

SPECIFIC FACTORS INFLUENCING PATIENT SATISFACTION IN SWISS OPHTHALMOLOGY PRIVATE PRACTICE

Summary: Over the last decades, robust evidence linking patient satisfaction to hospital reputation and profitability has accrued, and patient satisfaction has now become a key focus in the healthcare industry. A review of the literature identified pre-established factors that were shown to influence patient satisfaction in different settings and could be categorized as patient-related factors, personnel-related factors, and external factors. In all, 132 surveys were completed and analysed, resulting in four major findings: (1) patients in Switzerland were highly satisfied with their private eyecare provider, (2) demographics and cultural backgrounds only had a weak effect on overall patient satisfaction in this setting, but (3) patients' nationalities significantly affected the aspect of their healthcare experience they valued most. Finally, satisfaction in every sub-group of patients was shaped by a different ensemble of factors of varying importance (4).

Word count: 6344

Track: Marketing and Retail

Introduction

The study of patient satisfaction dates to the 1950s, where its impact on the healthcare industry was first examined (Abdellah et al. 1957). Acknowledging the importance of patients' satisfaction in healthcare has led to a gradual shift of standards and practice, with patients being more and more considered consumers of healthcare services (Needham 2012). Studies have shown that present-day patients tended to be more educated and expect more from their doctors than before (Cockburn and Pit, 1997). They were also more likely to question their doctors' decisions and seek second opinions or change healthcare providers (Ogden et al. 2002; MacStravic, 1994).

Concomitantly, these new consumers have developed similar expectations to that of other service industries, such as comfort, convenience, and value for money. Like in all service industries, improved patient experience has been linked to increased patient satisfaction and fidelity, and better financial results (Cliff 2012). Indeed, direct associations between patient satisfaction and hospital reputation, revenue, and malpractice claims were documented in several studies (Hall, 2008; Cliff, 2012). With substantial financial implications for the healthcare industry, it is no wonder why patient satisfaction has become a key issue in modern healthcare management (Garman et al. 2004).

Intuitively, one may associate patient satisfaction with clinical performance, yet studies have shown that many factors play a considerably greater role in influencing patient satisfaction, and may be classified as patient-related, personnel-related, or external factors (Grøndahl et al. 2013). Furthermore, these factors are not set and may vary depending on the country, setting and patient values (Fenton et al. 2012; Ziaei et al. 2011; Schoenfelder et al. 2011; McMullen et al. 2013). Indeed, Sutton et al. (2017) and Ziaei et al. (2011) have shown that patients may value specific aspects of their environment and care in different medical specialties or countries. Yet, the specific factors defining patients' expectations and satisfaction in different settings remain mostly unknown. For example, Switzerland tends to have a higher percentage of patient satisfaction and staff satisfaction than most Western countries (Aiken et al. 2012). While overall patient satisfaction remains high, Sebo et al. (2015) have highlighted some clear discrepancies between doctors' concerns and patients' expectations. Furthermore, the ever-increasing price of Swiss mandatory insurances has raised considerable awareness about the costs of health amongst the Swiss population (Schindler et al. 2018).

Besides, most published studies on patient satisfaction rely on short satisfaction questionnaires, which tend to provide only limited insight into patients' personal experiences, limiting their interpretation (Senitan and Gillespie, 2020). A narrative qualitative approach was used to overcome this but suffered the major drawback of being too subjective to allow for meaningful statistical and association analyses (Ali et al. 2020). Most authors have therefore turned to "patient experience" surveys, such as the Agency for Healthcare Research and Quality's (AHRQ) Consumer Assessments of Healthcare Providers and Systems (CAHPS) questionnaire, to study the roots of patient satisfaction in healthcare settings (Holt, 2019). These, however, tend to ignore some important factors (Marshall et al. 1994), and the addition of more detailed questions further increased the correlation between "patient experience" items and overall

satisfaction ratings (Martino et al. 2017).

The above issues underline the need for specifically designed studies to elicit the specific factors influencing patient satisfaction in different specialties and countries. To the best of our knowledge, no studies have yet investigated these factors in Swiss private ophthalmology clinics. The present study will therefore contribute novel primary data from an understudied setting. This is particularly relevant, not only because medical fields and patients' cultures were shown to directly impact patient satisfaction, but also because the Swiss eyecare system may differ from other countries by nature. Indeed, contrary to many other countries, ophthalmology in Switzerland is a primary care service, offering both specialist diagnoses and referral-free eye checks and spectacles prescription. For this reason, 90% of Swiss ophthalmologists work in community practices or private clinics (Ruedin et al. 2007; Hostettler and Kraft, 2020).

In a review of the literature, the present article will first explore the role of patient satisfaction in healthcare, then review the different factors that were described in the literature as influencing patient satisfaction, and finally assess the currently accepted tools to evaluate patient satisfaction. We will then lay out our main research theories and methods, present our results, and conclude with a discussion of the empirical and academic implications of the present study.

Patient Satisfaction

Satisfaction is a subjective concept and may differ widely between individuals. For this reason, there has been a considerable shift, in the service industry, from generalization towards the individualization of services, in an attempt to satisfy as many customers as possible. The healthcare industry, however, appears to be lagging behind and still relies extensively on generalization and basic satisfaction surveys (Powers et al. 2013). Indeed, patient satisfaction is a multifactorial concept shaped by considerations reaching far beyond the obvious.

Multifactorial aspects of patient satisfaction

Fenton et al. (2012) have researched the correlation between clinical performance and patient satisfaction. Curiously, they demonstrated a direct association between higher patient satisfaction and higher mortality rates, suggesting that clinical performance may not be the most determinant factor in patient satisfaction. This illustrates how intuitive assumptions concerning patient satisfaction may be erroneous. Since several studies have studied the specific factors influencing patient satisfaction in healthcare. These may be classified as patient-related, personnel-related, or external (Grøndahl et al. 2013).

Patient-related factors

Otani et al. (2012) have shown that patients' perceived health influences their perception of healthcare services. In their study, they demonstrated that patients suffering from more severe illnesses tended to trust their doctors more and considered the patient-doctor relationship as the most important aspect of healthcare. Another

study by Murdock and Griffin (2013) identified patient education as a strong determinant for patient satisfaction. Furthermore, the level of patient education had a significant impact on their treatment compliance, appointment attendance, and rates of night-time admissions, all of which may translate into reduced satisfaction. Senitan et al. (2018) also described a significant effect of patients' demographics on satisfaction in a primary care setting. Finally, in a study of Russian and Israeli patients, Baider et al. (1995) proved that cultural background had a strong influence on patients' expectations and satisfaction. Using identical questionnaires to describe their ideal doctor, the authors observed significant differences in the descriptions made by both groups of different nationalities. Besides, wider discrepancies between patients' ideal and the actual doctors encountered were directly correlated with lower levels of satisfaction.

Personnel-related factors

While the healthcare industry is intrinsically built around a patient-doctor relationship, several other protagonists contribute to shaping patients' experience, including receptionists, nurses, associate healthcare professionals, and other patients. Lanser (2015) estimated that as much as 60% of a patient's satisfaction or lack thereof results from their relationship with the healthcare team, and particularly their perceived attitude. Shannon (2013) identified doctors' psychological well-being as a key factor of patients' perception of the quality of service, and Schoenfelder et al. (2011) described the perceived kindness of nurses as the most determinant factor of patient satisfaction. Similarly, Ossoff and Thomason (2012) suggested that doctors' bedside manners, defined as the way they listen and communicate, deliver information, and involve patients and their families in clinical decision making. All the above are key points in achieving patient satisfaction.

External factors

Beyond healthcare professionals and patients themselves, Prakash (2010) suggested a number of external factors that may play a role in patient satisfaction. These included the perceived level of technology of the hospital, its cleanliness, and décor, whether the personnel was deemed appropriately dressed, and the time spent in the waiting room. Another study by Hantel et al. (2020) has suggested that this latter factor may have even greater importance if several patients are kept waiting for extensive periods of time, as satisfaction may also be shaped by one's perception of others.

Role of national specificities

The influence of cultural factors, individual expectations, and wide external factors explains why patient satisfaction may vary so widely across the world. Patient satisfaction with healthcare services in Switzerland is one of the highest in the Western world (Aiken et al. 2012). Yet, recent studies suggest that Swiss doctors largely misunderstand their patients' expectations. Indeed, Sebo et al. (2015) has shown that doctors tend to overemphasize diagnostic technologies leading to over-investigations, while patients are more concerned with their doctors' professional qualifications. Another specificity of the Swiss healthcare system is its cost, with PPP-adjusted health consumption expenditures per capita of \$8,009 in 2017 (Peterson-KFF, 2017). This has

led to the general involvement of the population in priority-setting (Emanuel, 1999), and a great awareness amongst the Swiss population of the issue of healthcare costs (Schindler et al. 2018).

<i>Summary of identified factors influencing patient satisfaction</i>	
Patient-related factors	Personnel-related factors
Perceived own health	Psychological well-being
Cultural background	Perceived kindness
Age	Patient-doctor relationship
Education	Politeness/bedside manners
Expectations (idealized image)	Involvement of patients/family
Perceived treatment efficacy	Doctor’s communication
	Doctor’s attentiveness
External factors	National specificities
Perceived technology level	Doctors’ qualifications
Perceived cleanliness	Cost of insurance
Décor	
Staff appearance	
Waiting time	
Perceived satisfaction of other patients	
Accessibility	
Convenience	
Cost of consultation	

Table 1: Summary of the patient-related, personnel-related, external, and national factors identified as influencing patient satisfaction in the literature.

Healthcare satisfaction evaluation tools

Most published studies on patient satisfaction rely on the analysis of short satisfaction questionnaires. Yet, several authors acknowledged the inherent limitations of this method, namely, the scarcity of specific data beyond simple demographics and levels of satisfaction, limiting the interpretation of results (Senitan and Gillespie, 2020). A handful of smaller studies opted for a narrative qualitative approach (Popay et al. 2006). However, these suffer the major drawback of being subject to subjective interpretation bias. Furthermore, the heterogeneity of the non-standardized answers makes statistical and association analyses impractical (Ali et al. 2020). For these reasons, most authors seeking to explore the roots of patient satisfaction in healthcare settings have opted for “patient experience” surveys. The most commonly used patient experience measurement tool is the Agency for Healthcare Research and Quality’s (AHRQ) Consumer Assessments of Healthcare Providers and Systems (CAHPS) questionnaire (Holt, 2019). The survey consists of 15 questions assessing patients’ experience in the following domains: access to care, doctor’s communication, follow-up on test results, receptionist’s behavior, and overall satisfaction (AHRQ, 2020). While Rothman et al. (2008) validated the questionnaire through an extensive review of 40,172 CAHPS surveys, they also reported that the addition of more detailed

questions further increased the correlation between “patient experience” items and overall satisfaction ratings. This was further supported by Martino et al. (2017) who reported the increased reliability of surveys when questions providing a more detailed account of patients’ experience were added. The difference was particularly significant in those with poor reported health. A longer questionnaire, the PSQ-18, was designed and validated to assess patient satisfaction in healthcare (Marshall and Hays, 1994) with questions encompassing 7 different domains: technical, financial, interpersonal, communication, convenience, accessibility, and availability. Yet, when it was used to assess eyecare settings in Iran, despite the noted association between overall patient satisfaction and both accessibility and technical aspects, the PSQ-18 questionnaire could only predict 60% of the answers (Ziaei et al. 2011). Interestingly, another study carried out in German eye clinics identified stronger correlations with treatment outcomes and the perceived kindness of the nurses in charge of the patients (Schoenfelder et al. 2011), while a third study studying patient satisfaction in a private eye clinic in Indiana, USA, identified shorter waiting time as the strongest drive for overall satisfaction (McMullen and Netland, 2013). This illustrates the impact of the clinical setting and cultural variations on patient satisfaction, and further highlights the fact that factors influencing patient satisfaction have not all yet been identified. Thus, the design of a more comprehensive questionnaire tool is warranted to identify the missing links between patients’ personal experience of healthcare and satisfaction.

Purpose and hypotheses

The present study aims to identify the main factors influencing the satisfaction of patients attending private ophthalmology clinics in Switzerland and provide concrete recommendations for their improvement.

Patient satisfaction

Aiken et al. (2012) had previously identified Switzerland as one of the countries where patients were most satisfied with healthcare services. Our first aim, therefore, is to confirm this finding by assessing the level of satisfaction of patients in the specific setting of Swiss private eye clinics.

Hypotheses Development

Patients’ demographics and satisfaction

Several authors have described the impact of patients’ demographics on their satisfaction (Senitan et al. 2018), as well as the influence of their perceived health (Otani et al. 2012). Specifically, studies have suggested that older patients with lower levels of education tend to be more satisfied with their primary care provider (Al-Ali and Elzubair, 2013). While a number of these studies were carried out in Saudia Arabia and in primary health centres, we hypothesise that the same may hold true in an ophthalmology setting, in Switzerland.

H1 - Patients’ demographic parameters and perception of their own health directly affect their overall satisfaction with their ophthalmic care provider.

The most significant predictor of satisfaction

The strongest driver for patient satisfaction in an eye care setting was shown to vary depending on the country and culture. In a study of patient satisfaction in German eye clinics, Schoenfelder et al. (2011) identified that, out of all the studied aspects of patients' experience, their relationship with the nurse or assistant was the strongest predictor of overall satisfaction. While this was never studied in Switzerland, some cultural and behavioral aspects were observed between Switzerland, Germany, and France (Faeh et al. 2009). We, therefore, hypothesise that principal factors influencing patients' satisfaction are similar in ophthalmology settings in Germany and Switzerland.

H2 – The relationship between patients and the nurse/doctors' assistant is the main factor affecting patients' overall satisfaction with their ophthalmic care provider.

Demographics and determining factors of satisfaction

As different demographic and cultural factors were reported to influence the overall satisfaction of patients regardless of their experience, we speculated that different groups of patients may value different aspects of their healthcare experience. We thus hypothesise that demographic characteristics may not only impact overall satisfaction directly but also influence what factors are most determinant in achieving satisfaction.

H3 – The main factors affecting patients' overall satisfaction vary in different subgroups of patients.

Methods and Methodology

The present study aimed to identify the factors influencing patient satisfaction in private ophthalmology clinics in Switzerland. The subject of patient satisfaction has been extensively studied in the literature using mainly two validated questionnaires: CAHPS and PSQ-18 (Holt, 2019; Marshall and Hays, 1994). To date, however, no data exist in the specific setting of Swiss private ophthalmology clinics, and no published study has yet been able to identify all the factors influencing patient satisfaction. These observations shaped the methods of this study in two ways: (1) using similar methods to previously published studies was crucial to allow result comparison, and assess whether the findings of other research are generalizable to the present context, and (2) refining current questionnaires with the addition of new items would be necessary to capture and identify new or context-specific factors influencing patient satisfaction and achieve a good predicting power.

Sample selection

The study of patient satisfaction in Swiss private ophthalmology clinics implied the selection of a sample representative of the market. To achieve this, the two largest groups of private ophthalmology clinics in the country (Clinique A, Clinique B) were contacted and agreed to participate. These companies were chosen because together,

they have a dominant share of the private ophthalmology market in Switzerland, serving a population of over 2 million people at 16 outreach clinics. This wide range of clinics presents the advantage of serving a broad population at various locations, both urban and rural, and from a variety of socioeconomic backgrounds. Furthermore, the selected clinics encompass all subspecialties of ophthalmology, including casualties, emergency surgery, elective procedures, clinics for chronic diseases, and routine eye-checks. Therefore, patients attending these clinics are deemed to be representative of the market as a whole. Indeed, contrary to some other countries, in Switzerland, ophthalmology is a primary care service that can be attended without being referred by a general practitioner. Their professional roles are also broader, encompassing not only the diagnosis and treatment of ocular pathologies but also the prescription of spectacles, which constitutes a significant part of their activities considering that the prevalence of spectacles use (67.7%) is higher in Switzerland than in any other European country (ECOO 2020). Thus, the density of eyecare practitioners is high, with 1.38 ophthalmologists per 10.000 inhabitants (European Council of Optometry and Optics 2020), and most of them work in community practices or clinics (90.0%), as opposed to hospitals (10.0%) (Ruedin et al. 2007; Hostettler and Kraft, 2020).

To ensure a fair representation, every patient who attended one of the participating clinics during the recruitment period was offered the opportunity to participate in the study if they did not meet any exclusion criterion. Exclusion criteria were defined to safeguard vulnerable patients and are outlined in Table 2 below. Furthermore, the online measurement tool was designed to ensure all enrolled patients could participate in the study, regardless of their health condition or visual impairment, and special attention was given to its accessibility. Finally, demographic questions were included in the questionnaire to assess the sample heterogeneity and test for any potential recruitment bias.

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> ● Attendance at one of the 16 participating clinics during the recruitment period, for any reason. ● Informed consent, ● Voluntary completion of the online questionnaire by the 10th of November (midnight). 	<ul style="list-style-type: none"> ● Age under 18 years, ● No capacity, ● Unable to understand their rights, ● Unable to consent, ● Non-French speaking, ● Previous inclusion in the present study.

Table 2: Summary of the inclusion and exclusion criteria (World Medical Association, 2013)

The minimum sample size was determined as 112 valid responses to identify a correlation coefficient (r) of 0.3 at 90% power with a significance level of 5% (p-value = 0.05) (Bujang and Baharum, 2016).

Data Collection

The present study follows the tenets of the Declaration of Helsinki and

enrolment was conditional to patients providing informed consent. The study was based on an anonymous and voluntary survey of patients' satisfaction and perceptions regarding healthcare. Patients were made aware of their rights to withdraw from the study at any point without any justification, and of the fact that their participation or lack thereof would not affect their medical care. Patients under the age of 18 years, lacking capacity, unable to understand their rights, or unable to consent were excluded

Over a randomly selected calendar month (October 2020), every patient who matched the inclusion criteria and attended an appointment at one of the 16 participating clinics was offered voluntary enrolment into the study at the end of their appointment. They were provided, either by a trained medical secretary or by the principal investigator, verbal instructions as well as an information leaflet explaining the study. The leaflet included a unique link to an online questionnaire. Patients were instructed to wait at least 48 hours after their appointment to complete the survey if they decided to enroll. The questionnaire could either be accessed from a smartphone or a computer and was live between the 1st of October and the 10th of November 2020. Each questionnaire could only be completed once, and patients who attended several appointments during the recruitment period were only offered to participate once.

Measurements

The questionnaire was based on the validated CAHPS and PSQ-18 questionnaires (Holt, 2019; Marshall and Hays, 1994), but additional questions were designed to cover most pre-identified factors of influence. It comprised 7 successive sections and 66 questions.

Patients demographics and education: 9 questions were used to capture the age, gender, culture, and education of the respondents. These questions concern regular demographic parameters.

Healthcare perception and values: to assess the perceived health, the severity of presenting complaint, previous experience of healthcare, and personal preferences 12 questions were included in the questionnaire.

External environment and waiting time: 16 questions were utilised to assess the importance of external environment, comfort, accessibility, convenience, and waiting on patient satisfaction. Given the current pandemic context, a specific item on patients' perceived safety with regards to COVID-19 was added.

Staff, doctors, and other patients: to capture the impact of staff appearance, politeness, and perceived wellbeing, as well as other patients' perceived satisfaction on patients, 9 questions were employed.

Clinical performance and communication: these 10 questions were used to assess the impact of perceived clinical performance, communication, and appointments' duration on patient satisfaction.

Insurance cover and attention to the costs: these 7 questions were utilised to assess the impact of specific variables related to patients' health insurances and the costs of medical treatments on patients' satisfaction. These original questions were

PATIENT SATISFACTION IN SWISS OPHTHALMOLOGY PRACTICE

designed to take into account the specificities of the Swiss healthcare and insurance system and were based on economic surveys.

Overall satisfaction and willingness to recommend: these 3 questions were employed as a measurement of patients' overall satisfaction, and likelihood to recommend the clinic or the doctor to relatives.

Constructs	Items	Source
Demographics	Gender	CAHPS
	Age	CAHPS
	Demographic	Senitan et al. (2018)
	Demographic	Senitan et al. (2018)
	Culture	Baider et al. (1995)
	Culture	Baider et al. (1995)
	Culture	CAHPS
	Education	CAHPS
	Education	Murdock and Griffin (2013)
	Healthcare perception	Perceived Health
Perceived Health		Otani et al. (2012)
Severity of Complaint		CAHPS
Severity of Complaint		Otani et al. (2012)
Experience of Healthcare		Nair et al. (2020)
Preference/Value		Manary et al. (2015)
Experience of Healthcare		Manary et al. (2015)
Experience of Healthcare		CAHPS
Preference/Value		Zarei et al. (2012)
Preference/Value		Landry et al. (2013)
Preference/Value		Jacobs (2016)
Preference/Value		Jacobs (2016)

PATIENT SATISFACTION IN SWISS OPHTHALMOLOGY PRACTICE

Constructs	Items	Source
External environment	Environment	Jacobs (2016)
	Environment	Hussain et al. (2019)
	Wait	McMullen and Netland, (2013)
	Convenience	Hussain et al. (2019)
	Environment	Ossoff and Thomason (2012)
	Environment	Pilpel (1996)
	Convenience	PSQ-18
	Accessibility	Hussain et al. (2019)
	Wait	PSQ-18
	Comfort	Hussain et al. (2019)
	Environment	Jacobs (2016)
	Accessibility	Hussain et al. (2019)
	Technicality	PSQ-18
	Comfort	Hussain et al. (2019)
	Confidentiality	Hartigan et al. (2019)
	Safety/COVID	Lewis (1990)

Constructs	Items	Source
Clinical Performance & Communication	Clinical performance	PSQ-18
	Communication	PSQ-18
	Patient involvement	PSQ-18
	Communication	Kamra et al. (2016)
	Communication	Kamra et al. (2016)
	Communication	Kamra et al. (2016)
	Duration	PSQ-18
	Duration	CAHPS
	Cleanliness	Pilpel (1996)
	Patient expectations	CAHPS
Insurance and Costs	Insurance	Le et al. (2018)
	Insurance	Le et al. (2018)
	Insurance	Le et al. (2018)
	Medical costs	Sans-Corrales et al. (2006)
	Medical costs	Smith et al. (2019)
	Medical costs	PSQ-18
	Medical costs	Smith et al. (2019)

PATIENT SATISFACTION IN SWISS OPHTHALMOLOGY PRACTICE

Staff, Doctors and others	Politenes	PSQ-18
	Staff wellbeing	Shannon (2013)
	Appearance	Landry et al. (2013)
	Continuity of care	CAHPS
	Staff wellbeing	Shannon (2013)
	Appearance	Landry et al. (2013)
	Environment	Hantel et al. (2020)
	Other patients	Hantel et al. (2020)

General Satisfaction	General Satisfaction	PSQ-18
	Willingness to recommend	CAHPS
	Willingness to recommend	CAHPS

Table 3: Summary of questionnaire items, factors assessed, and references used as a basis to design questions that were not present in CAHPS (Holt, 2019) or PSQ-18 (Marshall and Hays, 1994).

Each section comprised several items. Whenever possible, answers were scored on a modified 10-point Likert scale. This specific scale design was chosen for several reasons. First, because semantic differential scales using bipolar adjectives are intuitive to most responders and provides a robust base for parametric tests such as Pearson correlation analysis (Murray, 2013). Second, an odd number of options was specifically chosen to omit the neutral answer, thus reducing central tendency bias and misuse of the midpoint under social desirability pressure (Chyung et al. 2017). Finally, as strong participant and acquiescence biases were anticipated amongst patients being actively treated at one of the participating clinics, potentially resulting in a concentration of responses within the high end of the scale, a 10-point scale was selected to provide greater variability in responses (Joshi et al. 2015). For some answers, such as demographics, a drop-down list was used for subjects to select the most appropriate answer. No free-text answers were allowed, to ensure data anonymity and exclude potential interpretation biases.

All information and survey questions were provided in French. Non-French-speaking patients were excluded from the study. Questions' wording was kept concise and jargon-free. An alternate of positive and negative statements was used to reduce acquiescence bias. The questionnaire was tested on a panel of five French-speaking healthcare workers from different nationalities and cultural backgrounds, and the wording of items was adapted until all panelists were satisfied with their clear meaning (Noelle-Neumann 1970). The information leaflets and questionnaires were designed by low vision specialists and relied on a combination of contrasts and large prints to ensure accessibility to visually impaired patients (Kaczmarek and Wolff, 2007). Please see appendix A.

Data analysis

Incomplete questionnaires were excluded from the analysis. The mean and the standard deviation were calculated for normally-distributed values, while median and interquartile ranges were used for non-normally-distributed values, to obtain a clear statistical representation of the samples' demographics. Pearson correlation coefficients were used to calculate odds ratios and assess for potential associations between overall satisfaction and demographic or other recorded factors (Gillmann et al. 2020). Correlations were considered weak, moderate, and strong when coefficients (r) were < 0.3 , between 0.3 and 0.7 , and > 0.7 , respectively (Dancey and Reidy, 2007). Student t -tests were used to compare the scores for all items between highly satisfied responders and others, the threshold being set as the mean score for overall satisfaction. P -values < 0.05 were considered statistically significant. All calculations were performed with commercially available software (Stata version 14.1; StataCorp, College Station, TX).

Results and Findings

Descriptive findings

Demographic characteristics

In total, 262 patients accessed the online surveys via their personal link, of which 50.4%

PATIENT SATISFACTION IN SWISS OPHTHALMOLOGY PRACTICE

responded (n = 132). While 60% took the anticipated 10-30 minutes to complete the survey, 25.5% were faster and a small proportion (5.5%) took over an hour. Of those who responded, 58.2% were women, and the most represented age group was 66-75 years (21.8%). **Table 4** shows the age distribution of responders. Most responders were Swiss (70.9%), the rest being made of French (10.9%), British (7.3%), Italian (3.6%), Spanish (3.6%) and Portuguese (3.6%) nationals. In terms of education (**table 5**), 50.4% had a university degree, with a predominance of administrative backgrounds (20.0%). **Table 6** illustrates the professional backgrounds of respondents. Most of them are working in the administrative function (20.45%) whereas, the second most common professional sector is that of healthcare (15.15%).

<i>Age Groups</i>	N	%
18-25	7	5.30%
26-35	12	9.09%
36-45	12	9.09%
46-55	22	16.67%
56-65	24	18.18%
66-75	29	21.97%
76-85	24	18.18%
85+	2	1.52%

Table 4 - Age distribution of all responders.

<i>Education</i>	N	%
<i>Doctorate / PhD</i>	12	9.09
<i>Master's Degree</i>	24	18.18
<i>Bachelor / Licence</i>	22	16.67
<i>A-Levels / Baccalaureate</i>	26	19.7
<i>High School</i>	12	9.09
<i>Vocational / Apprenticeship</i>	36	27.27

Table 5 – Education expressed as the level of the highest achieved degree

<i>Professional sector</i>	N	%
<i>Security</i>	0	0
<i>Law</i>	2	1.52
<i>Transport / Logistic</i>	2	1.52
<i>Retail</i>	0	0
<i>Services</i>	12	9.09
<i>Healthcare</i>	20	15.15
<i>Finances / Management</i>	12	9.09
<i>Building / Architecture</i>	2	1.52
<i>Science / Engineering</i>	10	7.58
<i>Industry</i>	7	5.3
<i>IT</i>	2	1.52
<i>Hospitality / Tourism</i>	7	5.3
<i>Administration</i>	27	20.45
<i>Education</i>	17	12.87
<i>Arts / Communication</i>	12	9.09
<i>Agriculture</i>	0	0

Table 6 - Professional sector of respondents.

Health-related values

Overall, most responders considered themselves in good physical health, with a mean score on a scale from 1 to 10 of 8.0 ± 1.7 . Similarly, on average, they rated their ocular health a 6.3 ± 2.1 out of 10. The most common reason for their appointments were routine eye checks (34.5%) followed by a follow-up for chronic eye disease (27.3%), eye surgery (20.0%), and casualties (18.2%). On a scale from 1 to 10 (1 for benign to 10 for sight-threatening), patients self-assessed the seriousness of their presenting complaint as 6.1 ± 2.7 on average and evaluated their eyesight as crucial (9.7 ± 0.6). The majority of responders never had an eye condition in the past (40.0%), while 23.6% reported frequent eye-related complaints, and 10.9% even attended an ophthalmologist monthly (vs. 65.5% once a year or less).

Patient satisfaction

Satisfaction in a Swiss private eyecare setting

On average, out of 10, responders rated their overall satisfaction an 8.9 ± 1.4 , with 64.2% of them scoring 9 or more. In terms of willingness to recommend their doctor and the clinic, mean scores were 9.0 ± 1.8 and 9.2 ± 1.7 , respectively. **Table 4** shows the average scores on the main factors assessed by the patients.

Some questionnaire items were collapsed into broader headings. The score for each heading was calculated as the mean score for all items within the heading. Broad headings were defined as follows:

PATIENT SATISFACTION IN SWISS OPHTHALMOLOGY PRACTICE

- Booking convenience: item 28
- Ease of access: item 29, 33
- Waiting time: item 30
- Comfort: item 31, 32, 35
- Technology and equipment: item 34
- Respect of confidentiality: item 36
- Measures to safeguard from COVID: item 37
- Politeness of staff: item 38
- Appropriateness of doctors' outfit: item 40, 43, 44
- Perceived satisfaction of others: item 39, 42, 46
- Satisfactory management of clinical problem: item 47
- Quality of communication and explanations: item 48, 49, 50, 52
- Appointment duration: item 53
- Perceived cleanliness: item 55
- Overall satisfaction: item 64
- Willingness to recommend clinic: item 65
- Willingness to recommend doctor: item 66

Heading	Mean score \pm SD	Heading	Mean score \pm SD
Booking convenience	8.87 \pm 1.72	Perceived satisfaction of others	7.62 \pm 1.60
Ease of access	8.98 \pm 1.46	Satisfactory management of clinical problem	8.75 \pm 1.90
Waiting time <i>(Low scores represent longer waiting time)</i>	6.36 \pm 3.16	Quality of communication and explanations	8.87 \pm 1.64
Comfort	8.04 \pm 2.33	Appointment duration	22.36 \pm 16.13 min
Technology and equipment	9.34 \pm 0.92	Perceived cleanliness	9.53 \pm 0.82
Respect of confidentiality	9.04 \pm 1.33	Overall satisfaction	8.9 \pm 1.4
Measures to safeguard from COVID	9.21 \pm 1.33	Willingness to recommend the clinic	9.0 \pm 1.8
Politeness of staff	9.57 \pm 0.82	Willingness to recommend the doctor	9.2 \pm 1.7
Appropriateness of doctors' outfit	9.55 \pm 0.95		

Table 4: Average scores of the main headings. All scores are out of 10 except for the mean appointment duration, in minutes.

Proposition Testing 1

H2 - Patients' demographics and satisfaction

The demographic makeup and main health-related values of highly satisfied patients were not found to be significantly different from that of less satisfied patients

(Table 5).

	<i>Highly Satisfied Patients</i>	<i>Less Satisfied Patients</i>	<i>p-value</i>
Gender	61.8% female	52.6% female	0.527
Age	64.3 ± 19.9 years	60.3 ± 16.8 years	0.462
Nationality			0.843
	73.5% Swiss	68.4% Swiss	
	5.9% French	15.8% French	
	0.0% Spanish	10.5% Spanish	
Education			0.723
	35.3% Apprentice	15.8% Apprentice	
	14.7% High school	26.3% High school	
	17.6% Bachelor	15.8% Bachelor	
	8.8% Master	31.6% Master	
	14.7% Doctorate	0.0% Doctorate	
General Health	8.1 ± 1.9	7.9 ± 1.2	0.734
Ocular Health	6.3 ± 2.2	6.3 ± 2.1	0.972
Severity	5.8 ± 2.8	6.5 ± 2.4	0.403
Importance of eyesight	9.7 ± 0.6	9.6 ± 0.7	0.691
Outfit preference			0.387
	82.4% Whitecoat	89.5% White coat	
	5.9% Scrubs	5.3% Scrubs	
	2.9% Casual	5.3% Casual	
	8.8% Suit	0.0% Suit	

Table 5: Comparison of the demographics and health-related values of highly satisfied and less satisfied patients using Student’s t-test and analysis of variance (ANOVA).

Table 6 presents the correlation between demographic characteristics of ophthalmology patients and their overall satisfaction and willingness to recommend their doctor or clinic.

	Gender	Age	Nationality	Education	Health	Ocular health
Overall satisfaction	0.105	-0.047	0.039	0.052	0.313*	0.233
Willingness to recommend the clinic	0.244	-0.060	0.076	0.154	0.069	0.016
Willingness to recommend the doctor	0.250	-0.097	0.126	0.216	0.075	0.010

Table 6: Correlation matrix for patient demographics and overall satisfaction – Pearson’s correlation coefficients. The highest intragroup correlation coefficients are highlighted in green. (*: fair correlation; **: strong correlation).

The second proposition aimed at evaluating the impact of patients’ demographic parameters and perception of their own health on their overall satisfaction with their ophthalmic care provider. The results show no strong correlation between any of these

parameters and overall satisfaction or willingness to recommend either their clinic or their doctor. Only a fair correlation was observed between patients’ perceived general health and overall satisfaction, suggesting that patients considering themselves healthy tend to be more satisfied with their ophthalmic care. Interestingly, the association was stronger between satisfaction and general health than ocular health ($r = 0.313$ vs. 0.233).

Proposition Testing 2

H3 - Most significant predictor of satisfaction

Table 7 presents the correlation between each of the main factors assessed and patients’ overall satisfaction and willingness to recommend their doctor or clinic.

	Booking	Accessib.	Wait	Comfort	Tech.	Confid.	COVID
Overall satisfaction	0.400*	0.346*	0.388*	0.177	0.517*	0.735**	0.388*
Willingness to recommend the clinic	0.517*	0.265	0.280	0.153	0.495*	0.544*	0.210
Willingness to recommend the doctor	0.470*	0.180	0.164	0.043	0.343*	0.486*	0.110
	Polite	Outfit	Others	Clinical	Explan.	Duration	Clean.
Overall satisfaction	0.610**	0.494*	0.484*	0.742**	0.721**	0.309*	0.484*
Willingness to recommend the clinic	0.876**	0.656**	0.532*	0.887**	0.791**	0.277	0.555*
Willingness to recommend the doctor	0.862**	0.601**	0.472*	0.892**	0.849**	0.310*	0.517*

Table 7: Correlation matrix for specific aspects of patient experience and overall satisfaction – Pearson’s correlation coefficients. The highest intragroup correlation coefficients are highlighted in green. (Booking: Appointment booking convenience; Assessing.: Ease of access to the clinic; Wait: Waiting time; Tech.: Quality of the equipment available; Confid.: Respect of patient confidentiality; COVID: Quality of measures taken to safeguard patients from COVID; Polite: Staff politeness; Outfit: Appropriateness of doctors’ outfit; Others: Perceived satisfaction of other patients; Clinical: Acceptable management of the presenting complaint; Explan.: Quality of the communication and explanations; Duration: Length of the appointment; Clean.: Perceived cleanliness; *: fair correlation; **: strong correlation).

The third proposition aimed at assessing the correlation between individual patient experience factors and their overall satisfaction or willingness to recommend the service provider. The results showed highly variable correlations with different factors. The most important factor associated with patient satisfaction with Swiss private eyecare was their perception of satisfactory management of their clinical problem ($r = 0.747$), followed by the respect of their confidentiality ($r = 0.735$), the quality of the explanations they received ($r = 0.742$), and the politeness of the staff ($r = 0.610$). Other factors only correlated weakly or fairly with satisfaction. While the main factors

determining patients' willingness to recommend their clinic or doctor were similar to that influencing their satisfaction, the perception of their doctor's outfit strongly correlated with these two outcomes ($r = 0.656$ and 0.601 , respectively).

Proposition Testing 3

H4 - Demographics and determining factors of satisfaction

Table 8 presents the differences in correlation factors between patients of different age groups, genders, nationalities, education, and satisfaction levels.

Overall satisfaction	Booking	Accessib.	Wait	Comfort	Tech.	Confid.	COVID
< 65 year-old	0.263	0.512*	0.287	-0.014	0.523*	0.723**	0.305*
> 65 year-old	0.627**	0.145	0.496*	0.486*	0.588*	0.658**	0.663**
Female	0.356*	0.593*	0.385*	0.185	0.419*	0.732**	0.372*
Male	0.436*	0.063	0.409*	0.241	0.623**	0.737**	0.405*
Very satisfied	-0.150	0.061	0.014	-0.138	0.400*	0.460*	0.466*
Less satisfied	0.428*	0.487*	0.216	-0.028	0.068	0.660**	0.273
Swiss	0.494*	0.547*	0.330*	0.127	0.566*	0.796**	0.643**
Foreigners	-0.035	-0.107	0.650**	0.423*	0.362*	0.529*	0.387*
University	0.292	0.202	0.486*	0.343*	0.401*	0.652**	0.379*
High school	0.593*	0.479*	0.316*	0.388*	0.625**	0.788**	0.519*
Overall satisfaction	Polite	Outfit	Others	Clinical	Explan.	Duration	Clean.
< 65 year-old	0.683**	0.647**	0.406*	0.827**	0.877**	0.313*	0.468*
> 65 year-old	0.554*	0.403*	0.640**	0.654**	0.589*	0.337*	0.516*
Female	0.371*	0.480*	0.418*	0.707**	0.701**	0.339*	0.375*
Male	0.825**	0.523*	0.688**	0.833**	0.784**	0.238	0.623**
Very satisfied	0.153	0.084	0.308*	0.453*	0.713**	-0.042	0.072
Less satisfied	0.387*	0.272	0.277	0.561*	0.497*	0.071	0.263
Swiss	0.663**	0.524*	0.512*	0.766**	0.735**	0.289	0.626**
Foreigners	0.306*	0.294	0.405*	0.579*	0.636**	0.409*	-0.048
University	0.478*	0.479*	0.216	0.631**	0.522*	0.189	0.220
High school	0.708**	0.514*	0.644**	0.814**	0.831**	0.399*	0.680**

Table 8: Correlation matrix for specific aspects of patient experience and overall satisfaction across several subgroups of patients – Pearson's correlation coefficients. The highest intragroup correlation coefficients are highlighted in green. Wide intergroup discrepancies (> 0.3) are shown in orange. (Booking: Appointment booking convenience; Assessing.: Ease of access to the clinic; Wait: Waiting time; Tech.: Quality of the equipment available; Confid.: Respect of patient confidentiality; COVID: Quality of measures taken to safeguard patients from COVID; Polite: Staff politeness; Outfit: Appropriateness of doctors' outfit; Others: Perceived satisfaction of other patients; Clinical: Acceptable management of the presenting complaint; Explan.: Quality of the communication and explanations; Duration: Length of the appointment; Clean.: Perceived cleanliness; University: Responders educated at a university level; High-school: Responders educated at a secondary level; *: fair correlation; **: strong correlation).

The fourth proposition aimed at exploring the differences in factors influencing overall satisfaction across different subgroups of patients. This highlighted significant discrepancies in the expectations of different groups. While younger patients were more influenced by the equipment and comfort of the clinic ($r = 877$ and 827 , respectively), the satisfaction of patients over 65-year-old was more influenced by the measures taken to safeguard them from COVID-19 and confidentiality issues ($r = 663$ and 658 , respectively). Similarly, the overall satisfaction of Swiss nationals was significantly more influenced by the convenience of the booking process ($r = 0.494$ vs -0.035), clinic accessibility ($r = 547$ vs. -0.107), staff politeness ($r = 0.663$ vs. 0.306), and perceived cleanliness ($r = 0.626$ vs. -0.048). On the other hand, the main factor influencing the satisfaction of foreigners was the time they spent in the waiting room ($r = 0.650$ vs. 0.330). This confirms the impact of demographics and culture, not on satisfaction itself, but on the factors influencing it, and further highlights the importance of segmentation and tailoring services to patients.

Summary, Discussion and Conclusion

Over the last century, the importance of patient satisfaction has significantly evolved to become one of the key focuses of the healthcare industry (McLaughlin, 2009). Indeed, there is now ample evidence that patient satisfaction is intrinsically linked to profitability and reputation (Hall, 2008; Cliff, 2012). Yet, satisfaction is an elusive concept, the origins of which were shown to vary depending on the setting and the country (Baider et al. 1995). This research was therefore conducted to explore the factors responsible for patient satisfaction in a private ophthalmology setting in Switzerland, where no previous data were available.

With a total of 132 surveys completed, the participation threshold set by power analysis was met, and all responses were analysed. The exploration of 4 hypotheses showed that: (1) The observation made by Aiken et al. (2012) in the primary care setting, that patients in Switzerland were highly satisfied with their healthcare providers, holds true for the private eyecare setting, with overall satisfaction scores of 8.9 ± 1.4 in the studied sample. (2) It had been suggested that demographics and cultural factors had a direct effect on patient satisfaction (Senitan et al. 2018; Baider et al. 1995). Yet, the present study found only weak correlations between such factors and overall patient satisfaction with Swiss private healthcare providers ($r = 0.039$ to 0.105), and there was no statistically significant difference in the demographic makeup of highly satisfied and less satisfied patients ($p = 0.463$ to 0.843). (3) Baider et al. (1995) had shown the role of culture in shaping the expectations of patients, resulting in wide variations in values and beliefs depending on their nationalities. The present study confirmed this by identifying “perceived clinical performance” as the most determinant factor of satisfaction with ophthalmic care ($r = 0.742$) in the whole cohort, which differs from previous findings in Iran, Germany, and the USA, where Ziaei et al. (2011), Schoenfelder et al. (2011) and McMullen and Netland (2013), had identified accessibility, nurse kindness and waiting time, respectively, as the main factors influencing patient satisfaction in eye care settings. Furthermore, subgroup analysis elicited major discrepancies in patients’ most valued aspects of their experience depending on their nationality, with Swiss nationals valuing their confidentiality the most ($r = 0.796$) and foreign patients being more attentive to waiting times ($r = 0.650$). (4) Finally, other subgroups of patients were

all shown to value different aspects of their experience of care, depending on their age, gender, nationality, or education. This introduces the concept of variable factor patterns: individual patterns within which the importance of specific aspects of the healthcare experience vary depending on several personal characteristics, thus influencing patient satisfaction.

Implications

The present research identified clinical performance, confidentiality, and the quality of doctors' explanations as the most determinant factors for patient satisfaction in the Swiss private eye care setting. No previous data existed. Practically, this finding may be utilized by clinic managers seeking to improve patient satisfaction by planning performance audits and staff training programs with specific attention to these elements. Indeed, while clinical performance tends to be highly doctor-related is often guaranteed by their credentials, staff's handling of confidentiality and communication may be more multifactorial and deeply linked with institutional processes and organizations (Bose, 2003; Terry and Francis, 2007; D'Agostino et al. 2017). Recognizing the importance of these issues to patients is the first step towards improving them and potentially achieving better patient satisfaction, which may translate into a better reputation and financial performance (Cliff, 2012).

Furthermore, this research introduces the concept of variable factor patterns, acknowledging that, while patients from different cultural backgrounds or nationalities value different aspects of their healthcare experience, so is true for a multitude of other differences such as age, gender, or education. This new finding has two main implications. (1) Practically, it highlights the importance of segmentation and tailoring services to patients, especially in a highly diverse and multicultural setting as the Swiss healthcare sector (Swiss Federal Statistical Office, 2018). Indeed, this suggests that the more diverse patients may be, the more varied their preoccupations will be. Thus, identifying a clinic's patient archetype may allow managers to better target their quality improvement interventions. (2) From an academic point of view, this study suggests a new area of research. While most research on patient satisfaction to date had focused on identifying the most determinant factor of satisfaction in different countries or settings, this suggests that factors influencing patient satisfaction may vary more finely within the population, and it may therefore be useful to investigate the fundamental origin for these variations.

Limitations

The present study has several limitations. First, it relies heavily on correlation coefficients that are commonly subject to what Field (2010) described as the "third variable problem". Indeed, correlation analyses do not control for other measured or unmeasured variables, and, as such, may incidentally reflect changes in other factors. This is notably palpable in the study of interlinked concepts such as, in the present study, scores for "communication" and for "consultation time" that had a fair level of correlation. Further research may then involve multivariate analyses controlling for other studied factors. Considering the high number of studied variables, however, such an analysis is likely to require a very high number of responses to achieve statistical significance. Second, the high overall satisfaction scores may be, in part, due to a

selection bias. Indeed, while attempting to include every attending patient ensures a fair representation of the practice's overall population through all demographic groups, it may also favour the inclusion of satisfied patients who are more likely to attend regularly and may thus dilute dissatisfied patients. To minimize this bias, the least satisfied patients' responses were analysed as a separate sub-group. Furthermore, even though the survey was completely anonymous, and responders were made aware that no identifiable information would be collected, some patients may still have been subject to participant and acquiescence biases (Brito, 2017). While the wording of the survey was carefully designed to be balanced, with an alternate of positive and negative statements, to minimize these biases, responders could not be blinded to the purpose of their overall satisfaction score. Besides, despite the anonymization process, responders that were actively treated or awaiting a surgical procedure may have been unconsciously biased to depict their treating ophthalmologist in a positive light (Santry and Wren, 2012). While excluding patients being followed up would neglect a significant proportion of the clinics' populations, future studies may attempt to control this bias by performing separate analyses in the subgroup of patients being actively treated and the subgroup of discharged patients. Finally, data obtained through the present study may be used for a wide range of secondary analyses, such as the impact of demographics or culture on doctors' outfit preferences (Landry et al. 2013) or the effect of the high costs of healthcare insurances in Switzerland on psychological stress or the use of healthcare resources.

Conclusion

The present research identified clinical performance, confidentiality, and the quality of doctors' explanations as the most determinant factors for patient satisfaction in the Swiss private eye care setting. This may serve to improve patient satisfaction through tailored training and interventions. Furthermore, acknowledging that the main factors influencing patient satisfaction are different depending on their age, gender, nationality, and education, is key to understanding patients' varying expectations and tailoring services to a specific group of patients. This also suggests a new area for research in the field: beyond identifying the most determinant factor of satisfaction, identifying fundamentally how the importance of factors influencing patient satisfaction varies within a population.

Appendix A: Questionnaire

1. **What is your gender?**
(Female, Male)
2. **How old are you?**
3. **What is your marital status?**
(Single, Married / In a relationship, Divorced / Separated, Widow)
4. **How many children do you have?**
5. **What is your nationality?**
6. **What is your native language?**
7. **How would you describe your ethnicity?**
(Caucasian, Hispanic, African, Asian, Other)
8. **What is your level of school / university education?**
(Compulsory education, Federal Maturity / Baccalaureate, Bachelor / License Master, Doctorate, Vocational training / Apprenticeship)
9. **Which industry do you/did you work in?**
(Agriculture, Arts / Communication, Education, Administration, Hospitality / Tourism, IT Industry, Sciences / Engineering, Construction / Architecture, Finance / Management, Health, Services, Sales, Transport / Logistics, Law, Security)
10. **Would you say your general health is...**
(Very bad ○○○○○○○○○○ Excellent)
11. **Would you say your vision / eye health is...**
(Very bad ○○○○○○○○○○ Excellent)
12. **Which reason best describes the reason for your last eye visit?**
(Routine eye check, Surgery, Chronic disease follow-up, Acute visual concern, Acute pain/discomfort, Other type of follow-up)
13. **How serious do you think your problem was?**
(Minor ○○○○○○○○○○ Sight-threatening)
14. **Do you suffer from one or more of these diseases?**
(AMD, Glaucoma, Uveitis, Diabetes, HTA, None)
15. **How important do you think good vision is?**
(Not important ○○○○○○○○○○ Essential)
16. **Have you ever had eye problems in the past?**
(Often, Occasionally, Rarely, Never)
17. **How often do you usually see ...**
[... an ophthalmologist?]
[... a general practitioner?]
[... visit a hospital?]
(Monthly, At least 3 times a year, Once a year, Rarely)
18. **When choosing a doctor, do you value...**
Their clinical competence ○○○○○○○○○○ Their communication and

kindness.

Your personal feelings ○○○○○○○○○○ Their reputation.

19. For a doctor, which of these outfits inspires you the most?



20. When you visit a clinic, which of these settings would you be most at ease with?



21. In a clinic waiting room, which of these settings would you prefer?



22. Which clinic did you attend?

23. When was your appointment?

(6-10am, 10am-1pm, 1-4pm, 4-8pm, Other)

24. You have arrived...

(Very early > 20 min, Early 5-20 min, On time, Slightly late 5-10 min, Late > 10 min)

25. Was your appointment rebooked by the doctor / clinic?

26. Did you come ...

(With someone, Alone)

27. What doctor did you see?

28. How easy was it to make an appointment?

(Very difficult ○○○○○○○○○○ Very easy)

29. How easy was it to get to the clinic?

(Very difficult ○○○○○○○○○○ Very easy)

30. How long did you wait in the waiting room?

(Not long at all ○○○○○○○○○○ Very long)

31. How would you rate the comfort of the waiting room?

(Very comfortable ○○○○○○○○○○ Not comfortable at all)

32. How would you rate the decor of the clinic?

(Very bad ○○○○○○○○○○ Very nice)

- 33. How easy was it to find your way around the clinic?**
(Very easy ○○○○○○○○○○ Very difficult)
- 34. Did the clinic seem to be well equipped technically / medically?**
(Not at all ○○○○○○○○○○ Completely)
- 35. Have you been offered a coffee / glass of water or a snack?**
- 36. Was your confidentiality respected?**
(Absolutely ○○○○○○○○○○ Absolutely not)
- 37. Were there enough measures in place to make you feel safe about COVID?**
(Not at all ○○○○○○○○○○ Absolutely)
- 38. From 1 to 10, how would you rate the friendliness / politeness of...**
[The secretary / telephone operator when making an appointment]
[Reception secretaries]
[The doctor who examined you]
(Very bad ○○○○○○○○○○ Very good)
- 39. In your opinion, did the secretaries seem happy in their work?**
(Absolutely ○○○○○○○○○○ Not at all)
- 40. Were they dressed professionally?**
(Absolutely ○○○○○○○○○○ Not at all)
- 41. Had you already met the doctor who examined you?**
- 42. In your opinion, did the doctor who examined you seem happy in their work?**
(Not at all ○○○○○○○○○○ Absolutely)
- 43. Was he / she dressed professionally?**
(Not at all ○○○○○○○○○○ Absolutely)
- 44. Would you say he / she looked charming / elegant?**
(Absolutely ○○○○○○○○○○ Not at all)
- 45. Were there other patients with you in the waiting room?**
(None ○○○○○○○○○○ Many)
- 46. In your opinion, did the other patients seem satisfied with the clinic?**
(Not at all ○○○○○○○○○○ Absolutely)
- 47. Did the doctor solve your clinical problem satisfactorily?**
(Absolutely ○○○○○○○○○○ Not at all)
- 48. Were you satisfied with the explanations given by your doctor?**
(Not at all ○○○○○○○○○○ Absolutely)
- 49. Did the doctor take your opinion into account when choosing your treatment plan?**
(Absolutely ○○○○○○○○○○ Not at all)
- 50. Have you had the opportunity to ask all your questions?**
(Absolutely ○○○○○○○○○○ Not at all)
- 51. Did you have an informal discussion on personal / non-medical matters with the doctor?**

- 52. How would you rate the doctor's command of French?**
(Very poor ○○○○○○○○○○ Absolutely fluent)
- 53. How long do you think you spent with your doctor?**
- 54. Do you think that this time was sufficient?**
(Not at all ○○○○○○○○○○ Absolutely)
- 55. Were you satisfied with the cleanliness of the clinic / examination tools?**
(Absolutely ○○○○○○○○○○ Not at all)
- 56. If you received a prescription, how many new treatments did you receive?**
- 57. Your insurance is a...**
(State insurance (LaMAL), Private / additional insurance, Foreign insurance, I do not have a health insurance, I am not sure)
- 58. Did you have to pay any excess ('franchise') for this consultation?**
- 59. Regarding your health insurance, would you say its price is...**
(Too expensive, Fair, Cheap, I do not know)
- 60. Do you check the invoices of your medical consultations?**
(Always, Never, Sometimes)
- 61. Regarding your ophthalmology consultations, would you say their prices are...**
(Too expensive, Fair, Cheap, I do not know)
- 62. Have you ever given up on seeing a doctor because of the cost of the consultation?**
- 63. Have you ever felt stressed about medical bills?**
- 64. What is your general satisfaction?**
(Not satisfied at all ○○○○○○○○○○ Very satisfied)
- 65. Would you recommend this clinic to your loved ones?**
(Yes absolutely ○○○○○○○○○○ Not at all)
- 66. Would you recommend this doctor to your loved ones?**
(Yes absolutely ○○○○○○○○○○ Not at all)

References

- Abdellah FG, Levine E. (1957) Developing a Measure of Patient and Personnel Satisfaction with Nursing Care. *Nursing Research*. 5(3):100-108.
- AHRQ. (2020) CAHPS Clinicians & Group Survey. Agency for Healthcare Research and Quality, Rockville, MD. (Accessed on 25.10.2020, from <https://www.ahrq.gov/cahps/surveys-guidance/cg/index.html>)
- Aiken LH, Sermeus W, Van den Heede K, et al. (2012) Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*. 344 :e1717
- Al-Ali AA, Elzubair AG. (2013) Establishing rapport: physicians' practice and attendees' satisfaction at a primary health care center, Dammam, Saudi Arabia. *Journal of Family and Community Medicine*. 23(1):12–7
- Ali E, Norris JM, Hall M, White DE. (2020) Single-room maternity care: Systematic review and narrative synthesis. *Nursing Open*. 7(6):1661-1670.
- Baider L, Ever-Hadani P, De-Nour AK. (1995) The impact of culture on perceptions of patient-physician satisfaction. *Israel Journal of Medical Sciences*. 31(2-3):179-185.
- Bose R. (2003). Knowledge management-enabled health care management systems: capabilities, infrastructure, and decision-support. *Expert Systems with Applications*, 24(1), 59-71.
- Brito CF. (2017). Demonstrating experimenter and participant bias. In J. R. Stowell & W. E. Addison (Eds.), *Activities for teaching statistics and research methods: A guide for psychology instructors* (p. 94–97). American Psychological Association.
- Bujang MA, Baharum N. (2016) Sample Size Guideline for Correlation Analysis. *World Journal of Social Science Research*. 3(1):37-46.
- Chyung SY, Roberts K, Swanson I, Hankinson A. (2017) Evidence-Based Survey Design: The Use of a Midpoint on the Likert Scale. *Performance Improvement*., 56(10): 15-23.
- Cliff B. (2012) Excellence in patient satisfaction within a patient-centered culture. *Journal of Healthcare Management*. 57(3):157-159.
- Cockburn J, Pit S. (1997) Prescribing behaviour in clinical practice: patients' expectations and doctors' perceptions of patients' expectations—a questionnaire study. *BMJ*. 315(7107): 520–523..
- Cui X, Cheng Q, Lin W, Lin J, Mo L. (2019) Different influences of facial attractiveness on judgments of moral beauty and moral goodness. *Scientific Reports*. 9(1):12152.
- D'Agostino TA., Atkinson TM., Latella LE., Rogers M., Morrissey D., DeRosa AP., Parker PA.

- (2017) Promoting patient participation in healthcare interactions through communication skills training: a systematic review. *Patient education and counseling*, 100(7):1247-1257.
- Dancey C.P., Reidy J. (2007) *Statistics without Maths for Psychology*. Pearson Education.
- European Council of Optometry and Optics. (2020) Blue Book: Trend in Optics and Optometry – Comparative European Data. p 28-41.
- Emanuel EJ. (1999) Choice and representation in health care. *Medical Care Research Review*. 56(Suppl 1):113-140.
- Faeh D, Minder C, Gutzwiller F, et al. (2009) Culture, risk factors and mortality: can Switzerland add missing pieces to the European puzzle? *Journal of Epidemiology & Community Health*;63:639-645.
- Fenton JJ, Jerant AF, Bertakis KD, Franks P. (2012) The Cost of Satisfaction: A National Study of Patient Satisfaction, Health Care Utilization, Expenditures, and Mortality. *Archives of Internal Medicine*. 172(5):405–411.
- Field A. (2010) *Discovering statistics using SPSS. Introducing Statistical Methods Series*. London, 2nd Ed. SAGE Publications Ltd.
- Garman AN, Garcia J, Hargreaves M. (2004) Patient Satisfaction as a Predictor of Return-to-Provider Behavior: Analysis and Assessment of Financial Implications. *Quality Management in Health Care*. 13(1) 75-80.
- Gillmann K, Bravetti GE, Rao LH, Mermoud A, Mansouri K. (2020) Bilateral XEN Stent Implantation: A Long-term Prospective Study of the Difference in Outcomes Between First-operated and Fellow Eyes, *Journal of Glaucoma*. 29(7):536-541.
- Grøndahl VA, Hall-Lord ML, Karlsson I, Appelgren J, Wilde-Larsson B. (2013) Exploring patient satisfaction predictors in relation to a theoretical model. *International journal of health care quality assurance*. Vol. 26 No. 1, pp. 37-54.
- Gusberti FR. (2016) La relève des jeunes médecins en danger ? *Revue Medicale Suisse* 12 : 1064-5
- Hall MF. (2008) Looking to improve financial results? Start by listening to patients: improving patient satisfaction can have a direct impact on your hospital's reputation--and financial results. *Healthcare Financial Management*. 62(10):76-80.
- Hantel S, Benkenstein M. (2020). The stranger in my room: The fellow patient as the fourth dimension of patient satisfaction. *Health Services Management Research*. 33(3):136–142.
- Hartigan L, Cussen L, Meaney S, O'Donoghue K. (2018) Patients' perception of privacy and confidentiality in the emergency department of a busy obstetric unit. *BMC Health Services Research*. 18(1):978.
- Holt JM. (2019) Patient Experience in Primary Care: A Systematic Review of CG-CAHPS Surveys. *Journal of Patient Experience*. 6(2):93-102.

- Hostettler S, Kraft E. (2020) Statistique médicale 2019 de la FMH: forte dépendance de l'étranger. *Bulletin des médecins suisses*, 101(13), 450-455.
- Hussain A, Asif M, Jameel A, Hwang J, Sahito N, Kanwel S. (2019) Promoting OPD Patient Satisfaction through Different Healthcare Determinants: A Study of Public Sector Hospitals. *International Journal of Environmental Research and Public Health*. 16(19):3719.
- Jacobs K. (2016) Patient Satisfaction by Design. *Seminars in Hearing*. 37(4):316-324.
- Joshi A, Kale S, Chandel S, Pal DK. (2015) Likert Scale: Explored and Explained. *Current Journal of Applied Science and Technology*, 7(4):396-403.
- Kaczmirek L, Wolff KG. (2007) Survey design for visually impaired and blind people. In *International Conference on Universal Access in Human-Computer Interaction* (pp. 374-381). Springer, Berlin, Heidelberg.
- Kamra V, Singh H, Kumar De K. (2016) Factors affecting patient satisfaction: An exploratory study for quality management in the health-care sector. *Total Quality Management and Business Excellence*. 27(9-10):1013–1027.
- Landry M, Dornelles AC, Hayek G, Deichmann RE. (2013) Patient Preferences for Doctor Attire: The White Coat's Place in the Medical Profession. *The Ochsner Journal*. 13(3):334-342.
- Lanser May E. (2015) Diagnosing the patient experience. *Healthcare Executive*. 30(4):20-30.
- Le N, Groot W, Tomini S, Tomini F. (2018) Health insurance and patient satisfaction: Evidence from the poorest regions of Vietnam. *MERIT Working Papers 2018-040*, United Nations University - Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT).
- Lewis BR. (1990) Service quality: An investigation of customer care in major UK organisations. *International Journal of Service Industry Management* 1(2):33–44.
- MacStravic S. (1994) Patient loyalty to physicians. *Journal of Health Care Marketing*. 14(4):53.
- Manary M, Staelin R, Kosel K, Schulman KA, Glickman SW. (2015) Organizational characteristics and patient experiences with hospital care: a survey study of hospital chief patient experience officers. *American Journal of Medical Quality*. 30(5):432-40.
- Marshall GN, Hays RD. (1994) The patient satisfaction Questionnaire Short-form (PSQ-18). *Santa Monica*: Rand Publication.
- McLaughlin H. (2009) What's in a Name: 'Client', 'Patient', 'Customer', 'Consumer', 'Expert by Experience', 'Service User'—What's Next? *The British Journal of Social Work*. Volume 39, Issue 6, Pages 1101–1117.
- Martino SC, Shaller D, Schlesinger M, et al. (2017) CAHPS and Comments: How Closed-Ended Survey Questions and Narrative Accounts Interact in the Assessment of Patient Experience. *Journal of Patient Experience*. 4(1):37-45.

- McMullen M, Netland PA. (2013) Wait time as a driver of overall patient satisfaction in an ophthalmology clinic. *Clinical Ophthalmology*. 7:1655-1660.
- Murdock A, Griffin B. (2013) How is patient education linked to patient satisfaction? *Nursing*. 43(6): 43-45
- Murray J. (2013) Likert Data: What to Use, Parametric or Non-Parametric? *International Journal of Business and Social Science*. 4(11):258-264.
- Nair R, Perencevich EN, Goto M, Livorsi DJ, Balkenende E, Kiscaden E, Schweizer ML. (2020) Patient care experience with utilization of isolation precautions: systematic literature review and meta-analysis. *Clinical Microbiology and Infection*. 26(6):684-695.
- Needham BR. (2012) The truth about patient experience: what we can learn from other industries, and how three P's can improve health outcomes, strengthen brands, and delight customers. *Journal of Healthcare Management*. 57(4):255-263.
- Noelle-Neumann E. (1970) Wanted: Rules for wording structured questionnaires. *Public opinion quarterly* 34.2: 191-201.
- Ogden J, Fuks K, Gardner M, et al. (2002) Doctors expressions of uncertainty and patient confidence. *Patient Education and Counseling*. 48(2): 171-176.
- Ossoff RH, Thomason CD. (2012) The role of the physician in patient satisfaction. *Journal of Health Care Compliance*. 14(1):57-72.
- Otani K, Waterman B, Dunagan WC. (2012) Patient satisfaction: how patient health conditions influence their satisfaction. *Journal of Healthcare Management*. 57(4):276-292.
- Peterson-KFF. (2017) OECD Health Statistics. doi: <https://doi.org/10.1787/health-data-en>
- Pilpel D. (1996) Hospitalized patients' satisfaction with caregivers' conduct and physical surroundings. *Journal of General Internal Medicine*. 11(5): 312–314.
- Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, Britten N. (2006) Guidance on the conduct of narrative synthesis in systematic reviews. *A product from the ESRC methods programme, Version 1*, b92.
- Powers B, Navathe AS, Jain S. (2013) How to Deliver Patient-Centered Care: Learn from Service Industries. *Harvard Business Review*. (<https://hbr.org/2013/04/how-to-deliver-patient-centere.html>)
- Prakash B. (2010) Patient satisfaction. *Journal of Cutaneous and Aesthetic Surgery*. 3(3):151-155.
- Ruedin HJ, Roth M, Kraft E, Hersperger M. (2007) Analyse de l'effectif des médecins hospitaliers en Suisse en 2005. p 34.

- Santry HP, Wren SM. (2012) The role of unconscious bias in surgical safety and outcomes. *Surgical Clinics of North America*. 92(1):137-151.
- Sans-Corrales M, Pujol-Ribera E, Gene-Badia J, Pasarnik-Rua MI, Iglesias-Pérez B, Casajuana-Brunet J. (2006) Family medicine attributes related to satisfaction, health and costs. *Family Practice*. 23(3):308–316.
- Schindler M, Danis M, Goold SD, Hurst SA. (2018) Solidarity and cost management: Swiss citizens' reasons for priorities regarding health insurance coverage. *Health Expectations*. 21(5):858-869.
- Schoenfelder T, Klewer J & Kugler J. (2011) Analysis of factors associated with patient satisfaction in ophthalmology: the influence of demographic data, visit characteristics and perceptions of received care. *Ophthalmic and Physiological Optics*. 31:580–587.
- Sebo P, Herrmann FR, Haller DM. (2015) How do GPs in Switzerland perceive their patients' satisfaction and expectations? An observational study. *BMJ Open*. 5:e007085.
- Senitan M, Alhaiti AH, Gillespie J. (2018) Patient satisfaction and experience of primary care in Saudi Arabia: a systematic review. *International Journal of Quality in Health Care*. 30:751–9.
- Senitan M, Gillespie J. (2020) Health-Care Reform in Saudi Arabia: Patient Experience at Primary Health-Care Centers. *Journal of Patient Expectations*. 7(4):587-592.
- Shannon D. (2013) Physician well-being: a powerful way to improve the patient experience. *Physician Executive*. 39(4):6-12.
- Smith GL, Lopez-Olivo MA, Advani PG, Ning MS, Geng Y, Giordano SH, Volk RJ. (2019) Financial Burdens of Cancer Treatment: A Systematic Review of Risk Factors and Outcomes. *Journal of the National Comprehensive Cancer Network*. 17(10):1184-1192.
- Sutton AV, Ellis CN, Spragg S et al. (2017) Improving Patient Satisfaction in Dermatology: A Prospective Study of an Urban Dermatology Clinic. *Cutis*. 99(4):273-278
- Swiss Federal Office of Public Health (FOPH). (2012) Federal Department of Home Affairs FDHA. 21 December 2012.
- Swiss Federal Statistical Office. (2018) Ständige ausländische Wohnbevölkerung nach Staatsangehörigkeit, 1980-2017. Migration et intégration 2018.
- Terry NP, Francis LP. (2007) Ensuring the privacy and confidentiality of electronic health records. *University of Illinois Law Review*, 681(2):1-48.
- World Medical Association (2013). "Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects". *JAMA*. 310 (20): 2191–2194.
- Zarei A, Arab M, Froushani AR, Rashidian A, Tabatabaei SMG. (2012) Service quality of private hospitals: The Iranian Patients' perspective. *BMC Health Service Research*. 12(31):1-7.

Ziaei H, Katibeh M, Eskandari A, Mirzadeh M, Rabbanikhah Z, Javadi MA. (2011)
Determinants of patient satisfaction with ophthalmic services. *BMC Research Notes*. 4(7):1-4.