies, in reality, most countries have a blend of these approaches, involving features of several systems. However, officially, countries have a single healthcare system that is uniform for most citizens. These distinctions are effective at differentiating schools of thought on healthcare policy. Discussions about what is the best model are continuously happening (Greer et al., 2016). Each healthcare system is explained next.

2.1.1 The Beveridge model

In this system, the government provides health care for all its citizens funded by direct income tax deductions. The government funds all health care services upfront. The underlying values are equity and solidarity. The majority of hospitals are owned and operated by the government and most healthcare staff including doctors and nurses are employed by the state. The UK’s National Health Service, Spain, Cuba and New Zealand operate on this model (Leite et al., 2022). The fundamental principle in the Beveridge healthcare system is its universal affordable coverage meaning all citizens have the right to health care, irrespectively of their financial contribution to the system. Thus, health services are free at the point of use. In addition, benefits are standardized across the country (Reid, 2009)

A disadvantage of this system is that it is frequently characterized by long waiting lists for treatment and a lack of choice. Thus, the major emphasis of reforms in countries with this system has been to increase choice and reduce waiting times (Or et al., 2010). One further challenge is that ageing populations mean there are fewer young people to pay taxes which arises the need to find ways to pump additional funding into health systems. In addition, in the case of a national emergency, such as war or a health crisis, funding for health services may decline as public revenue decreases, intensifying the financial burden of a large influx of patients (Leite et al., 2022; Wallace, 2013).

2.1.2 The Bismarck model

In this system employers and employees are responsible for funding their health insurance system through sickness funds created by payroll deductions. Health care is provided through insurance companies that are paid by employer and employee payroll deductions (Torbica et al., 2018). There is a plurality of providers, financed by multiple insurers, an abundance of choice, and patients have direct access to specialists (Bevan et al., 2010). It is a more decentralized form of healthcare compared to the Beveridge model.

Providers and hospitals are generally private. The major concern of the Beveridge model is cost control since providers are individually responsible for managing their facilities. Since cost control is usually more efficient when exercised by the government, there has been an increase in the level of government control, which may be limiting the choice and access to care in some countries operating in the Bismarck system (Reid, 2009). For example, both France and Germany are trying to control the choice of providers by introducing optional gatekeeping arrangements in which patients are required to visit a GP or primary care physician to authorise access to speciality care (Or et al., 2010).

It requires employment for health insurance, so it allocates its resources to those who contribute financially. This is also the main reason for criticism, how to provide care for people who are unable to work or can't afford contributions, including ageing populations and the imbalance between retirees and employees (Leite et al., 2022; Reid, 2009).

2.1.3 The National health insurance model

The National Health Insurance model incorporates aspects of both the Bismarck and Beveridge models. Like the Beveridge model, the government is the single care payer, and like the Bismarck model, there are also private providers (Wallace, 2013). Health care is paid by government-run insurance programs financed through dedicated taxation or general revenues. Patients are free to choose any doctor or healthcare provider they wish (Mossialos et al., 2020).

There has been a tendency in recent years for countries with Beveridge-type health care systems to incorporate Bismarck characteristics or vice versa, leading to the health care policies in several countries like Hungary and Germany to trend towards the mixed model. The balance between public insurance and private practice allows hospitals to maintain independence while also reducing internal complications with insurance policies. The primary criticism of the national health insurance model is the potential for long waiting lists and delays in treatment, which are considered serious health policy issues. Ageing population and overuse of health resources in non-urgent situations are also challenges to the stability of this system (Grant Thornton, 2009; Reid, 2009).

2.1.4 Out-of-Pocket

This method of access to healthcare is most common in developing countries where no formal state-wide system exists and where governments can’t afford mass health care. People requiring medical treatment need to pay for it with no external coverage. There is no universal insurance system and income taxes are not raised to provide access to healthcare for all citizens (Wallace, 2013). The People in rural areas of India and China as well as parts of Africa and South America source healthcare in this way. Health care services are not always available and when they are, they are beyond the financial access of many people. As such, the reality of this is that the world’s poorest people are frequently denied access to health care, which becomes reserved for the wealthy (Mossialos et al., 2020).

Table 1 presents a summary of the four existing models of healthcare systems regarding coverage, payer, provider, entitlement basis, financer, insurer, management, hospital ownership, provider payment, cost control, profit, care coordination, advantages and disadvantages as well as the countries officially applying the system.

Table 1. Healthcare systems (Adapted from Mossialos et al. 2020 and Leite et al. 2022).

	THE BEVERIDGE MODEL	THE BISMARCK MODEL	THE NATIONAL HEALTH INSURANCE MODEL	THE OUT-OF-POCKET MODEL
COVERAGE	Universal	Universal	Universal	Non-Universal
FUNDING BASE	Government (taxes)	Employer and employee. Income-related contribution	Government (taxes)	Individual
ENTITLEMENT BASIS	Citizenship/residence	Employment	Citizenship/residence	None
PAYER	Single Payer Government	Multi-Payer	Single Payer Government	Individual
PROVIDER	Single Provider	Multiple Providers	Multiple Providers	Multiple Providers
MANAGEMENT	Government	Independent	Government and public-private partnership	Individual
HOSPITAL OWNERSHIP	Mostly Public and governmental ownership	Mostly private	Some Public, some private	Private
EMPLOYEE PAYMENT	Salaried and publicly contracted	Privately contracted	Both publicly and privately contracted	Privately contracted
COST CONTROL	Controlled by the Ministry of Health and Finance	Independent	Government control	None
CARE COORDINATION	High (standardized)	Medium	Medium	Low
ADVANTAGES	Basic healthcare for all citizens	Client-friendly, professional autonomy	Basic healthcare for all citizens	Lower waiting time
DISADVANTAGES	Bureaucracy, long waiting lists, underfunding	High costs difficult to control	Long waiting lists	Non-universal access
EXAMPLE OF COUNTRIES	UK, India, Scandinavia, Spain, New Zeland	Germany, Belgium, Japan, Switzerland, the Netherlands, France.	Canada, South Korea, U.S. Medicare	Rural areas in India, China, Africa, South America, and uninsured populations in the USA and Vietnam

Universal access is a means of assuring that the economic barrier to health care is mostly removed for the total population and may lead to increased access to medical and hospital services for those previously excluded. Assuring access to quality health care for all is accepted as a basic principle of public health and human rights (WHO, 2017).

Many socioeconomic factors affect health status, with health care being one of the most vital aspects. Specifically, the building blocks for universal health coverage presented by WHO, (2010) are as follows:

(1) Adequate financing;
(2) Well-trained and adequately remunerated workforce;
(3) Information on which to base policy and management decisions;
(4) Logistics that get medicine, vaccines and technologies to where they are needed;
(5) Well-maintained facilities organized as part of a service delivery and referral network;
(6) Leadership that sets and enforces the rules of the game, provides clear direction and harnesses the energies of all stakeholders including communities and other sectors.

Each country faces different concerns when trying to construct a system for health care provision. No health care system is entirely the same, and none is free of challenges. A system that works for one country is not likely to be entirely adaptable to another because different countries have different health concerns and priorities (Bevan et al., 2010). Even though complicated, considering the implications of various models is essential to implementing a health care system that is fair to all citizens. Its construction should involve the collaboration between policy experts, health providers, politicians, and other stakeholders to attempt to achieve the building blocks for universal health coverage.

2.2 Drivers of transformation in healthcare

The healthcare industry experiences remarkable growth, as innovative products treat a wider array of diseases experienced by patients. Currently, the focus is shifting from reactive healthcare and responding to patient illness after diagnosis, to health prevention and well-being promotion. More resources are being allocated from the end of the health care value chain (treatment and aftercare) to the beginning (prevention and well-being). There will be a greater focus on promoting healthy lifestyles, primary and secondary health prevention and early diagnosis (Allen, 2021).

Several foundational shifts are currently arising in the healthcare industry which are supported by advancements in many sectors. Specifically, technological advances have brought about a revolution in the healthcare industry worldwide, from modern testing techniques to improved surgical equipment and remote health monitoring technologies (Singhal et al., 2020).

Currently, healthcare is facing a collision of forces (Gutiérrez-Hernández & Abásolo-Alessón, 2021; Rana et al., 2021; Singhal et al., 2020; WHO, 2021):

(1) Uncertainty around challenges such as the global pandemic worldwide extended, new virus strains, vaccines, and supply chain disruptions;
(2) Fast-paced advances in medical science, supported by recent investments in fundamental research, product development and manufacturing capacity for diagnosis, vaccines and therapeutics especially focusing on infectious diseases;
(3) An explosion of digital technologies, data access, and analytics supported by high rates of healthcare technology investment which enabled a widespread availability and adoption of digital and cognitive technologies;

(4) Informed, empowered, and demanding patients, which are increasingly acting as consumers, improving self-knowledge and ownership of personal health outcomes and data;
(5) The ongoing challenges of clinical and administrative staff regarding availability and qualification, but also about assuring their physical, mental, and emotional well-being, safety, and motivation;
(6) A movement from disease care to prevention and well-being as patients' actions and habits enable wellness and health, including fitness and nutrition. This is shared with policy makers as well, which are increasingly focused on population health.
(7) Demographic and social changes affecting the well-being of the population and the provision of quality care. There has been an overall increase in both global life expectancy and healthy life expectancy. Globally, life expectancy has increased by more than six years between 2000 and 2019. The ageing demographic, as a result of decreased birth rates and increasing life expectancy and changes in the standard of care demanded by patients, are introducing major challenges in the healthcare sector.

These forces are the catalysts for the clinical, financial, and operational transformation that health care is currently experiencing while creating an imperative for stakeholders to move toward an ecosystem-based model of care (Allen, 2022; Singhal et al., 2020).

Patients are driving and accelerating the pace of change in health care. Thus, the context in which service is delivered and experienced has been changing throughout the last years (Allen, 2021). Advances in technology are leading to a rise of innovative services and changing how patients serve themselves before, during, and after care. These advances enabled an improvement in communication and the acquisition, storage, and analysis of big data, presenting opportunities for more personalized, deeper patient relationships and higher quality service (Ostrom et al., 2015). Further shifts include patients' increasing involvement in health care decision-making, the rapid adoption of virtual health and other digital innovations, the push for interoperable data and data analytics use; and unprecedented public-private collaborations in vaccine and therapeutics development. Amid these dynamics, governments, health care providers, payers, and other stakeholders around the globe are being challenged to quickly pivot, adapt, and innovate (Allen, 2021).

As previously identified one of the main goals for healthcare systems is to provide affordable healthcare services. Thus, there is the need to deliver healthcare to more patients for less money. This means that the relevant stakeholders of the industry need to continually strive to identify the ineffective elements that add to raising the cost of healthcare service delivery. Resources need to be allocated efficiently and fairly to attend to all needs (Allen, 2022).

A larger workforce is needed to provide healthcare to the world's ageing citizens (Dash et al., 2019). Despite employment in the healthcare sector is likely to increase in the foreseeable future, the type of skills and functions needed in the sector are expected to change (Gutiérrez-Hernández & Abásolo-Alessón, 2021). This arises two concerns. Firstly, ageing populations will change patterns of demand increasing the need for health and social services. This includes greater demand for long-term care and related services, which are particularly labour-intensive. Over time, rising incomes and the availability of new technologies will raise expectations on the quality and scope of care (Ungureanu et al., 2019).

Second, many countries have started to introduce new care delivery models that will involve integration of health and social services. These changes are expanding the roles of non-physician providers such as nurse practitioners and pharmacists and community health workers into health care aimed at maintaining access to services and increasing the productivity of the health workforce as well as improving the continuity and quality of care for the patients (Gutiérrez-Hernández & Abásolo-Alessón, 2021; PWC, 2021). These changes will likely lead to significant transformations in staffing profiles (OECD and European Union, 2020).

Differentiation in service delivery enables business success, especially under the circumstances of competitive market conditions (Homburg et al., 2022). Nowadays, healthcare companies often have to innovate in a constrained environment, overseen by multiple regulations, laws, and quality standards, and impacted or confined by existing infrastructure and established work procedures of the patient environment. Thus, by making innovative service strategies, companies can enable long-term performance benefits (Vogus & McClelland, 2016).

2.3 Quality of healthcare

Healthcare service quality varies in definition and understanding (Endeshaw, 2019). The complex nature of healthcare, the different interests of healthcare providers in delivering healthcare services and the requirement of ethical considerations when subjected to a problem also contribute to the difficulty of finding a unanimous definition (Eiriz & Figueiredo, 2005). There is a consensus achieved that healthcare service quality is a complex and multidimensional concept and difficult to operationalize (Endeshaw, 2019).

Many efforts have been done trying to define and measure various components of quality from different perspectives. Researchers are progressively aiming at developing more systematic ways of measuring and benchmarking the quality of care (Cioplan, 2019). Standards of care are derived from guidelines and provide a specific and measurable target along the patient's journey to reflect the quality of care that healthcare professionals should provide to be effective and safe for the patient. These standards act as auditable tools to measure the quality of care provided by individuals and organizations to meet the benchmark (Lim et al., 2020).

Several definitions of healthcare service quality have been presented through the years. Such a research trend is understandable because the healthcare industry involves multiple stakeholders who regularly have conflicting interests. There is empirical evidence that different groups of stakeholders perceive quality in different but equally important ways (Yip et al., 2015). One of the most widely investigated areas involves studies exploring the differences between patients' and healthcare providers' insights of health care service quality. In fact, health care service quality means different things for different stakeholders, since they have different views, interests and meanings, even if they are using the same concept (Chang et al., 2006; Gupta, 2008; Naveh & Stern, 2005; Piligrimiene & Buciuniene, 2005). Some studies find that the manager's opinion about health care service quality differs from that of healthcare professionals and tends to be more similar to the opinion of patients. Physicians traditionally relate service quality with good medical results, expressed in terms of objective measures (Piligrimiene & Buciuniene, 2008). The managers of health care organizations tend to evaluate service

quality by using some managerial measures. While patients tend to evaluate health care quality as a function of their relationships with a healthcare provider (Parasuraman et al., 2011).

Given the broad spectrum of opinions, authors have been considering different definitions of quality of care over the years. The most consensual are presented in table 2.

In summary, health services' quality ultimately aims at increasing the likelihood of desired health outcomes. High-quality health care is the right care, at the right time, with the right knowledge, in a coordinated way, responding to the service users' needs and preferences, while minimizing harm and resource waste. The quest for high-quality health care recognizes that such improvement is a continuous or dynamic rather than a static process. Regardless of the income level of a country, if there is room for improving health outcomes, the quality of care can also be increased (WHO, 2018a).

Table 2. Selected definitions of quality 1980-2018

PUBLICATION	DEFINITION
DONABEDIAN, (1980)	*"that kind of care which is expected to maximize an inclusive measure of patient welfare, after one has taken account of the balance of expected gains and losses that attend the process of care in all its parts"*
INSTITUTE OF MEDICINE, (1990)	*"the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge"*
COUNCIL OF EUROPE (1997)	*"the degree to which the treatment dispensed increases the patient's chances of achieving the desired results and diminishes the chances of undesirable results, having regard to the current state of knowledge"*
EUROPEAN COMMISSION (2010)	*[Good quality care is] "health care that is effective, safe and responds to the needs and preference of patients"*
WHO (2018)	*"Quality health services across the world should be:* • *Effective: providing evidence-based health care services to those who need them.* • *Safe: avoiding harm to people for whom the care is intended.* • *People-centred: providing care that responds to individual preferences, needs and values.* *[…] In order to realize the benefits of quality health care, health services must be timely […], equitable […], integrated […], and efficient […]"*

Similarly to most services, quality of healthcare is difficult to measure owing to inherent intangibility, heterogeneity, inseparability, complexity and specialization features (Vaz, 2018; Wilson et al., 2016). Naturally, healthcare management bears important and different characteristics when compared to other sectors, mainly for five reasons. Firstly, and most importantly, it is directly related to human life. Human health disorders are inherently complex and may manifest differently across patients (Khan et al., 2018). The demographic heterogeneity of patients amplifies the complexity. Health care professionals can provide the same service, but the patient may experience it differently as a function of their current condition. Thus, high-quality care is highly customized care - it is based on an intimate and particular understanding of the patient (Vogus & McClelland, 2016). Second, the potential consequences for the patient and the provider organization are qualitatively different in healthcare.

Services performed inside the care delivery scope, carry a higher risk of injury and harm than other industries. The cost of failure is much greater in terms of patient injury and in some cases death, especially for vulnerable populations. Third, care delivery may evolve over a longer period of time than other services, and satisfaction with the care influences patients' availability to comply with the treatment plans (e.g., go to follow-up appointments and take medication). Both participation and compliance influence subsequent health outcomes (Vogus & McClelland, 2016). Fourth, health care professionals are highly dependent on each other to provide and coordinate services of high value for human beings (Eiriz & Figueiredo, 2005). Lastly, patients might be unable to correctly and non-emotionally evaluate the quality of care, given the severity and/or complexity of their illness (Hashim, 2017). Measurement is often biased due to several factors that, in turn, do not necessarily affect the quality of the delivered services.

Despite these barriers, having detailed information regarding quality-of-care measurements available for each provider carries significant benefits. Healthcare service quality has been a subject of increasing interest to health care providers, organizations and researchers and it is currently high up on the agenda of policy-makers at national, European and international levels (WHO, 2021). The issue of healthcare quality is addressed for numerous reasons (Busse et al., 2019; WHO, 2021):

(1) Growing need to compare the quality of healthcare provided by different hospitals, different hospital teams and wards, and individual clinicians;
(2) To identify gaps in safe, effective and person-centred care which can be improved;
(3) To address concerns about practice variations in healthcare delivery;
(4) To align the performance of public and private healthcare;
(5) It supports universal health coverage while guaranteeing appropriate quality levels in care access to all to achieve desired population health outcomes;
(6) Reliable quality services are needed to handle outbreaks or other complex emergencies;
(7) To enable a competitive advantage in the market for companies who have quality improvement as a strategic tool.

One of the frameworks published for examining health services and evaluating the quality of healthcare is the one published by Donabedian (1966). According to Donabedian's model, information about the quality of care can be drawn from a mix of three components to assess the quality of care: process, structure, and outcome:

(1) Structure - refers to the settings in which care is delivered. These are the attributes of the service provider and include the physical facility, tools, equipment, human resources, qualification of medical staff, administrative processes as well as organizational characteristics such as staff training and payment methods. It is relevant to quality since it is supported by the assumption that given the proper settings and instrumentalities, good medical care will follow, increasing the probability of good performance. Structure is often easy to observe and measure since it counts on concrete and accessible information.
(2) Process – refers to the set of activities and the way the systems and processes work to deliver the desired outcome. In sum, it comprehends all the actions that constitute the healthcare process. These commonly include diagnosis, treatment, coordination and continuity of care and

may include actions from patients and their families. Information about process can be obtained from medical records, interviews with patients and practitioners, or direct observations of healthcare visits.

(3) Outcome – refers to the impacts of healthcare on patients and/or the population, demonstrating the results of care. These include changes in health status or behaviour, recovery, restoration of function and survival, as well as patient satisfaction and health-related quality of life. Outcomes are usually seen as the ultimate indicators of the effectiveness and quality of medical care. However, measuring outcomes that are exclusively attributed to healthcare is a very complex task.

In addition, Donabedian (1980) introduced the dual nature of healthcare quality by describing both the technical and the interpersonal components of care. At one level, technical service quality addresses clinical expertise and technical aspects of healthcare such as selecting the appropriate intervention for a patient's symptoms or carrying out a clinical procedure properly. It refers to the general competence of providers and their ability to demonstrate this competence to patients while performing their duties and thus, can be assessed as a performance issue related to the entire health care provider. On the other hand, interpersonal components refer to the degree and quality of interaction between the patient and service provider, including trust, empathy, communication, and attitude. It is a sensitive aspect of care because it involves discussions of illnesses, treatment, and health information with patients. A third element was added as a component of healthcare quality in Donabedian (1992) the amenities of care which refer to administrative components, comprising operational tasks such as executing the admission process, updating medical records, and other core services which facilitate core services and add value to the customer's experience. Figure 2 presents the assessment of quality of care according to this framework. It is important to consider both technical and human aspects to develop a comprehensive understanding of quality of care (Eiriz & Figueiredo, 2005).

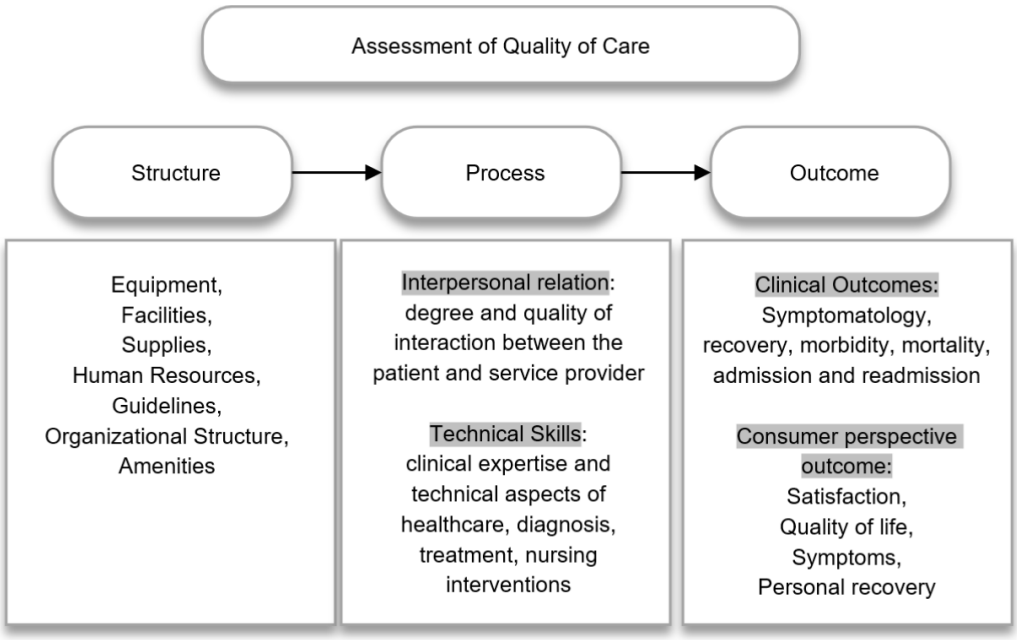

Figure 2. Extended Donabedian model for measuring quality of care (Adapted from Donabedian, 1992)

When assessing the quality of healthcare, the feedback from the users of healthcare facilities and institutions is generally considered to be vital (Berger et al., 2020). The right service provided at the right level of quality leads to higher levels of satisfaction, which in turn leads to patient loyalty and retention (Khan & Ghouri, 2018; Shonk, 2013). Additionally, it gives providers insights into various aspects of medicine, including the effectiveness of their care and their level of empathy (Howick et al., 2018). Quality and adequacy of healthcare services can be measured based on the views and satisfaction of patients and their relatives. Therefore, patient satisfaction can be considered one performance measure of health care quality (Prakash, 2010). Results of patient satisfaction surveys allow policy makers to understand patients' needs and identify service factors that need attention and improvement, and then to make strategic plans for effective and better quality services (Lee et al., 2018). It seems necessary to understand how individuals evaluate care and make judgements (Dunsch et al., 2018). The latter is a very difficult task, not only because of its subjective and relative nature, but it also appears to be cognitively and emotionally difficult for some patients to evaluate the quality of care, since their experiences may vary over time and across different providers (Sofaer & Firminger, 2005).

In the field of research in the scope of administration and management of health services, the theme of patient satisfaction in health services and its relationship with the quality of care has been expanding (Manzoor et al., 2019). Patient satisfaction has been studied and measured extensively as a stand-alone construct and as a component of outcome quality and in particular in quality care assessment studies (Gill & White, 2009). Patients are learning about their health risks, communicating with their doctors in different ways, and increasingly caring about their data confidentiality. They want convenience, access, and transparency around treatment care and cost. Each of these factors has a significant influence on how patients are feeling and interacting with their health system. Patients' preferences are pushing the development of digital, on-demand, and connected clinician-patient interactions. Their demands are driving the transition to patient-centred care delivery across geographies and socioeconomic groups, and their expectations are driving industry stakeholders to elevate a transactional patient/customer health care encounter into a holistic human health experience (Allen, 2022).

2.4 Satisfaction

Organizations of all types and sizes have increasingly grown awareness regarding the importance of customer satisfaction. It has been one of the main concerns for both product and service operating companies and it has been widely recognized as an important issue for firms and consumers, which are increasingly demanding of the quality of products and services (Khan & Ghouri, 2018). Customer satisfaction is a pivotal concept in modern marketing. It emphasizes delivering satisfaction to consumers for both products and services and obtaining profits in return. Several decades of research have been devoted to understanding factors that influence customer satisfaction evaluations.

Satisfaction is an abstract and intangible concept (Dimitrievska & Misoska, 2021). Many definitions have been published in the last years. It is the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product (Tse & Wilton, 1988). It refers to how well a customer's expectations have been met by the product or service provided by a particular company (Hill

& Alexander, 1996). Satisfaction is related to the complete consumption experience. It is defined as pleasurable fulfilment. That is, the consumer senses that consumption fulfils some need, desire or goal and this fulfilment is pleasurable (Oliver, 1997). Thus, satisfaction is the customer's sense that the transaction, whether product or service, provides desired, preferred, pleasant and needed outcomes (Liang & Zhang, 2011). Although different approaches to defining customer satisfaction may be found in the literature, the most popular of them are based on the fulfilment of customer expectations. However, many existing studies are divergent regarding key concepts and their interrelationships which makes its measurement a complex task.

Customers have a pivotal role in every business's survival and sustainability. Without customers, businesses would not be operating. The goal for companies is not only to fulfil the needs of the customers but also to secure customer satisfaction and exceed their expectations (Alzaydi et al., 2018).

It is fundamental for companies to seek continuous customer feedback to track their progress. Knowledge of customers' perceptions and attitudes about an organization, may help to understand customer behaviour, and particularly to identify and analyse customer expectations, needs, and desires (Grigoroudis & Siskos, 2010).

For this reason, customer satisfaction should be measured and translated into a number of measurable parameters, understandable for every business.

2.5 Patient satisfaction

Customer satisfaction is a KPI that drives quality and profitability in the service industry. Assessing satisfaction represents a baseline standard performance and a possible standard of excellence for any business organisation, including in the healthcare business (Farzianpour et al., 2015; Grigoroudis & Siskos, 2010).

The beginning of research on users' satisfaction with health services started in the 1960s with the appearance of the first investigations on the doctor-patient interaction (Irvine, 2002). At that time, it was observed that patient satisfaction was associated with improved appointment keeping, medication use and adherence to treatment recommendations. It was important to know the degree of satisfaction of the user, even though at that time the patient was seen as a passive agent.

At the beginning of the 1970s, this concept was changed due to the appearance of the patient-consumer movement, a movement that changed the position of patients in health care in which users started to be interventional (Mukhtar et al., 2013). Under these circumstances, patients began to be regarded as consumers, which means "a person who buys goods or uses services" (Oxford Dictionary). Research on the field picks up considerably in the late 1970s and early 1980s. This led to the replacement of the idea of "quantity of life" with a more patient cantered concept of "quality of life".

In the 1980s, surveys that assessed patient satisfaction begin to appear. Patient satisfaction was no longer just an abstract indicator, but one that could and should be measured. Some companies dedicated to the application of satisfaction surveys emerged, in an innovative assignment that combined survey design and healthcare, creating a new market (Cioplan, 2019). In the early 1980s, only some hospitals were interested in applying satisfaction surveys. Over the next decade, more and more hospitals saw the value that could be achieved from tracking their patients' satisfaction. The refinement

of data collection, analysis, and reporting continued to increase. Survey companies began to offer health care organizations advice on how to improve their satisfaction scores after the surveys had been administered and analysed (Siegrist, 2013). Table 3 presents the shifts that occurred in patient satisfaction since 1960.

Table 3. Patient satisfaction shifts since 1960

	1960	1970	1980	CURRENTLY
FRAMEWORK	Satisfied patients will comply with treatment and improve outcomes	Patient-consumer Movement	Patient Satisfaction Measurement	Patient-Cantered Care
PATIENT	Passive agent	Interventional	Interventional	Shared goal setting and decision making
DOCTOR	Decision maker, authority	Listens to the patient to make decisions	Listens to the patient to make decisions	Shared goal setting and decision making
COMPANIES	Attempt to make patients satisfied. No measurement	Attempt to make patients satisfied. No measurement	Beginning of surveys to measure patient satisfaction	Patient satisfaction as a strategic top priority

Currently, the patient finds himself as a buyer of health care services (Prakash, 2010). The modern-day patient is more aware and educated, has access to information, and has expectations from the health system. Patient-centred care has been increasing in significance. Despite there is no one definition of patient-centred care, most definitions have several common elements that affect the way health systems and facilities are designed and managed, and the way care is delivered (Freundlich et al., 2020; Larson et al., 2019; National Academies of Sciences Engineering and Medicines, 2018; Vaz, 2018). Common elements between patient satisfaction definitions currently agreed upon are as follows:

(1) The health care system's mission, vision, values, leadership, and quality-improvement drivers are aligned to patient-centred goals;
(2) Individual's specific health needs and desired health outcomes are the driving force behind all health care decisions and quality measurements;
(3) Care is collaborative, organised, cohesive and accessible - the right care is provided at the right time and the right place;
(4) Care focuses on physical comfort as well as emotional support and well-being;
(5) Patient and family preferences, values, cultural traditions, and socioeconomic conditions are respected;
(6) Care encourages active collaboration and shared decision-making between patients, families, and providers;
(7) The presence of family members in the healthcare facility is promoted;
(8) Information is continuously shared and communication flows in a timely manner so that patients and their family members can make informed decisions;
(9) Assured continuity between and within services.

This shift was essential for two reasons. First, individuals have the right to be treated with dignity and respect when they are using healthcare services. Second, person-centred care is associated with improved healthcare utilisation and health outcomes. Patient-centred measures are useful for policymakers for guiding and evaluating quality improvement efforts. It also enhanced the importance of awareness regarding patient satisfaction indicators and their impact on both medical practices and service. Alongside measures of clinical and safety outcomes, patient satisfaction is increasingly recognised as an important indication of the quality of healthcare service providers (Gleeson et al., 2016). Satisfaction extends to patients as well as different medical providers such as physicians, nurses and medical technicians (Torres & Guo, 2004). This multi-dimensional concept includes both medical and non-medical aspects of health care.

Patient satisfaction has become largely studied by several authors since the 1980s. Even so, research has not been explicitly guided by a well-supported definition (Batbaatar et al., 2015). It is defined differently and it has been given different theories in the literature, which makes its measurement a complex task, raising issues in the interpretation of survey results (Abrahamsen Grøndahl et al., 2013; Dimova et al., 2017). Table 4 presents some selected definitions of patient satisfaction published over the years.

Table 4 Selected definitions of patient satisfaction

PUBLICATION	DEFINITION
Zyzanski et al., (1974)	"… the patient's attitudes toward physicians and medical care."
Linder-Pelz, (1982)	"patient satisfaction as positive evaluations of distinct dimensions of the health care."
Pascoe, (1983)	"Patient satisfaction as a health care recipient's reaction to salient aspects the context, process, and result of their service experience."
Eriksen, (1995)	"…patient satisfaction is a rating or evaluation of a service or provider, based on a comparison of the patient's subjective standards to care received, and presents a positive emotional response to the comparison."
Vaz, (2018)	"Patient satisfaction describes how patients value and regard their care. It is a process as much as an attitude."
Manzoor et al., (2019)	"Patient satisfaction is the state of pleasure or happiness that the patients experience while using a health service."
Cioplan, (2019)	"Patient satisfaction represents their degree of satisfaction with their perception of a hospital quality management regarding the services provided by it and the results related to the health status, the interaction with the medical staff, having an impact on the evolution of their health status."

Although the abovementioned definition seems quite simple and adequate, it also gives rise to a couple of important aspects which embody the complexity of this matter. First of all, in healthcare satisfaction itself does not imply a superior service, i.e., satisfaction can be achieved by an adequate or acceptable standard of service. Secondly, whenever different individuals are asked to evaluate a service, they usually compare their personal subjective standards with their own perception of care received, meaning that the concept of satisfaction assumes a relative, rather than an objective nature (Crow et al., 2002). Furthermore, the wide diversity of services constitutes another factor that poses measurement difficulties. Separate criteria are essential to differentiate services mainly based on the sort of experience users have with a particular service. The degree of involvement can vary as well as the duration of the consumer experience. Services can also differ in the degree of technical knowledge and skill required. Patients may be asked to perform a single global summary judgement and/or to evaluate a set of aspects individually.

Given this complexity, it is generally agreed that service quality is a multidimensional concept, under the influence of several internal and external aspects of health service (Crow et al., 2002; Gill & White, 2009). It comprises the degree of patient's positive feelings on satisfaction, interpersonal behaviour, communication, financial aspects, time spent with physicians, nurses, administrative staff, services, accessibility to health care services, convenience, availability of care and condition of facilities (Batbaatar et al., 2017).

There are 11 key factors that support the importance of patient satisfaction (Ferrand et al., 2016; Gallo, 2014; Grigoroudis & Siskos, 2010; Homburg et al., 2022; Otto et al., 2020; Prakash, 2010):

(1) Improving clinical outcomes - studies indicate a direct correlation between patient satisfaction and effectiveness of treatment, treatment compliance and care plans. Hospital physicians and staff members who can build trust will increase the likelihood of the patient maintaining a continuing relationship with the healthcare practitioner and engaging in follow-up appointments, which results in better health outcomes;

(2) Building loyalty - satisfied patients are likely to keep choosing the same company as their medical care provider, meaning the company will increase patient retention, powering sales and helping businesses to maintain sustainability;

(3) Attracting new patients – *word-of-mouth* is the best form of advertising; people who are satisfied with their hospital stay are more likely to tell others about their experience and recommend it, which will lead to new patients choosing the facility;

(4) Negative feedback – unhappy patients talk about their experience to others, may decide to stop choosing the healthcare facility as a provider, and won't hesitate at switching. This will directly impact your business revenue and reputation;

(5) Staff satisfaction – satisfied patients are more likely to express it to the staff, increasing staff morale and reducing staff turnover which leads to increased productivity, and personal and professional satisfaction.

(6) Areas of improvement - patient satisfaction data allows companies to pinpoint what areas that need to be developed;

(7) Patient (customer) analytics - patient satisfaction data gives powerful insights into who is consuming the products or services. These metrics allow providers to learn about patients and to know who is satisfied with the services;

(8) Market opportunities – patient's insights might also uncover potential market opportunities, ideas on improving products and services, suggest new products or reveal a new trend, which will help to build a truly patient-centric business;

(9) Market positioning – patient satisfaction represents highly reliable market information that allows business organizations to evaluate their current position against competitors, their strengths and weaknesses, and to design future plans and strategies; patient satisfaction can serve as an inimitable resource differentiation factor, helping the company to stand out;

(10) Patient's behaviours - patient satisfaction helps to understand their behaviour, particularly expectations, needs and desires;

(11) Quality pinpoint – patient satisfaction reveals potential disparities regarding perceptions of service quality between patients and managers.

To provide the highest level of satisfaction that is profitable to both the patient and the provider, management must control both the perception of expectation and the quality of delivery of the healthcare services. Knowledge of expectations and the factors affecting them, combined with knowledge of actual and perceived healthcare quality, provides the necessary information for designing and implementing programs to satisfy patients (Prakash, 2010).

Health care organizations have been measuring satisfaction to create accountability and set standards (Torres & Guo, 2004). The emergence of continuous quality improvement initiatives has led healthcare organizations to use satisfaction data to identify process problems, improve performance in key processes, monitor improvement efforts, provide benchmarking information, and identify best clinical practices so that high levels of patient satisfaction are achieved (Burroughs et al., 2001).

3 Literature review

Over the past decades, the broadly adopted customer-oriented strategies and continuous improvement principles have enhanced the importance of consumer satisfaction in many sector services (Grigoroudis & Siskos, 2010). As seen previously, superior customer satisfaction provides a strategic advantage for companies (Dash et al., 2021). Thus, it is important to understand satisfaction and related concepts as well as what has been published regarding the subject.

This chapter is organized into two sections. Section 3.1 presents systematics reviews made over the years concerning patient satisfaction determinants and section 3.2 presents existing gaps.

3.1 Reviews on patient satisfaction determinants

Whilst there are numerous specific patient satisfaction studies published in peer-reviewed journals, there is a substantially smaller number of reviews assessing the topic of determinants of satisfaction. From the research made on the determinants of patient satisfaction, only a few studies were found focusing on the subject.

The critical review conducted by Crow et al. (2002) identified 37 studies investigating methodological issues and 139 studies providing evidence about the determinants of satisfaction. The population involved were categorised into four groups: outpatients/ambulatory care, inpatients, primary care/general care including family practice and healthcare in general. Studies were categorised as experimental, observational and others such as meta-analysis. Regarding methodological issues, it was found the need for research on the effect of timing surveys on reported satisfaction; the extent of bias introduced by interviewers; cross-cultural issues and adaptations and how consumer feedback can be incorporated into healthcare decision-making, including the development of measures of relative preference. Two groups of factors that influence patient satisfaction were identified:

(i) factors related to the characteristics of the respondents,

(ii) factors related to the health providers' policies.

It was stated that health status and health outcomes affect satisfaction. Consistent evidence across settings described that the most important health service factor affecting satisfaction is the relationship between physicians and patients. It is noted that consumers are important judges of the care they receive. However, concern remained about their ability to judge technical aspects of it, and uncertainty exists about what they are evaluating when they report satisfaction. Furthermore, expectations were found to be correlated in some studies, meaning satisfaction implies that expectations are met. However, satisfaction can be recorded even in the face of poor-quality care if the patient has low expectations. Similarly, dissatisfaction may reflect unreasonable expectations, even when care is adequate and appropriate. Thus, it was noted a need to classify different types of expectations and explore how consumers operationalise these in evaluations and examine the relationship between sociodemographic factors and expectations. Standards need to be set, meaning the choice of criteria and the determination of an appropriate benchmark is required. Finally, according to the review, it was concluded that

consumer views are important because of the particular perspectives they provide and because they are the ultimate evaluators of the care that is subsequently delivered.

According to the systematic review of Naidu (2009), the dimensions that determine patient satisfaction are health care output, access, caring, communication, hospital room appearance and comfort and trust. Each of these factors has the capacity to create a positive or negative patient experience. Patient involvement is an inherent feature in healthcare services influencing outcome quality through compliance, describing the right symptoms, and physically undergoing treatment. This article, by reviewing published research, found that patient satisfaction and healthcare quality are fundamental to improving health service performance and image. They are encouraged to regularly monitor healthcare quality and accordingly initiate service delivery improvements to maintain high levels of patient satisfaction.

The review conducted by Al-Abri & Al-Balushi (2014) assessed 29 articles concerning patient satisfaction determinants. It provides a comprehensive understanding of determinants of patient satisfaction either dependent or independent variables. There was a common salient determining factor between the studies which was interpersonal skills in terms of courtesy, respect by healthcare providers in addition to communication skills, explanation and clear information, which are more essential and influential than other technical skills such as clinical competency and hospital equipment.

The meta-narrative review concluded by Batbaatar et al. (2017) assessed 109 studies published between 1980 and 2014. All quantitative, qualitative, and mixed methods studies were considered. Studies were included if assessed satisfaction in a population of 18 years or above. The review found that the potential determinants playing important roles in patient satisfaction varied across studies both between and within fields, owing to no globally accepted formulation of patient satisfaction. The most consistent and strong determinant was interpersonal care. Further determinants found to be associated were quality of health care service, staff competence, the physical environment of the facility, accessibility, continuity of care, hospital characteristics, and outcome of care, which are all associated with patient satisfaction positively. Given the importance of patient-doctor relations, it was recommended the training of medical students in interpersonal skills such as communication. The relationships between person-related characteristics and satisfaction were the most contradictory in this study. There is evidence that socio-demographic factors of patients affect their satisfaction with health services. However, the strength and direction of the effects on patient satisfaction were varied.

The systematic review conducted by Salehi et al. (2018) included articles related to inpatients in public hospitals. No time bound was applied. 85 articles were reviewed, mainly from Iran and USA. The main factors affecting consumer satisfaction in hospitals were grouped into two categories: patient attribute factors, which involved expectations, health status, demographic and socioeconomic; health system factors, which involved service quality, hospital features, staff satisfaction and insurance.

The review conducted by Sarfraz et al. (2020) included studies assessing the satisfaction of children and adults in emergency, outpatients and inpatient departments. The dimensions that determine patient satisfaction are the effectiveness of treatment/education measures, the efficiency of care, accessibility to services, acceptable/patient-centred nature of care, equitability, and safety. Given that most studies included were from Pakistan, it was noted that the poor patient care and satisfaction in low and middle-income countries are mainly due to the limited resources in those regions. In addition,

assessments for quality of care in both public and private care are also limited. A note was also made regarding the care delivered to female patients, and the need to assure customized needs of privacy, which would improve their satisfaction. This review found methodological discrepancies between the studies. Critical gaps exist for pre, and post-admission care in indoor healthcare facilities, in which no accounting or monitoring system is found. There is a need for improvement in patient satisfaction monitoring and assessment specifically across patient profile characteristics and regarding patient-doctor interaction. In addition, given the economic context, it was identified a need to assess gaps in service provision.

Table 5 presents the determinants associated to patient satisfaction based on the reviews analysed. Transversely, all reviews concluded that patient satisfaction is a multi-dimensional healthcare construct affected by many variables. It was also consistent in all six reviews (100%) that the most important determinant of patient satisfaction is interpersonal relationships with staff regarding communication and information sharing from staff to the patient. Technical care, the physical environment and the outcome of care were found to be associated to patient satisfaction in four reviews (67%). Access, cost, age and health condition of the patient were found to be determinants associated to patient satisfaction in two reviews (33%). The less consistent determinants to be associated to patient satisfaction were organizational characteristics, gender, education, income and marital status, which were only found in one review each (17%). Patient satisfaction and healthcare service quality, though difficult to measure, can be operationalized using a multi-disciplinary approach that combines patient inputs as well as expert judgement. Table 6 presents a summary of selected reviews on patient satisfaction determinants.

Table 5. Number of studies associating determinants with patient satisfaction

DETERMINANTS	NUMBER OF REVIEWS	FREQUENCY
INTERPERSONAL CARE	6	100%
TECHNICAL CARE	4	67%
PHYSICAL ENVIRONMENT	4	67%
OUTCOME OF CARE	4	67%
ACCESS	2	33%
COST	2	33%
AGE	2	33%
HEALTH CONDITION	2	33%
ORGANISATIONAL CHARACTERISTICS	1	17%
GENDER	1	17%
EDUCATION	1	17%
INCOME	1	17%
MARITAL STATUS	1	17%

Table 6. Summary of review on patient satisfaction determinants

AUTHORS	PERIOD STUDIED	TYPE OF ARTICLE	JOURNAL	KEYWORDS	METHODOLOGY	MAIN CONCLUSIONS
CROW ET AL., (2002)	1980-2000	Critical Literature Review	Health Technology Assessment	Not Specified	Electronic searching on 7 databases. Were collected information regarding methodological issues and determinants of patient satisfaction. Were included 139 studies regarding determinants.	Satisfaction is linked to a patient's predisposition, utilization, and granting of patients' desires (tests and medications), patient's expectations, health status, health outcomes, age, patient-practitioner relationship, and cost of care.
NAIDU (2009)	Until 2009	Systematic Literature Review	International Journal of Health Care Quality Assurance	- Health services, - Quality management, - Customer satisfaction, - Performance monitoring	Searching on the factors affecting satisfaction in public hospitals. 24 studies were included and collected information regarding determinants of patient satisfaction and healthcare quality.	Dimensions that determine patient satisfaction are health care output, access, caring, communication, hospital room appearance, comfort, and trust.
AL-ABRI ET AL., (2013)	1997-2012	Literature Review	Oman Medical Journal	- Patient satisfaction; - Quality improvement; - Healthcare	Electronic searching on 5 databases, concerning factors affecting satisfaction in public hospitals. 29 studies were included and collected information regarding determinants of patient satisfaction.	There was a common salient determining factor between the studies which was interpersonal skills in terms of courtesy, respect by healthcare providers in addition to communication skills, explanation and clear information, which are more essential and influential than other technical skills such as clinical competency and hospital equipment.
BATBAATAR ET AL., (2017)	1980-2014	Systematic Literature review	Perspectives in Public Health	- Patient satisfaction; - Determinants; - Systematic review; - Predictors; - PRISMA	Searching on 3 databases. 109 articles were included. Report methodology: PRISMA	The strongest determinants of patient satisfaction were the quality of health care providers' interpersonal skills, competence, the physical environment of the facility, accessibility, continuity of care, hospital characteristics, and outcome of care. Were found contradictory relationships between sociodemographic characteristics and patient satisfaction.
SALEHI ET AL., (2018)	Until 2015	Systematic Literature Review	Bali Medical Journal	- Patient satisfaction, - Consumer satisfaction, - Factor, - Systematic review	Electronic searching on 4 databases. 90 studies were included and collected information regarding determinants of patient satisfaction.	The main factors affecting consumer satisfaction in hospitals were grouped into 2 categories: Patient attribute factors that involved expectations, health status, demographic and socioeconomic; Health system factors: that involved service quality, hospital features, staff satisfaction and insurance.
SARFRAZ ET AL., (2020)	Until 2019	Literature Review	The International Journal of Frontier Sciences	- Patient, - Care, - Satisfaction, - Quality; - Sector, - Level; - Pakistan	Electronic searching on 3 databases. 16 studies were included and collected information regarding determinants of patient satisfaction. Report methodology: PRISMA	The main factors correlated to patient satisfaction were effectivity of treatment/education measures, the efficiency of care, accessibility to services, acceptable/patient-centred nature of care, equitability, and safety.

Recommendations from these studies point to the need to develop a standardized questionnaire, standardized satisfaction measurement method and standards for weighing criteria, to improve comparisons and to enable the establishment of relationships between determinants. In addition, there is a need for more studies on how cultural, behavioural, and socio-economic differences affect patient satisfaction with a standardised questionnaire which is adaptable to specific groups and countries for further comparisons. Furthermore, across all studies, it is unmistakable the link between the evaluation of patients' satisfaction, the data that can be obtained through the measurement of patient satisfaction and the improvement action plans that can be developed as a result of data analysis. The measurement of patients' satisfaction and a better understanding of patient views and perceptions helps healthcare managers to:

(1) Effectively set control mechanisms,

(2) Implement effective changes

(3) Develop new strategic quality improvement plans, which will directly enhance patient satisfaction. This is a recommendation for managers and stakeholders shared across all reviews.

3.2 Gaps in the literature

Patient satisfaction is a multi-dimensional healthcare construct influenced by many variables. Several studies have been published over the years to identify the factors that influence patient satisfaction. The determinants of patient satisfaction should be defined so that can be used as a way to improve satisfaction and assess decision-making. Some literature reviews were found that gathered research regarding the determinants of patient satisfaction. Two reviews conducted the analysis and presented the results separating outpatient and inpatient data (Crow et al., 2002; Sarfraz et al., 2020). Two reviews considered patients as a broad term, meaning there is no identification nor separation of the patients' hospital staying nature included in the study – outpatient or inpatient (Al-Abri & Al-Balushi, 2014; Batbaatar et al., 2017; Naidu, 2009). Only one review assessed determinants that influence inpatient satisfaction exclusively in public hospital settings (Salehi et al., 2018). This segmentation is important since inpatients stay at the hospital longer than outpatients and the factors that influence satisfaction are likely different. In addition, only two reviews conducted their search through a systematic process, both using PRISMA.

There is still a clear gap in the patient satisfaction determinants literature. Specifically, there is a lack of reviews concerning the determinants that influence inpatients' satisfaction. Furthermore, there is a lack of reviews that assesses both public and private hospital studies. There is a lack of reviews that apply and present a systematic searching process. In addition, existing reviews regarding inpatient satisfaction determinants have only used articles until the year 2019. However, many research articles and satisfaction assessment studies have been published in 2020 and 2021. In fact, a longitudinal analysis of the publication patterns showed a surge in published articles on inpatient satisfaction in 2021, being also the year with the highest number of publications in ten years. This may be a result of the Covid-19 pandemic where a decrease in patients satisfaction and reduced likelihood to recommend providers was reported (Maher et al., 2021; Shirazi et al., 2020; Stericycle, 2020), raising the need to

improve and step up the assessment of patient satisfaction, leading scholars to focus on the issue. Therefore, it is also important to explore what recent studies have concluded during these last years.

A further gap exists of reviews that address the type of healthcare system operating in the country and its influence on patient satisfaction determinants. This is particularly relevant because patient satisfaction represents not only but also their degree of satisfaction with their perception of a hospital's quality management regarding the services provided. If currently there are four main healthcare systems in the world each one operating differently, it is important to evaluate which determinants influence patient satisfaction in each type of healthcare system. These determinants can then be converted as performance indicators of the health system and can have a major influence on the national decision-makers to understand the characteristics and processes that contribute to the relative levels of patient satisfaction. While improving and excelling the factors that make patients satisfied, patients are more likely to follow treatment and care plans and attend follow-up appointments, which results in better health outcomes. In addition, providers that manage to keep patients satisfied will increase patient loyalty, attract new patients, increase their staff satisfaction and strengthen their market reputation.

In sum, existing gaps in the literature can be briefly presented as follows:

- Lack of literature reviews on the determinants of inpatients satisfaction;
- Lack of meta-analytical reviews;
- Lack of reviews that analyze more recent studies;
- Lack of reviews that follow a systematic search process, such as PRISMA
- Lack of reviews that address the influence of the type of healthcare system, the medical speciality, and the country on the determinants of inpatient satisfaction.

The present dissertation will respond to the identified gaps in the literature.

4 Reviews

Chapter 4 comprises two sections. Section 4.1 presents an introduction to reviews and related concepts and section 4.2 presents the existing types of reviews.

4.1 What are reviews?

In this era of data overflow, it is not easy for decision-makers to ensure that their decisions are informed by the latest, reliable, research knowledge. Research evidence is one of many inputs into decision-making by stakeholders, managers, policymakers, and consumers. However, the vast scale of information and literature available makes it difficult to comprehensively record and assess the state of knowledge on a particular topic. Thus, it is of great importance the existence of methods to compile available and relevant information to ease the process of decision-making (O'Gorman & MacIntosh, 2014; Rhoades, 2011). The continuous expansion of research, combined with the demand to summarize the available evidence, led to the development of literature reviews (Poklepovic & Tanveer, 2019).

According to Maggio et al. (2016), a literature review is "a synthetic review and summary of what is known and unknown regarding the topic of a scholarly body of work, including the current work's place within the existing knowledge". A subject develops when a prior study's findings are logically synthesised. Thus, literature reviews allow for the rationale or reason for a study to emerge, which may include a justification for a specific research approach (Paul & Criado, 2020). Furthermore, it provides a starting point for researchers since it requires an understanding of what has been written about the topic to be addressed. In addition, reviewing what has already been published in a particular field, guarantees that previous work is not being repeated, but allows the identification of inconsistencies, knowledge gaps and contradictions in the literature. Lastly, literature reviews can support clarity in thinking about concepts and possible contribute to theory development (O'Gorman & MacIntosh, 2014).

The primary purpose of a literature review is to provide a comprehensive overview of literature related to a topic through synthesising prior studies and results (Paul & Criado, 2020). The information gathered from relevant studies, provides readers with an understanding of the whole body of available research on a topic, comparing and contrasting the findings of prior studies (O'Gorman & MacIntosh, 2014). In doing so can uncover important knowledge, help identify research gaps and suggest future research paths or theoretical frameworks (Marabelli & Newell, 2014).

4.2 Types of literature reviews

Over the years, several types of literature reviews have appeared. However, currently, there are three main types of literature review - narrative, systematic and meta-analysis. Some are more acceptable than others depending on the purpose.

4.2.1 Narrative reviews

Narrative reviews, sometimes referred to as overviews, integrative, standard or traditional reviews of the literature, critically analyse and summarize the literature relevant about the topic (O'Gorman &

MacIntosh, 2014). It is an objective-focused literary review of relevant studies based on pre-defined criteria, such as a time period. It presents a comprehensive overview of the literature published about a topic, presenting major arguments. It is often presented as background reading, preceding the research study and tend to begin with an explanation of the underlying theory for the selected topic. Although narrative reviews do not necessarily adhere to rigorous standards or methodologies, the results of the search, selection, and assessment procedures must meet pre-established criteria (Higgins et al., 2019).

4.2.2 Systematic reviews

A systematic review consolidates all evidence that fits pre-specified eligibility criteria to answer a specific research question. It uses explicit, systematic, detailed, and rigorous methods that are selected to minimize bias, thus providing more reliable findings from which conclusions can be drawn and decisions made.

Authors of systematic reviews attempt to obtain all original research studies published on the topic under study by searching in multiple databases (Liberati et al., 2009). Each paper is reviewed systematically and consistently. Each piece of evidence drawn from a paper for the literature review is extracted in the same process to help decrease the bias. Authors create data, or evidence tables, to tease out the differences in the results of different studies. Because of the rigorous methods employed in conducting systematic reviews, they are a more powerful evidence-based source to gather clinical information than narrative reviews (Gusenbauer & Haddaway, 2020)

Systematic reviews provide health decision-makers with access to high-quality, relevant, accessible and up-to-date information (Higgins et al., 2019). Systematic reviews contribute to scientific progress through (Randolph, 2009; Rhoades, 2011):

(1) Identifying methodologies and research techniques;
(2) Facilitating the development of practice guidelines;
(3) Identifying new lines of investigation;
(4) Discovering important variables relevant to the topic;
(5) Identifying relationships between ideas and practices;
(6) Supporting existing theory and leading to its application;
(7) Rationalizing the significance of the problem;
(8) Identifying recommendations for further research;
(9) Reviewing and expanding subject vocabulary;
(10) Avoiding fruitless approaches;
(11) Strengthening advocacy capacity;
(12) Guiding the decision-making process;
(13) Uncover many reasons why a larger body of evidence provides unequivocal or equivocal support for a particular strategy in multiple circumstances or with different environmental variables.

Systematic reviews provide four main advantages when compared to an individual study. First, the likelihood of being misled is lower with a systematic review than with an individual study. Second, confidence in results is higher with a systematic review than with an individual study. Third, drawing on

an existing systematic review constitutes a more efficient use of time. Fourth, a systematic review can be more constructively contested than an individual study (Neely et al., 2010).

Systematic literature review articles can be classified as domain-based, theory-based, and method-based (Paul & Criado, 2020). Domain-based reviews can be classified into five different categories (Paul & Criado, 2020):

(1) Structured review, which focuses on widely used methods, theories, and constructs in the form of tables and figures. information is generally presented in classic structured review articles so that readers can easily understand the methods that have been already been used and what theories and constructs have already been applied;
(2) Framework-based review, where the authors use a framework such as ADO (Antecedents, Decisions and Outcome), 6W or Theory, Construct, Characteristics and Methodology, likely to be suitable for the question of the review and using it as the basis of their initial coding framework. Therefore, authors of framework-based reviews have to either develop their framework or adopt an existing framework (Dixon-Woods, 2011);
(3) Bibliometric review**,** analyses an extensive amount of research through the use of statistical tools to measure certain indicators such as citations and/or co-citations, by year, country, author, journal, method, theory, and research problem. It provides insights into research trends in a particular field (Daim et al., 2006);
(4) Hybrid-Narrative reviews can be developed with a framework for setting future research agendas or integrating the tenets of both bibliometric and structured review;
(5) Review aiming for model/framework development**,** where authors develop theoretical models and/or testable hypotheses or propositions in such theory-building review articles.

Theory-Based Reviews are focused on analysing the role of a specific theory in a subject field. This type of review article synthesises and helps advance a topic that applies a given underlying theory.

Method-Based Review articles synthesize and extend a body of literature that uses an underlying methodology (either quantitative or qualitative).

4.2.3 Meta-Analysis review

A meta-analysis is a statistical analysis that combines results from different studies identified in a systematic review (Macones & Tuuli, 2019). It involves comparing studies to identify patterns, differences, or relationships that appear in the context of multiple studies on the same topic (Chen et al., 2021). By combining information from all relevant studies, meta-analyses help researchers to identify directions and to contextualise the relationships by considering moderator variables (Chen et al., 2021). It aims at developing a deeper statistical assessment of available data and findings (essential associations among variables) while combining the quantitative data with similar properties – particularly if the multiple studies yield sufficient data (Pati & Lorusso, 2018). Thus, they can be used to summarize the empirical results of previous studies. The results of a meta-analysis are more meaningful than individual single studies because it incorporates different samples into a single analysis.

The main objectives of a meta-analysis are to:

(1) Summary of integrated results analysed for their differences;
(2) Evaluate effects in different subsets of participants;
(3) Create new hypotheses to inspire future clinical studies;
(4) Explain the variability between different studies;
(5) Establish statistical significance across studies with different results.

Meta-analysis provides advantages such as:

(1) Greater statistical power;
(2) Confirmatory data analysis;
(3) Greater ability to extrapolate to the general population affected;
(4) Considered an evidence-based resource.

However, there are disadvantages such as:

(1) Difficult and time-consuming to identify appropriate studies;
(2) Not all studies provide adequate data for inclusion and analysis;
(3) Requires advanced statistical techniques;
(4) Heterogeneity of study populations.

Every meta-analysis is based on a systematic review, but not every systematic review leads to a meta-analysis. This method helps in drawing conclusions and detecting patterns and relationships between findings while facilitating investigations of the consistency of evidence across studies, and the exploration of differences across studies (Higgins et al., 2019; O'Gorman & MacIntosh, 2014). Table 7 presents the main differences between the types of literature review.

Table 7 Main differences between the types of literature review

FEATURES	NARRATIVE REVIEW	SYSTEMATIC REVIEW	META-ANALYSIS
RESEARCH QUESTION	Broad	Explicit	Explicit
RESEARCH SOURCE	Not usually specified	Explicit search approach in comprehensive sources	Explicit search approach in comprehensive sources
METHODOLOGICAL DETAIL	No methods	Explicit methods	Explicit methods
STUDY SELECTION	Not usually specified	Eligibility criteria	Eligibility criteria
STUDY EVALUATION	Variable	Rigorous critical evaluation	Rigorous critical evaluation
STUDY SYNTHESIS	Often Qualitative	Often Qualitative	Statistical synthesis
INFERENCES	Sometime evidence-based	Usually evidence-based	Usually evidence-based
EXECUTION SPEED	Rapid	Slow	Slow
RISK OF BIAS	High risk of Bias	Decreased risk	Decreased risk

5 Methodology

This section presents the methodology applied to develop the search strategy. The main steps of the systematic review are explained in section 5.1. Section 5.2 presents the PRISMA methodology and section 5.3 presents the process applied to conduct the meta-analysis.

5.1 Systematic review steps

The steps involved in the systematic review are as follows (Green et al., 2006; Higgins et al., 2019):

(1) Formulate review question;
(2) Define search keywords;
(3) Define inclusion and exclusion criteria – time frame, language, participants, outcomes, study designs and methodologies;
(4) Locate studies - develop search strategy considering the sources such as electronic databases, checking reference lists and hand-searching of key journals
(5) Select studies - have eligibility criteria checked for each study and for those studies which do not fulfil eligibility criteria, maintain a record of excluding reasons;
(6) Assess the validity of the findings of the included studies;
(7) Extract data - design and pilot data extraction form;
(8) Consolidate the information in a logical and coherent statement;
(9) Analyse and present results - tabulate results from individual studies, examine forest plots, explore possible sources of heterogeneity, and consider meta-analysis;
(10) Interpret results - consider limitations, applicability and implications for future research.

5.1.1 Review question formulation

The first step in a systematic review is to determine its focus which should be presented through a framed question to which the review seeks to answer (Higgins et al., 2019). Well-formulated questions will direct many aspects of the review process, including determining eligibility criteria, searching for studies, collecting data, and presenting results. Thus, defining the central question of a systematic literature review is crucial. The research question should be explicitly constructed to obtain an answer that allows to meet the research objectives. The question that arises in the present work is - Which dimensions determine the satisfaction of inpatients?

5.1.2 Choice of keywords

A detailed search was performed from December 2021 to February 2022. The electronic databases were searched using the following terms: “predictors”, “determinants”, “factors affecting”, “dimensions”, “aspects”, “attributes”, “inpatient satisfaction”, and “hospitalized patient satisfaction”. Boolean operators like “AND” and “OR” were used to combine search terms. It was also conducted a manual search of reference lists of relevant articles to identify additional pertinent publications. All included studies were listed to eliminate duplications.

5.1.3 Criteria of inclusion and exclusion

A systematic review of the literature requires the specification of the criteria for eligibility of the studies to be analyzed, to limit the references to those who are relevant to conduct the study. Inclusion and exclusion criteria are defined based on the combination of aspects inherent to the research question, specification of the type of participants, intervention, eventual comparisons, and study design. The inclusion and exclusion criteria of articles are presented in table 8.

Table 8. Criteria of inclusion and exclusion

CRITERIA OF INCLUSION	CRITERIA OF EXCLUSION
Written in English	Studies without full text
Published from January 2012 and February 2022	Government or organisational reports, books or book chapters, conference abstracts or proceedings, dissertations, theses, reviews, commentaries, editorials, notes, expert opinions, and letters
Studies that reported at least one associated factor of patient satisfaction	Studies with poor methodological quality
Studies that present results through statistical data	Studies that did not meet the eligibility criteria
Studies in which the participants included were inpatients	
Studies published in journals.	

Inclusion and exclusion criteria were assessed through screening titles, abstracts, and full-text reports. Retrieved articles were assessed for inclusion before inclusion in the final review. Data were extracted for all eligible studies.

5.1.4 Information sources

This step comprehends the decision of the search sources. The main search for this review was conducted from December 2021 to February 2022 in two central databases – Science Direct and PubMed. In addition reference lists of included studies were also searched.

5.1.5 Data extraction

After inclusion and exclusion criteria were applied, data from relevant studies were extracted using a data extraction table prepared in a Microsoft Excel spreadsheet. Mendeley v1.19.8 reference management software for Windows was used to download, organize, review, and cite the articles. Studies were characterized by the author(s), country of research, year of publication, journal, SCIMAGO index, methods of analysis, type of healthcare system, medical speciality, satisfaction associated determinants and main conclusions. Based on these data, a table was constructed providing an overview of the collected studies and enabling the comparison between studies.

5.2 PRISMA

In order to facilitate transparent and complete reporting of systematic reviews and meta-analyses, the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement was developed in 2009 by a group of 29 review authors, methodologists, clinicians, medical editors, and consumers (Liberati et al., 2009; Page et al., 2021). Its recommendations have been widely adopted (Page et al., 2020).

Over the past decade, advances in systematic review methodology revealed the need for a guideline update. The PRISMA was updated in 2020 replacing the 2009 statement. The new reporting guidance reflects advances in methods to identify, select, appraise, and synthesise studies. It consists of a 27-item checklist that details reporting recommendations for each item and a four-phase flow diagram. The checklist includes items essential for transparent reporting of a systematic review and covers all aspects of the manuscript, including title, abstract, introduction, methods, results, discussion, and funding (Page et al., 2021).

The procedure for this systematic review and meta-analysis was designed by the PRISMA guidelines. The PRISMA flow diagram is presented in figure 3. The four phases included in the PRISMA flow diagram are:

(1) Identification, where the keywords are entered in chosen databases;
(2) Screening of the titles and abstracts;
(3) Eligibility, where the full-text articles are checked for the inclusion and exclusion criteria;
(4) Inclusion, where the studies are added to the final sample.

The first step of the PRISMA is identification. Search keywords were entered in two electronic databases – Science Direct and PubMed, during December 2021 and February 2022. Reference lists from included studies were hand searched. All included studies were listed to eliminate the duplications and resolve proper reporting guidelines for the selected articles. The initial search identified 1975 titles and abstracts. Of these, 37 were duplicated and thus, removed.

After the elimination of the duplicates, there were 1938 titles and abstracts for the screening phase. From these articles, 1719 were excluded since they failed all inclusion criteria or included at least one exclusion criterion.

The main reasons for exclusion were articles being related to:

(1) Wrong patient population – not inpatient;
(2) Review articles;
(3) Conference papers;
(4) Written in languages different from English
(5) Did not measure satisfaction from the patient perspective.

These were identified during the title and abstract reviewing process with eligibility criteria application, and they were removed from the list of eligible full articles. After this step were left 219 potentially eligible full articles and the eligibility criteria were applied to each of them. The reports sought for retrieval were 219, but 116 could not be retrieved. Reports assessed for eligibility were 103, which underwent full-text review. Of these, 33 did not present clear results or had incongruencies within the

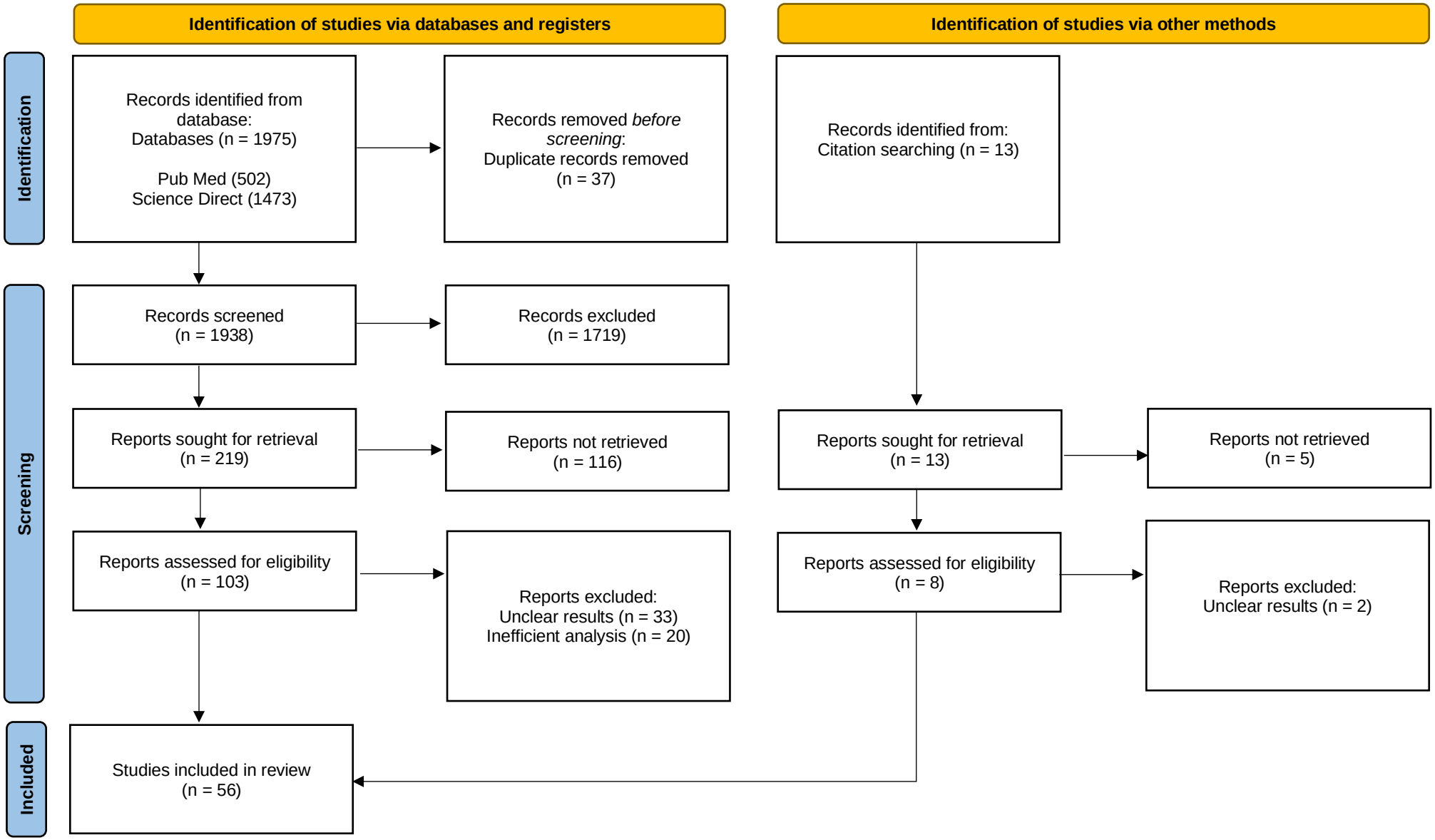

Figure 3. PRISMA flow chart

text and 20 had inefficient analysis or did not present statistical analysis at all, thus were removed. In addition, 13 articles were identified by manually searching cross-references. Of these 13, five articles could not be accessed and two were excluded as they provide unclear results. Thus, from this method, six articles were added to the final sample. After these phases, 56 studies were included in the review.

5.3 Meta-Analysis

A meta-analysis works in conjunction with systematic reviews. Considering the set of studies selected and included in the analysis, there is a need to use a statistical tool on the data to improve the validity of the results. Through a meta-analysis, data from each of the studies under review is gathered and combined all together in a database. Appropriate statistics are performed on the sample, allowing to establish statistical significance across the included studies and introducing greater statistical power. A set of questions was constructed to extrapolate relevant relationships between variables from the present study, as a way to incorporate further information for future researchers.

These questions are related to the influence of the type of health system, the country, the medical speciality and the methodology on the determinants of satisfaction. This is particularly relevant because patient satisfaction represents not only but also their degree of satisfaction with their perception of a hospital's quality management regarding the services provided. If currently there are four main healthcare systems in the world each one operating differently, it is important to evaluate which determinants influence patient satisfaction in each type of healthcare system. Identically, medical specialities differ from one another, thus being important to assess which determinants should be measured and if they vary across medical specialities. These determinants can then be converted as performance indicators of the health system and can have a major influence on the national decision-makers to understand the characteristics and processes that contribute to the relative levels of patient satisfaction. While improving and excelling the factors that make patients satisfied, patients are more likely to follow treatment and care plans and attend follow-up appointments, which results in better health outcomes. In addition, providers that manage to keep patients satisfied will increase patient loyalty, attract new patients, increase their staff satisfaction and strengthen their market reputation.

1. Is the evidence regarding each one of the determinants related to the type of healthcare system?
2. Is the evidence regarding each one of the determinants related to the country?
3. Is the evidence regarding each one of the determinants related to the medical speciality?
4. Is the evidence regarding each one of the determinants related to the methodology?

The software SPSS Statistics (version 28) was used to analyse the association between the above-mentioned variables. The statistical analysis was performed using the chi-square test which compares variables in a single sample to determine whether there is an association between them. The null hypothesis H_0 is that the variables of interest are independent; the alternative hypothesis H_1 is that the variables are associated. A significant test rejecting the hypothesis H_0 (p-value < 0.05) would suggest that in the considered sample, the variables analysed are associated with each other.

6 Results and discussion

This chapter is divided into eight sections. Section 6.1 presents a statistical overview of data; from section 6.2 to section 6.6 an overview of the journals, years, countries, type of healthcare system and methods used respectively, are presented. Section 6.7 assesses the determinants affecting satisfaction according to each one of the studies and section 6.8 presents the meta-analysis.

A total of 56 articles were identified from which evidence was analysed about how individual factors and various health service features affected reported satisfaction. The 56 studies selected through the PRISMA methodology underwent the data extraction process. In this process, the key characteristics of selected studies are collected in a structured and standardised form. An excel table was designed to facilitate the process and guarantee that all important information was gathered. The following relevant data was retrieved from each one of the studies: Author name, publication's year, country of publication, journal, SCIMAGO index, objectives, health system type, medical speciality, year(s) studied, methods of analysis, and main conclusions. The excel table with filled information by articled is presented in Appendix A.

6.1 Statistical overview of the sample

Based on the excel table, it was possible to apply statistical measures to the data. The statistical indicators calculated were the number of years studied, number of methods of analysis and number of determinants associated to patient satisfaction. Table 9 presents the statistical measures obtained.

Table 9. Statistical measures applied to included studies

	NO. OF YEARS STUDIED	NO. OF METHODS	NO. DETERMINANTS
MEAN	1,83	1,80	4,98
MEDIAN	1,00	2,00	4,50
MODE	1,00	2,00	3,00
STANDARD DEVIATION	1,73	0,84	2,66
COEFFICIENT OF VARIATION (%)	94,54%	46,67%	53,46%
MINIMUM VALUE	1,00	1,00	1,00
MAXIMUM VALUE	10,00	5,00	12,00

The statistical data obtained provides a brief insight into the literature review. First of all, the number of years studied data provides an insight regarding the number of years during which the survey was applied to the patients in the studies considered in this work. The average number of years that the surveys were conducted was 1,83 years. However, most studies conducted the surveys for only one year. A study was found conducting the survey for ten years, the maximum number of years of this sample.

Concerning the number of methods employed while developing the data analysis collected through the surveys, most studies utilized two methods. One study developed a deeper analysis, utilizing five methods. Through the use of more methods, authors are frequently looking to obtain more accurate results. The use of more methods during the analysis also allows comparing the different methodologies and the variations in results obtained.

Regarding the number of determinants, the average number of determinants found to have an association with inpatient satisfaction was around five. The maximum number of determinants found to have an association with inpatient satisfaction was 12 and the minimum was one.

6.2 Statistical overview of journals and authors

The sample of 56 articles was obtained from 40 different journals. The top ten journals with more published articles are displayed in Table 10. These ten journals together published a total of 46% of all studies of the sample. Six journals are related to the field of health care, patient satisfaction preferences and expectations and quality of care. Most journals present Scimago quartiles Q1 or Q2, journal indicators that range from Q1 to Q4. This is a measure of a journal's impact, influence, and prestige. These quartiles were obtained from the Scimago Journal and Country Rank website, an open access scientometric directory with more than 27,000 scientific journals and other types of publications.

Table 10. Ten most utilized journals and scimago quartile category

JOURNAL	NUMBER OF STUDIES	% OF STUDIES	SCIMAGO QUARTILE
PATIENT PREFERENCE AND ADHERENCE	5	8,93%	Q1
INTERNATIONAL JOURNAL OF HEALTH CARE QUALITY ASSURANCE	4	7,14%	Q2
PLOS ONE	3	5,36%	Q1
JOURNAL OF SURGERY	2	3,57%	Q1
BMJ OPEN	2	3,57%	Q1
BMC RESEARCH NOTES	2	3,57%	Q2
SAGE OPEN	2	3,57%	Q2
HEALTH EXPECTATIONS	2	3,57%	Q1
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2	3,57%	Q2
JOURNAL OF MEDICINE	2	3,57%	Q2

The journal with the highest contribution is the patient preference and adherence, followed by the international journal of health care quality assurance. The first journal assesses topics in the area of medicine, health policy, pharmacology, and social sciences. The second journal publishes work that contributes to the continuous improvement of health care organisations, providing a forum for current

thinking on the theoretical and practical aspects of quality and management in health care. More specifically, studies gathered from these journals were related to patient satisfaction across different healthcare providers.

6.3 Statistical overview of years studied

Examining the variation of publication through the years is also an important issue to address since it provides insights regarding both the importance given to the subjects and their evolution over time. Figures 4 and 5 show the fluctuation of studies and the cumulative number of studies published over the years considered in this work, respectively.

According to the current sample, the evolution of inpatient satisfaction has not been linear nor a clear tendency can be identified. A growing tendency was expected since the subject of patient satisfaction has been a growing concern to both private and public organizations as an attempt to both capture new patients, retain existing patients and in some countries to guarantee cost coverage support. However, the data shows an absence of pattern, with ups and downs along time.

The year with the most publications in the field was 2021 (14 studies) being also the year with the highest number of publications in ten years. This may be a result of the Covid-19 pandemic. The healthcare industry was one of the most overloaded industries. Hospitals and medical care facilities were overrun with patients. Some recent studies have been recognizing the decrease in patient satisfaction during the pandemic (Alhowaymel et al., 2022; Grissom et al., 2021; Satpathy et al., 2022). Many factors have been identified, but mostly this outcome results from a combination of:

(1) Patients with non-Covid-19 related concerns that were staying away from hospitals, and not interacting with their providers as much leaving fewer opportunities for them to be satisfied;
(2) A decrease and postponement of consultations due to hospital overcrowding;
(3) Lack of resources both human and equipment;
(4) Overall incapacity of hospitals to attend to patients with the same level as before.

Given the scenario, in 2021 it was inevitably clear the need to improve and step up the assessment of patient satisfaction. This may have led scholars to focus on the issue and may have led to an increase in studies published. On the other hand, perhaps the clear increase in publications in 2021 can indicate a future path of concern regarding the issue. Of course, in 2022 it is not possible to draw any conclusion given the time frame considered for this work (until February 2022).

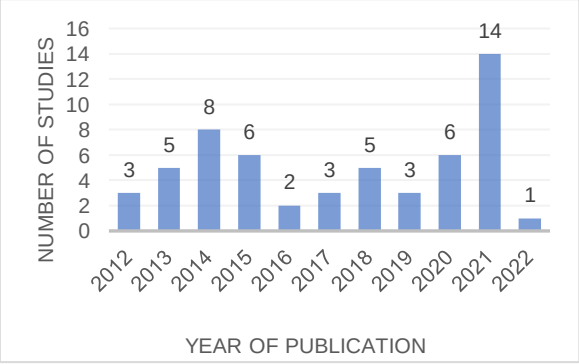

Figure 4. Published studies per year

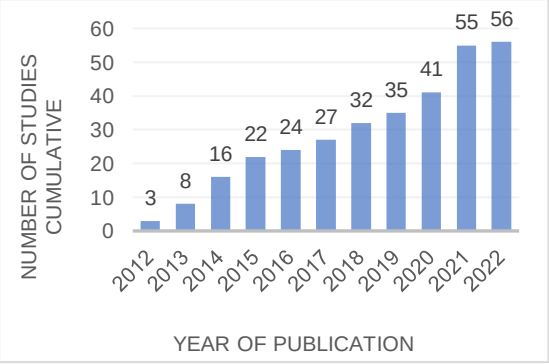

Figure 5. Published studies per year (cumulative)

6.4 Statistical overview of countries studied

Regarding the countries in which the patient satisfaction assessment study was conducted, a total of 23 countries and four continents were identified. Figure 6 presents the studies by country and figure 7 presents the studies by continent.

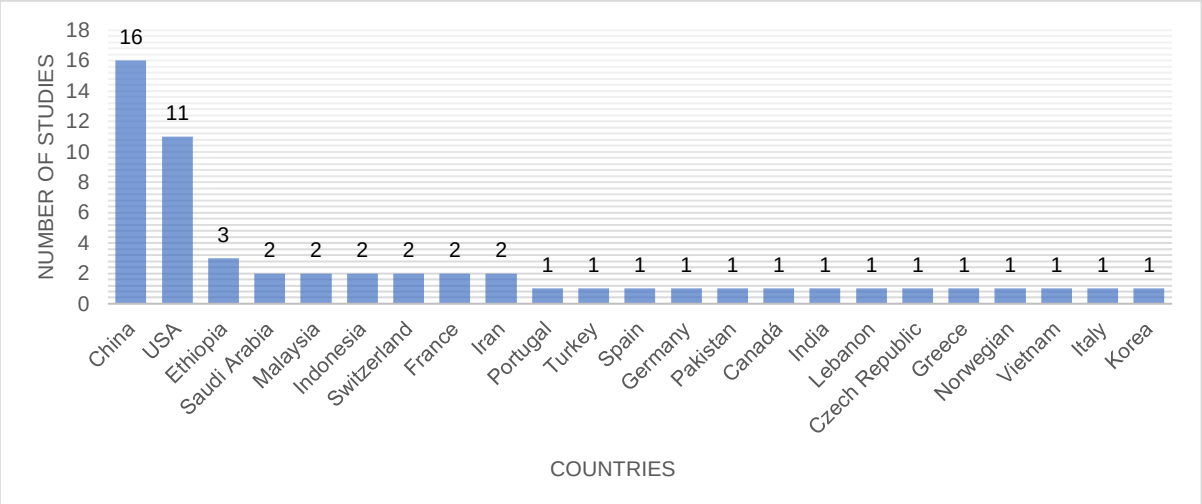

Figure 6. Countries studied

Of the 23 countries that were present in the studies, China is the country with the highest number of studies, representing 29% of the sample. This may be related to the fact that in China, until recently, the physician used to be authoritarian to the patient, in an imbalanced patient-practitioner relationship, where patients follow treatment advice from physicians and play a passive role in the care process. Currently, this mindset in China is shifting, and moving towards the European and North American patient care approach where the patient is the centre of care and has an active role as regards to opinion and decision making. In fact, in 2015 the Chinese government released a national healthcare development program with clear goals to enhance both patient experience and satisfaction (Zhou et al., 2018). This may have uncovered a need to assess patient satisfaction as a primary focus of healthcare organizations in China, leading scholars to increase the research in this field.

The United States of America is the second country with 20%. This fact is related to the healthcare Pay for Performance (P4P) (Value-Based Purchasing) policy in the USA, where hospitals and healthcare facilities are reimbursed for metric-driven outcomes, best practices, and patient satisfaction. Thus, it is clear the need for constant assessment of patient satisfaction, to improve performance and reimbursements.

However, when analysing from a continent perspective, it is possible to conclude that Asia is the continent with more published studies considered in this work (51,8%). Europe and North America each equally represent 21,4% of the total studies included. Africa accounts for 5,4% of studies, referring to only three Ethiopian studies. To some extent, patient satisfaction studies can imply the concern of government entities regarding patient satisfaction and healthcare quality. The low number of studies published in Africa may indicate a need for improvement in patient satisfaction in the continent. Whilst important improvements have been made in Africa's healthcare provisions, healthcare financing remains the greatest hurdle towards quality and accessible healthcare on the continent. For the vast

majority of Africans still unable to pay for health provision, new models of care are being designed, as governments begin to acknowledge the importance of preventive methods over curative action. The sizeable gap in healthcare infrastructure and increase in urbanization creates a demand for additional healthcare facilities. A growing urban middle class is willing to pay for better treatment which increased the need to provide better healthcare facilities and access to medicine at an affordable price. Both healthcare infrastructures and healthcare access are very limited in quantity and quality. Thus, scholars may be currently facing other crucial challenges rather than patient satisfaction, which reflects in the low number of publications on the subject. It is only expected that because Africa's healthcare systems are at a turning point, several improvements will take place in the coming years and with that, an increase in studies published so that the improvements can be endorsed with scientific support.

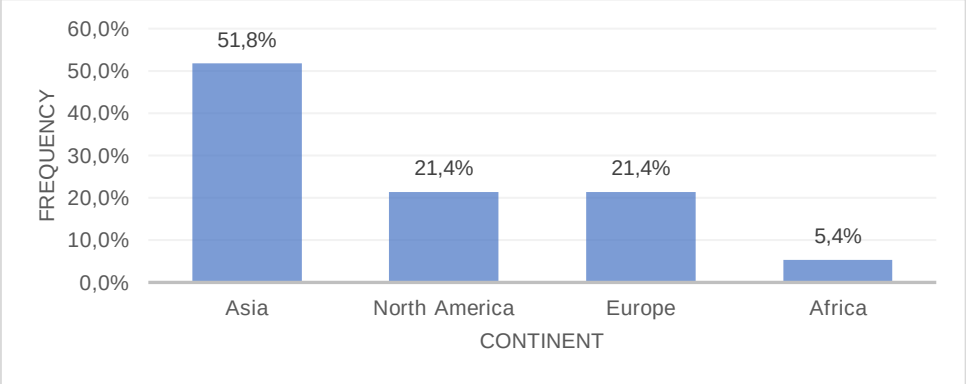

Figure 7. Continents studied

6.5 Statistical overview of the healthcare system

The world has four main healthcare systems, as previously presented. However, each country devises its own set of arrangements for meeting the three basic goals of a health care system: keeping people healthy, treating the sick, and protecting families against financial ruin from medical bills. Thus, at this time there are no pure healthcare systems. Instead, each country has employed the basic structure of one or more healthcare systems, adapted the system to their needs and implemented additional specific measures that can better serve the population of that country. Globally, the result is the existence of four main healthcare systems with variations across countries. Nevertheless, for all the local variations, health care systems tend to follow general patterns.

Countries adopt different systems to provide health care to their citizens, with different levels of government and private sector involvement. The spectrum of ways in which health care is delivered around the world can be gathered into four general systems, from universal coverage under fully funded national programs to no coverage at all, requiring individuals to pay for health care fully out of pocket. Table 11 presents the type of healthcare system for each one of the countries that were observed in the studies. Table 12 provides an overview of the number of studies and frequency of each type of system.

Table 11. Healthcare system by country

COUNTRY	TYPE OF HEALTHCARE SYSTEM	REFERENCE
CANADA	NHI	(Wallace, 2013)
CHINA	NHI	(Fang, 2020)
CZECH REPUBLIC	Bismarck	(Kinkorová & Topolčan, 2012)
ETHIOPIA	Out-of-Pocket	(Borde et al., 2022)
FRANCE	Bismarck	(Wallace, 2013)
GERMANY	Bismarck	(Wallace, 2013)
GREECE	NHI	(Exadaktylos, 2005)
INDIA	Beveridge	(Chokshi et al., 2016)
INDONESIA	NHI	(Nugraheni et al., 2020)
IRAN	NHI	(WHO, 2016)
ITALY	Beveridge	(Ferre et al., 2014)
KOREA	NHI	(Kwon et al., 2015)
LEBANON	Out-of-Pocket	(Salti et al., 2010)
MALAYSIA	Beveridge	(Safurah et al., 2013)
NORWEGIAN	Bismarck	(Saunes, 2020)
PAKISTAN	Out-of-Pocket	(WHO, 2018b)
PORTUGAL	Beveridge	(Nunes, 2018)
SAUDI ARABIA	Beveridge	(Walston et al., 2008)
SPAIN	Beveridge	(Wallace, 2013)
SWITZERLAND	Bismarck	(Wallace, 2013)
TURKEY	NHI	(Tatar et al., 2011)
USA	Out-of-Pocket	(Lakhan et al., 2020)
VIETNAM	Out-of-Pocket	(Federal Research Division, 2005)

Table 12. Number of studies by healthcare system

HEALTH SYSTEM	NUMBER OF STUDIES	FREQUENCY
NHI	24	42,86%
OUT-OF-POCKET	17	30,36%
BEVERIDGE	8	14,29%
BISMARCK	7	12,50%

6.6 Statistical overview of methods used

Regarding the methodologies used by authors when analysing inpatient satisfaction survey answers and associated variables, 20 methods were found. The most used methodology is logistic regression used in 15 studies, followed by Cronbach's Alpha test used in 13 studies and Linear Regression used in 11 studies. Figure 8 presents the top ten methods used in the considered studies. These ten top methods were used 78 times, while the other ten methods were used only 20 times. As was expected, the logistics regression was the most used method since it is the process of modelling the probability of a discrete outcome given an input variable. It enables the understanding of the relationship between the dependent variable and one or more independent variables by estimating probabilities. Similarly, linear regression was also expected to be one of the most used methods in this scenario. Linear regression analysis is used to predict the value of a variable based on the value of another variable. This is exactly what most studies were looking for, associating variables obtained through survey answers to infer which factors are determinants of patient satisfaction. The Cronbach's Alpha is one of the most common tests for internal consistency assessment, thus being of great importance in this subject, not unexpected to be one of the most used methods.

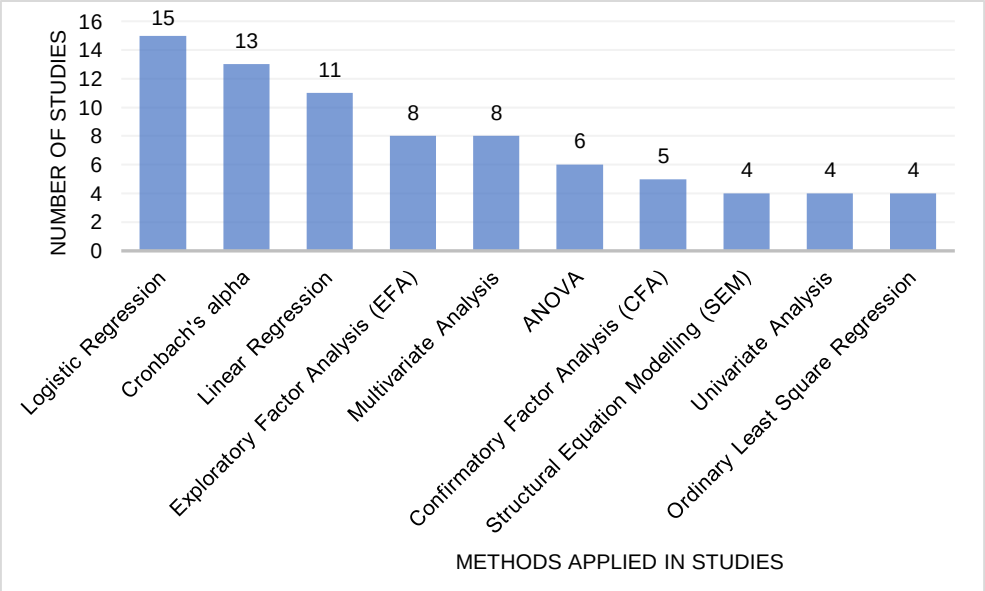

Figure 8. Top 10 most used methods in studies

6.7 Statistical overview of inpatient satisfaction determinants

Numerous studies have dived deep into the topic of determinants of patients' satisfaction. The current study analysed patient satisfaction determinants to i) provide an overview of the factors that healthcare providers can directly manage to improve patient satisfaction, and ii) provide an overview of how each group of patients behave so that providers can customize their program approaches according to the socio-demographic characteristics each group. Of course, patient-related predictors of patient satisfaction are uncontrollable by the provider but should be also known to provide a better

understanding of how satisfaction can be improved in each one of the patient groups and to deliver an accurate interpretation of user evaluations of healthcare delivery.

Considering the objectives of this study, variables were extracted from the literature and the individual factors that affect satisfaction were grouped into two categories: (i) healthcare provider-related determinants and (ii) patient-related determinants, presented in table 13. Study results regarding this section are presented in Appendix B.

Table 13. Determinants of inpatient satisfaction

HEALTHCARE PROVIDER DETERMINANTS	PATIENT RELATED DETERMINANTS
Technical Care	Age
Interpersonal Care	Gender
Physical Environment	Education
Access	Income
Organisational Characteristics	Marital Status
Outcome Of Care	Ethnicity
Cost	Geographic Characteristics
Pain Management	Health Condition
Length Of Stay	Emotional Status
	Occupation

6.7.1 Healthcare provider determinants

Fifty-six studies assessing the determinants that may influence inpatient satisfaction were analysed in this work. Of these studies, 55 included healthcare provider determinants in their studies, meaning only one study did not consider these determinants. Of the nine determinants concerning the healthcare provider characteristics, interpersonal care was the most analysed factor being included in 43 studies (77%), followed by organizational characteristics, included in 27 studies (48%) and physical environment, analysed in 26 studies (46%). Figure 9 presents the percentage of studies including each one of the healthcare provider-related determinants. Each one of the determinants and corresponding statistics will be described below.

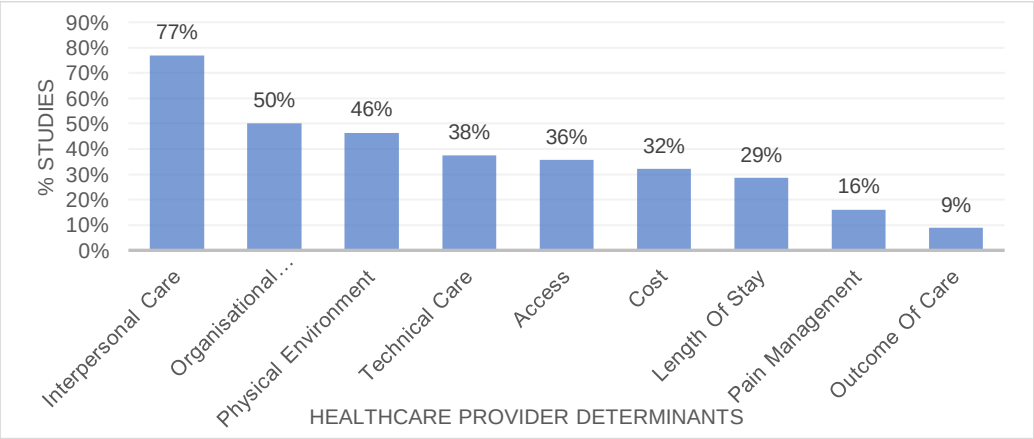

Figure 9. Percentage of studies including healthcare provider-related determinants

6.7.1.1 Interpersonal care

Interpersonal care comprises the behaviours of physicians, nurses, and staff regarding the patient. Such behaviours reflect interpersonal skills and communication which are important competency domains especially when in a healthcare environment (Alemu, 2014).

Interpersonal care refers to the extent of interaction of physicians, nurses and staff with the patient concerning several relational aspects such as communication, sharing, participating, active listening, companioning, comforting, caring, and noticing. It further includes the empathy that professionals express for a patient and the friendliness of physicians. It refers to the ability of the provider in understanding patient concerns, explain healthcare issues, respond to the patient's calls and requests, engage in shared decision-making if desired and spend time with the patient. Reliability regarding staff commitment to providing services at a specified time. Additionally, it also refers to communication between hospital staff and caregivers because in some cases healthcare professionals feel more comfortable communicating openly with family members than with patients (B. Liu et al., 2021) and in other cases where patients cannot fully understand what the physicians communication.

Forty-three studies have included interpersonal care in their analysis, representing 77% of the total number of studies (Table 14). From these, all 43 studies (100%) revealed evidence that aspects of interpersonal care may have effects on patients. In fact, all studies found a positive association between interpersonal care and inpatient satisfaction, meaning that establishing an interpersonal care relationship between physicians, nurses and medical staff and the patients, will lead to higher levels of inpatient satisfaction. This was also verified in six other reviews on patient satisfaction determinants, as it is presented in chapter 3.1. In fact according to Crow et al., (2002) the most important health service factor affecting satisfaction is the patient-practitioner relationship, including information giving. This was also found in other three studies on inpatient satisfaction. According to Zendjidjian et al., (2014) the relationship between patients and physicians was the most important and constant feature associated with a patient's satisfaction. A high alliance between the patient and the therapist result in higher inpatient satisfaction (Zendjidjian et al., 2014). The domain patient-doctor relationship was found to be the strongest predictor of overall patient satisfaction (Sun et al., 2017). This conclusion was also reported by Gavurova et al., (2021) in which the strongest factor with a direct impact on patient satisfaction with inpatient care was satisfaction with healthcare professionals, namely physicians, nurses, as well as other staff. A good physician-patient relationship can increase work satisfaction and enhance patient self-confidence as well as a positive image of their health status that may affect the outcome of the disease.

Five main attributes were found related to interpersonal care throughout the analysis:

1. Communication – bidirectional interaction between healthcare professionals and the patients;
2. Information sharing– when and how medical information is given to the patients;
3. Trust – confidence in physicians and medical staff;
4. Empathy and sympathy – acknowledge emotions with respect and support;
5. Inclusion – physician's ability to include the patient in decision-making processes;
6. Confidentiality – maintaining the patient information confidential.
7. Tailored care – ability to provide care adapted to the patient's preferences and tendencies;
8. Honesty – medical staff's integrity, truthfulness, and straightforwardness.

Table 14. Evidence on interpersonal care

	INCLUDED INTERPERSONAL CARE (*n* = 43)	ASSOCIATION (*n* = 43)	NO ASSOCIATION (*n* = 0)
PERCENTAGE OF STUDIES	77% (43 out of 56)	100% (43 out of 43)	0% (0 out of 43)
REFERENCES	(Aga et al., 2021; Al-Borie & Damanhouri, 2013; Alaloul et al., 2015; Alemu, 2014; Amin & Nasharuddin, 2013; Ammo et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Chen et al., 2016; Gavurova et al., 2021; Hazilah Abd Manaf, 2012; Heberer et al., 2015; Hussain et al., 2018; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Li et al., 2021; Liang et al., 2021; Liu et al., 2021; M. Liu et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Más et al., 2016; McKinley et al., 2018; Mitropoulos et al., 2018; Naik et al., 2013; Nguyen et al., 2020; Pan et al., 2015; Park, 2015; Park et al., 2021; Puppala et al., 2020; Schmocker et al., 2015; Shan et al., 2016; Shang et al., 2021; Siddiqui et al., 2014; Silva et al., 2018; Sun et al., 2017; Wulandari et al., 2021; Xu et al., 2022; Zendjidjian et al., 2014; Zhang et al., 2020; Zhi et al., 2021; Zineldin, 2015)	(Aga et al., 2021; Al-Borie & Damanhouri, 2013; Alaloul et al., 2015; Alemu, 2014; Amin & Nasharuddin, 2013; Ammo et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Chen et al., 2016; Gavurova et al., 2021; Hazilah Abd Manaf, 2012; Heberer et al., 2015; Hussain et al., 2018; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Li et al., 2021; Liang et al., 2021; Liu et al., 2021; M. Liu et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Más et al., 2016; McKinley et al., 2018; Mitropoulos et al., 2018; Naik et al., 2013; Nguyen et al., 2020; Pan et al., 2015; Park, 2015; Park et al., 2021; Puppala et al., 2020; Schmocker et al., 2015; Shan et al., 2016; Shang et al., 2021; Siddiqui et al., 2014; Silva et al., 2018; Sun et al., 2017; Wulandari et al., 2021; Xu et al., 2022; Zendjidjian et al., 2014; Zhang et al., 2020; Zhi et al., 2021; Zineldin, 2015)	-

Evidence from each one of the aforementioned attributes is presented as follows.

1. Communication

Communication was one of the main attributes found to be associated to patient satisfaction in the studies including verbal, nonverbal, visual, and written communication. It involves the medical staff's attentive listening, encouraging patients to explain concerns, seeking to clarify topics, checking for understanding and assessing the patients' feelings. Effective physician-patient communication is an important clinical skill to build a physician-patient relationship. In fact, according to Mitropoulos et al. (2018), communication with nurses was found to be the most salient predictor of overall satisfaction, followed by communication with doctors. This was also demonstrated by Alaloul et al. (2015). The level of patient satisfaction strongly depends on the adequacy of communication between clinician and patients and it depends on the communication style of the physician that emphasizes decency, warmth and showing love and affection (Gavurova et al., 2021; Puppala et al., 2020). Clear and consistent pain-related communication, emotional communication and medical information exchange between patients and nurses were found to significantly improve patient satisfaction (Alaloul et al., 2015; Li et al., 2021).

In surgery department studies, given that patients must enter into explicitly trusting relationships with their surgeons to agree to undergo any operative procedure, interpersonal skills are especially critical for surgeons. This will increase the patient's trust in doctors and nurses, improve treatment and nursing compliance and increase patient satisfaction (Li et al., 2021). This was also verified by Schmocker et al. (2015) according to which patients highly value the ability of the surgeon to connect

with patients meaning to listen carefully, encourage questions, attentiveness on the surgery day, show respect, and spend time with patients. This was especially verified after medical intervention.

Doctor-patient communication and nursing care were found to play central roles in improving and restoring patients' health (Arab et al., 2014). According to McKinley et al. (2018) physicians scores higher levels of patient satisfaction when they encouraged patients to ask questions and when they discussed the outcome of the surgery. Furthermore, hospital staff responsiveness regarding patients' concerns, inquiries and complaints, regardless of the degree of concern was also shown to be important behaviour (Al-Borie & Damanhouri, 2013).

In opposite, poor communication between healthcare professionals and their patients is considered a key problem in the growing number of complaints against the healthcare profession worldwide (Zhang et al., 2020). Poor communication was found to be one of the main reasons for patient dissatisfaction (Pan et al., 2015). Thus, studies reveal that poor communication and inappropriate staff attitudes reduce patient satisfaction.

It is effective to understand the actual needs of patients and improve communication skills through professional training. The effect of the training increased the communication of nurses with their patients so that the level of patient satisfaction significantly increased (Alemu, 2014). In fact, Amin & Nasharuddin (2013) suggested that both public and private hospitals should provide effective training and courses for all staff including nurses, doctors and general staff to enhance their skills in communication and motivation for them to provide a good service to patients. Through motivation and such courses, it will motivate them to work efficiently, especially in handling patients. Thus, hospitals should improve service attitudes and communication with patients to increase patient satisfaction (Shang et al., 2021). Creating a care process that includes a window within which nurses, doctors and staff must communicate with patients following a procedure or post-admission can improve patient satisfaction (Xu et al., 2022).

2. Information sharing

Information sharing concerns the way medical information is given to the patients which ideally should be in a way of easy understanding. According to Más et al. (2016) patients who experienced clarity of information about the reason for admission, absence of contradictory information from staff, clear explanations of the treatment and care to be observed by the patient at home and the opportunity to ask doctors questions concerning the discharge report were more satisfied. Hazilah Abd Manaf (2012) and Silva et al. (2018) concluded that patients who received information about their condition were more satisfied. This feedback helps to reduce the patients' psychological stress. According to Liu & Mao 2019 illness explanation, medical service attitude and trust in physicians were significantly related to inpatients' overall satisfaction. Patients receiving recommendations about care from nurses were more satisfied than those who did not receive them (Laal, 2013).

Ward rounds were also related to information sharing and communication in Puppala et al. (2020). When regarding doctors' ward rounds, patients are more satisfied when there is doctor–patient communication and information sharing during the round period. It helps to develop an understanding of the patient's condition and provides an opportunity to discuss a diagnosis and treatment plan. In addition, according to the patient's condition, changes can be made to adjust the doctor's orders, thus

improving the patient's condition, and providing patients with effective treatment. Rounds in perioperative areas allow the doctor to answer patient and family questions. Patients hope doctors will come to them during rounds because they will hear news of their progress and, perhaps, whether they can go home. Recommendations regarding doctor's rounds were made in Puppala et al. (2020), suggesting that hospitals should apply frequent rounding, at least two times a day, to meet the patient's needs.

Zhang et al. (2020) concluded that interaction with nurses plays a vital role in patient satisfaction. Patients were least satisfied when the nurses were lacking the patient's needs. This might be explained by the nurse's heavy workload, who spent more time completing doctor's orders and therapeutic work, and less time spent communicating with patients and conducting health education. With such a workload, nurses provide incomplete information that could not meet patients' needs. Additionally in the same study, it is revealed that nurses' working years also influence patient satisfaction. In fact, patients in the charge of junior nurses were more satisfied than those in the charge of senior nurses. The reason may be that senior nurses have rich clinical experience and better-operating skills, but most of them have a sense of job burnout, which has a negative impact on patient satisfaction. On the other hand, junior nurses are mainly engaged in first-line clinical nursing, while senior nurses may be performing ward organisation and management. Therefore, senior nurses have less communication with patients, thus affecting patients' satisfaction with their work.

3. Trust

Trust in physicians and medical staff and their relationship with higher patient satisfaction was also present in the studies. In fact, satisfaction with trust in physicians was identified as the strongest influencing factor related to the inpatients' overall satisfaction which implies that building a better patient-physician relationship will contribute to improving inpatients' overall satisfaction (Chen et al., 2016). Better trust in physicians would help patients to better cooperate with physicians' treatment and would contribute to better medical service outcomes. In addition, patients who trust their doctors are more likely to recommend physicians to other people (Gavurova et al., 2021; Shan et al., 2016; Zineldin, 2015).

4. Empathy and sympathy

Enthusiasm and empathy among hospital staff led to patient satisfaction. Patients could feel respect and politeness from positive medical service attitudes of health workers and were more satisfied (Al-Borie & Damanhouri, 2013). Furthermore, it is also important that hospital staff is characterised by humanity, decency and civility (Al-Borie & Damanhouri, 2013; Gavurova et al., 2021).

5. Inclusion

Some studies revealed that patient participation in shared decision-making has a great positive influence on inpatient satisfaction, especially because the information is provided to the patient before treatment, concerning medical expenses, treatment procedures and the expected outcome (Luo et al., 2021; Schmocker et al., 2015). The patient's input is taken into account and treatment plans can be

reorganized. The patient also provides informed consent when treatments or procedures are high risks, expensive or involve considerable out-of-pocket costs, and hospital-level commitment (Luo et al., 2021).

6. Confidentiality

Ensuring privacy and confidentiality for services provided has been shown to increase patient satisfaction (Asamrew et al., 2020). Accordingly, lack of attention to protecting patient privacy was also related to less satisfied patients. Participants who report their feeling on ways privacy was assured were more satisfied than participants in whom measures were not taken to assure privacy (Aga et al., 2021). According to Zhang et al. (2020) patients reported the highest satisfaction when nurses treated them as an individual and respected their privacy.

7. Tailored care

Interactions between patients and staff need to be adequate to the needs and the procedure of each patient. Differentiated and humanized approaches should be adapted to each patient and made accordingly to the condition of the patient. Surgical patients might be more nervous and in need of extra assurance before surgery, then once in recovery, they can benefit from proper nurse assistance, and when discharged, proper instructions for recovery and billing assistance (Puppala et al., 2020). For patients with vascular diseases, it is important to provide synchronized care and education about their condition to treat associated conditions (Puppala et al., 2020).

The quality of the information provided to the patient on discharge, description of medication and drug side effects, highly accounted for patient satisfaction variance (Heberer et al., 2015). For oncology patients, health care providers need to go beyond their clinical duties and provide emotional support, information to family members, care coordination among specialists, lifestyle explanation, and practical issues such as parking for medical appointments and treatment costs. Oncologic patients greatly value the information provided by medical staff about their illness and treatment, the time spent with the physician and the interpersonal skills of the physician. Given the importance of patient satisfaction to treatment compliance, it is recommended that oncologists consider evaluating patient expectations for support, issues concerning treatment planning (including side effects and fatigue), and involving the family in medical decisions (Puppala et al., 2020).

In addition, the study conducted by Ryu et al. (2016) concluded that personalized service enhances patient satisfaction during hospitalization. This study assessed the personalized service Smart Bedside Station, which allows the patient to keep receiving updated information regarding individual health indicators, laboratory test results, message logs, daily medication information and meal information. This allows the patient to be fully connected and with real-time access to information up to date. This was also observed by Koné Péfoyo & Wodchis (2013) that concluded that hospitals using electronic records had higher scores of satisfaction. Electronic information resources such as patient visit registration information, diagnostic imaging reports, laboratory results, and patient pharmacy profile, contribute to the improvement of interaction between physicians and staff with the patient, regarding health information and enhances clinical workflow. Individualized patient care helps nurses focus on the most important things to patients and hourly rounding helps identify needs before the patient asks for them (Alaloul et al., 2015).

8. Honesty

Patients are more satisfied when the staff admits if an error is made, explains to the patient the reason for the interpretation of the incident, notifies the rectification to the relevant department, provides measures and apologises to the patient (Ke et al., 2018). In cases of a complaint, patients are more satisfied when the response to the complaint is not expressed in a sorry or sympathetic tone. The patient needs to be shown actual support and take action to avoid the next occurrences.

Interpersonal care was the most common determinant in the studies. One hypothesis as to why interpersonal skills are so critical to patient satisfaction is that in contrast to technical care, it is one aspect of care that patients feel they have the expertise to judge. Furthermore, to assess patient satisfaction, it is essential to rigorously understand the inpatient's perspective regarding the behaviours and characteristics that they value in physicians, nurses, and staff. Furthermore, patients are the only source of information about whether they are treated with dignity and respect or not and are the best source of information about a hospital system's function.

Given its importance, a means to improve patient satisfaction ratings could be for hospitals to increase the number of non-medical staff and emphasize non-technical interpersonal care training for nurses and physicians. This could result in higher confidence and a greater focus on the staff, which in turn leads to a higher impact on patient satisfaction. Additionally, it is important to consider factors like worker satisfaction and work environment, both being associated with worker motivation, which does have an impact on patient satisfaction.

6.7.1.2 Organisational characteristics

Organisational characteristics include several elements of an organization, specifically the healthcare provider's reputation, image, size, type of services, type of equipment, internal management process, staff work conditions and the number of available staff.

Twenty-eight studies included organisational characteristics in the analysis, representing 50% of the total sample (Table 15). This result differs from the reviews considered in chapter 3.1, being only present in two of them (17%). In the context of inpatient satisfaction, organisational characteristics appear to be more relevant to study than in the context of outpatient satisfaction. This may be explained by the fact that when hospitalized, patients may give more importance to hospital characteristics such as the size, type of services, type of equipment, type of management, staff work conditions and the number of staff available because they remain at the hospital for an extended period of time than when they access the hospital for consultations, appointments and exams. Generally, inpatients have contact with a larger group of providers, identifying the availability of physicians, nurse practitioners, lab technicians, physical therapists, pharmacists, and physician assistants during a hospital stay, and may need to utilize services and equipment that outpatients generally do not require.

From the 28 studies that included organisational characteristics, 25 of them (89%) revealed evidence that organisational characteristics have an association with patient satisfaction; three studies found no association with patient satisfaction.

Table 15. Evidence on organisational characteristics

	INCLUDED ORGANISATIONAL CHARACTERISTICS (*n* = 28)	ASSOCIATION (*n* = 25)	NO ASSOCIATION (*n* = 3)
PERCENTAGE OF STUDIES	50% (28 out of 56)	89% (25 out of 28)	11% (3 out of 28)
REFERENCES	(Aga et al., 2021; Al-Borie & Damanhouri, 2013; Alemu, 2014; Amin & Nasharuddin, 2013; Antje et al., 2017; Arab et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Danforth et al., 2014; Hu et al., 2020; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Liang et al., 2021; Liew & Brooks, 2017; Liu & Mao, 2019; Más et al., 2016; McKinley et al., 2018; Moret et al., 2012; Naik et al., 2013; Pan et al., 2015; Puppala et al., 2020; Siddiqui et al., 2014; Sun et al., 2017; Tobler & Stummer, 2021; Xu et al., 2022; Zhang et al., 2020; Zhi et al., 2021)	(Aga et al., 2021; Al-Borie & Damanhouri, 2013; Alemu, 2014; Amin & Nasharuddin, 2013; Antje et al., 2017; Arab et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Danforth et al., 2014; Hu et al., 2020; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Liew & Brooks, 2017; Liu & Mao, 2019; McKinley et al., 2018; Moret et al., 2012; Naik et al., 2013; Pan et al., 2015; Puppala et al., 2020; Siddiqui et al., 2014; Tobler & Stummer, 2021; Xu et al., 2022; Zhang et al., 2020; Zhi et al., 2021)	(Liang et al., 2021; Más et al., 2016; Sun et al., 2017)

Eight main factors were found related to organisational characteristics throughout the analysis. Evidence from each one of the aforementioned attributes is presented as follows.

1. Facility dimension

Some studies revealed the influence of the hospital dimension on patient satisfaction. Having been hospitalized in medium or large hospitals when compared to small hospitals seemed to improve patient satisfaction (Hu et al., 2020; M. Liu et al., 2021). Such a relationship can have three underlying mechanisms. On the one hand, larger hospitals tend to have more capable physicians, higher capacity in treating complicated conditions and thus better service quality. Secondly, it is indisputable that larger hospitals offer a broader service portfolio and have a different patient distribution across diseases compared to smaller hospitals. On the other hand, hospitals with better capacity can manage more patients and provide a higher number of therapies, especially surgeries.

In opposite, the studies conducted by Antje et al. (2017) and Xu et al. (2022) concluded that patients hospitalized in larger hospitals reported lower levels of satisfaction. One possible explanation for this lower satisfaction is that the patients perceive larger hospitals as impersonal and intimidating.

The hospital's academic nature was found to be related to patient satisfaction in Murante et al. (2014). Small and teaching hospitals received higher scores than medium to large and community hospitals, respectively. This could be in part explained by the reputation the academic status provides to doctors working in teaching hospitals (Murante et al., 2014).

2. Facility management

The type of facility management – public or private, has proven to be the second most important determinant of inpatient satisfaction according to Liew & Brooks (2017). Patients hospitalized in public hospitals have given lower satisfaction scores when compared to their counterparts who stayed in private facilities. The same was concluded by Al-Borie & Damanhouri (2013). Patients usually prefer

private hospitals hoping for higher service quality. These studies were conducted in Saudi Arabia and Indonesia. In Saudi Arabia, the government provides free healthcare services through a network of healthcare centres across the country. In Indonesia, there is a mandatory health insurance program making available basic medical care and facilities to all citizens. However, in this last case, public health facilities are modest. Major cities have good public hospitals, but rural clinics offer very limited resources. Additionally, most public facilities need investment in modern equipment, laboratory services, and staffing capabilities. Either way, in both cases, patients can individually decide to pay additional fees and attend private facilities, where they can expect cleaner, organized, up-to-date facilities and receive care in a comfortable, private environment.

3. Facility location

Facility location has proven to be related to inpatient satisfaction according to Liew & Brooks (2017) and Al-Borie & Damanhouri (2013). Urban hospitals earned higher scores than sub-urban hospitals. Accordingly, rural hospitals tended to have lower inpatient satisfaction (Xu et al., 2022). This may be explained by the fact that perhaps central and urban governments financially invest in buildings, equipment, and medical facilities for higher-level hospitals to a great extent. Many township hospitals may only provide basic outpatient services and the function of inpatient services is gradually weakening, so that is why inpatients in county-level hospitals are more satisfied than those in township hospitals (Liu & Mao, 2019). Patients expect higher-quality service from these top-level hospitals, which leads increasingly more patients to select top hospitals directly as their primary health providers, even in cases that are not serious or complex. On the other hand, lower-level providers may continue to be weak competitors if there is a continuous lack of financial investment, insurance compensation, and qualified human resources, which also leads to lower patient trust and overall satisfaction.

4. Hospitalization ward

Some studies have also assessed satisfaction in different hospital wards. Patients who were admitted to the surgical ward were more satisfied than those patients admitted to the medical ward (Aga et al., 2021; Alemu, 2014). This might be due to the condition and expectations of patients admitted to the medical ward. Patients admitted to the medical ward are mostly diagnosed with more severe conditions, poorer prognosis, and being greatly exposed to stressful and anxious situations. Accordingly, Danforth et al. (2014) concluded that patients admitted via the emergency department were less satisfied than other patients.

5. Type of hospital

Specialized hospitals exhibited significantly higher satisfaction scores than did the other types of hospitals such as general medical hospitals (Siddiqui et al., 2014). This may be attributed to the fact that the staff and the hospital environment in specialised hospitals are more focused on patients and their specific needs, providing better attentiveness, personal care, and information than in other types of hospitals. Speciality hospitals may treat more patients in their area of specialization, care for fewer sick patients, have greater physician ownership, and are less likely to have ED services. In addition, a possible explanation is that in speciality hospitals patients often stay in private rooms, quiet

environments, where there is accommodation for family members, and accessible, attentive, and well-trained nursing staff.

6. Staff availability

The number of staff available was associated with patient satisfaction in Koné Péfoyo & Wodchis (2013). Specifically, regarding the availability of staff. However patient satisfaction had lower scores in hospitals where the percentage of nurses was higher. This perhaps may be related to the fact that investments in hiring nurses left less capacity to hire other staff who could be more responsive to patients' non-medical needs. However, on the other hand, Hu et al. (2020) concluded that inpatients tend to prefer a higher nurse-to-bed ratio for overall satisfaction. This was also stated by Antje et al. (2017) concluding that a higher number of medical staff per bed was associated with more patient satisfaction. In the study conducted by McKinley et al. (2018) most patients agreed to have better care because there were several doctors involved in their care. However, it is consistent that heavy workload and widespread job burnout among nurses are a serious threat to the quality of care. This calls for attention to the design of hospital personnel structure. One of the essential problems to be addressed is how to ensure a strong and healthy nurse workforce to improve patient satisfaction.

7. Staff work conditions

Patient satisfaction is also directly related to the satisfaction levels of health institutions and health professionals. In this respect, improving the conditions of institutions and employees are also important for improving satisfaction (Tobler & Stummer, 2021). A study found that short-term absenteeism among nurses is significantly correlated with patient satisfaction in a negative manner (Moret et al., 2012). Furthermore, this study suggests the need to explore human resource indicators as explicative factors for satisfaction data, since burnout, stress, lack of autonomy, or poor cohesion in the team are linked to inadequate organisational and managerial support affecting job satisfaction and consequently, although indirectly, patient satisfaction.

8. Available services and technology

According to Asamrew et al. (2020), the existence of laboratory, radiology and pharmacy services is also a strong predictor of patient satisfaction. Additionally, according to J. Liu & Mao (2019), medical technology was also found to be related to patient satisfaction. Hospital technology, devices and up-to-date medical devices were found to be related to patient satisfaction (Al-Borie & Damanhouri, 2013). According to Naik et al. (2013) aspects of healthcare service provided such as availability of services, hospital equipment, ward arrangements and hospital building layout are also correlated to patient satisfaction. This was also concluded by Al-Borie & Damanhouri (2013) which stated that hospital department design makes it easier for the patients to access services.

Patients are the only source of information about whether they are treated with dignity and respect or not and are the best source of information about a hospital system's function. Their experiences often reveal how well a hospital system is operating and can stimulate important insights into the kinds of changes that are needed to close the chasm between the care provided and the care

that should be provided (Laal, 2013). In general, it is important to allocate health resources in a balanced manner, especially distributing human resources among different levels of providers, enhancing government subsidy for health insurance to further alleviate the financial burden, reforming the current capital planning investment model in hospitals, and therefore building a more primary care-cantered health service system (Pan et al., 2015).

6.7.1.3 Physical environment

The physical environment refers to the environment of health care and it is an important factor that impacts the physical and mental comfort of the patient. The physical environment aspects include room facilities, conditions, and services. It refers to the room cleanliness, room appropriate temperature, a reasonable sound level, a pleasant atmosphere, room comfort, bedding, lighting convenience, quality and availability of food service, bathroom comfort, availability and clarity of signboards and directions displayed inside the facility, arrangement of equipment and facilities, and parking. Furthermore, it includes hospital premises and measures of hygiene and wards maintenance (Naik et al., 2013)

Twenty-six studies have included physical environment aspects in their analysis, representing 46% of the total number of studies (Table 16). From these, 24 studies (92%) revealed evidence of an association with inpatient satisfaction. Two of these studies (Hazilah Abd Manaf, 2012; Xu et al., 2022) found that the hospital environment was the most influential factor in patient satisfaction. This result is higher than the ones in chapter 3.1. This may be explained by the fact that inpatients can be more sensitive to the medical facility's physical aspects since they remain for longer periods of time in the facility than outpatients. Consequently, they are more likely to realize and evaluate extensively physicals aspects such as cleanliness, sound levels throughout the day and food service. Two studies (8%) found no association between the physical environment and inpatient satisfaction.

Table 16. Evidence of physical environment

	INCLUDED PHYSICAL ENVIRONMENT (*n* = 26)	**ASSOCIATION (*n* = 24)**	**NO ASSOCIATION (*n* = 2)**
PERCENTAGE OF STUDIES	46% (26 out of 56)	92% (24 out of 26)	8% (2 out of 26)
REFERENCES	(Al-Borie & Damanhouri, 2013; Almrstani et al., 2014; Ammo et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Chen et al., 2016; Erden & Emirzeoğlu, 2021; Gavurova et al., 2021; Hazilah Abd Manaf, 2012; Li et al., 2021; Liang et al., 2021; Liu et al., 2021; M. Liu et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Mitropoulos et al., 2018; Murante et al., 2014; Naik et al., 2013; Nguyen et al., 2020; Park, 2015; Sarkar et al., 2021; Shan et al., 2016; Siddiqui et al., 2014; Sun et al., 2017; Xu et al., 2022)	(Al-Borie & Damanhouri, 2013; Almrstani et al., 2014; Ammo et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Chen et al., 2016; Erden & Emirzeoğlu, 2021; Gavurova et al., 2021; Hazilah Abd Manaf, 2012; Li et al., 2021; Liu et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Mitropoulos et al., 2018; Murante et al., 2014; Naik et al., 2013; Nguyen et al., 2020; Park, 2015; Sarkar et al., 2021; Shan et al., 2016; Siddiqui et al., 2014; Sun et al., 2017; Xu et al., 2022)	(Bjertnaes et al., 2012; Liang et al., 2021)

Four main factors were found related to the physical environment throughout the analysis. Evidence from each one of the aforementioned attributes is presented as follows.

1. Cleanliness

Cleanliness was correlated to patient satisfaction in several studies, many assessing cleanliness in different hospital areas. Toilet cleanliness was identified as a strong predictor of patient satisfaction in Asamrew et al. (2020). Both bathroom and bedroom cleanliness was correlated to patient satisfaction by Hazilah Abd Manaf (2012) and Siddiqui et al. (2014). Ward cleanliness and the environment were correlated with patient satisfaction by Hazilah Abd Manaf (2012). Hospital cleanliness was correlated to patient satisfaction in H. Liang et al. (2021). The possible reason for these indicators to be important may be that people consider receiving adequate food timely, clean toilet service and good quality accommodation to be the bases for psychological satisfaction and the healing process. Besides, patients may fear developing infection due to the poor sanitation of the facility which can debilitate their health status. Cleanliness is considered an important issue, not only as a primary measure to control the infection risk but as well as an indicator of the commitment of the hospital staff and the hospital's attention as a whole (Mitropoulos et al., 2018).

2. Sound level

The sound level in the facility is also important because it is directly related to the inpatient's need to rest or sleep. The noise is a result of a combination of multiple factors including conversations (patient, families, and health care provider related), monitor alarms, telephone rings, and ambient noise. According to Hazilah Abd Manaf (2012) and Sarkar et al. (2021) noise levels are correlated with patient satisfaction. In the study, the implementation of the noise reduction program led to a statistically significant increase in patient satisfaction, specifically with the noise level and having the ability to rest.

Some studies have demonstrated the physiological effects of poor sleep and high environmental noise. Often the patient's perception of sleep quality in the hospital is poorer compared with the patient's baseline sleep levels (regular levels of sleep at home). The consequences of the sleep deprivation that occur in hospital care areas can be severe, resulting in altered immune functions, increased inflammation of injured areas, para-sympathetic and sympathetic loss of equilibrium, altered carbohydrate metabolism, and altered cognitive performance (Sarkar et al., 2021). Thus, many patient care settings have worked to lower noise levels to improve patient rest and prevent these consequences. Some adjustments that can be made involve redesigning the floor plan to minimize noise. Additionally, some minor changes can be made such as improving privacy and developing staff education and behaviour regarding noise. This was also achieved by Xu et al. (2022) that concluded that while a small thing reducing noise levels throughout the night can positively impact patient satisfaction. Although there is little that can be done about the beeping of machines or even about snorers, a clear policy concerning traffic in and out of areas with resting patients, the number of people on staff during night hours, and even ensure nurses remember to whisper can play an important role to improve patient satisfaction related to the environment.

3. Food service

Food has been correlated with patient satisfaction (Almrstani et al., 2014; Asamrew et al., 2020; Xu et al., 2022). Specifically, the quality of food has proven to have an impact on patient satisfaction (Almrstani et al., 2014; Asamrew et al., 2020). Similarly, how timely the food is provided, and the temperature and accuracy of food services all affect patient satisfaction and should, therefore, be given sufficient attention by hospital management. Food service characteristics also impact patient satisfaction such as time of serving meals, food quantity and variety, food quality, taste, temperature and the service of a special diet when needed (Xu et al., 2022). Since detailed factors affecting the quality of ward life are the quality of meals, privacy in a ward and mealtime, it seems necessary to provide customized services for meeting patients' demands in such an aspect. Furthermore, satisfaction with nutrition can affect hospital accreditation, hospital managers should take effective steps to improve these services, which may lead to more satisfied customers and improve the hospital staff's reputation.

4. Communication equipment

Availability of public phone, radio, television, rest lounge and additional facilities for patients and family members was mentioned by Hazilah Abd Manaf (2012) as contributors to patient satisfaction. A study shows that patients in the intensive care units gave low satisfaction scores which can possibly be explained by the physical conditions in these unit's environments (Puppala et al., 2020). The importance that the patient attributes to the hospital's physical environment may be explained by the fact that if patients feel unable to judge the clinical care provided, they use the physical environment as a proxy for overall quality.

The system environment, if deviating from the shared values of the society, may contribute to a sense of inequity. This compounds the development of distrust in care providers and shapes how patients and care providers interact. Given the importance of the physical environment to the inpatients' satisfaction, measures should be taken to improve it.

6.7.1.4 Technical care

Technical care is the dimension of professional competence of healthcare staff - nurses, physicians, and auxiliary staff. It refers to the healthcare staff's capacity to provide promised and qualified care and whether the services adhere to hospitals' standards, norms and requirements of clinical diagnoses and treatments. It refers to health professionals' competency, ability, experience, and professional ethics. Furthermore, it includes procedures and specific actions such as physical examinations and injections from both doctors and nurses during hospitalization. It is expected to be bound with scientific evidence - what should be delivered and how (Shan et al., 2016).

Twenty-one studies have included technical care in their analysis, representing 38% of the total number of studies (Table 17). Professional care plays a vital role in patients' satisfaction levels according to all 21 studies (100%). In fact, all studies found a positive association between technical care and inpatient satisfaction.

Table 17. Evidence on technical care

	INCLUDED TECHNICAL CARE (*n* = 21)	ASSOCIATION (*n* = 21)	NO ASSOCIATION (*n* = 0)
PERCENTAGE OF STUDIES	38% (21 out of 56)	100% (21 out of 21)	0% (0 out of 21)
REFERENCES	(Amin & Nasharuddin, 2013; Ammo et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Erden & Emirzeoğlu, 2021; Gavurova et al., 2021; Hazilah Abd Manaf, 2012; Hopkins et al., 2019; Hussain et al., 2018; Li et al., 2021; Liu et al., 2021; M. Liu et al., 2021; Luo et al., 2021; Más et al., 2016; McKinley et al., 2018; Naik et al., 2013; Pan et al., 2015; Shan et al., 2016; Shang et al., 2021; Sun et al., 2017; Zineldin, 2015)	(Amin & Nasharuddin, 2013; Ammo et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Erden & Emirzeoğlu, 2021; Gavurova et al., 2021; Hazilah Abd Manaf, 2012; Hopkins et al., 2019; Hussain et al., 2018; Li et al., 2021; Liu et al., 2021; M. Liu et al., 2021; Luo et al., 2021; Más et al., 2016; McKinley et al., 2018; Naik et al., 2013; Pan et al., 2015; Shan et al., 2016; Shang et al., 2021; Sun et al., 2017; Zineldin, 2015)	-

In some studies, the domain diagnosis and treatment was one of the stronger predictors of overall patient satisfaction (Sun et al., 2017). There were some studies providing evidence that better technical care may have played an important role in increasing patient satisfaction levels. Poor practices of staff were found to be one of the main reasons for patient dissatisfaction (Pan et al., 2015). Patients' satisfaction level tends to be higher when patients receive correct and proper treatment. Furthermore, professional management, and expertise on how to diagnose and treat diseases and regularly monitor the patients exert positive effects on patients' satisfaction. According to Gavurova et al. (2021), the satisfaction of hospitalised patients is related to the quality of healthcare, diagnosis and treatment processes. It also refers to the accuracy in administering medication. According to Hazilah Abd Manaf (2012) clinical treatment received and the way the medical procedure was managed were found to be correlated to patient satisfaction.

On the other hand, poor management, amateur hospital personnel and little expertise in managing illness considerably diminish the patients' satisfaction level. Irregular medical treatment was also found to be related to less satisfied patients. Additionally, by default, a patient expects a performance as close to perfect as possible, and a perfect patient satisfaction score is lost by suboptimal results in the eyes of the patient. A failure of medical competency is often considered the root cause of misdiagnosis, unnecessary treatment, and iatrogenic harm.

In addition, an important point regarding technical care is the relationship between patients' satisfaction and junior residents. The study conducted by McKinley *et al.* (2018) refers to an overall positive attitude toward surgical resident involvement in care. About 90% of patient participants agreed that it is important to participate in the education of future surgeons and welcomed supervised resident participation in care. However, some patients did not agree with the presence of residents during care. Perhaps, some patients under their care may not understand the term "resident" or "intern". Thus, residents should introduce themselves as a doctor and explain their role and training level when first meeting patients and their families prior to hospitalization during preoperative office visits. This could help to ensure that patients are fully informed about their part in care because an improved patient

understanding of resident education levels facilitates patient acceptance of resident operative autonomy increasing patient satisfaction concerning technical care (McKinley et al., 2018).

The particularity of technical care when conducting satisfaction surveys is that patients usually lack the knowledge to properly assess technical aspects of services, such as surgeon's skills or practitioner's diagnostics, providing a limited view of what needs to be improved (Eleuch, 2011; Laal, 2013). Surveys can assess patients' perceptions of doctors' medical knowledge, thoroughness of the physical examination, and diagnostic and prescribing skills. Patients can evaluate if the doctor has up-to-date, technical skills. Despite this limitation, examining a hospitalization through the patients' eyes, even if through limited variables, can reveal important information about a healthcare provider.

6.7.1.5 Access

Health service access concerns aspects such as waiting time to get required service in the facility, admitting processes of the hospital for inpatient service admission, guiding directives by the information desk, discharge process complexity and waiting time to be performed, the scheduling appointment process, availability of follow up, delays in consultations, the caretaker accompaniment policies and visiting policies. Additionally, some measures have also been taken into account in some studies such as the process of patient treatment and the availability of online appointment scheduling. The principle of "patient first" is also helpful in improving the efficiency of day-to-day operations and the effectiveness of nursing work.

Nineteen studies have included access in their analysis, representing 36% of the total number of studies (Table 18). From these, 18 studies (90%) revealed evidence of an association with inpatient satisfaction. The results of the present work show greater importance given to access than the reviews analysed in chapter 3.1 since only two of those reviews (33%) have identified access as a factor related to patient satisfaction. Two studies found no association between inpatient satisfaction and access.

Table 18. Evidence on access

	INCLUDED ACCESS (*n* = 20)	**ASSOCIATION (*n* = 18)**	**NO ASSOCIATION (*n* = 2)**
PERCENTAGE OF STUDIES	36% (20 out of 56)	90% (18 out of 21)	10% (2 out of 21)
REFERENCES	(Almrstani et al., 2014; Amin & Nasharuddin, 2013; Ammo et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Erden & Emirzeoğlu, 2021; Gavurova et al., 2021; Heberer et al., 2015; Koné Péfoyo & Wodchis, 2013; Li et al., 2021; Liew & Brooks, 2017; M. Liu et al., 2021; Luo et al., 2021; Murante et al., 2014; Puppala et al., 2020; Siddiqui et al., 2014; Silva et al., 2018; Sun et al., 2017; Wulandari et al., 2021; Zhi et al., 2021).	(Almrstani et al., 2014; Amin & Nasharuddin, 2013; Ammo et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Erden & Emirzeoğlu, 2021; Gavurova et al., 2021; Koné Péfoyo & Wodchis, 2013; Li et al., 2021; Liew & Brooks, 2017; M. Liu et al., 2021; Luo et al., 2021; Murante et al., 2014; Puppala et al., 2020; Siddiqui et al., 2014; Silva et al., 2018; Wulandari et al., 2021; Zhi et al., 2021)	(Heberer et al., 2015; Sun et al., 2017)

Five main factors related to access were found throughout the analysis. Evidence from each one of the aforementioned attributes is presented as follows.

1. **Waiting time**

Long waiting time in the emergency room were found to impact satisfaction scores negatively. Specifically according to Almrstani et al. (2014) waiting time in the emergency room department of more than three hours has proven to decrease patient satisfaction. Similarly, unforeseen waiting time in the hospital has also been correlated to patient dissatisfaction (Bjertnaes et al., 2012). Accordingly, in Li *et al.* (2021) and Asamrew et al. (2020) reducing patients' waiting time has been revealed to increase patient satisfaction. In addition, patient satisfaction is sensitive to the examination room waiting time, which is heavily influenced by overcrowding services (Puppala et al., 2020).

2. **Appointment scheduling**

According to Silva et al. (2018) having a follow-up appointment significantly influences satisfaction meaning that inpatients with a follow-up consultation scheduled are the most satisfied. This was also stated by Puppala et al. (2020) which further recommended that a measure that can be adopted is the scheduling of post-discharge follow-up to better serve patients with chronic conditions while patients are still hospitalized. Discharge material can be provided to detail follow-up appointments and medical care information (Puppala et al., 2020).

3. **Discharge process**

According to Gavurova et al. (2021) discharge process was seen by the patient as a standardised process, but should also be connected with subsequent treatment in outpatient healthcare. Providing information about what to do during recovery at home to the patient when they are being discharged was also correlated to increase patient satisfaction (Siddiqui et al., 2014) The instructions for the patient on the next steps after their release from the healthcare facility should also motivate the patient to understand their role for a subsequent examination by a general practitioner to achieve treatment continuity and better health outcomes (Gavurova et al., 2021).

4. **Caretaker presence and visitors**

Patients who were allowed to be accompanied by a caretaker during admission were more satisfied (Asamrew et al., 2020). A study revealed a negative association between visits and patient satisfaction - patients who received visits in intensive care units were less satisfied (Puppala et al., 2020).

Providing effective and efficient healthcare services is one of the main goals set by healthcare providers. Health care systems must eliminate not only wasted time, but also wasted effort, materials, medications, money, and trust. The results achieved in this work regarding access were expected. Patients are more satisfied when they can have easy access to care, experience short waiting times to get treated, can schedule post-hospitalization appointments before discharge and are able to be accompanied by their caretaker. This can be achieved by using existing resources more efficiently and optimising processes. Possible strategies may be to implement open access scheduling and using email to follow up with

patients when appropriate. All these changes are ways of working smarter instead of harder, and all share the goal of reducing waste and increasing efficiency, making resources more available for the work that truly matters, serving patients better and improving their satisfaction.

6.7.1.6 Cost

Cost refers to the cost of care, insurance coverage and extra service fees. Seventeen studies included the cost in the analysis, representing 30% of the total sample (Table 19). From the 17 studies that included cost, 16 of them (94%) revealed evidence that cost has an association with patient satisfaction; one study found no association with patient satisfaction. The results of the present work show greater importance given to cost than the reviews analysed in chapter 3.1, where only 33% of studies have linked cost to patient satisfaction.

Table 19. Evidence on cost

	INCLUDED COST (*n* = 17)	**ASSOCIATION (*n* = 16)**	**NO ASSOCIATION (*n* = 1)**
PERCENTAGE OF STUDIES	30% (17 out of 56)	94% (16 out of 17)	6% (1 out of 17)
REFERENCES	(Ammo et al., 2014; Arab et al., 2014; Chen et al., 2016; Heberer et al., 2015; Hu et al., 2020; Li et al., 2021; Liang et al., 2021; Liew & Brooks, 2017; M. Liu et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Nguyen et al., 2020; Pan et al., 2015; Park, 2015; Shang et al., 2021; Sun et al., 2017; Tobler & Stummer, 2021)	(Ammo et al., 2014; Arab et al., 2014; Chen et al., 2016; Heberer et al., 2015; Hu et al., 2020; Li et al., 2021; Liang et al., 2021; Liew & Brooks, 2017; M. Liu et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Nguyen et al., 2020; Pan et al., 2015; Park, 2015; Shang et al., 2021; Tobler & Stummer, 2021)	(Sun et al., 2017)

Medical charges are one of the foremost reasons for dissatisfaction (Pan et al., 2015). Therefore, relieving the financial burden due to healthcare consumption could play an important role in enhancing patient satisfaction. A study suggests that insurance coverage is found to have a positive influence on overall patient satisfaction primarily driven by limiting patient concerns about treatment costs, as well as increasing positive perceptions of hospital staff (Nguyen et al., 2020). Insured patients are more satisfied than non-insured patients. In addition, insured patients are more likely to express higher scores of satisfaction regarding staff expertise and treatment instructions. Accordingly, the type of insurance was also found to significantly reduce patient dissatisfaction (Pan et al., 2015). Intuitively, health insurance can lower the effective costs of health care when consumers purchase services, thus alleviating their financial burden. The extent of such a reduction in financial burden would depend on various benefit arrangements of health insurance.

Additionally, patients who paid extra service fees are more likely to perceive higher levels of needs fulfilled and thus, report higher levels of satisfaction than other patients (Nguyen et al., 2020). This result is corroborated with the study made by Liew & Brooks (2017) which stated that patients are more satisfied when paying high hospitalization expenses.

According to M. Liu *et al.*, (2021) patient satisfaction concerning hospitalization expenses varied significantly according to gender, age, monthly income, type and location of the hospital and type of medical insurance. Female inpatients, inpatients between the ages of 18 and 60, and those from families with higher incomes and with higher educational levels tended to be more satisfied with high hospitalization expenses.

Inpatients receiving care in suburban hospitals are less satisfied with expenses compared to their counterparts in urban hospitals.

A study shows that patients with self-reported health had also low scores on satisfaction with hospital expenses. Specifically, satisfaction regarding the cost of care was lower when the patients had chronic diseases (M. Liu et al., 2021).

Some studies showed no significant relationship between patient satisfaction and insurance (Aga et al., 2021; Sun et al., 2017). This may be explained by the fact that in the health systems where universal health coverage has been well achieved with good benefits packages, private health insurance programs may not be so important to affect overall patient satisfaction.

6.7.1.7 Length of stay

Length of stay refers to the hospitalization duration. Sixteen studies have included length of stay in their analysis, representing 29% of the total number of studies (Table 20). From these, 11 studies (69%) revealed evidence of an association with inpatient satisfaction. The results of the present work show greater importance given to the length of stay than the reviews analysed in chapter 3.1 since none of the reviews has identified length of stay as related to patient satisfaction. Five studies found no association between inpatient satisfaction and length of stay.

Table 20. Evidence on length of stay

	INCLUDED LENGTH OF STAY (*n* = 16)	**ASSOCIATION (*n* = 11)**	**NO ASSOCIATION (*n* = 5)**
PERCENTAGE OF STUDIES	29% (16 out of 56)	69% (11 out of 16)	31% (5 out of 16)
REFERENCES	(Almrstani et al., 2014; Ammo et al., 2014; Bjertnaes et al., 2012; Danforth et al., 2014; Heberer et al., 2015; Hopkins et al., 2019; Hu et al., 2020; Hussain et al., 2018; Koné Péfoyo & Wodchis, 2013; Murante et al., 2014; Nguyen et al., 2020; Puppala et al., 2020; Shang et al., 2021; Silva et al., 2018; Vovos et al., 2019; Zhi et al., 2021)	(Almrstani et al., 2014; Ammo et al., 2014; Hopkins et al., 2019; Koné Péfoyo & Wodchis, 2013; Murante et al., 2014; Nguyen et al., 2020; Puppala et al., 2020; Shang et al., 2021; Silva et al., 2018; Vovos et al., 2019; Zhi et al., 2021)	(Bjertnaes et al., 2012; Danforth et al., 2014; Heberer et al., 2015; Hu et al., 2020; Hussain et al., 2018)

Despite 11 studies having identified length of stay as a determinant of patient satisfaction, there is no clear pattern regarding the nature of the association. A study shows that patients who had a longer length of stay had a higher level of overall satisfaction than patients with shorter stays. In particular,

long-stay patients perceived higher levels of satisfaction regarding attitudes, accessibility, and instructions from the staff than short-stay patients (Nguyen et al., 2020).

On the contrary, some studies found a relationship between the extended length of stay and lower patient satisfaction, thus an inverse association (Almrstani et al., 2014; Koné Péfoyo & Wodchis, 2013; Silva et al., 2018; Vovos et al., 2019). The longer the patient stayed in the hospital, the lower the scores were especially on nursing assistance and communication (Murante et al., 2014). For each additional day in the hospital, a decrease in satisfaction ratings was found (Koné Péfoyo & Wodchis, 2013). Patients who have had procedures with early recovery had less hospital stay than other patients and show higher satisfaction scores. Patients who were in the hospital at the time they considered the necessary time, were the most satisfied. This same result was concluded by Hopkins et al. (2019) in which patients who experienced longer stays gave lower satisfaction scores. According to this last study, the longer the time between surgery and completion of an HCAHPS survey, the more likely the patient was to give a low score. This trend perhaps suggests that patients may only voice dissatisfaction following a given time after surgery. The same conclusion was obtained by Zhi et al. (2021) which states that the satisfaction rate of inpatients hospitalized longer than 21 days was lower than those hospitalized for less than five days. A possible explanation for this is that perhaps longer stays potentially arise from more serious health conditions. Patients in these conditions may be more debilitated and tend to be less satisfied overall.

In addition, Puppala *et al.* (2020) reported that the relation between the length of stay and satisfaction is non-linear. Lengths of stay between three and fifteen days were associated with low scores, with a peak at ten days of hospitalization; however, this association changes after fifteen days, when satisfaction scores increased. This is corroborated by Liew & Brooks (2017) which concluded that patient satisfaction increased for stays of one and two nights and then decreased. Patients that stayed two nights were the most satisfied.

In order to shorten the length of stay, checklists can be used and improve communication, teamwork, continuity of care, and coordination among care providers to ensure an efficient patient discharge process.

6.7.1.8 Pain management

Pain is a common problem among hospitalized patients and affects different aspects of their lives, including quality of life, sleep, and activities of daily living as well as increased health care expenses. Relieving patients' pain is essential and medical staff are in a pivotal position to play this role (Alaloul et al., 2015).

Nine studies have included pain management in their analysis, representing 16% of the total number of studies (Table 21). All nine studies (100%) revealed evidence of an association with inpatient satisfaction. The results of the present work show greater importance given to pain management than the reviews analysed in chapter 3.1 since none of the reviews has linked pain management to patient satisfaction.

Table 21. Evidence on pain management

	INCLUDED PAIN MANAGEMENT (*n* = 9)	ASSOCIATION (*n* = 9)	NO ASSOCIATION (*n* = 0)
PERCENTAGE OF STUDIES	16% (9 out of 56)	100% (9 out of 9)	0% (0 out of 9)
REFERENCES	(Alaloul et al., 2015; Asamrew et al., 2020; Bjertnaes et al., 2012; Erden & Emirzeoğlu, 2021; Heberer et al., 2015; Koné Péfoyo & Wodchis, 2013; McKinley et al., 2018; Park et al., 2021; Siddiqui et al., 2014)	(Alaloul et al., 2015; Asamrew et al., 2020; Bjertnaes et al., 2012; Erden & Emirzeoğlu, 2021; Heberer et al., 2015; Koné Péfoyo & Wodchis, 2013; McKinley et al., 2018; Park et al., 2021; Siddiqui et al., 2014)	

There are studies showing a strong relationship between patient satisfaction and pain management - while improving pain management the satisfaction increases. Thus patient satisfaction with pain control is an issue of importance to all. Patients with higher pain intensity were significantly less satisfied (Erden & Emirzeoğlu, 2021). Lower satisfaction might be caused by higher pain. Effective management of patients' medications contributes directly to better pain management leading to more satisfied patients (Koné Péfoyo & Wodchis, 2013). Furthermore, clear, and consistent communication about pain between patients and nurses led to a significant improvement in patient satisfaction with pain management over time. Accordingly in the study of McKinley et al. (2018) physicians scored higher levels of patient satisfaction when made sure the patient was physically comfortable or had enough pain relief. According to Siddiqui et al. (2014) pain always controlled was related to higher satisfied patients.

6.7.1.9 Outcome of care

The outcome of care refers to incision infection rate, mortality rate, rescue failure rate and major and minor complications.

Five studies have included the outcome of care in their analysis, representing 9% of the total number of studies (Table 22). All five studies (100%) revealed evidence of an association with inpatient satisfaction. The results of the present work show greater importance given to the outcome of care than the reviews analysed in chapter 3.1 since only 67% of the reviews have linked the outcome of care to patient satisfaction.

Table 22. Evidence on the outcome of care

	INCLUDED OUTCOME OF CARE (*n* = 5)	ASSOCIATION (*n* = 5)	NO ASSOCIATION (*n* = 0)
PERCENTAGE OF STUDIES	9% (5 out of 56)	100% (5 out of 5)	0% (0 out of 5)
REFERENCES	(Erden & Emirzeoğlu, 2021; M. Liu et al., 2021; Park, 2015; Puppala et al., 2020; Shang et al., 2021)	(Erden & Emirzeoğlu, 2021; M. Liu et al., 2021; Park, 2015; Puppala et al., 2020; Shang et al., 2021)	

The results were as expected - patients who recovered from the health problem were the most satisfied, followed by patients who improved. The least satisfied were patients who did not improve (Park, 2015).

Figure 10 summarizes the healthcare provider-related determinants and key linked factors that influence inpatient satisfaction, retrieved from the studies reviewed.

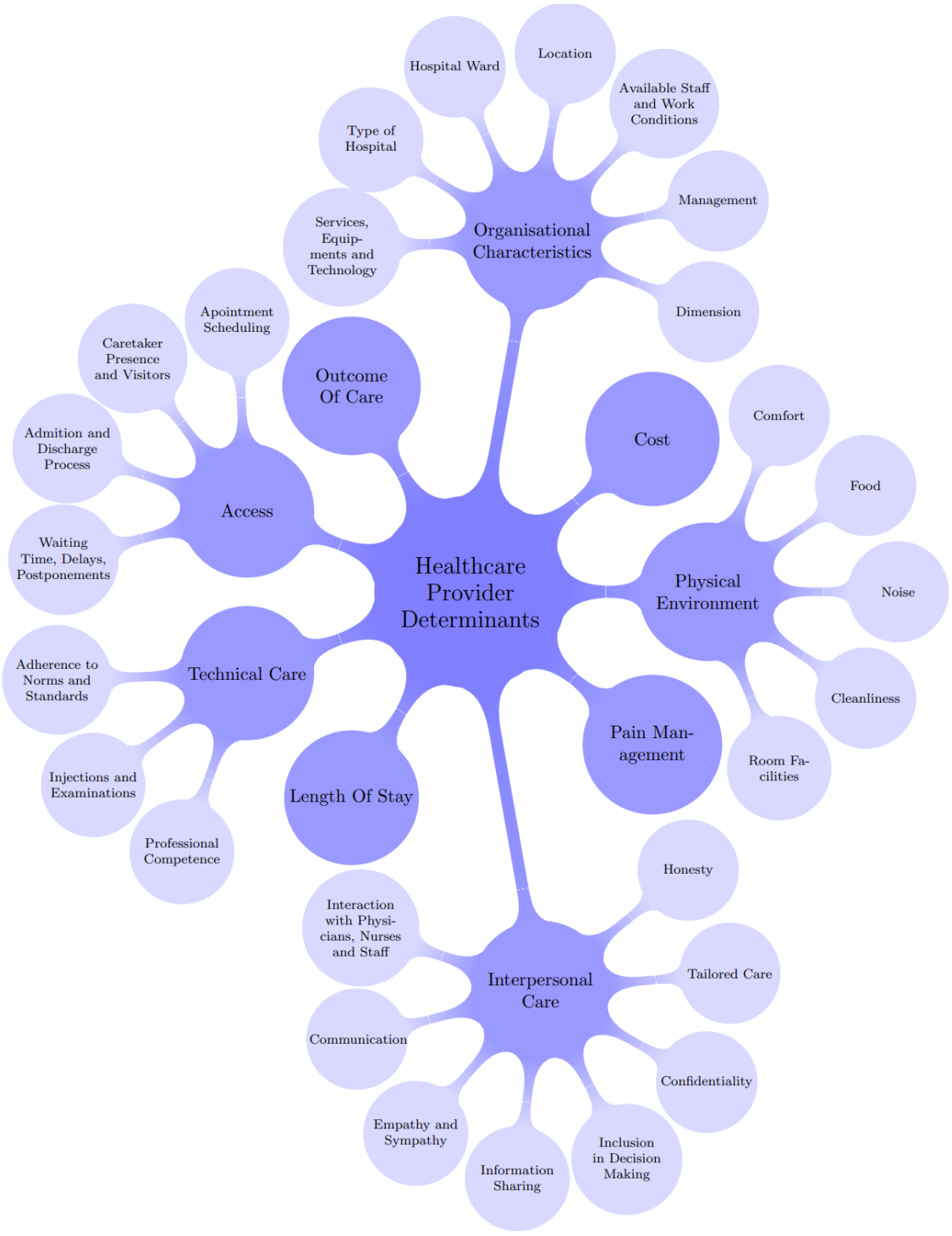

Figure 10. Mind map of the healthcare provider-related determinants of inpatient satisfaction

6.7.2 Patient-related determinants

Fifty-six studies assessing the determinants that may influence inpatient satisfaction were analysed in this work. Of these studies, thirty-eight included patient-related determinants in their studies (68%). Of the ten patient-related characteristics, age, gender and education were the most analysed factors being included in 26 (46%), 24 (43%) and 21 (38%) studies respectively (Figure 11). Each one of the determinants and corresponding statistics will be described below.

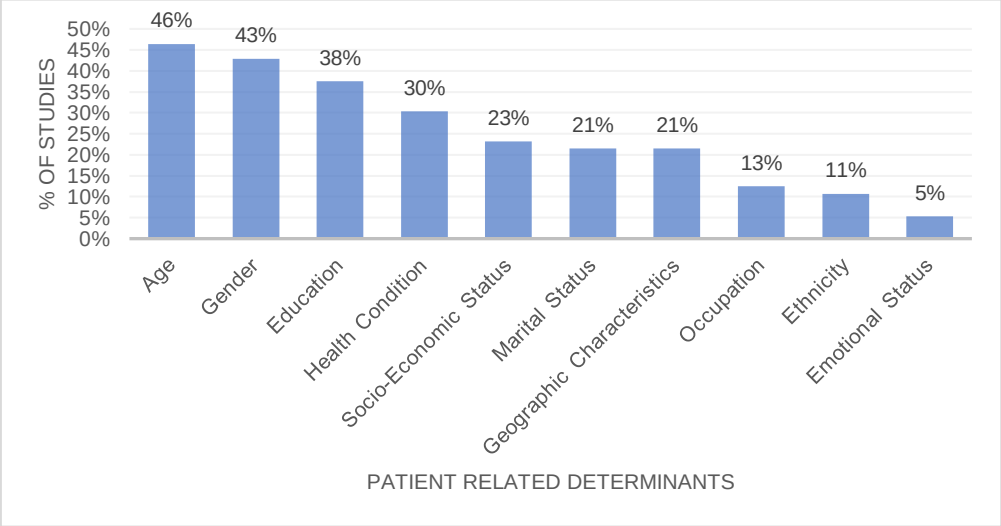

Figure 11. Percentage of studies including patient-related determinants

6.7.2.1 Age

Twenty-six studies have included the patients' age in their analysis, representing 46% of the total number of studies (Table 23). From the 26 studies, 21 have found an association between the patients' age and patient satisfaction (81%). The results of the present work show greater importance given to age than the reviews analysed in chapter 3.1 since only 33% of those reviews have identified age as a factor related to patient satisfaction.

Table 23. Evidence on age

	INCLUDED AGE (*n* = 26)	**ASSOCIATION (*n* = 21)**	**NO ASSOCIATION (*n* = 5)**
PERCENTAGE OF STUDIES	46% (26 out of 56)	81% (21 out of 26)	19% (5 out of 26)
REFERENCES	(Al-Borie & Damanhouri, 2013; Alemu, 2014; Almrstani et al., 2014; Ammo et al., 2014; Bjertnaes et al., 2012; Chen et al., 2016; Danforth et al., 2014; Erden & Emirzeoğlu, 2021; Heberer et al., 2015; Hu et al., 2020; Ke et al., 2018; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Li et al., 2021; Liang et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Más et al., 2016; Mitropoulos et al., 2018; Murante et al., 2014; Nguyen et al., 2020; Puppala et al., 2020; Schmocker et al., 2015; Shang et al., 2021; Zendjidjian et al., 2014; Zhi et al., 2021)	(Alemu, 2014; Alfred et al., 2016; Almrstani et al., 2014; Ammo et al., 2014; Danforth et al., 2014; Erden & Emirzeoğlu, 2021; Heberer et al., 2015; Hu et al., 2020; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Liang et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Mitropoulos et al., 2018; Murante et al., 2014; Nguyen et al., 2020; Puppala et al., 2020; Schmocker et al., 2015; Shang et al., 2021; Zendjidjian et al., 2014; Zhi et al., 2021)	(Al-Borie & Damanhouri, 2013; Bjertnaes et al., 2012; Ke et al., 2018; Li et al., 2021; Más et al., 2016)

Twenty-one studies had evidence that patients' age affected their satisfaction. Studies show that older patients tend to report higher levels of satisfaction than younger patients, which tend to be less satisfied (Asamrew et al., 2020; Laal, 2013; Mitropoulos et al., 2018). Satisfaction rates increased for each additional age decade (Koné Péfoyo & Wodchis, 2013). Being older increased the probability of declaring higher satisfaction (Murante et al., 2014). Patients older than 50 years of age reported higher satisfaction scores than younger patients (Nguyen et al., 2020; Shang et al., 2021). Admitted patients who were older in age reported more satisfaction with the service they were provided than younger patients. Patients who were older than 60 years of age were seven times more likely to be satisfied than patients who were between 18 and 30 (Alemu, 2014). Compared to younger patients under age 35, elder patients are more satisfied, especially in an age group above 65 (Hu et al., 2020). Inpatients who reported a significantly higher score of overall satisfaction were those who were 46 years and older (Liu & Mao, 2019).

Younger patients tended to have lower satisfaction levels (Zendjidjian et al., 2014). Specifically, according to Ammo et al. (2014), younger patients were significantly less satisfied with the reception of the staff, food quality, taste and temperature, time of serving meals, and guiding directives by the information desk compared to older patients. This may be explained by the fact that i) older patients tend to give higher evaluation because they are more positive (Murante et al., 2014) and ii) older patients with more health constraints and life experiences have more realistic expectations (Danforth et al., 2014). One possible explanation for the lower satisfaction rating of younger patients could be that they may be treated differently (e.g. less gently than older ones) or, that they have unrealistic expectations due to their lack of knowledge about hospital care (Mitropoulos et al., 2018). Another possible explanation might be due to the fair expectation of patients by understanding the condition of the health facility (Alemu, 2014). The potential explanations include that older patients might have a lower expectation of medical services and that the attitudes of doctors might be better toward older patients (Liu & Mao, 2019).

Two studies reported contrary results (Almrstani et al., 2014; Puppala et al., 2020). As age increases, patient satisfaction scores reduce. The very elderly (age>80 years) are the least satisfied patients according to Puppala *et al.* (2020). The same was concluded by Almrstani et al. (2014) in which patients over 50 years old were the most dissatisfied. Specifically, the very elderly are the least satisfied with communication issues such as explaining things, listening carefully and describing medical information and with nurse assistance and help to use the bathroom.

Despite these last studies reporting other results, the majority of authors do however agree that older patients (e.g., > 65 years) provide higher satisfaction scoring.

6.7.2.2 Gender

Twenty-four studies have included the patients' gender in their analysis, representing 43% of the total number of studies (Table 24). From the 24 studies, 17 have found an association between the patients' gender and patient satisfaction (71%). The results of the present work show greater importance given to gender than the reviews analysed in chapter 3.1 since only 17% of those reviews have identified gender as a factor related to patient satisfaction.

Table 24. Evidence on gender

	INCLUDED GENDER (*n* = 24)	ASSOCIATION (*n* = 17)	NO ASSOCIATION (*n* = 7)
PERCENTAGE OF STUDIES	43% (24 out of 56)	71% (17 out of 24)	29% (7 out of 24)
REFERENCES	(Al-Borie & Damanhouri, 2013; Almrstani et al., 2014; Ammo et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Chen et al., 2016; Danforth et al., 2014; Erden & Emirzeoğlu, 2021; Heberer et al., 2015; Hopkins et al., 2019; Hu et al., 2020; Ke et al., 2018; Laal, 2013; Li et al., 2021; Liang et al., 2021; L. Liu & Fang, 2019; Luo et al., 2021; Más et al., 2016; Murante et al., 2014; Nguyen et al., 2020; Pan et al., 2015; Silva et al., 2018; Vovos et al., 2019)	(Al-Borie & Damanhouri, 2013; Almrstani et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Chen et al., 2016; Danforth et al., 2014; Erden & Emirzeoğlu, 2021; Heberer et al., 2015; Hu et al., 2020; Laal, 2013; Liang et al., 2021; Luo et al., 2021; Murante et al., 2014; Nguyen et al., 2020; Pan et al., 2015; Silva et al., 2018; Vovos et al., 2019)	(Ammo et al., 2014; Bjertnaes et al., 2012; Hopkins et al., 2019; Ke et al., 2018; Li et al., 2021; Liu & Mao, 2019; Más et al., 2016)

The results regarding patient gender and satisfaction are different across two groups of studies. According to Al-Borie & Damanhouri (2013), Danforth et al. (2014), Murante et al. (2014), Vovos et al. (2019) it was observed that gender had a significant statistical effect on patient satisfaction specifically men were likely to provide higher scores than women. Female patients were less satisfied with their health care and had lower scores than men.

On the contrary, according to Hu et al. (2020), Laal (2013), Nguyen et al. (2020), Pan et al. (2015), Silva et al. (2018) female patients reported higher satisfaction scores than their male counterparts. Male gender patients were more dissatisfied than women.

6.7.2.3 Education

Twenty-one studies have included the patients' education in their analysis, representing 38% of the total number of studies (Table 25). From the 21 studies, 15 have found an association between the patients' education and patient satisfaction (71%). The results of the present work show greater importance given to education than the reviews analysed in chapter 3.1 since only 17% of those reviews have identified education as a factor related to patient satisfaction. Six studies found no association to patient satisfaction.

Table 25. Evidence on education

	INCLUDED EDUCATION (*n* = 21)	ASSOCIATION (*n* = 15)	NO ASSOCIATION (*n* = 6)
PERCENTAGE OF STUDIES	38% (21 out of 56)	71% (15 out of 21)	29% (6 out of 21)
REFERENCES	(Al-Borie & Damanhouri, 2013; Ammo et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Bjertnaes et al., 2012; Danforth et al., 2014; Hu et al., 2020; Ke et al., 2018; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Li et al., 2021; Liang et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Más et al., 2016; Murante et al., 2014; Nguyen et al., 2020; Pan et al., 2015; Shang et al., 2021; Silva et al., 2018; Zhi et al., 2021).	(Al-Borie & Damanhouri, 2013; Ammo et al., 2014; Arab et al., 2014; Asamrew et al., 2020; Danforth et al., 2014; Ke et al., 2018; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Luo et al., 2021; Murante et al., 2014; Nguyen et al., 2020; Pan et al., 2015; Shang et al., 2021; Silva et al., 2018; Zhi et al., 2021).	(Bjertnaes et al., 2012; Hu et al., 2020; Li et al., 2021; Liang et al., 2021; Liu & Mao, 2019; Más et al., 2016)

Seven studies revealed that a higher level of education is negatively associated with the overall satisfaction score (Danforth et al., 2014; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Li et al., 2021; Murante et al., 2014; Nguyen et al., 2020; Pan et al., 2015). As the level of education upgraded, satisfaction scored lower (Laal, 2013). Less educated patients were more satisfied than those with a university education (Murante et al., 2014). Patients with only the primary level of education are the ones to report higher satisfaction scores (Nguyen et al., 2020). Junior and university-level education (compared to "primary or lower education") are associated with higher levels of dissatisfaction (Pan et al., 2015). Accordingly, patients with elementary education levels were significantly more satisfied than patients with postgraduate education levels (Ammo et al., 2014). The reasons for lower ratings of care among respondents with more education can be hypothesized. The psychological satisfaction of highly educated patients is more complex (Li et al., 2021). The result may reflect that these individuals have either higher expectations or are more critical in their evaluation of care. Patients with higher education may be more knowledgeable about their condition and have higher expectations about their involvement in decision-making and care processes. In this engagement, interpersonal tensions or unmet expectations of staff-provider interaction might lead to lower ratings.

In contrast, two studies concluded that patients with lower education are least satisfied (Silva et al., 2018; Zhi et al., 2021). A study concluded that the most satisfied patients are the ones with a bachelor's degree and above. Patients in junior high school and below were the least satisfied (Zhi et al., 2021). This was also concluded by Silva et al. (2018) given that patients with lower education show less satisfaction.

6.7.2.4 Health condition

Health condition refers to the patient's current health status and the history of hospitalization.

Seventeen studies have included the patients' health conditions in their analysis, representing 30% of the total number of studies (Table 26). From the 17 studies, 13 have found an association between the patients' health condition and patient satisfaction (76%). The results of the present work show greater importance given to health condition than the reviews analysed in chapter 3.1 since only 33% of those reviews have identified health condition as a factor related to patient satisfaction. Four studies found no association to patient satisfaction.

Table 26. Evidence on health condition

	INCLUDED HEALTH CONDITION (*n* = 17)	**ASSOCIATION (*n* = 13)**	**NO ASSOCIATION (*n* = 4)**
PERCENTAGE OF STUDIES	30% (17 out of 56)	76% (13 out of 17)	24% (4 out of 17)
REFERENCES	(Bjertnaes et al., 2012; Danforth et al., 2014; Erden & Emirzeoğlu, 2021; Heberer et al., 2015; Hopkins et al., 2019; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Liang et al., 2021; Más et al., 2016; Mitropoulos et al., 2018; Murante et al., 2014; Puppala et al., 2020; Shang et al., 2021; Silva et al., 2018; Zendjidjian et al., 2014; Zhang et al., 2020; Zhi et al., 2021).	(Danforth et al., 2014; Erden & Emirzeoğlu, 2021; Hopkins et al., 2019; Koné Péfoyo & Wodchis, 2013; Laal, 2013; Mitropoulos et al., 2018; Murante et al., 2014; Puppala et al., 2020; Shang et al., 2021; Silva et al., 2018; Zendjidjian et al., 2014; Zhang et al., 2020; Zhi et al., 2021).	(Bjertnaes et al., 2012; Heberer et al., 2015; Liang et al., 2021; Más et al., 2016)

1. Health status

It is consensual among studies that being in good health increases the probability of declaring a high satisfaction - sicker patients tended to give more negative evaluations (Murante et al., 2014). Patients with chronic diseases, pulmonary diseases and vascular diseases reported the lowest levels of satisfaction (Puppala et al., 2020). High comorbidity patients gave lower satisfaction scores (Hopkins et al., 2019). Additionally, the same study found that urgent procedures and revision surgeries were reported to be negative predictors of patient satisfaction. While this exact relationship has yet to be studied, the nature of urgent procedures as being sudden and revision surgeries being corrective likely contributes to negative outcomes and subsequent associated lower satisfaction scores. People in excellent health rated higher satisfaction scores compared to those with low self-rated health (Koné Péfoyo & Wodchis, 2013). Furthermore, according to the same study patients with planned admissions had satisfaction scores higher than those admitted through an ED. People who perceived themselves as being healthy were more likely to be more satisfied with hospital care. A possible explanation is that healthier people may be more satisfied with life generally, and this attitude stimulates their ultimate satisfaction with hospital care (Mitropoulos et al., 2018). Patients suffering from more severe illnesses (poor perceived health, functional limitation as described by respondents, and admission through an ED) were less satisfied (Koné Péfoyo & Wodchis, 2013). These patients may require more attention and, with additional burden and pressure on the hospital, may be less likely to receive sufficient attention. According to Danforth et al. (2014), both severity of illness and risk of mortality also influenced satisfaction scores, but those patients who were the most severely ill with the greatest risk of mortality were not less, but more likely to be satisfied. These patients most likely have lower expectations and, as a result, are more likely to be satisfied when their surgery is successful.

2. History of hospitalization

Another factor that needs to be emphasised is that patients with a history of hospitalization were found to be more satisfied than their counterparts according to Zendjidjian et al. (2014) and Zhang et al. (2020). Patients with previous hospitalization had a higher level of satisfaction with care than did patients who were admitted for the first time. Accordingly, patients with more hospitalizations rated higher satisfaction scores than those being hospitalized for the first time (Laal, 2013). This could be because patients who are hospitalised for the first time are unfamiliar with the nursing staff and hospital environment. Furthermore, fist-time admissions have been reported to be a traumatic and stressful experience for patients. They may have more needs for communication with nurses regarding their diseases and nursing services. Those with a history of admission, have a certain understanding of their own diseases and health conditions and are familiar with the hospital environment and ward nurses and have a stronger sense of security than patients hospitalised for the first time. However, a study concluded that patients being hospitalized for the first time expressed higher satisfaction scores than all others (Silva et al., 2018).

6.7.2.5 Socio-economic status

Socio-economic status refers to the patient's level of income. Thirteen studies have included the patients' socio-economic status in their analysis, representing 38% of the total number of studies (Table

27). From the 13 studies, ten have found an association between the patients' socio-economic status and patient satisfaction (77%). The results of the present work show greater importance given to socio-economic status than the reviews analysed in chapter 3.1 since only 17% of those reviews have identified socio-economic status as a factor related to patient satisfaction. Three studies found no association to patient satisfaction.

Table 27. Evidence on socio-economic status

	INCLUDED SOCIO-ECONOMIC STATUS (*n* = 13)	**ASSOCIATION (*n* = 10)**	**NO ASSOCIATION (*n* = 3)**
PERCENTAGE OF STUDIES	23% (13 out of 56)	77% (10 out of 13)	23% (3 out of 13)
REFERENCES	(Asamrew et al., 2020; Chen et al., 2016; Danforth et al., 2014; Hu et al., 2020; Ke et al., 2018; Li et al., 2021; Liu & Mao, 2019; Luo et al., 2021; Nguyen et al., 2020; Shang et al., 2021; Vovos et al., 2019; Wulandari et al., 2021; Zhi et al., 2021).	(Asamrew et al., 2020; Danforth et al., 2014; Hu et al., 2020; Ke et al., 2018; Luo et al., 2021; Nguyen et al., 2020; Shang et al., 2021; Vovos et al., 2019; Wulandari et al., 2021; Zhi et al., 2021).	(Chen et al., 2016; Li et al., 2021; Liu & Mao, 2019)

It was found that the level of income is inversely associated with the overall patient satisfaction score. For instance, a typical low-income patient tends to report higher satisfaction than higher-income level patients (Nguyen et al., 2020). Higher-income level patients have been reported to have lower satisfaction (Danforth et al., 2014; Vovos et al., 2019).

In opposite, some studies revealed that inpatients with a higher annual family income had a higher likelihood of having a positive satisfaction rating (Zhi et al., 2021). Higher-income also predicts higher satisfaction scores (Hu et al., 2020). This might be because patients with a high income can afford better medical services, and another assumption is that a higher income level for patients would allow the luxury of obtaining health insurance benefits (Liu & Mao, 2019)

However, some studies establish no significant relationship between inpatient satisfaction and monthly income (Chen et al., 2016; Li et al., 2021; Liu & Mao, 2019). This may be because hospitalized patients are more concerned about the positive role of medical service in improving the quality of life in general, owing to potentially having serious diseases.

6.7.2.6 Marital status

Twelve studies have included the patients' marital status in their analysis, representing 21% of the total number of studies (Table 28). From the 12 studies, six have found an association between the patients' marital status and patient satisfaction (50%). The results of the present work show greater importance given to marital status than the reviews analysed in chapter 3.1 since only 17% of those reviews have identified marital status as a factor related to patient satisfaction. Six studies found no association to patient satisfaction.

Table 28. Evidence on marital status

	INCLUDED SOCIO-ECONOMIC STATUS (*n* = 12)	ASSOCIATION (*n* = 6)	NO ASSOCIATION (*n* = 6)
PERCENTAGE OF STUDIES	21% (12 out of 56)	50% (6 out of 13)	50% (6 out of 13)
REFERENCES	(Arab et al., 2014; Chen et al., 2016; Ke et al., 2018; Laal, 2013; Li et al., 2021; Liang et al., 2021; Park, 2015; Schmocker et al., 2015; Shang et al., 2021; Silva et al., 2018; Zendjidjian et al., 2014; Zhang et al., 2020)	(Laal, 2013; Park, 2015; Shang et al., 2021; Silva et al., 2018; Zendjidjian et al., 2014; Zhang et al., 2020)	(Arab et al., 2014; Chen et al., 2016; Ke et al., 2018; Li et al., 2021; Liang et al., 2021; Schmocker et al., 2015)

According to Zendjidjian et al. (2014) and Zhang et al. (2020), married patients were more satisfied with health services. This could be that married patients were accompanied by their spouses who provided daily care and communicated with them. Single patients rated lower satisfaction scores than married or divorced patients (Laal, 2013). This was also concluded by (Park, 2015). According to Silva et al. (2018) patients living together were the most satisfied, followed by married patients. Patients living alone were the least satisfied.

6.7.2.7 Geographic characteristics

Twelve studies have included the patients' geographic characteristics in their analysis, representing 21% of the total number of studies (Table 29). From the 12 studies, 11 have found an association between the patients' geographic characteristics and patient satisfaction (92%). The results of the present work show greater importance given to geographic characteristics than the reviews analysed in chapter 3.1 since none of those reviews have identified geographic characteristics as a factor related to patient satisfaction. One study found no association to patient satisfaction (8%).

Table 29. Evidence on geographic characteristics

	INCLUDED GEOGRAPHIC CHARACTERISTICS (*n* = 12)	ASSOCIATION (*n* = 11)	NO ASSOCIATION (*n* = 1)
PERCENTAGE OF STUDIES	21% (12 out of 56)	92% (11 out of 12)	8% (1 out of 12)
REFERENCES	(Chen et al., 2016; Heberer et al., 2015; Ke et al., 2018; Laal, 2013; Luo et al., 2021; Murante et al., 2014; Nguyen et al., 2020; Park, 2015; Sun et al., 2017; Tobler & Stummer, 2021; Vovos et al., 2019; Zhi et al., 2021).	(Chen et al., 2016; Heberer et al., 2015; Ke et al., 2018; Laal, 2013; Luo et al., 2021; Murante et al., 2014; Nguyen et al., 2020; Park, 2015; Tobler & Stummer, 2021; Vovos et al., 2019; Zhi et al., 2021)	(Sun et al., 2017)

Two measures concerning geographic characteristics are found in the literature 1) distance to the centre of care and 2) rural or urban residence.

1. Distance to the centre of care

Some studies suggest that living in the hospital area negatively affected both patients' overall satisfaction and their relationship with doctors. According to this, receiving care in a hospital far from home had a positive impact on the hospitalization experience (Murante et al., 2014). Accordingly, a positive association was observed between inpatient satisfaction and distance to the medical centre (Vovos et al., 2019).

2. Rural or urban residence

From a different point of view, patients living in rural areas tend to have higher satisfaction scores than patients living in urban areas (Nguyen et al., 2020). Accordingly, patients residing in rural villages score higher rates of satisfaction than those residing in a city or suburban area (Laal, 2013).

In opposite according to Park (2015) patients living in a metropolitan city are more satisfied than those living in non-urban regions. Accordingly, Zhi et al. (2021) concluded that patients living in urban areas are more satisfied than rural living patients. Additionally, the most satisfied patients in the study were migrant patients.

6.7.2.8 Occupation

Seven studies have included the patients' occupation in their analysis, representing 13% of the total number of studies (Table 30). From the seven studies, six have found an association between the patients' occupation and patient satisfaction (86%). The results of the present work show greater importance given to occupation than the reviews analysed in chapter 3.1 since none of those reviews has identified occupation as a factor related to patient satisfaction. One study found no association to patient satisfaction (14%).

Table 30. Evidence on occupation

	INCLUDED OCCUPATION (*n* = 7)	**ASSOCIATION (*n* = 6)**	**NO ASSOCIATION (*n* = 1)**
PERCENTAGE OF STUDIES	13% (7 out of 56)	86% (6 out of 7)	14% (1 out of 7)
REFERENCES	(Al-Borie & Damanhouri, 2013; Asamrew et al., 2020; Chen et al., 2016; Ke et al., 2018; Laal, 2013; Liu & Mao, 2019; Nguyen et al., 2020)	(Al-Borie & Damanhouri, 2013; Asamrew et al., 2020; Chen et al., 2016; Ke et al., 2018; Laal, 2013; Nguyen et al., 2020).	(Liu & Mao, 2019).

One study suggested that patients who work in the foreign investment and enterprise sectors, tend to have lower satisfaction levels compared to employees in government sectors, students, and social beneficiaries (Nguyen et al., 2020). Similarly according to Al-Borie & Damanhouri (2013) patients who were private sector employees and businessmen had higher satisfaction levels compared to students and government employees. Patients who are self-employed or retired are more satisfied that others (Laal, 2013).

6.7.2.9 Ethnicity

Six studies have included the patients' ethnicity in their analysis, representing 11% of the total number of studies (Table 31). From the six studies, four have found an association between the patients' ethnicity and patient satisfaction (67%). The results of the present work show greater importance given to ethnicity than the reviews analysed in chapter 3.1 since none of those reviews has identified ethnicity as a factor related to patient satisfaction. Two studies found no association to patient satisfaction (33%).

Table 31. Evidence on ethnicity

	INCLUDED ETHNICITY (*n* = 6)	**ASSOCIATION (*n* = 4)**	**NO ASSOCIATION (*n* = 2)**
PERCENTAGE OF STUDIES	11% (6 out of 56)	67% (4 out of 6)	33% (2 out of 6)
REFERENCES	(Asamrew et al., 2020; Danforth et al., 2014; Hopkins et al., 2019; Nguyen et al., 2020; Puppala et al., 2020; Vovos et al., 2019).	(Asamrew et al., 2020; Nguyen et al., 2020; Puppala et al., 2020; Vovos et al., 2019).	(Danforth et al., 2014; Hopkins et al., 2019)

The relationships between ethnicity and satisfaction are not clear. African Americans gave high satisfaction scores and were more satisfied than any other race, and their level of satisfaction was maintained throughout different age groups (Puppala et al., 2020). Accordingly, the same result was obtained by Vovos et al. (2019) which concluded that African Americans gave the highest satisfaction scores, followed by Caucasian patients. From another perspective, patients from minority communities usually feel more comfortable with care providers from a similar culture and racial background, awareness or sensitivity, showing higher satisfaction (Puppala et al., 2020). It is important to focus on cultural awareness and to offer a service that is culturally sensitive (Puppala et al., 2020).

6.7.2.10 Emotional status

Three studies have included the patients' emotional status in their analysis, representing 5% of the total number of studies (Table 32). All three studies have found an association between the patients' emotional status and patient satisfaction (100%). The results of the present work show greater importance given to emotional status than the reviews analysed in chapter 3.1 since none of those reviews has identified emotional status as a factor related to patient satisfaction.

Table 32. Evidence on emotional status

	INCLUDED EMOTIONAL STATUS (*n* = 3)	**ASSOCIATION (*n* = 3)**	**NO ASSOCIATION (*n* = 0)**
PERCENTAGE OF STUDIES	5% (3 out of 56)	100% (3 out of 3)	0% (0 out of 3)
REFERENCES	(Erden & Emirzeoğlu, 2021; M. Liu et al., 2021; Zhang et al., 2020)	(Erden & Emirzeoğlu, 2021; M. Liu et al., 2021; Zhang et al., 2020)	-

The patients' emotional status refers to their emotions during hospitalization. Patient satisfaction is directly related to the patient's cognitive and emotional status (Erden & Emirzeoğlu, 2021). All studies reveal lower patient satisfaction emerging for patients who were experiencing nervousness, anxiety and fear during the preoperative process and hospitalization (Erden & Emirzeoğlu, 2021; B. Liu et al., 2021; Zhang et al., 2020). This might be explained by the fact that hospital interventions are associated with a wide range of distressing emotions such as fear, discomfort, anxiety, and pain which impact the satisfaction of the patient (Erden & Emirzeoğlu, 2021). Therefore, it is important to assess the patient emotional status and plan interventions and care according to their needs to improve their satisfaction (B. Liu et al., 2021). This is also pointed out by Zhang et al. (2020) that suggest that patients need to be assessed regularly for anxiety during the preoperative visit and appropriate anxiety-reducing methods should be introduced.

Figure 12 summarizes the patient-related determinants and key linked factors that influence inpatient satisfaction, retrieved from the studies assessed.

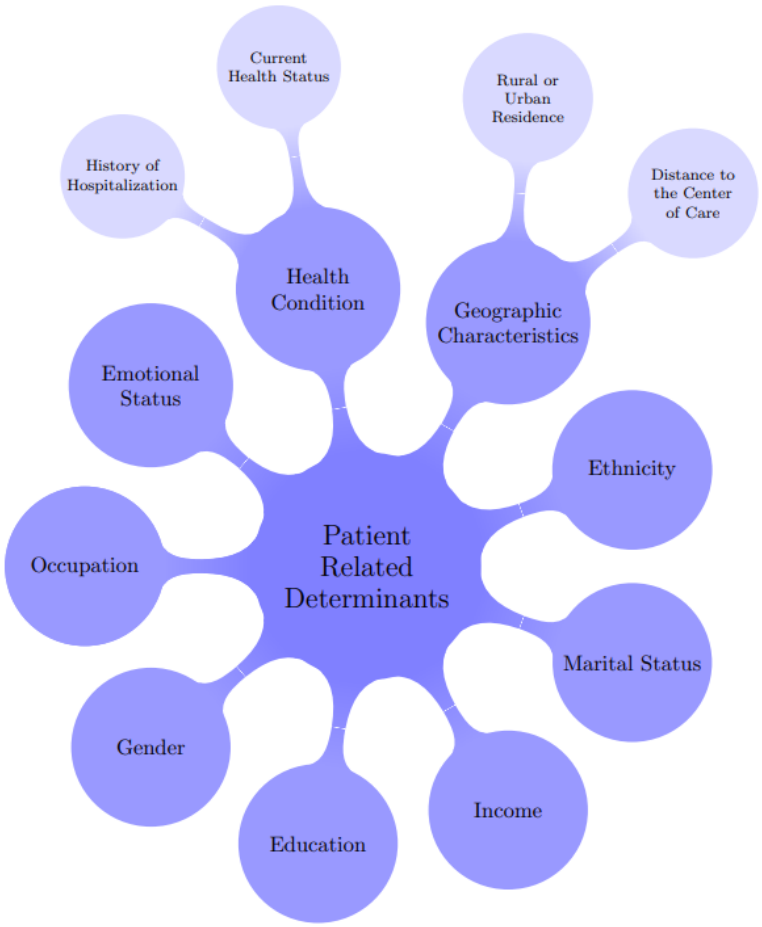

Figure 12. Mind map of the patient-related determinants of inpatient satisfaction

6.8 Meta-Analysis

As announced earlier, a chi-square test of independence is used to answer the questions presented in Section 5.3. Significant correlation results were considered for the p-value < 0.05. The questions enunciated may be answered as follows:

1. Is the evidence regarding each one of the determinants related to the type of healthcare system?
No. According to the results of the present work, relations between each one of the determinants and the type of health system were not significant.

2. Is the evidence regarding each one of the determinants related to the country?
No. According to the results of the present work, relations between each one of the determinants and the country were not significant.

3. Is the evidence regarding each one of the determinants related to the medical speciality?
No. According to the results of the present work, relations between each one of the determinants and medical speciality were not significant.

4. Is the evidence regarding each one of the determinants related to the methodology?
Yes, for two determinants. Specifically, studies that found no correlation between patient income and patient satisfaction, were using Cronbach's test (p=0,041). The same result appeared concerning the determinant of patient education (p=0,040).

Results from the meta-analysis based on the p-value, show that possibly there is no relation between the determinants and the type of healthcare system, the country or the medical speciality. However, this means that these study hypotheses could be true, but there is not enough evidence in this study to support the hypothesis. As the p-value is highly affected by the sample size, it is possible that the design and test combination can be underpowered for detecting hypothetical effect sizes of interest (Visentin et al., 2020). Thus, further studies should be developed including higher sample size.

Despite not being obtained significant correlations between the determinants and the type of health system, some interpretations can be taken through frequency analysis. Table 33 presents the results of the frequency analysis through a colour scheme, in which darker red represents a higher frequency of studies finding an association between the determinant and patient satisfaction. These interpretations can serve as a point of start for further research in the field, in research that ideally would be able to include more studies in the systematic review. Through frequency analysis, it is observable that for technical care, interpersonal care, access, cost, length of stay, gender, education, health condition and occupational status, the Beveridge, NHI and Out of Pocket studies show a higher association than the Bismarck healthcare system. This can be explained by the fact that Bismarck systems usually have significantly higher accessibility, lower waiting times and, thanks to the competition between operators, higher quality and more consumer-oriented healthcare (Or et al., 2010). In addition, a study shows that

the introduction of the Bismarck system led to a significant reduction in mortality (Bauernschuster et al., 2020). Access is specifically associated to patient satisfaction in studies where the Beveridge, NHI and Out of Pocket healthcare systems are operative. This may be explained by the fact that the Beveridge and NHI models are characterized by long waiting lists and lines to receive care, especially for those with non-emergency situations. In addition, longer waiting times may be adopted by providers if doctors can work in both the public and private sectors, which gives them incentives to maintain long waiting lists for public patients. Regarding the out-of-pocket model, it is usually associated with rural areas of underdeveloped countries, which generally lack efficient health services and are unable to provide time efficient care. There are also usually long waiting lines to receive care, under dimensioned staff teams that perform medical support in under capacity facilities, being unable to provide the services that patients need. In opposite, the Bismarck health insurance is characterized by 'money follows the patient' which means that hospitals are paid for the actual quantity and quality of care they deliver to patients, thereby enabling the hospitals to see clearly the link between money and the work they do. Hospitals are subject to overall budgetary ceilings and are encouraged to pursue the most cost-effective means of meeting their targets. This will significantly improve levels of efficiency. Thus, in the Bismarck model there are incentives to find the optimum waiting time, staff team and scheduling processes.

Table 33. Importance of determinants by health system

Determinants	Beveridge	Bismarck	NHI	Out-of-Pocket
Technical Care				
Interpersonal Care				
Physical Environment				
Access				
Organizational Characteristics				
Outcome Of Care				
Cost				
Pain Management				
Length Of Stay				
Age				
Gender				
Education				
Income				
Marital Status				
Ethnicity				
Geographic Characteristics				
Health Condition				
Emotional				
Occupational Status				

7 Conclusions, limitations and future work

This chapter is divided into three sections. Section 7.1 presents a brief overview of the results and conclusions of this work. Section 7.2 presents the limitations encountered. Section 7.3 presents research that can be further done as an extension of this work.

7.1 Conclusions

Consumerism has progressively entered the health care industry. Patients have been gradually turning into consumers and now approach their providers with heightened expectations and an eagerness to question medical advice and even to switch healthcare providers when their experiences do not meet their expectations. Patients are progressively more demanding in their healthcare and expect a certain level of service from their providers (WHO, 2018a). Providers, on the other hand, face patient satisfaction with new eyes. Guaranteeing and exceeding patient satisfaction has become imperative for healthcare organizations. It is seen as a way to maintain current patients and attract new ones, being an important contributor to hospitals' financial well-being. This trend is also noted in the literature, where studies regarding patient satisfaction are strongly present.

Through a systematic review and meta-analysis, this work gathered existing information published in a ten years time frame, 2012-2022, following criteria of inclusion and exclusion to retrieve studies that have already been published about the determinants that influence patient satisfaction. This is particularly important because to achieve patient satisfaction set targets, organizations need to be aware of what factors influence patients' satisfaction to assess them internally and improve the less efficient ones. In addition, while improving patient satisfaction, knowledge about these factors may lead to a more detailed decision-making process and higher patient adherence to treatment, thus contributing to better treatment outcomes and cost-effectiveness.

The PRISMA method was used to ensure the clarity and transparency of reporting of systematic reviews. Fifty-six studies satisfied all criteria and were included in the analysis. The work conducted concludes that 2021 was the year with more publications in the field and on average 5,3 new studies were published every year. Asia, North America, and Europe were the continents that provide the most studies, being China, the USA, and Ethiopia being the most studied countries during this time frame. The healthcare system most studied was the National Health Insurance model, followed by the out-of-pocket. The most used method according to the sample was logistic regression. The most relevant journal is Patient preference and adherence.

Finding from the current study indicate that the notion of patient satisfaction is to some extent determined by certain subject characteristics. These characteristics were investigated in a wide diversity of studies, including fields of behavioural science, health management, medicine, health policy, healthcare quality, and so on.

Interpersonal care, technical care, pain management, the outcome of care and emotional status were the most consistent determinants, being associated to patient satisfaction in all studies where they were included. Specifically, interpersonal care appears repeatedly as the most important and strong determinant of patient satisfaction. To a lesser extent, organizational characteristics, physical

environment, access, cost, age, gender, education, health condition, socio-economic status, marital status, nationality and geographic characteristics, occupations and ethnicity have been shown to influence measured satisfaction ratings in some of the studies where they were assessed. However, the strength and direction of the effects of these determinants on patient satisfaction were varied. In fact, study results between and within fields varied on these last-mentioned determinants, which may be explained by the absence of a globally accepted formulation of patient satisfaction.

The literature indicates general acceptance of the notion that various aspects of care, independent of each other to some extent, have an effect on overall satisfaction. It is indicated in the literature the concern regarding the patient's ability to judge technical aspects of care, and uncertainty exists about what they are evaluating when they report satisfaction. Furthermore, it is noted that the socio-demographic factors do not only affect patient satisfaction but may also influence when patients are evaluating the healthcare provider-related factors. Person-related variables should be considered as both potential predictors of patient satisfaction and confounders in the same study to control their roles in the true associations between determinants and patient satisfaction. Therefore, it is suggested that employing population-specific or setting-specific and valid instruments with open questions for comments and complaints from patients would reduce the weakness.

Regarding the meta-analysis, four questions were hypothesized. No significant correlation was found between each one of the determinants and the type of healthcare system, the country, and the medical speciality. A correlation was only found significant between the methodology used and patient income and education.

7.2 Limitations

All studies have limitations regarding design or methodology that may have influenced the interpretation of the findings from the research. Three limitations were identified throughout the development of this work. First, when conducting the PRISMA screening phase, 116 studies were not retrieved due to a lack of accessibility through the University of Lisbon VPN. This led to the exclusion of those studies, which influenced the number of articles included and the work conclusions, since they may have contributed with additional results and different points of view to this work. Secondly, when assessing studies for eligibility, many studies were found with unclear results, ambiguous conclusions and performing inefficient analysis without clear findings. This also impacted the work because 54 studies were excluded from the analysis. Third, two databases were used to search for studies - science direct and PubMed. Despite these databases being widely chosen as article providers and being ranked in the top list of academic research databases, there are some other relevant databases which could be also considered. Since this study is academic research with limited time, the exclusion of other databases as a search engine was due to time constraints.

7.3 Recommendations for future studies

As explained previously, all limitations found thorough this work affected the sample size. The sample size depends on the nature of the research problem and the work's methodology and conclusions are influenced by the sample size. Further research should be done based on a larger sample size, through the search in more databases, which can generate more consistent results.

Furthermore, future reviews could be done including the population of patients in each article. This could provide additional insights and different results when evaluating the determinants.

In addition, future research should be done to develop a universal and standardized patient satisfaction assessment survey. The measurement of satisfaction has been described as a difficult and complex task, with many possible sources of measurement and interpretation errors. The most criticized aspect when measuring patient satisfaction is the survey's subjectivity. Many surveys have been developed through the years and it was noticed the use of different surveys in the studies differs from country to country and even within the same country. This can often lead to different results, since the questions are different and the patients can perceive the questions differently depending on how it is written, leading to interpretation errors. This could be overcome through the use of a universal survey. Furthermore, it was noted in some studies that patients may say they are satisfied with care because they want to please the interviewer, worrying that care may be suspended in the future, or have some cultural or other reason to fear complaining. This should be considered when developing the survey and the process, setting and circumstances through which the patient answers to the survey so that impartial answers are given.

It would also be interesting to develop a similar analysis but considering only the most recent pandemic years, focusing on how Covid 19 pandemic has influenced patient satisfaction and the determinants that affect patient satisfaction.

8 Bibliography

Abrahamsen Grøndahl, V., Hall-Lord, M. L., Karlsson, I., & Appelgren, J. (2013). Exploring patient satisfaction predictors in relation to a theoretical model. *International Journal of Health Care Quality Assurance*, *26*(1), 37–54. https://doi.org/10.1108/09526861311288631

Aga, T. B., Ferede, Y. M., & Mekonen, E. G. (2021). Satisfaction and associated factors towards inpatient health care services among adult patients at Pawie General Hospital, West Ethiopia. *PloS One*, *16*(4), e0249168. https://doi.org/10.1371/journal.pone.0249168

Al-Abri, R., & Al-Balushi, A. (2014). Patient satisfaction survey as a tool towards quality improvement. *Oman Medical Journal*, *29*(1), 3–7. https://doi.org/10.5001/omj.2014.02

Al-Borie, H. M., & Damanhouri, A. M. S. (2013). Patients' satisfaction of service quality in Saudi hospitals: a SERVQUAL analysis. *International Journal of Health Care Quality Assurance*, *26*(1), 20–30. https://doi.org/10.1108/09526861311288613

Alaloul, F., Williams, K., Myers, J., Jones, K. D., & Logsdon, M. C. (2015). Impact of a Script-based Communication Intervention on Patient Satisfaction with Pain Management. *Pain Management Nursing*, *16*(3), 321–327. https://doi.org/10.1016/j.pmn.2014.08.008

Alemu, S. (2014). Changes in Inpatient Satisfaction with Nursing Care and Communication at Debre Markos Hospital, Amhara Region, Ethiopia. *American Journal of Health Research*, *2*(4), 171. https://doi.org/10.11648/j.ajhr.20140204.21

Alfred, M., Ubogaya, K., Chen, X., Wint, D., & Worral, P. S. (2016). Effectiveness of culturally focused interventions in increasing the satisfaction of hospitalized Asian patients: a systematic review. *JBI Database of Systematic Reviews and Implementation Reports*, *14*(8), 219–256. https://doi.org/10.11124/JBISRIR-2016-003048

Alhowaymel, F., Abaoud, A., Alhuwaimel, A., Alenezi, A., & Alsayed, N. (2022). COVID-19 Patients' Satisfaction Levels with Nursing Care: A Cross-Sectional Study. *SAGE Open Nursing*, *8*. https://doi.org/10.1177/23779608221078163

Allen, S. (2021). Global health care outlook 2021. In *Deloitte*. https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Life-Sciences-Health-Care/gx-lshc-2016-health-care-outlook.pdf%5Cnhttp://www.deloitte.com/healthcareoutlook.

Allen, S. (2022). *2022 Global Health Care Outlook*.

Almrstani, A. M. S., Eldeek, B., Abubakr, H., Alnoman, A., & Anshasi, A. (2014). Determinants of patient satisfaction in the obstetrics ward at a university hospital in Saudi Arabia. *Research Journal of Medical Sciences*, *8*(3), 94–98. https://doi.org/10.3923/rjmsci.2014.94.98

Alzaydi, Z. M., Al-Hajla, A., Nguyen, B., & Jayawardhena, C. (2018). A review of service quality and service delivery: Towards a customer co-production and customer-integration approach. *Business Process Management Journal*, *24*(1), 295–328. https://doi.org/10.1108/BPMJ-09-2016-0185

Amin, M., & Nasharuddin, S. Z. (2013). Hospital service quality and its effects on patient satisfaction and behavioural intention. *Clinical Governance*, *18*(3), 238–254. https://doi.org/10.1108/CGIJ-05-2012-0016

Ammo, M. A., Abu-Shaheen, A. K., Kobrosly, S., & Al-Tannir, M. A. (2014). Determinants of Patient Satisfaction at Tertiary Care Centers in Lebanon. *Open Journal of Nursing*, *04*(13), 939–946.

https://doi.org/10.4236/ojn.2014.413100

Amzat, J., & Razum, O. (2021). Globalization, Health and the Global South. In Routledge (Ed.), *Globalization, Health and the Global South* (1st Editio). Taylor & Francis. https://doi.org/10.4324/9781003247975

Antje, R., Dipl, K., Weigand, M., Heilpaed, D., & Geraedts, M. (2017). Associations between hospital characteristics and patient satisfaction in Germany. *Health Expectations*, *June 2016*, 593–600. https://doi.org/10.1111/hex.12485

Antony, J., Sunder M, V., Sreedharan, R., Chakraborty, A., & Gunasekaran, A. (2019). A systematic review of Lean in healthcare: a global prospective. *International Journal of Quality and Reliability Management*, *36*(8), 1370–1391. https://doi.org/10.1108/IJQRM-12-2018-0346

Arab, M. M., Rashidian, A., Pourreza, A., Forooshani, A. R., Tajvar, M., Nemati, R. K., Sari, A. A., & Forooshani, A. R. (2014). Developing a Persian inpatient satisfaction questionnaire. *International Journal of Health Care Quality Assurance*, *27*(1), 4–14. https://doi.org/10.1108/IJHCQA-10-2011-0059

Asamrew, N., Endris, A. A., & Tadesse, M. (2020). Level of Patient Satisfaction with Inpatient Services and Its Determinants: A Study of a Specialized Hospital in Ethiopia. *Journal of Environmental and Public Health*, *2020*. https://doi.org/10.1155/2020/2473469

Batbaatar, E., Dorjdagva, J., Luvsannyam, A., & Amenta, P. (2015). Conceptualisation of patient satisfaction: A systematic narrative literature review. *Perspectives in Public Health*, *135*(5), 243–250. https://doi.org/10.1177/1757913915594196

Batbaatar, E., Dorjdagva, J., Luvsannyam, A., Savino, M. M., & Amenta, P. (2017). Determinants of patient satisfaction: A systematic review. *Perspectives in Public Health*, *137*(2), 89–101. https://doi.org/10.1177/1757913916634136

Bauernschuster, S., Driva, A., & Hornung, E. (2020). Bismarck's health insurance and the mortality decline. *Journal of the European Economic Association*, *18*(5), 2561–2607. https://doi.org/10.1093/JEEA/JVZ052

Berger, S., Saut, A. M., & Berssaneti, F. T. (2020). Using patient feedback to drive quality improvement in hospitals: A qualitative study. *BMJ Open*, *10*(10), 1–8. https://doi.org/10.1136/bmjopen-2020-037641

Betts, D., & Balan-Cohen, A. (2017). *Value of patient experience*.

Bevan, G., Helderman, J. K., & Wilsford, D. (2010). Changing choices in health care: Implications for equity, efficiency and cost. *Health Economics, Policy and Law*, *5*(3), 251–267. https://doi.org/10.1017/S1744133110000022

Bjertnaes, O. A., Sjetne, I. S., & Iversen, H. H. (2012). Overall patient satisfaction with hospitals: effects of patient-reported experiences and fulfilment of expectations. *BMJ Quality & Safety*, *21*(1), 39–46. https://doi.org/10.1136/bmjqs-2011-000137

Borde, M. T., Kabthymer, R. H., Shaka, M. F., & Abate, S. M. (2022). The burden of household out-of-pocket healthcare expenditures in Ethiopia: a systematic review and meta-analysis. *International Journal for Equity in Health*, *21*(1), 1–20. https://doi.org/10.1186/s12939-021-01610-3

Burroughs, T. E., Waterman, B. M., Cira, J. C., Desikan, R., & Claiborne Dunagan, W. (2001). Patient satisfaction measurement strategies. *Journal on Quality Improvement*, *27*(7), 349–361.

https://doi.org/10.1016/S1070-3241(01)27030-8

Busse, R., Klazinga, N., Panteli, D., & Quentin, W. (2019). Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies. In *Health Policy Series*. https://apps.who.int/iris/bitstream/handle/10665/327356/9789289051750-eng.pdf?sequence=1&isAllowed=y

Chang, J. T., Hays, R. D., Shekelle, P. G., MacLean, C. H., Solomon, D. H., Reuben, D. B., Roth, C. P., Kamberg, C. J., Adams, J., Young, R. T., & Wenger, N. S. (2006). Patients' global ratings of their health care are not associated with the technical quality of their care. *Annals of Internal Medicine*, *144*(9), 665–672. https://doi.org/10.7326/0003-4819-144-9-200605020-00010

Chen, H., Li, M., Wang, J., Xue, C., Ding, T., Nong, X., Liu, Y., & Zhang, L. (2016). Factors influencing inpatients' satisfaction with hospitalization service in public hospitals in Shanghai, People's Republic of China. *Patient Preference and Adherence*, *10*, 469–477. https://doi.org/10.2147/PPA.S98095

Chen, Jia, F., Li, T., & Zhang, T. (2021). Supply chain leadership and firm performance: A meta-analysis. *International Journal of Production Economics*, *235*(February), 108082. https://doi.org/10.1016/j.ijpe.2021.108082

Chokshi, M., Patil, B., Khanna, R., Neogi, S. B., Sharma, J., Paul, V. K., & Zodpey, S. (2016). Health systems in India. *Journal of Perinatology*, *36*(s3), S9–S12. https://doi.org/10.1038/jp.2016.184

Cioplan, G. (2019). Evaluating the quality of health care by assessing patient satisfaction. In *Centre for European Studies (CES) Working Papers* (Vol. 11, Issue 4). http://ezproxy.umgc.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=asn&AN=141668233&site=eds-live&scope=site

Crow, R., Gage, H., Hampson, S., Hart, J., Kimber, A., Storey, L., & Thomas, H. (2002). The measurement of satisfaction with healthcare: Implications for practice from a systematic review of the literature. In *Health Technology Assessment* (Vol. 6, Issue 32). https://doi.org/10.3310/hta6320

Curtis, M., Quiring, K., Theofilou, B., & Björnsjö, A. (2021). Life Reimagined: Mapping the motivations that matter for today's consumers. In *Accenture*. https://www.accenture.com/gb-en/insights/strategy/reimagined-consumer-expectations

Daim, T. U., Rueda, G., Martin, H., & Gerdsri, P. (2006). Forecasting emerging technologies: Use of bibliometrics and patent analysis. *Technological Forecasting and Social Change*, *73*(8), 981–1012. https://doi.org/10.1016/j.techfore.2006.04.004

Danforth, R. M., Pitt, H. A., Flanagan, M. E., Brewster, B. D., Brand, E. W., & Frankel, R. M. (2014). Surgical inpatient satisfaction: What are the real drivers? *Surgery (United States)*, *156*(2), 328–335. https://doi.org/10.1016/j.surg.2014.04.029

Dash, Kiefer, K., & Paul, J. (2021). Marketing-to-Millennials: Marketing 4.0, customer satisfaction and purchase intention. *Journal of Business Research*, *122*(February 2020), 608–620. https://doi.org/10.1016/j.jbusres.2020.10.016

Dash, P., Henricson, C., Kumar, P., & Stern, N. (2019). The hospital is dead, long live the hospital! *McKinsey & Company*, *May*. https://www.mckinsey.com/~/media/McKinsey/Industries/Healthcare Systems and Services/Our Insights/The hospital is dead long live the hospital/The-hospital-is-dead-long-live-the-hospital.ashx

Dimitrievska, V., & Misoska, A. T. (2021). Patients Characteristics as Determinants of Patient Satisfaction: Modelling Satisfaction in a Transitional Economy. *Journal of Health and Medical Sciences*, *4*(2). https://doi.org/10.31014/aior.1994.04.02.162

Dimova, R., Stoyanova, R., & Keskinova, D. (2017). The EUROPEP questionnaire for patient's evaluation of general practice care: Bulgarian experience. *Croatian Medical Journal*, *58*(1), 63–74. https://doi.org/10.3325/cmj.2017.58.63

Dixon-Woods, M. (2011). Using framework-based synthesis for conducting reviews of qualitative studies. *BMC Medicine*, *9*, 9–10. https://doi.org/10.1186/1741-7015-9-39

Donabedian, A. (1966). EVALUATING THE QUALITY OF MEDICAL CARE. *The Milbank Memorial Fund Quarterly*, *44*(3), 166–206.

Donabedian, A. (1980). *The definition of quality and approaches to its assessment Exploration in quality assessment and monitoring: Volume 1*. Health Administration Press.

Donabedian, A. (1992). The Lichfield Lecture Quality consumers ' role. *Quality*, *1*, 247–251.

Dunsch, F., Evans, D. K., Macis, M., & Wang, Q. (2018). Bias in patient satisfaction surveys: A threat to measuring healthcare quality. *BMJ Global Health*, *3*(2), 1–5. https://doi.org/10.1136/bmjgh-2017-000694

Eiriz, V., & Figueiredo, J. A. (2005). Quality evaluation in health care services based on customer-provider relationships. *International Journal of Health Care Quality Assurance*, *18*(6), 404–412. https://doi.org/10.1108/09526860510619408

El-Haddad, C., Hegazi, I., & Hu, W. (2020). Understanding Patient Expectations of Health Care: A Qualitative Study. *Journal of Patient Experience*, *7*(6), 1724–1731. https://doi.org/10.1177/2374373520921692

Eleuch, A. (2011). Healthcare service quality perception in Japan. *International Journal of Health Care Quality Assurance*, *24*(6), 417–429. https://doi.org/10.1108/09526861111150680

Endeshaw, B. (2019). Healthcare service quality-measurement models: a review. *Journal of Health Research*, *35*(2), 106–117. https://doi.org/10.1108/JHR-07-2019-0152

Erden, A., & Emirzeoğlu, M. (2021). Factors Affecting the Satisfaction Levels of Patients who Underwent Orthopedic Knee Surgery in the Early Postoperative Period. *Journal of Patient Experience*, *8*, 1–7. https://doi.org/10.1177/23743735211043392

Eriksen, L. R. (1995). Patient satisfaction with nursing care: concept clarification. In *Journal of nursing measurement* (Vol. 3, Issue 1, pp. 59–76). https://doi.org/10.1891/1061-3749.3.1.59

Exadaktylos, N. M. (2005). Organisation and financing of the health care systems of Bulgaria and Greece - What are the parallels? *BMC Health Services Research*, *5*(1998), 1–7. https://doi.org/10.1186/1472-6963-5-41

Fang, H. (2020). *Health System Overview China* (Issue December).

Farzianpour, F., Byravan, R., & Amirian, S. (2015). Evaluation of Patient Satisfaction and Factors Affecting It: A Review of the Literature. *Health*, *07*(11), 1460–1465. https://doi.org/10.4236/health.2015.711160

Federal Research Division. (2005). *COUNTRY PROFILE: VIETNAM* (Issue December).

Ferrand, Y. B., Siemens, J., Weathers, D., Fredendall, L. D., Choi, Y., Pirrallo, R. G., & Bitner, M. (2016). Patient satisfaction with healthcare services: A critical review. *Quality Management Journal*, *23*(4),

6–22. https://doi.org/10.1080/10686967.2016.11918486

Ferre, F., de Belvis, A. G. iuli., Valerio, L., Longhi, S., Lazzari, A., Fattore, G., Ricciardi, W., & Maresso, A. (2014). Italy: health system review. *Health Systems in Transition*, *16*(4), 1–168.

Freundlich, R. E., Li, G., Grant, B., St. Jacques, P., Sandberg, W. S., Ehrenfeld, J. M., Shotwell, M. S., & Wanderer, J. P. (2020). Patient satisfaction survey scores are not an appropriate metric to differentiate performance among anesthesiologists. *Journal of Clinical Anesthesia*, *65*(April), 109814. https://doi.org/10.1016/j.jclinane.2020.109814

Gallo, A. (2014). The Value of Keeping the Right Customers. In *Harvard Business Review*. https://hbr.org/2014/10/the-value-of-keeping-the-right-customers

Gavurova, B., Dvorsky, J., & Popesko, B. (2021). Patient Satisfaction Determinants of Inpatient Healthcare. *International Journal of Environmental Research and Public Health*, *18*(21). https://doi.org/10.3390/ijerph182111337

Gill, L., & White, L. (2009). A critical review of patient satisfaction. *Leadership in Health Services*, *22*(1), 8–19. https://doi.org/10.1108/17511870910927994

Gleeson, H., Calderon, A., Swami, V., Deighton, J., Wolpert, M., & Edbrooke-Childs, J. (2016). *Systematic review of approaches to using patient experience data for quality improvement in healthcare settings* (Vol. 6, Issue 8). https://doi.org/10.1136/bmjopen-2016-011907

Godbole, N. S., & Lamb, J. P. (2018). Healthcare: An Emerging Domain and Its Global Importance. In *Making Healthcare Green: The Role of Cloud, Green IT, and Data Science to Reduce Healthcare Costs and Combat Climate Change*. https://doi.org/10.1007/978-3-319-79069-5

Grant Thornton. (2009). *Transforming the Middle East ' s Healthcare Model*.

Green, B., Johnson, C., & Adams, A. (2006). Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *Journal of Chiropractic Medicine*, *5*(3). https://doi.org/10.1162/ling_a_00246

Greer, S. L., Wismar, M., & Figueras, J. (2016). Strengthening health system governance. Better policies, stronger performance. In *European Observatory on Health Systems and Policies Series*. http://www.euro.who.int/__data/assets/pdf_file/0004/307939/Strengthening-health-system-governance-better-policies-stronger-performance.pdf

Grigoroudis, E., & Siskos, Y. (2010). Customer Satisfaction Evaluation Methods for Measuring and Implementing Service Quality. In *Customer Satisfaction Evaluation: Methods for Measuring and Implementing Service Quality* (Vol. 139). Springer US.

Grissom, M. O., Farra, M., Cruzen, E. S., Barlow, E., & Gupta, S. (2021). What can COVID-19 teach us about patient satisfaction in the emergency department? A mixed-methods approach. *Journal of the American College of Emergency Physicians Open*, *2*(2), 1–9. https://doi.org/10.1002/emp2.12436

Gupta, H. D. (2008). Identifying Health Care Quality Constituents: Service Providers' Perspective. *Journal of Management Research*, *8*(1), 18–28. http://search.proquest.com/docview/237237392/abstract/BBF15C21F7324B33PQ/1

Gusenbauer, & Haddaway. (2020). Which academic search systems are suitable for systematic reviews or meta-analyses? Evaluating retrieval qualities of Google Scholar, PubMed, and 26 other resources. *Research Synthesis Methods*, *11*(2), 181–217. https://doi.org/10.1002/jrsm.1378

Gutiérrez-Hernández, P., & Abásolo-Alessón, I. (2021). The health care sector in the economies of the European Union: an overview using an input–output framework. *Cost Effectiveness and Resource Allocation*, *19*(1), 1–22. https://doi.org/10.1186/s12962-021-00258-8

Hashim, M. J. (2017). Patient-centered communication: Basic skills. *American Family Physician*, *95*(1), 29–34.

Hazilah Abd Manaf, N. (2012). Inpatient satisfaction: An analysis of Malaysian public hospitals. *International Journal of Public Sector Management*, *25*(1), 6–16. https://doi.org/10.1108/09513551211200258

Heberer, M., Bourke, L., Wildhaber, F., & Sütterlin, J. (2015). Partnership between patients and health care professionals is an important determinant of patient satisfaction. *International Journal of Healthcare*, *2*(1). https://doi.org/10.5430/ijh.v2n1p90

Hendry, A., Kadu, M., Kuluski, K., & Thompson, J. (2018). Continuity and Coordination of Care. In *World Health Organization*. https://apps.who.int/iris/handle/10665/274628

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2019). Cochrane Handbook for Systematic Reviews of Interventions. In *Cochrane Handbook for Systematic Reviews of Interventions*. https://doi.org/10.1002/9781119536604

Hill, N., & Alexander, J. (1996). The Handbook of Customer Satisfaction and Loyalty Measurement (3rd ed.). In *Measuring Business Excellence*. Gower Publishing. https://doi.org/10.1108/13683040810900412

Homburg, C., Klarmann, M., & Vomberg, A. (2022). *Handbook of Market Research*. https://doi.org/10.1002/9781118572979

Hopkins, B. S., Patel, M. R., Yamaguchi, J. T., Cloney, M. B., & Dahdaleh, N. S. (2019). Predictors of patient satisfaction and survey participation after spine surgery: a retrospective review of 17,853 consecutive spinal patients from a single academic institution. Part 2: HCAHPS. *Journal of Neurosurgery. Spine*, *30*(3), 389–396. https://doi.org/10.3171/2018.8.SPINE181024

Howick, J., Moscrop, A., Mebius, A., Fanshawe, T. R., Lewith, G., Bishop, F. L., Mistiaen, P., Roberts, N. W., Dieninytė, E., Hu, X. Y., Aveyard, P., & Onakpoya, I. J. (2018). Effects of empathic and positive communication in healthcare consultations: a systematic review and meta-analysis. *Journal of the Royal Society of Medicine*, *111*(7), 240–252. https://doi.org/10.1177/0141076818769477

Hu, L., Ding, H., Liu, S., Wang, Z., Hu, G., & Liu, Y. (2020). Influence of patient and hospital characteristics on inpatient satisfaction in China's tertiary hospitals: A cross-sectional study. *Health Expectations : An International Journal of Public Participation in Health Care and Health Policy*, *23*(1), 115–124. https://doi.org/10.1111/hex.12974

Hussain, M., Rehman, R., Ikramuddin, Z., Asad, N., & Farooq, A. (2018). Inpatient satisfaction at different public sector hospitals of a metropolitan city in Pakistan: a comparative cross-sectional study. *Hospital Practice (1995)*, *46*(2), 88–96. https://doi.org/10.1080/21548331.2018.1427410

Institute of Medicine. (1990). *Medicare: a strategy for quality assurance* (K. N. Lohr (ed.); Vol. 1). National Academies Press.

Irvine, R. (2002). Fabricating 'health consumers' in health care politics. *Consuming Health: The Commodification of Health Care*, *January 2002*, 31.

Ke, P., Jiang, F., Wu, D., Ke, L., Lin, Z., Jia, J., Ye, B., & Liu, B. (2018). A third-party investigation of inpatient satisfaction with a tertiary hospital in People's Republic of China. *Patient Preference and Adherence*, *12*, 2027–2037. https://doi.org/10.2147/PPA.S176471

Khan, & Ghouri, A. (2018). Enhancing Customer Satisfaction and Loyalty through Customer-Defined Market Orientation and Customer Inspiration: A Critical Literature Review. *International Business Education Journal*, *11*(1), 25–39. https://doi.org/10.37134/ibej.vol11.1.3.2018

Khan, S., Vandermorris, A., Shepherd, J., Begun, J. W., Lanham, H. J., Uhl-Bien, M., & Berta, W. (2018). Embracing uncertainty, managing complexity: Applying complexity thinking principles to transformation efforts in healthcare systems. *BMC Health Services Research*, *18*(1), 1–8. https://doi.org/10.1186/s12913-018-2994-0

Kinkorová, J., & Topolčan, O. (2012). Overview of healthcare system in the Czech Republic. *EPMA Journal*, *3*(1), 1–8. https://doi.org/10.1007/s13167-012-0139-9

Koné Péfoyo, A. J., & Wodchis, W. P. (2013). Organizational performance impacting patient satisfaction in Ontario hospitals: A multilevel analysis. *BMC Research Notes*, *6*(1). https://doi.org/10.1186/1756-0500-6-509

Kwon, S., Lee, T., & Kim, C. (2015). Republic of Korea Health Sytem Review. In *Health Systems in Transition* (Vol. 5, Issue 4).

Laal, M. (2013). Inpatient's Perspective on Nursing Care; Affecting Factors. *Procedia - Social and Behavioral Sciences*, *84*, 243–247. https://doi.org/https://doi.org/10.1016/j.sbspro.2013.06.543

Lakhan, R., Gillette, S. Y., Lee, S., & Sharma, M. (2020). Satisfaction with health care system: A comparative study between market-based insurance model of the United States and "out-of-pocket" model in developing and low-income countries. *International Journal of Healthcare*, *6*(1), 41. https://doi.org/10.5430/ijh.v6n1p41

Larson, E., Sharma, J., Bohren, M. A., & Tunçalp, Ö. (2019). When the patient is the expert: Measuring patient experience and satisfaction with care. *Bulletin of the World Health Organization*, *97*(8), 563–569. https://doi.org/10.2471/BLT.18.225201

Lee, R., Baeza, J. I., & Fulop, N. J. (2018). The use of patient feedback by hospital boards of directors: a qualitative study of two NHS hospitals in England. *BMJ Quality & Safety*, *27*(2), 103–109. https://doi.org/10.1136/bmjqs-2016-006312

Leite, A. M. R., Leite, E. de A., Ribeiro, H. N. R., Alves, S. R. P., & Sardinha, L. F. (2022). 79th International Scientific Conference on Economic and Social Development. *From Bismarck to Beveridge: Contributions for the Understanding of Different Social Security Models*, *March*.

Li, C., Wei, B., Zhu, P., Liao, C., Chen, W., & Meng, X. (2021). Effective Analysis of Inpatient Satisfaction: The Random Forest Algorithm. *Patient Preference and Adherence*, *15*, 691–703. https://doi.org/10.2147/PPA.S294402

Liang, H., Xue, Y., & Zhang, Z.-R. (2021). Patient satisfaction in China: a national survey of inpatients and outpatients. *BMJ Open*, *11*(9), e049570. https://doi.org/10.1136/bmjopen-2021-049570

Liang, & Zhang, J. S. (2011). The effect of service interaction orientation on customer satisfaction and behavioral intention: The moderating effect of dining frequency. *Procedia - Social and Behavioral Sciences*, *24*, 1026–1035. https://doi.org/10.1016/j.sbspro.2011.09.082

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M.,

Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Medicine*, *6*(7). https://doi.org/10.1371/journal.pmed.1000100

Liew, H.-P., & Brooks, T. (2017). A conjoint analysis of inpatient satisfaction ratings in Indonesia. *Health Policy and Technology*, *6*(1), 105–113. https://doi.org/https://doi.org/10.1016/j.hlpt.2016.11.007

Lim, C., Mahmood, T., & Arulkumaran, S. (2020). Developing standards of care for obese women during pregnancy. In T. Mahmood, S. Arulkumaran, & F. Chervenak (Eds.), *Obesity and Obstetrics* (1st ed., p. 349). Elsevier. https://doi.org/10.1016/c2018-0-02230-6

Linder-Pelz, S. (1982). Toward a theory of patient satisfaction. *Social Science and Medicine*, *16*(5), 577–582. https://doi.org/10.1016/0277-9536(82)90311-2

Liu, B., Liu, S., Zheng, T., Wang, Y., Cao, B., Wang, Z., Yu, L., Zhang, N., Zhao, B., Lu, D., Chen, L., Ma, T., Zhong, Y., & He, S. (2021). Development and validation of the Chinese surgical inpatient satisfaction and comfort questionnaire. *Medicine*, *100*(52), e28363. https://doi.org/10.1097/MD.0000000000028363

Liu, L., & Fang, J. (2019). Study on potential factors of patient satisfaction: Based on exploratory factor analysis. *Patient Preference and Adherence*, *13*, 1983–1994. https://doi.org/10.2147/PPA.S228073

Liu, M., Hu, L., Guo, R., Wang, H., Cao, M., Chen, X., & Liu, Y. (2021). The Influence of Patient and Hospital Characteristics on Inpatient Satisfaction at Beijing District-Level Hospitals. *Patient Preference and Adherence*, *15*, 1451–1460. https://doi.org/10.2147/PPA.S314910

Liu, & Mao, Y. (2019). Patient Satisfaction with Rural Medical Services: A Cross-Sectional Survey in 11 Western Provinces in China. *International Journal of Environmental Research and Public Health*, *16*(20). https://doi.org/10.3390/ijerph16203968

Luo, H., Liu, G., Lu, J., & Xue, D. (2021). Association of shared decision making with inpatient satisfaction: a cross-sectional study. *BMC Medical Informatics and Decision Making*, *21*(1), 25. https://doi.org/10.1186/s12911-021-01385-1

Macones, G. A., & Tuuli, M. G. (2019). Evidence-Based Practice in Perinatal Medicine. In *Creasy and Resnik's Maternal-Fetal Medicine: Principles and Practice* (Eighth Edi, pp. 207–218). Elsevier, Inc. https://doi.org/10.1016/b978-1-4160-4224-2.50018-1

Maggio, L. A., Sewell, J. L., & Artino, A. R. (2016). The Literature Review: A Foundation for High-Quality Medical Education Research. *Journal of Graduate Medical Education*, *8*(3), 297–303. https://doi.org/10.4300/JGME-D-16-00175.1

Maher, D. P., Hess, D., Edwards, C., & Allen, L. (2021). Changes in Patient Satisfaction Scores During the Early COVID-19 Pandemic. *Journal of Patient Experience*, *8*, 1–5. https://doi.org/10.1177/23743735211034610

Manzoor, F., Wei, L., Hussain, A., Asif, M., & Shah, S. I. A. (2019). Patient satisfaction with health care services; an application of physician's behavior as a moderator. *International Journal of Environmental Research and Public Health*, *16*(18), 1–16. https://doi.org/10.3390/ijerph16183318

Marabelli, M., & Newell, S. (2014). Knowing, Power and Materiality: A Critical Review and Reconceptualization of Absorptive Capacity. *International Journal of Management Reviews*, *16*(4), 479–499. https://doi.org/10.1111/ijmr.12031

Martin, S. (2017). Word-of-mouth in the health care sector: a literature analysis of the current state of research and future perspectives. *International Review on Public and Nonprofit Marketing*, *14*(1), 35–56. https://doi.org/10.1007/s12208-016-0154-y

Más, A., Parra, P., Bermejo, R. M., Hidalgo, M. D., & Calle, J. E. (2016). Improving quality in healthcare: What makes a satisfied patient? *Revista de Calidad Asistencial : Organo de La Sociedad Espanola de Calidad Asistencial*, *31*(4), 196–203. https://doi.org/10.1016/j.cali.2015.11.006

McKinley, S. K., Wojcik, B. M., Kochis, M., Mansur, A., Jones, C. B., Petrusa, E., Mullen, J., Traeger, L., & Phitayakorn, R. (2018). A Pilot Study of Inpatient Satisfaction Rating of Surgical Resident Care. *Journal of Surgical Education*, *75*(6), e192–e203. https://doi.org/10.1016/j.jsurg.2018.08.007

Mitropoulos, P., Vasileiou, K., & Mitropoulos, I. (2018). Understanding quality and satisfaction in public hospital services: A nationwide inpatient survey in Greece. *Journal of Retailing and Consumer Services*, *40*(March 2017), 270–275. https://doi.org/10.1016/j.jretconser.2017.03.004

Moret, L., Anthoine, E., Paillé, C., Tricaud-Vialle, S., Gerbaud, L., Giraud-Roufast, A., Michel, P., & Lombrail, P. (2012). Relationship between inpatient satisfaction and nurse absenteeism: an exploratory study using WHO-PATH performance indicators in France. *BMC Research Notes*, *5*, 83. https://doi.org/10.1186/1756-0500-5-83

Mossialos, E., Osborn, R., Tikkanen, R., Djordevic, A., & Wharton, G. (2020). International Profiles of Health care systems 2020. *The Commonwealth Fund*, *December*, 37–45.

Mukhtar, F., Anjum, A., Shahzad, S., Hamid, S., Masood, Z., Mustafa, R., & Bajwa, M. (2013). *Patient Satisfaction: OPD Services in a Tertiary Care Hospital of Lahore*. *20*(6), 973–980.

Murante, A. M., Seghieri, C., Brown, A., & Nuti, S. (2014). How do hospitalization experience and institutional characteristics influence inpatient satisfaction? A multilevel approach. *International Journal of Health Planning and Management*, *29*(3), e247–e260. https://doi.org/10.1002/hpm.2201

Naidu, A. (2009). Factors affecting patient satisfaction and healthcare quality. *International Journal of Health Care Quality Assurance*, *22*(4), 366–381. https://doi.org/10.1108/09526860910964834

Naik, J. R. K., Anand, B., & Bashir, I. (2013). An empirical investigation to determine patient satisfaction factors at tertiary care hospitals in India. *International Journal of Quality and Service Sciences*, *34*(1), 1–5.

National Academies of Sciences Engineering and Medicines. (2018). *Crossing the Global Quality Chasm: Improving Health Care Worldwide*. The National Academies Press. https://www.ncbi.nlm.nih.gov/books/NBK222274/

Naveh, E., & Stern, Z. (2005). How quality improvement programs can affect general hospital performance. *International Journal of Health Care Quality Assurance*, *18*(4), 249–270. https://doi.org/10.1108/09526860510602532

Neely, J. G., Magit, A. E., Rich, J. T., Voelker, C. C. J., Wang, E. W., Paniello, R. C., Nussenbaum, B., & Bradley, J. P. (2010). A practical guide to understanding systematic reviews and meta-analyses. *Otolaryngology - Head and Neck Surgery*, *142*(1), 6–14. https://doi.org/10.1016/j.otohns.2009.09.005

Nguyen, T., Nguyen, H., & Dang, A. (2020). Determinants of patient satisfaction: Lessons from large-scale inpatient interviews in Vietnam. *PLoS ONE*, *15*(9), e0239306.

https://doi.org/10.1371/journal.pone.0239306

Nilsen, P., Seing, I., Ericsson, C., Birken, S. A., & Schildmeijer, K. (2020). Characteristics of successful changes in health care organizations: an interview study with physicians, registered nurses and assistant nurses. *BMC Health Services Research*, *20*(1), 1–8. https://doi.org/10.1186/s12913-020-4999-8

Nugraheni, W. P., Mubasyiroh, R., & Hartono, R. K. (2020). The influence of Jaminan Kesehatan Nasional (JKN) on the cost of delivery services in Indonesia. *PLoS ONE*, *15*(7), 1–16. https://doi.org/10.1371/journal.pone.0235176

Nunes, A. M. (2018). A Recuperação Do Serviço Nacional De Saúde Português: Novas Perspectivas Para A Política De Saúde. *Revista de Gestão Em Sistemas de Saúde*, *7*(1), 16–28. https://doi.org/10.5585/rgss.v7i1.311

O'Gorman, K. D., & MacIntosh, R. (2014). *Research Methods for Business & Management* (2nd ed.). Goodfellow Publishers Limited.

Oben, P. (2021). The Missing Piece in the Current Patient Experience Movement in Healthcare. *Journal of Patient Experience*, *8*, 4–6. https://doi.org/10.1177/23743735211060615

OECD and European Union. (2020). Health at a Glance: Europe 2020 State of health in the EU cycle. In *Health at a Glance 2020*.

Oliver, R. L. (1997). *Satisfaction: A Behavioral Perspective on the Con- sumer*. McGraw Hill.

Or, Z., Cases, C., Lisac, M., Vrangbk, K., Winblad, U., & Bevan, G. (2010). Are health problems systemic? Politics of access and choice under Beveridge and Bismarck systems. *Health Economics, Policy and Law*, *5*(3), 269–293. https://doi.org/10.1017/S1744133110000034

Ostrom, A. L., Parasuraman, A., Bowen, D. E., Patrício, L., & Voss, C. A. (2015). Service Research Priorities in a Rapidly Changing Context. *Journal of Service Research*, *18*(2), 127–159. https://doi.org/10.1177/1094670515576315

Otto, A. S., Szymanski, D. M., & Varadarajan, R. (2020). Customer satisfaction and firm performance: insights from over a quarter century of empirical research. *Journal of the Academy of Marketing Science*, *48*(3), 543–564. https://doi.org/10.1007/s11747-019-00657-7

Oxford Dictionary. (n.d.). *Definition of Consumer in English*. https://www.oxfordlearnersdictionaries.com/definition/english/the-hound-of-the-baskervilles

Page, McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, *372*(71). https://doi.org/10.1186/s13643-021-01626-4

Page, Moher, D., Bossuyt, P., Shamseer, L., Tetzlaff, J., Akl, E., Brennan, S., Chou, R., Glanville, J., Grimshaw, J., Hróbartsson, A., Lalu, M., Li, R., Loder, E., Mayo-Wilson, E., McDonald, S., McGuinness, L., Stewart, L., Thomas, J., … McKenzie, J. (2020). *PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews*. https://doi.org/10.31857/s0044467720030107

Pan, J., Liu, D., & Ali, S. (2015). Patient dissatisfaction in China: What matters. *Social Science and Medicine*, *143*, 145–153. https://doi.org/10.1016/j.socscimed.2015.08.051

Parasuraman, A., Zaithaml, V., & Berry, L. (2011). Exploring Managerial and Professional View To Health Care Service Quality. *Economics and Management*, *16*(January 2014), 1304–1316.

Park. (2015). Determinants of Patients Satisfaction and Intent to Revisit Oriental Medical Hospitals. *Journal of the Korea Academia-Industrial Cooperation Society*, *16*(4), 2726–2736. https://doi.org/10.5762/kais.2015.16.4.2726

Park, C., Zakare-fagbamila, R. T., Dickson, W., Garcia, A. N., & Gottfried, O. N. (2021). The limited influence of neurosurgeons' behavior on inpatient satisfaction: a retrospective multihospital analysis. *Journal of Neurosurgery*, *134*(June), 1983–1989. https://doi.org/10.3171/2020.5.JNS20923.

Pascoe, G. C. (1983). Patient satisfaction in primary health care: A literature review and analysis. *Evaluation and Program Planning*, *6*(3–4), 185–210. https://doi.org/10.1016/0149-7189(83)90002-2

Pati, D., & Lorusso, L. N. (2018). How to Write a Systematic Review of the Literature. *Health Environments Research and Design Journal*, *11*(1), 15–30. https://doi.org/10.1177/1937586717747384

Paul, J., & Criado, A. R. (2020). The art of writing literature review: What do we know and what do we need to know? *International Business Review*, *29*(4), 101717. https://doi.org/10.1016/j.ibusrev.2020.101717

Piligrimiene, Z., & Buciuniene, I. (2005). Health Care Quality Evaluation: Medical and Marketing Approahc. *Journal of Management Research*, *8*(1), 18–28.

Piligrimiene, Z., & Buciuniene, I. (2008). Different perspectives on health care quality: Is the consensus possible? *Engineering Economics*, *1*(56), 104–111.

Poklepovic, T., & Tanveer, S. (2019). Why systematic reviews matter. In *Elsevier*. https://www.elsevier.com/connect/authors-update/why-systematic-reviews-matter

Prakash, B. (2010). Patient satisfaction. *Journal of Cutaneous and Aesthetic Surgery*, *3*(3), 151–156. https://doi.org/10.4103/0974-2077.74491

Puppala, M., Ezeana, C. F., Alvarado, M. V. Y., Goode, K. N., Danforth, R. L., Wong, S. S. Y. T. C., Vassallo, M. L., & Wong, S. S. Y. T. C. (2020). A multifaceted study of hospital variables and interventions to improve inpatient satisfaction in a multi-hospital system. *Medicine*, *99*(51), e23669. https://doi.org/10.1097/MD.0000000000023669

PWC. (2021). Global Top Health Industry Issues 2021. In *Pwc*. https://www.pwc.com/gx/en/industries/healthcare/top-health-industry-issues.html

Rana, A., Krishnan, K., & Mukherjee, S. (2021). *The Top 5 Trends for Healthcare in 2022* (Issue December 2021).

Randolph, J. (2009). A guide to writing the dissertation literature review. *Practical Assessment, Research and Evaluation*, *14*(13).

Reid, T. R. (2009). Four Basic Models of Health Care. *The Change Agent*, *March*, 26–27.

Rhoades, E. A. (2011). Literature reviews. *Volta Review*, *111*(1), 61–71. https://doi.org/10.17955/tvr.111.1.677

Rivers, & Saundra, G. (2008). Health care competition, strategic mission, and patient satisfaction: research model and proposition. *Journal of Health Organ*, *22*(6), 1–14.

Roberts, E. T., Song, Z., Ding, L., & McWilliams, J. M. (2021). Changes in Patient Experiences and Assessment of Gaming Among Large Clinician Practices in Precursors of the Merit-Based Incentive Payment System. *JAMA Health Forum*, *2*(10), e213105. https://doi.org/10.1001/jamahealthforum.2021.3105

Ryu, B., Kim, S., Lee, K. H., Hwang, H., & Yoo, S. (2016). Inpatient satisfaction and usage patterns of personalized smart bedside station system for patient-centered service at a tertiary university hospital. *International Journal of Medical Informatics*, *95*, 35–42. https://doi.org/10.1016/j.ijmedinf.2016.09.003

Safurah, J., Kamaliah, M. H., Khairiyah, A. M., Nour Hanah Othman, & Healy, J. (2013). Malaysia Health System Review. *Health Systems in Transition*, *3*(1), 103. http://apps.who.int/iris/bitstream/handle/10665/206911/9789290615842_eng.pdf;j

Salehi, A., Jannati, A., Nosratnjad, S., & Heydari, L. (2018). Factors influencing the inpatients satisfaction in public hospitals: a systematic review. *Bali Medical Journal*, *7*(1), 17. https://doi.org/10.15562/bmj.v7i1.533

Salti, N., Chaaban, J., & Raad, F. (2010). Health equity in Lebanon: A microeconomic analysis. *International Journal for Equity in Health*, *9*, 1–21. https://doi.org/10.1186/1475-9276-9-11

Sarfraz, Z., Sarfraz, A., Hussain, H., Jabeen, F., Nadeem, A., Bano, S., Kharal, R., Zulfiqar, F., Tariq, S., Fatima, Z., & Zafar, M. (2020). Determinants of Patient Care and Satisfaction in Pakistan- A Scoping Review. *The International Journal of Frontier Sciences*, *5*(1), 1–11. https://doi.org/10.37978/tijfs.v5i1.301

Sarkar, M., Rock, P., Rowen, L., & Hong, C. (2021). Increased Patient Satisfaction in the Postanesthesia Care Unit with the Implementation of a Controlled Noise Reduction Program. *Journal of PeriAnesthesia Nursing*, *36*(1), 3–7. https://doi.org/https://doi.org/10.1016/j.jopan.2020.05.001

Satpathy, S., Wundaville, L. T., Satapathy, S., Malik, A., Singh, S., Singh, A. R., Chadda, R., Barre, V. P., & Tiwari, S. K. (2022). A Systematic Review of Patient Satisfaction Scales and Their Applicability to Covid-19 Hospitalized Patients: Gaps and Emerging Needs. *Journal of Patient Experience*, *9*. https://doi.org/10.1177/23743735221079132

Saunes, I. S. (2020). *Health System Overview Norway* (Issue December).

Schmocker, R. K., Cherney Stafford, L. M., Siy, A. B., Leverson, G. E., & Winslow, E. R. (2015). Understanding the determinants of patient satisfaction with surgical care using the Consumer Assessment of Healthcare Providers and Systems surgical care survey (S-CAHPS). *Surgery (United States)*, *158*(6), 1724–1733. https://doi.org/10.1016/j.surg.2015.06.018

Shan, L., Li, Y., Ding, D., Wu, Q., Liu, C., Jiao, M., Hao, Y., Han, Y., Gao, L., Hao, J., Wang, L., Xu, W., & Ren, J. (2016). Patient Satisfaction with Hospital Inpatient Care: Effects of Trust, Medical Insurance and Perceived Quality of Care. *PloS One*, *11*(10), e0164366. https://doi.org/10.1371/journal.pone.0164366

Shang, R., Wang, D., Cai, H., Chen, J., Lv, L., & Huang, C. (2021). Relationship between inpatient satisfaction and the quality of surgery. *Gland Surgery*, *10*(5), 1726–1735. https://doi.org/10.21037/gs-21-289

Shirazi, H., Kia, R., & Ghasemi, P. (2020). Ranking of hospitals in the case of COVID-19 outbreak: A new integrated approach using patient satisfaction criteria. *International Journal of Healthcare*

Management, *13*(4), 312–324. https://doi.org/10.1080/20479700.2020.1803622

Shonk, D. J. (2013). Service Quality. *Encyclopedia of Sports Management and Marketing*, 51–83. https://doi.org/10.4135/9781412994156.n682

Siddiqui, Z. K., Wu, A. W., Kurbanova, N., & Qayyum, R. (2014). Comparison of Hospital Consumer Assessment of Healthcare Providers and Systems patient satisfaction scores for specialty hospitals and general medical hospitals: confounding effect of survey response rate. *Journal of Hospital Medicine*, *9*(9), 590–593. https://doi.org/10.1002/jhm.2225

Siegrist, R. B. (2013). Patient satisfaction: History, myths, and misperceptions. *American Medical Association Journal of Ethics*, *15*(11), 982–987. https://doi.org/10.1001/virtualmentor.2013.15.11.mhst1-1311

Silva, A. G., Ferreira, P. L., & Daniel, F. B. (2018). Portuguese university hospital patient satisfaction and service quality Introduction. *International Journal of Health Care Quality Assurance*, *31*(5), 1–40. https://doi.org/10.1108/09526862199400001

Singhal, S., Kayyali, B., Levin, R., & Greenberg, Z. (2020). *The next wave of healthcare innovation: The evolution of ecosystems How healthcare stakeholders can win within evolving healthcare ecosystems* (Issue June). https://www.mckinsey.com/~/media/McKinsey/Industries/Healthcare Systems and Services/Our Insights/The next wave of healthcare innovation/The-next-wave-of-healthcare-innovation-The-evolution-of-ecosystems-vF.pdf

Sofaer, S., & Firminger, K. (2005). Patient perceptions of the quality of health services. *Annual Review of Public Health*, *26*(35), 513–559. https://doi.org/10.1146/annurev.publhealth.25.050503.153958

Stericycle. (2020). *What the Pandemic Taught Us About Patient Engagement*.

Sun, J., Hu, G., Ma, J., Chen, Y., Wu, L., Liu, Q., Hu, J., Livoti, C., Jiang, Y., & Liu, Y. (2017). Consumer satisfaction with tertiary healthcare in China: Findings from the 2015 China national patient survey. *International Journal for Quality in Health Care*, *29*(2), 213–221. https://doi.org/10.1093/intqhc/mzw160

Tatar, M., Mollahaliloğlu, S., Sahin, B., Aydin, S., Maresso, A., & Hernández-Quevedo, C. (2011). Turkey Health system review. *Health Systems in Transition*, *13*(6).

Tobler, S., & Stummer, H. (2021). Determinants of inpatient satisfaction: evidence from Switzerland. *International Journal of Health Care Quality Assurance*, *34*(1), 19–34.

Torbica, A., Tarricone, R., & Drummond, M. (2018). Does the approach to economic evaluation in health care depend on culture, values, and institutional context? *European Journal of Health Economics*, *19*(6), 769–774. https://doi.org/10.1007/s10198-017-0943-1

Torres, E., & Guo, K. L. (2004). Quality improvement techniques to improve patient satisfaction. *International Journal of Health Care Quality Assurance*, *17*(6), 334–338. https://doi.org/10.1108/09526860410557589

Trienekens, J., & Zuurbier, P. (2008). Quality and safety standards in the food industry, developments and challenges. *International Journal of Production Economics*, *113*(1), 107–122. https://doi.org/10.1016/j.ijpe.2007.02.050

Tse, D. K., & Wilton, P. C. (1988). Models of Consumer Satisfaction Formation: An Extension. *Journal of Marketing Research*, *25*(2), 204. https://doi.org/10.2307/3172652

Ungureanu, M., Wiskow, C., & Santini, D. (2019). The future of work in the health sector. In *International*

Labour Office (Issue 325). https://ilo.userservices.exlibrisgroup.com/view/delivery/41ILO_INST/1257859990002676

Vaz, N. (2018). Patient satisfaction. *Healthcare Administration for Patient Safety and Engagement*, *December*, 186–200. https://doi.org/10.4018/978-1-5225-3946-9.ch010

Visentin, D. C., Cleary, M., & Hunt, G. E. (2020). The earnestness of being important: Reporting non-significant statistical results. *Journal of Advanced Nursing*, *76*(4), 917–919. https://doi.org/10.1111/jan.14283

Vogus, T. J., & McClelland, L. E. (2016). When the customer is the patient: Lessons from healthcare research on patient satisfaction and service quality ratings. *Human Resource Management Review*, *26*(1), 37–49. https://doi.org/10.1016/j.hrmr.2015.09.005

Vovos, T. J., Ryan, S. P., Hong, C. S., Howell, C. B., Risoli, T. J. J., Attarian, D. E., & Seyler, T. M. (2019). Predicting Inpatient Dissatisfaction Following Total Joint Arthroplasty: An Analysis of 3,593 Hospital Consumer Assessment of Healthcare Providers and Systems Survey Responses. *The Journal of Arthroplasty*, *34*(5), 824–833. https://doi.org/10.1016/j.arth.2019.01.008

Wallace, L. S. (2013). A view of health care around the world. *Annals of Family Medicine*, *11*(1), 84. https://doi.org/10.1370/afm.1484

Walston, S., Al-harbi, Y., & Al-omar, B. (2008). *The changing face of healthcare in Saudi Arabia*. *28*(August), 243–250.

WHO. (2010). *Monitoring the Building Blocks of Health Systems : a Handbook of Indicators and*.

WHO. (2016). *Islamic Republic of Iran: Health Systems Profile*.

WHO. (2017). *Classification of Health Care Functions* (pp. 71–119). https://doi.org/10.1787/9789264270985-7-en

WHO. (2018a). *Delivering quality health services* (Issue July). http://apps.who.int/bookorders.

WHO. (2018b). *Pakistan: Health Systems Profile*.

WHO. (2021). *World Health Statistics Report 2021*.

Wilson, A., Zeithaml, V., Bitner, M. J., & Gremler, D. (2016). *Services Marketing: Integrating Customer Focus Across the Firm* (McGraw-Hill (ed.); 7th ed.). https://www.amazon.com/Services-Marketing-Integrating-Customer-Across/dp/0078112109

Wulandari, A. R. C., Rachmawaty, R., Ilkafah, I., & Erfina, E. (2021). Patient satisfaction towards healthcare quality in Indonesian Public Hospital. *Enfermería Clínica*, *31*(5), 745–750.

Xu, J. J., Park, S., Xu, J. J., Hamadi, H., Zhao, M., & Otani, K. (2022). Factors Impacting Patients' Willingness to Recommend: A Structural Equation Modeling Approach. *Journal of Patient Experience*, *9*, 237437352210775. https://doi.org/10.1177/23743735221077538

Yip, M. H., Phaal, R., & Probert, D. R. (2015). Characterising product-service systems in the healthcare industry. *Technology in Society*, *43*, 129–143. https://doi.org/10.1016/j.techsoc.2015.05.014

Zendjidjian, X., Auquier, P., Lançon, C., Loundou, A., Parola, N., Faugère, M., & Boyer, L. (2014). Determinants of patient satisfaction with hospital health care in psychiatry: Results based on the SATISPSY-22 questionnaire. *Patient Preference and Adherence*, *8*, 1457–1464. https://doi.org/10.2147/PPA.S67641

Zhang, J., Yang, L., Wang, X., Dai, J., Shan, W., & Wang, J. (2020). Inpatient satisfaction with nursing care in a backward region: a cross-sectional study from northwestern China. *BMJ Open*, *10*(9),

e034196. https://doi.org/10.1136/bmjopen-2019-034196

Zhi, M., He, Z., Ji, J., Lian, J., Guo, R., Sun, J., & Liu, Y. (2021). Patient satisfaction with non-clinical nursing care provided by the nursing assistant under different management models in Chinese public tertiary hospital. *Applied Nursing Research : ANR*, 151431. https://doi.org/10.1016/j.apnr.2021.151431

Zhou, H., Bai, G., Gao, J., Zhou, Y., Ma, E., Hu, L., Hu, G., Zhao, P., Jiang, F., Luo, L., & Liu, Y. (2018). The development of indicator measure for monitoring the quality of patient-centered care in China's tertiary hospitals. *PLoS ONE*, *13*(10), 1–15. https://doi.org/10.1371/journal.pone.0205489

Zineldin, M. (2015). Determinants of patient safety, satisfaction and trust: With focus on physicians-nurses performance. *Clinical Governance*, *20*(2), 82–90. https://doi.org/10.1108/CGIJ-12-2014-0038

Zyzanski, S. J., Hulka, B. S., & Cassel, J. C. (1974). Scale for the Measurement of "Satisfaction" with Medical Care: Modifications in Content, Format and Scoring. *Medical Care*, *12*(7), 611–620. http://www.jstor.org/stable/3763408

Appendix A

Table A.34. Data of studies reviewed

PUBLICATION	TITLE	JOURNAL	COUNTRY	HEALTHCARE SYSTEM	MEDICAL SPECIALITY	SURVEY DATE	SCIMAGO QUARTIL	METHODS OF ANALYSIS	DETERMINANTS ASSOCIATED TO PATIENT SATISFACTION
Aga et al., (2021)	Satisfaction and associated factors towards inpatient health care services among adult patients at Pawie General Hospital, West Ethiopia.	PloS one	Ethiopia	Out-of-pocket	All inpatients	2020	Q1	logistic regression, Cronbach's Alpha	Interpersonal Care; Organisational Characteristics
Alaloul et al., (2015)	Impact of a Script-based Communication Intervention on Patient Satisfaction with Pain Management	Pain Management Nursing	USA	Out-of-pocket	All inpatients	2013	Q1	Ordinary Least Square (OLS)	Interpersonal Care; Pain Management
Al-Borie & Damanhouri, (2013)	Patients' satisfaction of service quality in Saudi hospitals: a SERVQUAL analysis.	International journal of health care quality assurance	Saudi Arabia	Beveridge	All inpatients	2009	Q2	Hypothesis Testing	Interpersonal Care; Physical Environment; Organisational Characteristics; Gender Education; Occupation
Alemu, (2014)	Changes in Inpatient Satisfaction with Nursing Care and Communication at Debre Markos Hospital, Amhara Region, Ethiopia	Journal of Health Research	Ethiopia	Out-of-pocket	All inpatients	2009	Q4	Bivariate and multivariate analysis	Interpersonal Care; Organisational Characteristics; Age
Almrstani et al., (2014)	Determinants of patient satisfaction in the obstetrics ward at a university hospital in Saudi Arabia	Life sciences	Saudi Arabia	Beveridge	Surgery	2011	Q1	linear regression	Physical Environment; Access; Length of Stay; Age; Gender
Amin et al., (2013)	Hospital service quality and its effects on patient satisfaction and behavioural intention	The Journal of Clinical Governance	Malaysia	Beveridge	All inpatients		Q4	hypothesis test; Structural equation modelling	Technical Care; Interpersonal Care; Access; Organisational Characteristics
Ammo et al., (2014)	Determinants of Patient Satisfaction at Tertiary Care Centres in Lebanon	Open Nursing Journal	Lebanon	Out-of-pocket	All inpatients	2012	Q2	Logistic regression, Cronbach's Alpha	Technical Care; Interpersonal Care; Physical Environment; Access; Cost; Length of Stay; Age; Education
Antje et al., (2017)	Associations between hospital characteristics and patient satisfaction in Germany	Health expectations	Germany	Bismarck	All inpatients	2013	Q1	multivariate regression	Organisational Characteristics

PUBLICATION	TITLE	JOURNAL	COUNTRY	HEALTHCARE SYSTEM	MEDICAL SPECIALITY	SURVEY DATE	SCIMAGO QUARTIL	METHODS OF ANALYSIS	DETERMINANTS ASSOCIATED TO PATIENT SATISFACTION
Arab et al., (2014)	Developing a Persian inpatient satisfaction questionnaire	International Journal of Healthcare Quality Assurance	Iran	NHI	All inpatients	2009	Q2	ANOVA, Exploratory Factor Analysis	Interpersonal Care-; Physical Environment; Organisational Characteristics; Cost; Gender; Education
Asamrew et al., (2020)	Level of Patient Satisfaction with Inpatient Services and Its Determinants: A Study of a Specialized Hospital in Ethiopia	Journal of Environmental and Public Health	Ethiopia	Out-of-pocket	All inpatients	2015	Q2	Linear regression, exploratory factor analysis	Technical Care; Interpersonal Care; Physical Environment; Access; Organisational Characteristics; Pain Management; Gender; Education; Income; Ethnicity; Occupation
Bjertnaes et al., (2012)	Overall patient satisfaction with hospitals: effects of patient-reported experiences and fulfilment of expectations.	BMJ Quality and Safety	Norwegian	Bismarck	All inpatients	2012	Q1	Multivariate linear regression, Cronbach's Alpha	Technical Care; Interpersonal Care; Access; Organisational Characteristics; Pain Management
Chen et al., (2016)	Factors influencing inpatients' satisfaction with hospitalization service in public hospitals in Shanghai, People's Republic of China.	Patient preference and adherence	China	NHI	All inpatients	2013	Q1	Logistic regression, Cronbach's Alpha	Interpersonal Care; Physical Environment; Cost; Age; Gender; Geographic Characteristics; Occupation
Danforth et al., (2014)	Surgical inpatient satisfaction: What are the real drivers?	Surgery	USA	Out-of-pocket	All inpatients		Q1	univariate and multivariate analysis	Organisational Characteristics; Age; Gender; Education; Income; Health Condition
Erden & Emirzeoğlu, (2021)	Factors Affecting the Satisfaction Levels of Patients who Underwent Orthopaedic Knee Surgery in the Early Postoperative Period	Sage open	Turkey	NHI	Orthopaedics	2018	Q2	Mann-Whitney U Test	Technical Care; Physical Environment; Access; Outcome of Care; Pain Management; Age; Gender; Health Condition; Emotional Status
Gavurova et al., (2021)	Patient Satisfaction Determinants of Inpatient Healthcare.	International journal of environmental research and public health	Czech Republic	Bismarck	All inpatients	2020-2021	Q2	Confirmatory Analysis, structural equation modelling	Technical Care; Interpersonal Care; Physical Environment; Access
Hazilah Abd Manaf, (2012)	Inpatient satisfaction: An analysis of Malaysian public hospitals	International Journal of Public Sector Management	Malaysia	Beveridge	All inpatients		Q1	Confirmatory Factor analysis, Cronbach's Alpha	Technical Care; Interpersonal Care; Physical Environment

PUBLICATION	TITLE	JOURNAL	COUNTRY	HEALTHCARE SYSTEM	MEDICAL SPECIALITY	SURVEY DATE	SCIMAGO QUARTIL	METHODS OF ANALYSIS	DETERMINANTS ASSOCIATED TO PATIENT SATISFACTION
Heberer et al., (2015)	Partnership between patients and health care professionals is an important determinant of patient satisfaction	International Journal of Healthcare Management	Switzerland	Bismarck	All inpatients	2010-2014	Q1	exploratory factor analysis	Interpersonal Care; Cost; Pain Management; Age; Gender; Geographic Characteristics
Hopkins et al., (2019)	Predictors of patient satisfaction and survey participation after spine surgery: a retrospective review of 17,853 consecutive spinal patients from a single academic institution. Part 2: HCAHPS.	Journal of neurosurgery: Spine	USA	Out-of-pocket	Spine surgery	2006-2015	Q1	Logistic regression	Technical Care´; Length of Stay; Health Condition
Hu et al., (2020)	Influence of patient and hospital characteristics on inpatient satisfaction in China's tertiary hospitals: A cross-sectional study.	Health expectations	China	NHI	All inpatients	2017	Q1	Logistic regression, Cronbach's Alpha	Organisational Characteristics; Cost; Age; Gender; Income
Hussain et al., (2018)	Inpatient satisfaction at different public sector hospitals of a metropolitan city in Pakistan: a comparative cross-sectional study.	Hospital practice (1995)	Pakistan	Out-of-pocket	All inpatients	2010-2012	Q3	Multivariate analysis, ANOVA	Technical Care; Interpersonal Care
Ke et al., (2018)	A third-party investigation of inpatient satisfaction with a tertiary hospital in the People's Republic of China.	Patient preference and adherence	China	NHI	All inpatients	2017	Q1	linear regression, ANOVA	Education; Income; Geographic Characteristics; Occupation
Koné et al., (2013)	Organizational performance impacting patient satisfaction in Ontario hospitals: A multilevel analysis	BMC Research Notes	Canada	NHI	All inpatients	2008	Q2	Exploratory factor analysis; hierarchical regression	Interpersonal Care; Access; Organisational Characteristics; Pain Management; Length of Stay; Age; Education; Health Condition
Laal, (2013)	Inpatient's Perspective on Nursing Care; Affecting Factors	Social and Behavioural Sciences	Iran	NHI	All inpatients		Q1		Interpersonal Care; Organisational Characteristics; Age; Gender; Education; Marital Status; Geographic Characteristics; Health Condition; Occupation
Li et al., (2021)	Effective Analysis of Inpatient Satisfaction: The Random Forest Algorithm.	Patient preference and adherence	China	NHI	All inpatients	2017	Q1	Random Forest Model	Technical Care; Interpersonal Care; Physical Environment; Access; Cost
Liang et al., (2021)	Patient satisfaction in China: a national survey of inpatients and outpatients.	BMJ open	China	NHI	All inpatients	2018	Q1	Ordinary Least Square (OLS), ANOVA, Cronbach's alpha	Interpersonal Care; Cost; Age; Gender

PUBLICATION	TITLE	JOURNAL	COUNTRY	HEALTHCARE SYSTEM	MEDICAL SPECIALITY	SURVEY DATE	SCIMAGO QUARTIL	METHODS OF ANALYSIS	DETERMINANTS ASSOCIATED TO PATIENT SATISFACTION
Liew et al., (2017)	A conjoint analysis of inpatient satisfaction ratings in Indonesia	Health Policy and Technology	Indonesia	NHI	All inpatients		Q3	Linear Regression, Conjoint Analysis	Access; Organisational Characteristics; Cost
Liu & Mao, (2019)	Patient Satisfaction with Rural Medical Services: A Cross-Sectional Survey in 11 Western Provinces in China.	International journal of environmental research and public health	China	NHI	All inpatients	2013	Q2	Cronbach's Alpha, ANOVA; Logistic Regression, Linear Regression	Interpersonal Care; Physical Environment; Organisational Characteristics; Cost; Age
B. Liu et al., (2021)	Development and validation of the Chinese surgical inpatient satisfaction and comfort questionnaire.	Medicine	China	NHI	Surgery	2018	Q4	Confirmatory factor analysis, exploratory factor analysis	Technical Care; Interpersonal Care; Physical Environment; Emotional Status
M. Liu et al., (2021)	The Influence of Patient and Hospital Characteristics on Inpatient Satisfaction at Beijing District-Level Hospitals.	Patient preference and adherence	China	NHI	All inpatients	2019	Q1	Univariate analysis, logistic regression, Kruskal-Wallis H Test, Mann-Whitney U Test	Technical Care; Interpersonal Care; Physical Environment; Access; Outcome of Care; Cost
Luo et al., (2021)	Association of shared decision making with inpatient satisfaction: a cross-sectional study	BMC medical informatics and decision making	China	NHI	All inpatients	2018	Q2	Linear Regression	Technical Care; Interpersonal Care; Physical Environment; Access; Cost; Age; Gender; Education; Income; Geographic Characteristics
Más et al., (2016)	Improving quality in healthcare: What makes a satisfied patient?	Journal of Healthcare Quality Research	Spain	Beveridge	All inpatients	2006-2009	Q4	logistic regression	Technical Care; Interpersonal Care
Mckinley et al., (2018)	A Pilot Study of Inpatient Satisfaction Rating of Surgical Resident Care	Journal of Surgical Education	USA	Out-of-pocket	Surgery		Q1	linear regression, chi-squared test	Technical Care; Interpersonal Care; Organisational Characteristics; Pain Management
Mitropoulos et al., (2018)	Understanding quality and satisfaction in public hospital services: A nationwide inpatient survey in Greece	Journal of Retailing and Consumer Services	Greece	NHI	All inpatients		Q1	ordinal regression analysis, exploratory factor analysis	Interpersonal Care; Physical Environment; Age; Health Condition
Moret et al., (2012)	Relationship between inpatient satisfaction and nurse absenteeism: an exploratory study using WHO-PATH performance indicators in France.	BMC research notes	France	Bismarck	Medicine, surgery, obstetrics	2007	Q2	univariate and Multivariate statistics	Organisational Characteristics

PUBLICATION	TITLE	JOURNAL	COUNTRY	HEALTHCARE SYSTEM	MEDICAL SPECIALITY	SURVEY DATE	SCIMAGO QUARTIL	METHODS OF ANALYSIS	DETERMINANTS ASSOCIATED TO PATIENT SATISFACTION
Murante et al., (2014)	How do hospitalization experience and institutional characteristics influence inpatient satisfaction? A multilevel approach	International Journal of Health Planning and Management	Italy	Beveridge	All inpatients		Q2	multivariate analysis	Physical Environment; Access; Organisational Characteristics; Length of Stay; Age; Gender; Education; Geographic Characteristics; Health Condition
Naik et al., (2013)	An empirical investigation to determine patient satisfaction factors at tertiary care hospitals in India	International Journal of Quality and Service Sciences	India	Beveridge	All inpatients	2012-2013	Q2	confirmatory factor analysis (CFA), Cronbach's Alpha	Technical Care Interpersonal Care Physical Environment Organisational Characteristics
Nguyen et al., (2020)	Determinants of patient satisfaction: Lessons from large-scale inpatient interviews in Vietnam.	PloS one	Vietnam	Out-of-pocket	All inpatients	2017-2018	Q1	Ordinary Least Square (OLS) models; logistic regression	Interpersonal Care; Physical Environment; Cost; Length of Stay; Age; Gender; Education; Income; Ethnicity; Geographic Characteristics; Occupation
Pan et al., (2015)	Patient dissatisfaction in China: What matters	Social Science and Medicine	China	NHI	All inpatients	2007-2010	Q1	Ordinary Least Square (OLS)	Technical Care; Interpersonal Care; Organisational Characteristics; Cost; Gender; Education
Park, (2015)	Determinants of Patients Satisfaction and Intent to Revisit Oriental Medical Hospitals	Korean Journal of Internal Medicine	Korea	NHI	All inpatients	2012	Q2	ANOVA, Sheffe test, Cronbach's Alpha	Interpersonal Care; Physical Environment; Outcome of Care; Cost; Marital Status; Geographic Characteristics
Park et al., (2021)	The limited influence of neurosurgeons' behaviour on inpatient satisfaction: a retrospective multihospital analysis	Journal of Neurosurgery	USA	Out-of-pocket	Neurosurgery and orthopaedics	2016-2018	Q1	Multivariate analysis, Logistic Regression	Interpersonal Care; Pain Management
Puppala et al., (2020)	A multifaceted study of hospital variables and interventions to improve inpatient satisfaction in a multi-hospital system.	Journal of Medicine	USA	Out-of-pocket	All inpatients	2016	Q3	multivariate regression	Interpersonal Care; Access; Organisational Characteristics; Outcome of Care; Length of Stay; Age; Ethnicity; Health Condition
Sarkar et al., (2021)	Increased Patient Satisfaction in the Postanaesthetic Care Unit with the Implementation of a Controlled Noise Reduction Program	Journal of PeriAnesthesia Nursing	USA	Out-of-pocket	Surgery		Q2	Paired T-Test	Physical Environment
Schmocker et al., (2015)	Understanding the determinants of patient satisfaction with surgical care using S-CAHPS	Surgery	USA	Out-of-pocket	Surgery	2013	Q1	univariate and bivariate analysis	Interpersonal Care; Age

PUBLICATION	TITLE	JOURNAL	COUNTRY	HEALTHCARE SYSTEM	MEDICAL SPECIALITY	SURVEY DATE	SCIMAGO QUARTIL	METHODS OF ANALYSIS	DETERMINANTS ASSOCIATED TO PATIENT SATISFACTION
Shan et al., (2016)	Patient Satisfaction with Hospital Inpatient Care: Effects of Trust, Medical Insurance and Perceived Quality of Care.	PloS one	China	NHI	All inpatients	2014-2015	Q1	multivariate analysis, logistic regression	Technical Care; Interpersonal Care; Physical Environment
Shang et al., (2021)	Relationship between inpatient satisfaction and the quality of surgery.	Gland surgery	China	NHI	Surgery		Q2	logistic regression	Technical Care; Interpersonal Care; Outcome of Care; Cost; Lenght of Stay; Age; Education; Income; Marital Status; Health Condition
Siddiqui et al., (2014)	Comparison of Hospital Consumer Assessment of Healthcare Providers and Systems patient satisfaction scores for speciality hospitals and general medical hospitals: confounding effect of survey response rate.	Journal of hospital medicine	USA	Out-of-pocket	All inpatients	2007-2010	Q1	linear regression	Interpersonal Care; Physical Environment; Access; Organisational Characteristics; Pain Management
Silva et al., (2018)	Portuguese university hospital patient satisfaction and service quality Introduction	International Journal of Health Care Quality Assurance	Portugal	Beveridge	All inpatients	2015	Q2	Structural equation; confirmatory factor analysis, Cronbach's Alpha	Interpersonal Care; Access; Length of Stay; Gender; Education; Marital Status; Health Condition
Sun et al., (2017)	Consumer satisfaction with tertiary healthcare in China: Findings from the 2015 China national patient survey	International Journal for Quality in Health Care	China	NHI	All inpatients		Q2	logistic regression	Technical Care; Interpersonal Care; Physical Environment
Tobler & Stummer, (2020)	Determinants of inpatient satisfaction: evidence from Switzerland	International journal of health care quality assurance	Switzerland	Bismarck	All inpatients		Q2	Exploratory Factor Analysis, Linear Regression	Organisational Characteristics; Cost; Geographic Characteristics
Vovos et al., (2019)	Predicting Inpatient Dissatisfaction Following Total Joint Arthroplasty: An Analysis of 3,593 Hospital Consumer Assessment of Healthcare Providers and Systems Survey Responses.	Journal of arthroplasty	USA	Out-of-pocket	Orthopaedic surgery	2013-2017	Q1	Kruskal-Wallis H Test	Length of Stay; Gender; Income; Ethnicity; Geographic Characteristics
Xu et al., (2022)	Factors Impacting Patients' Willingness to Recommend: A Structural Equation Modelling Approach	Sage open	USA	Out-of-pocket	General and speciality	2013-2014	Q2	exploratory factor analysis, structural equation modelling	Interpersonal Care; Physical Environment; Organisational Characteristics
Wulandari et al., (2021)	Patient satisfaction towards healthcare quality in Indonesian Public Hospital	Enfermeria Clinica	Indonesia	NHI	All inpatients		Q3		Interpersonal Care; Access; Income

PUBLICATION	TITLE	JOURNAL	COUNTRY	HEALTHCARE SYSTEM	MEDICAL SPECIALITY	SURVEY DATE	SCIMAGO QUARTIL	METHODS OF ANALYSIS	DETERMINANTS ASSOCIATED TO PATIENT SATISFACTION
Zendjidjian et al., (2014)	Determinants of patient satisfaction with hospital health care in psychiatry: Results based on the SATISPSY-22 questionnaire	Patient Preference and Adherence	France	Bismarck	Psychiatric		Q1	multivariate analysis, linear regression	Interpersonal Care; Age; Marital Status; Health Condition
Zhang et al., (2020)	Inpatient satisfaction with nursing care in a backward region: a cross-sectional study from north-western China.	BMJ open	China	NHI	All inpatients	2018	Q1	logistic regression	Interpersonal Care; Organisational Characteristics; Marital Status; Health Condition; Emotional Status
Zhi et al., (2021)	Patient satisfaction with non-clinical nursing care provided by the nursing assistant under different management models in Chinese public tertiary hospitals.	Applied nursing research	China	NHI	All inpatients	2019	Q1	logistic regression, Kruskal-Wallis H Test, Mann-Whitney H Test, Chi-squared test	Interpersonal Care; Access; Organisational Characteristics; Length of Stay; Age; Education; Income; Geographic Characteristics; Health Condition
Zineldin, (2014)	Determinants of patient safety, satisfaction, and trust: With a focus on physicians-nurses performance	International Journal of Health Governance	China	NHI	All inpatients		Q3	linear regression	Technical Care; Interpersonal Care

Appendix B

Table B.35. Statistics on the number of studies including each determinant in the analysis

Patient satisfaction determinants	No. Studies including in the analysis	% Of studies including in the analysis
INTERPERSONAL CARE	43	77%
ORGANISATIONAL CHARACTERISTICS	25	50%
PHYSICAL ENVIRONMENT	24	46%
AGE	26	46%
GENDER	24	43%
TECHNICAL CARE	21	38%
EDUCATION	21	38%
ACCESS	18	36%
COST	16	30%
HEALTH CONDITION	17	30%
LENGTH OF STAY	11	29%
SOCIO-ECONOMIC STATUS	13	23%
GEOGRAPHIC CHARACTERISTICS	12	21%
MARITAL STATUS	12	21%
PAIN MANAGEMENT	9	16%
OCCUPATION	7	13%
ETHNICITY	6	11%
OUTCOME OF CARE	5	9%
EMOTIONAL STATUS	3	5%

Table B.36. Statistics on the number of studies finding association between each determinant and patient satisfaction

Patient satisfaction determinants	No. Studies showing association	% Of studies showing association
INTERPERSONAL CARE	43	100%
TECHNICAL CARE	21	100%
PAIN MANAGEMENT	9	100%
OUTCOME OF CARE	5	100%
EMOTIONAL STATUS	3	100%
COST	16	94%
PHYSICAL ENVIRONMENT	24	92%
GEOGRAPHIC CHARACTERISTICS	12	92%
ACCESS	18	90%
ORGANISATIONAL CHARACTERISTICS	25	89%
OCCUPATION	7	86%
AGE	26	81%
SOCIO-ECONOMIC STATUS	13	77%
HEALTH CONDITION	17	76%
EDUCATION	21	71%
GENDER	24	71%
LENGTH OF STAY	11	69%
ETHNICITY	6	67%
MARITAL STATUS	12	50%