Patients Satisfaction for Gynecological Surgeries:

A Study Comparing Patients’ and Caregivers’ Perspective

Master’s thesis in Quality and Operations Management

VIKTORIA ERHARDSSON
AMANDA SKAGERSTRÖM

DEPARTMENT OF TECHNOLOGY MANAGEMENT AND ECONOMICS
DIVISION OF INNOVATION AND R&D MANAGEMENT

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www.chalmers.se

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Department of Technology Management and Economics
Chalmers University of Technology
SE-412 96 Gothenburg
Sweden
Telephone + 46 (0)31-772 1000

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ABSTRACT

Patient satisfaction is not always prioritized in Swedish healthcare since it belongs to the public sector and is a non-profit organization. Neither is gynecological care the area that is most prioritized and because of that, it is suffering. This study addresses the department of gynecological care and their patients. The aim is to examine the performance and importance of factors affecting patient satisfaction. By using both quantitative and qualitative methods, a presentation of which factors are perceived to be the most important with respect to patient satisfaction will be delivered. Furthermore, an investigation of if there is a gap between the patients' and caregivers' perception will be carried out. The methods are based on the theories of Patient Satisfaction Questionnaire-18 and the Analytic Hierarchy Process.

The empirical findings resulted in a high satisfaction for the current performance of the gynecological care. Most patients seem to perceive the interpersonal manner components as being beneficial for the gynecological flow. Four variables were found to be the most crucial for both patients and caregivers to attain patient satisfaction in the empirical research on whether there is a difference between the two groups. These include respect, competency, listening to the patient, and providing care when necessary. In other words, there was not much of a difference in the two groups' assessments of what matters most for patient satisfaction. However, the results can be used as a confirmation that the caregivers understand their patients well and the weight of importance for the factors can be used as a guideline of what the caregivers need to focus on to increase the patient satisfaction further. It serves as a foundation for understanding patients in future strategic decisions in improvement work.

Keywords: *Healthcare, Patient Satisfaction, The Analytic Hierarchy Process, Gynecology, Patient Satisfaction Questionnaire-18*

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Most of all, we would like to draw attention to all the patients out there. Not only the kind patients who voluntarily participated in the study, but also to all patients out there in need of medical care. You are the reason why we are doing the study, to make your voice heard.

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1. Introduction

The following sections will cover the background, purpose, research questions and delimitations of the research.

1.1 Background

Healthcare in Sweden is struggling with significant resource shortages, leading to extended healthcare queues and inefficient processes (Dagens industri, 2022). A lack of a coherent structure for coordinating processes between different departments contributes to increased queues for surgeries and appointments. When planning surgeries, numerous factors must be considered, including prioritization of various procedures and the distinct pre- and postoperative care requirements. Despite the healthcare sector being built and made for the patient, there is in some way a lack of patient awareness. Most of the actions being taken are based on what the system believes the patients need, without always involving them. This is often due to lack of time and resources for it.

In Sweden there is an established 90-day limit for waiting on surgery (SFS 2010:349; Sveriges Kommuner och Regioner [SKR], 2023). Despite this, it is a recurring occurrence that the timeframe is exceeded, leading to surgical procedures being postponed for various reasons. This issue presents a significant challenge within the healthcare sector, and it is crucial that it is addressed and managed effectively. Active measures are being taken to solve this phenomenon and facilitate patients' access to necessary care within a more desirable timeframe. SKR (2023) highlights numbers of reasons for moments when the care guarantee is not achieved. Such moments would be, if for example, the patient turns down an offer for switching hospitals, if there are legitimate reasons for postponing the surgery or if the actual investigation of the conditions takes longer.

This research is undertaken at Östra Hospital that is a part of Sahlgrenska University Hospital in Gothenburg, Sweden. Sahlgrenska as it is today created 1997 when the three different hospitals of Östra, Mölndal and Sahlgrenska merged into one unit, but it is still located at three separate areas of Gothenburg (Sahlgrenska, 2022).

Östra Hospital serves as an illustration of how daily operations are impacted by resource deficiencies. To enhance these processes and their effect on the hospital, Sahlgrenska has initiated a project at Östra in Gothenburg called *"The way forward for the surgical care at Östra.* The project aims to make patient safety and surgical processes more effective while also nurturing the culture, knowledge and leadership within the hospital and the employees. The initiative focuses on the overall streamline for the surgical healthcare and for that reason there are multiple different departments and processes that need to collaborate and be coordinated to achieve a smooth flow through the entire pathway.

To solve issues and enhance patient safety within the healthcare system, there is a need to have a stronger patient involvement (Socialstyrelsen, 2024). The National Board of Health and Welfare (2024) further highlights that the patient needs to be included in every step of their care, to have the patient as a co-creator of their care is seen as a fundamental aspect for safe care. Healthcare providers are according to the Swedish law obligated to both receive and investigate complaints from the patients affected (Vårdhandboken, 2022). There are several procedures made for handling accidents and how to risk managing it after it happened, but not too much about how to work with patient satisfaction in a more preventive way.

Operation for gynecological surgeries at Östra is divided into two departments, Operation 1 and Operation 2. Several different surgeries are performed at the two departments such as Cesarean section, both emergency and planned, and other gynecological surgeries. The need to improve the flow for surgical healthcare is since these used to be two separate departments but have since 2022 been considered one unit. However, the departments are still operating as separate and located in different places, which has led to lack of communication and dissatisfaction within the unit. The goal with the project is to achieve *"Patients should receive surgery on time, with high quality, and in a sustainable work environment for staff at the reception, operation, and ward".*

Therefore, to have a stronger patient participation as recommended by the National Board of Health and Welfare, it is vital to understand what patients regard to be patient satisfaction. It is also interesting to find out if patients' perceptions of satisfaction and those of caregivers aligns. This research is being conducted concurrently with the improvement project. If this is not investigated, Östra's reform efforts could not be as successful as they could be as they lack insight into what patients need and want, and they run the risk of putting the wrong items at the

top of the list of priorities for reaching their goal for the project. Especially within women's healthcare, as this is an area that is often considered a lower priority.

Given financial and resource constraints, this aspect of the Östra project—more precisely, the analysis of elements that add patients' satisfaction for patients in the general streamlining of the gynecological care processes—is absent. Moreover, they have not examined the differences between what caregivers believe their patients need and what their patients need. By filling this gap, the research aims to support the project at Östra Hospital.

1.2 Purpose

The research aims to compare and uncover discrepancies between patient and caregiver perceptions of patient satisfaction within gynecological care. This investigation will contribute to a deeper understanding of patient satisfaction dynamics in this healthcare setting, guiding strategic focus and priorities for future improvements.

1.3 Research Questions

The research will investigate the following two research questions:

RQ1: *What is the current level of patient satisfaction at the gynecological unit?*

RQ2: *Is there a discrepancy between patients' and caregivers' perspective on patient satisfaction?*

1.4 Delimitations

This research will focus exclusively on patients getting gynecological surgeries at Östra Hospital. A defined starting and ending point will be established, where the starting point will be when the patient's initial contact with the healthcare services at Östra and the ending point will be two weeks after the patient is discharged from the gynecological department. Notably, the research will exclude the activities after the gynecological department, such as rehabilitation and re-admission. Additionally, a limiting factor is the predefined time frame of five months, which, in turn, results in a constrained sample size.

2. Literature Review

The following chapter will cover the relevant theories of patient satisfaction in relation to healthcare and gynecological surgeries. The theories regarding customer and patient satisfaction, Patients Satisfaction questionnaire and Analytic Hierarchy Process will be presented below.

2.1 Customer & Patient Satisfaction

Customer satisfaction is a concept of understanding the customer and knowing what is important for them. If you do not understand your customer and fail to reach their expectations, it will most likely lead to a dissatisfied one (Mohammed & Mahmood, 2022). Customer satisfaction can be considered difficult to measure in some respects thus it can depend on the customers' own past knowledge, experience and mood.

When it comes to profit-making companies, quality and customer satisfaction are frequently used terms to drive success (Grunert & Ellegaard, 1992). Within the public sector, such as healthcare in Sweden, quality and customer satisfaction is not as prioritized as it is in profit-making companies. Some studies have shown that treating the public sector as a profit-making company and treating the patients more like customers have benefits when it comes to success (Hellgren, 2016). The lack of prioritization for customer satisfaction presumably has to do with its lack of need to be competitive in the market. Patient satisfaction corresponds to the term customer satisfaction despite that it refers to a customer in a specific concept, a patient within the healthcare sector. By having patient satisfaction as a key performance index and measuring it, one can receive information about the patients' experience of the care and its perceived quality. Patient satisfaction identifies the needs of a patient and can be utilized to highlight concrete areas with potential of improvement in the public sector hospitals (Hussain et al., 2019).

Hussain et al. (2019) describe several different factors within the healthcare sector that both have a significant importance when it comes to affecting patient satisfaction and factors that did not have a clear relation to patient satisfaction, for their selected geographic area. Pharmacy services, laboratory services, doctor-patient communication and physical facilities are four factors that Hussain et al. (2019) claim to possibly have an impact on patient satisfaction. Pharmacy services refer to the quality of the pharmacy service when it comes to the pharmacist's competence and the ability to communicate information to the patient. An example of

laboratory services is providing fast and correct test results to the patient. Doctor-patient communication points to the quality of the communication between doctor and patient, clear communication indicates higher satisfaction. Showing empathy and allowing the patient to ask questions also plays a certain role within the patient-communication category. Physical facilities involve hygiene and the overall hospital environment, but according to Hussain et al. (2019) these aspects turned out to be less significant than the others when it comes to patient satisfaction. Other studies have shown that Technical Quality, Interpersonal Manner, Communication, Time Spent with Doctor and Accessibility & Convenience are all factors contributing to patient satisfaction (see Section 2.2). Communication and competence are two factors that are referred to in both studies as crucial (Marshall and Hays, 1994).

The above stated factors for patient satisfaction appear in the general healthcare sector but also in gynecological care. Additionally, gynecological care has factors affecting satisfaction that are specific for this context. For example, previous studies have shown that most of the patients would be more satisfied if their gynecologist was a female and not a male (Janssen & Lagro-Janssen, 2012). This preference was explained by the female gynecologist having a more patient centered communication style, which led to increased patient satisfaction. The patient centered communication style referred to the female gynecologist being more observant, provided more information and had more empathy in this intimate context. Yeh et al. (2010) highlights the importance of communication in gynecology regarding patient satisfaction and argues that if patients leave the hospital with questions, there is a higher risk that patient satisfaction will be lower. The quality of nursing care is another factor that significantly affected the overall satisfaction in gynecological care. Nurses checking in on you regularly to see if you are alright, protecting your integrity and privacy, and nurses coming quickly when calling for them showed positive results for patient satisfaction (Akbaş, 2019).

2.2 Patients Satisfaction Questionnaire (PSQ-18)

As mentioned in Section 2.1, there is value in understanding patients and their needs. A way to deal with these issues is by using trusted questionnaires. The Patient Satisfaction Questionnaire, PSQ-18, is a reconstructed version from PSQ-III that had 50 pre-decided questions (Marshall & Hays, 1994). The original PSQ had 80 questions and was created to meet the need of knowing the patients' viewpoint of the quality for their care. The PSQ worked as an instrument for the general patient with a vision to ease the process for administration, planning and evaluating the different healthcare delivery programs (Marshall & Hays, 1994). The updated and improved

version PSQ-III gives a view for the quality of the care covering both a generalized view while also covering a more specific aspect of satisfaction for patients.

PSQ has previously been used in several studies in different fields, including the gynecological field (Barber et al.,2016). The study used the factors from the patient satisfaction questionnaire to examine the level of patient satisfaction. Barber et al. (2016) further explains that additional factors beyond the ones in PSQ were included in the study to make a better fit for the gynecological context, since the original PSQ is not specifically created for the gynecological setting.

A problem with the original PSQ, PSQ-III, was the time needed for completion. This is one of the reasons why the short form version, PSQ-18, has been constructed to decrease the need for time for answering the survey. PSQ-18 could be deemed as the speed-up version for PSQ-III, while still targeting all the aspects of patient satisfaction. The 18 questions are divided into seven categories; General Satisfaction, Technical Quality, Interpersonal Manner, Accessibility & Convenience, Communication, Financial Aspects and Time Spent with a Doctor. The design of this questionnaire let the patients answer each statement with the use of the Likert Scale (see Figure 1) of five choices ranging from strongly disagree to strongly agree (Marshall & Hays, 1994).

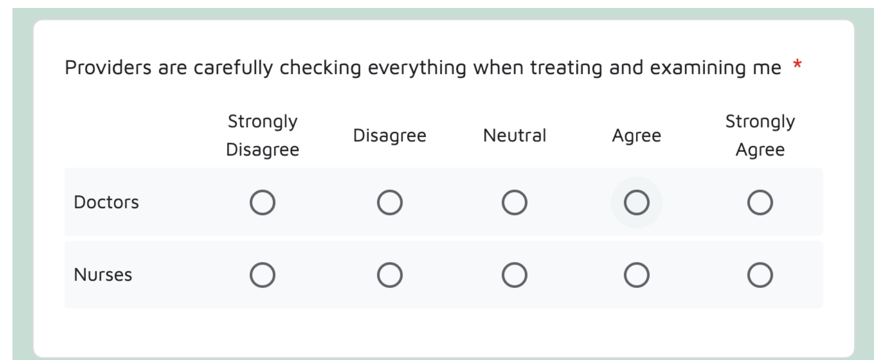


Figure 1. Example of a statement in the PSQ-18 and how the Likert Scale is structured.

2.3 Analytic Hierarchy Process

In a complex environment, making decisions comes with significant challenges (Brunelli, 2015). The decision-making process is crucial since the decision can entail great consequences. This is particularly vital when making strategic decisions and for that reason, an awareness of the desired outcome is needed. When facing several alternatives there is a need for comparing

alternatives against each other and prioritize what alternative is most valuable. One of the most tested methods for decision making is the Analytic Hierarchy process (AHP) (Vaidya and Kumar, 2006). AHP is a method to use for analyzing the decision and when aiming to prioritize different possibilities. Additionally, the theory can be explained as "*a decision analysis designed to help the individual make a choice among a set of prespecified alternatives "(*Brunelli, 2015). By using the AHP one can avoid the "*all things are important*" situation since you force the respondents to prioritize. One of the shortcomings of the method is that the number of comparisons increases exponentially as the number of alternatives increases. Furthermore, this theory can be described as a relative measurement, which indicates that it is the relative proportions between alternatives that matter and not specific quantities. If the goal is to pick the most valuable alternative, it is enough to know the proportion between the alternatives.

There are two approaches when working with the Analytic Hierarchy Process and compiling the result. Either the respondents are considered as one unit or separate individuals. The first alternative, when the respondents are considered as one unit, is called Aggregating individuals' judgments. In this case, a group of respondents get together and act like an individual to form a decision. For the second alternative, when the group is separate individuals, it is a question of aggregating individuals' preferences which means that the individuals stating their preferences are independent from the rest of the respondents. For the Aggregating individuals' preferences, the geometric mean is essential to calculate the result of the Analytic Hierarchy Process. The geometric mean refers to the fact that all individuals' responses are calculated as an average ratio of their resulting priorities. Using the geometric mean is appropriate if all individuals within the group of respondents are viewed as equals (Forman and Peniwati, 1998).

The AHP is structured in a way where the goal is used as a starting point (see Figure 2). The goal is broken down into relevant criteria for achieving it, and those criteria are further broken down into alternatives or sub-criteria. The number of criteria and sub-criteria will vary depending on the context. Next, a pairwise comparison is made between each criterion and sub-criteria.

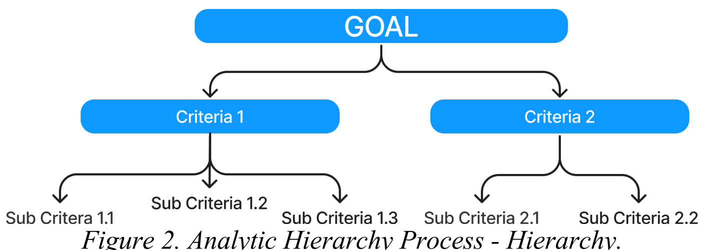


Figure 2. Analytic Hierarchy Process - Hierarchy.

The AHP method uses a pairwise comparison to come to a conclusion of what the optimal choice would be. The pairwise comparison solves the dilemma of having many choices to choose from. The beneficial part of the pairwise comparison is that two alternatives are presented at the time, which increases the effectiveness (Brunelli, 2015). The number of pairwise comparisons for each category is calculated by the following equation:

$$\frac{n(n-1)}{2}$$

(Vaidya and Kumar, 2004). This means that if one category has four sub-criteria, *n* equals four, and the number of pairwise comparison questions would be six.

Each of the comparison questions are formulated as follows; *With respect to the *Goal*, how important is "Alternative A" compared to "Alternative B?"*. For each comparison the respondent is provided with a set ratio scale. The scale goes from 9-1, and then 1-9 again (see Figure 3). The uneven numbers 1, 3, 5, 7, 9 are considered as more value-adding numbers than the even numbers 2, 4, 6 and 8, which are considered as intermediate values. Each of the numbers has a corresponding meaning (see Table 1).

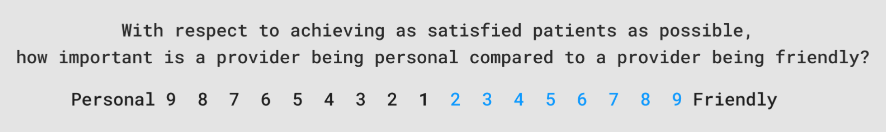


Figure 3. Structure for the Analytic Hierarchy Process questionnaire.

Table 1. The intensity of importance for each number

Intensity of Importance	Definition	Explanation
1	Equally important	Both choices feel equivalent
3	Slightly more important	Leaning slightly more towards one choice over the other
5	More important	Leaning significantly more towards one choice than the other
7	Very important, with some weight	Strongly leaning towards one choice over the other, with weight
9	Extremely important	One choice is clearly superior/better than the other option without a doubt
2, 4, 6, 8	Intermediate values	In between two choices

The answers from the pairwise comparisons can be compiled into a pairwise comparison matrix where one can see the relative comparison between each alternative. In the example below (see Figure 4), one can tell that A is two times more important than B and six times more important than C. B is three times more important than C.

$$\begin{matrix} A \\ B \\ C \end{matrix}\begin{bmatrix} 1 & 2 & 6 \\ 1/2 & 1 & 3 \\ 1/6 & 1/3 & 1 \end{bmatrix}$$

Figure 4. Pairwise Comparison Matrix.

To end up in the matrix above, a set of alternatives are presented, X=$\{x_1 \ldots, x_n\}$. For each alternative X, there is a weight vector, W= $(w_1 \ldots, w_n)^T$, where w_i corresponds to a calculated score of X_i. The higher the w_i, the higher the x_i. One important rule is that x_i is preferred over x_j, if and only if the corresponding vectors have the same order, $w_i > w_j$. Weight vectors are the ratings of the alternatives, which means that if the set of W is W= (0.3, 0.5, 0.2), x is prioritized as $x_2 > x_1 > x_3$. The weight vector, W, is the relative importance of a factor.

The pairwise comparison can be structured in the pairwise comparison matrix, A= (a_{ij}) n $\times n$, where (a_{ij}) >0 symbolizes the preferences between the alternatives x_i to x_j. (a_{ij}) can also be described as the ratio between the corresponding weight vectors, which can be written as (a_{ij}) = $w_i \div w_j$ (see Figure 5) (Brunelli, 2015).

$$\mathbf{A} = \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix} = \qquad \mathbf{A} = (w_i/w_j)_{n\times n} = \begin{pmatrix} w_1/w_1 & w_1/w_2 & \dots & w_1/w_n \\ w_2/w_1 & w_2/w_2 & \dots & w_2/w_n \\ \vdots & \vdots & \ddots & \vdots \\ w_n/w_1 & w_n/w_2 & \dots & w_n/w_n \end{pmatrix}.$$

Figure 5. Calculations for Pairwise comparison matrix (Brunelli, 2015).

After all respondents have answered the pairwise comparison questions, the geometric me an is calculated for each question with the following equation:

$$\sqrt[P]{a_{ij}^1 \times a_{ij}^2 \times a_{ij}^3 \dots a_{ij}^P}$$

P is the number of people. For answers belonging to the left side of the answer scale, one can put them directly into the equation, while numbers on the right side of the scale will be the inverse number when put in the equation. The product of the equation is then transferred into the pairwise comparison matrix. The next step is to calculate the weight vector, which symbolizes the relative importance of the sub-criteria. The weight vector, *W*, is calculated with the following row geometric mean approximation:

$$W_{ij} = \frac{\sqrt[n]{\prod_{j=1}^{n} a_{ij}}}{\sum_{i=1}^{n} \sqrt[n]{\prod_{j=1}^{n} a_{ij}}}$$

The numerator represents the *n*-root of the product of the elements in one row of the pairwise comparison matrix and the denominator is the sum of all the *n*-root of the product of the elements in all rows.

When the vector is calculated for each sub-criteria and criteria, the sub-criteria vector is multiplied with its corresponding criteria vector to receive the final value for each factor, which represents the relative importance of each factor when the criteria is taken into consideration.

This theory is based on assuming that the respondents are consistent (Saaty, 1987). To confirm the validity in the comparison, a consistency ratio can be calculated. As long as the consistent ratio does not exceed 10 %, the result can be viewed as valid and consistent (Saaty, 1987). The consistency ratio (CR) is calculated by CR= CI/RI, where CI=Consistency index and

RI=Random consistency index. The consistency index is calculated with the following equation, where *n* refers to the number of sub-criteria and λ_{max} refers to maximum eigen value of the pairwise comparison matrix:

$$CI = \frac{\lambda max - n}{n - 1}$$

The eigen value in turn is calculated by choosing one row in the matrix and multiplying the row with the weight vectors. λ_{max} is obtained from dividing this with the weight vector for the chosen row (see Figure 6).

$$\lambda\text{max} = \frac{\begin{bmatrix} 1 & 2 & 1 \end{bmatrix} * \begin{pmatrix} 0.407 \\ 0.370 \\ 0.224 \end{pmatrix}}{0.407} = 3.367$$

Figure 6. Calculation of λmax

The random consistency index is a set value based on the number of factors (see Table 2). For example, if the comparison includes four factors, the random consistency index would be 0.9. These values are based on an average random consistency index (R.I.) from a sample size of 500, using a scale from 1/9 to 9 (Saaty, 1987).

Table 2. Random Consistency Index (Saaty, 1987)

n	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
R.I	*0*	*0*	*0.58*	*0.90*	*1.12*	*1.24*	*1.32*	*1.41*	*1.45*	*1.49*

3. Methods

This chapter describes the research design and specification of the research methods. The level of research quality is discussed while looking at the ethics and moral aspect behind the chosen research.

3.1 Research Design

When conducting research and gathering data, it is most common to apply either qualitative or quantitative strategy (Bell et al., 2022). The difference between these two is generally described as follows, the quantitative approach is using data of a more distinctive nature where the focus is on measurable numerical data while the qualitative approach focuses more on soft data. For this research, both quantitative and qualitative methods were applied. This equals a mixed method strategy, more specifically Convergent Design, where the data collection was made through both quantitative and qualitative methods in parallel with each other (Bell et al., 2022). Convergent Design lets researchers get a wider understanding of a research topic, which was needed for this research. Moreover, qualitative research often focuses on trying to see through the eyes of the stakeholders which seemed suitable for the chosen research questions. This research had the need to also look more concrete at what factors are preferred over another, which led to the need to apply a mixed method. The output was a comparison of performance factors gathered from qualitative interviews and quantitative questionnaires with patients, to importance factors from quantitative interviews with both patients and caregivers.

Due to the complex environment of hospitals, a single case research with an exploratory approach was further applied. This allowed the researchers to deepen their understanding about the target case organization of Sahlgrenska Hospital of University and more specifically the area of Gynecological surgeries at Östra.

Furthermore, a qualitative approach applies an inductive view which means that the theory for the research is given by the research. The adaptation of the qualitative inductive approach means that after deciding on suitable research questions, relevant and specific theories were gathered to later perform the data collection (Bell et al., 2022). The data collection includes both theoretical and empirical data which lead to the need of applying the inductive view.

3.2 Research Methods

The research methods served three purposes; to receive a deeper understanding of the gynecological care pathway, to identify the current performance of the gynecological care and lastly, to identify the importance of different satisfaction factors. In the initial phase of the research, a literature study, observations and interviews with employees were performed. Furthermore, patients were provided with a Patient Satisfaction Questionnaire, to assess their perceived quality of the care. Subsequently, interviews with patients were conducted, and finally, follow-up interviews were conducted with both patients and employees to evaluate the importance of factors influencing patient satisfaction (see Figure 7). Evaluation of the importance was done by using the Analytic Hierarchy Process. The methods will be further described in the following sections.

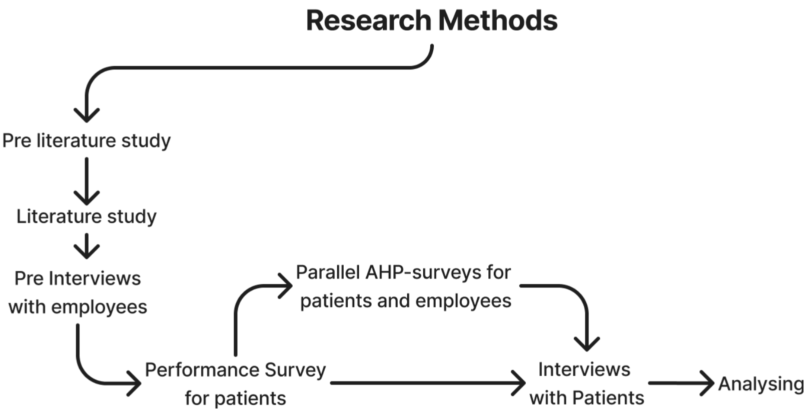


Figure 7. Research methods.

The collection of data from interviews lasted between March 25th and May 7th. The interviews for patients were between 40-50 minutes and for caregivers the interviews lasted between 30-40 minutes, including both qualitative and quantitative data collection. The literature review spanned from February 14th to May 5th.

3.2.1 Literature Review

In the initial phase of the research, pre-literature research was conducted to receive inspiration and to find possible gaps within the area (Bell et al., 2022). When the scope and the research questions were set, the main literature review was introduced to receive a deeper understanding of the chosen project. This was done by using *Scopus*, *Web of Science* and *Google Scholar*. Using these databases one can receive a broad result of academic articles but easily narrow the number of articles down. In addition to *Web of Science*, *Scopus* and *Google Scholar*, course

literature and previous master theses have been used on similar topics. During the entire project, the chosen literature was reviewed regularly to ensure its relevance for the niche. *Customer Satisfaction, Patient Satisfaction, Customer Experience, Healthcare, Gynecological care, Sahlgrenska University Hospital, Design for Quality, Analytic Hierarchy Process* are some examples of keywords that were used during the literature review.

To review all publications from *Scopus* and *Web of Science*, a systematic review built on the PRISMA - method was conducted (see Figure 8) (Prisma, 2024). The Prisma-method refers to Preferred researching Items for Systematic Reviews and Meta-analysis and is commonly used to improve and visualize the screening process. This is done by having transparency in all selection by presenting the number of exclusions and underlying causes for exclusion at each step (Moher et al., 2009). In the first identification, all non-peer-reviewed articles were removed, which resulted in a transition from 2041 to 151 articles. After the screening, where the exclusions were made based on an audit of the titles and abstracts, the number of articles were downed to 45 articles. The next stage, eligibility, narrowed down the number of articles to 17, assessed by the full text. Lastly, the inclusion stage presents the number of articles that were included in both the systematic review and the meta-analysis. This systematic review was conducted using keywords such as "patient satisfaction," "gynecology," "healthcare," and "analytic hierarchy process.". Additionally, during the systematic review, the snowballing method was employed. This involved examining the references cited in the selected articles from the PRISMA method to find new relevant articles (Wohlin, 2014).

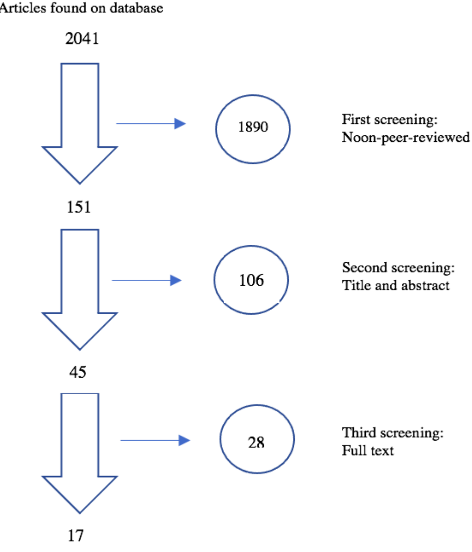


Figure 8. Screening process.

3.2.2 Qualitative Methods

In parallel with the literature review, qualitative observations were executed with the intention to form a perception of the current state. Observations are crucial for understanding how people interact with their environment, often accomplished by visiting Gemba, the actual place (Ahrne & Svensson, 2011). This approach uncovers valuable insights that may not emerge during interviews alone. Interview templates for both patients and employees were carefully evaluated both before the interviews and iteratively during the interview process to maintain its relevance (Lantz, 2007). The interviews were qualitative and had a semi-structured nature. Qualitative interviews are appropriate when striving to increase knowledge within the subject. Furthermore, qualitative research can describe a subject rather than measuring it (Lantz, 2007). Since the existing information in this phase is relatively low, a semi-structured interview is appropriate for the qualitative interviews. This structure allowed follow-up questions which suited the project since it took place in, for the researchers, an unknown environment. Both researchers participated in all interviews, where one researcher took notes, and the other one asked the questions. The interviews were recorded to guarantee that no information was missed and to have the opportunity to go back and listen if needed. Lantz (2007) describes recording the interviews, even if it is only the sound, enabling impressions in terms of the mood, emotions and expressions. After each interview, the recorded material was transcribed.

Before performing the employee interviews, a selection of sample sizes was done. The sampling was done to guarantee that all necessary stakeholders were selected and with enough participants to ensure saturation. The saturation was considered achieved after ten interviews since the emerging data from the interviews was no different from previous interviews (Strauss & Corbin, 1998). The sampling method used was a stratified interview sample. Bell et al. (2022) explains stratified interview samples suitable when aiming for interviewing different types of interest groups within case research. In this case, the aim was to reach different types of occupational groups and levels within different departments that are all involved in the gynecological flow. The different roles were nurse, operation coordinator, assistant nurse, amnesty nurse, administrative secretary, business developer, care unit manager and section leader. The primary objective of these initial interviews was to gain a deeper understanding of the processes that the gynecological patients undergo (see Appendix A). Therefore, not all questions are directly linked to the research questions; rather, they serve as a foundation for the research process. All employee interviews, except one, were performed live, and not digitally,

to make it more personal and comfortable for the respondent to open. In total, ten interviews with employees were conducted.

Besides interviews with employees, interviews with patients were executed (see Appendix B). The sampling was made of the 25 patients that voluntarily signed up for an interview through the digital survey (see Appendix C). In total, seven interviews with patients were conducted (see Table 3). The patient interviews aimed to develop the answers from the Patient Satisfaction Questionnaire to receive more qualitative data on the experiences that the patients had through their gynecological care pathway. All patients had the opportunity to choose to be interviewed physically or digitally. Since not all patients live in the area, and since the patients still were recovering from their surgeries, no interviews were performed physically. Instead, there was a mix of phone calls and video interviews depending on patients' preference.

Table 3. Type of surgery for patients in the interviews.

Patient number	Type of Surgery
P1	Hysterectomy
P2	Cystectomy
P3	Hysterectomy
P4	Pelvic floor repair
P5	TVT-procedure
P6	Pelvic floor repair
P7	TVT-procedure

3.2.3 Quantitative Methods

When it comes to the quantitative methods, two questionnaires were created. One of them, the patient satisfaction questionnaire, for the patients, and the second questionnaire, pairwise comparison questionnaire, targeted both patients and employees.

Due to privacy regulations concerning personal data, obtaining patients' contact details directly from the hospital and contacting them was not feasible. Similarly, researchers could not be physically present in the departments. Therefore, it became necessary to promote the research to encourage patients to participate voluntarily. A poster featuring information regarding the research and a QR code was designed and distributed by staff to patients (see Appendix D).

Additionally, the poster was displayed prominently at the gynecological department, both in print and digitally on a TV screen, ensuring visibility for patients. Scanning the QR code directed patients to a Google form questionnaire with a quantitative character. This Google form served two purposes: gathering data about their experience with gynecological care and obtaining consent from patients for contacting them for potential interviews.

The questions for the Google form questionnaire were based on the theory PSQ-18 (see Appendix E). By utilizing this theory, a detection of the performance aspect for the service from the patient perspective can be revealed (Marshall & Hays, 1994). The finalized digital survey consisted of 26 questions (see Appendix C). A few questions were taken away or remade from the PSQ-18 questionnaire, and a few were added. This was due to when analyzing the premade questions, some did not make sense for this research context. Furthermore, when translated to Swedish there were a few too similar to make sense. The questions added in the digital survey were Q17, Q19, Q20 (see Appendix C) and taken away were PSQ5 and PSQ7 (see Appendix E).

The two PSQ-questions were removed due to the study made by Marshall and Hays (1994) was conducted in the United States of America where the financial aspect for their healthcare differs from the Swedish healthcare system. The question about gender was added because the researchers wanted to investigate if the gender of the caregiver had any meaning for the gynecological health service. The other two questions were created after feedback from the hospital who considered the area of information to the patient to be a common area of discussion and misunderstanding.

The questions were reviewed on numerous occasions and by multiple stakeholders for added strength for the questions and right phrasing. The questionnaires were originally produced in English, but due to the research aimed for the Swedish healthcare system and all the interviewees were Swedish speaking, the researchers chose to translate the questionnaire to Swedish for better understanding from the interviewees.

The final part of the data collection consisted of a quantitative pairwise comparison questionnaire where the patients and employees from the interviews were provided 26 pairwise comparison-questions, based on the theory Analytic Hierarchy Process (see Appendix F). In contrast to the PSQ, where the purpose was to identify the perceived performance within

gynecological care, the pairwise comparison questionnaire aims to identify what factors matter to achieve patient satisfaction. Because PSQ may indicate that a specific factor is perceived as high quality, but it may not actually affect or be important for patient satisfaction. The pairwise comparison questionnaire was divided into five criteria; Technical Quality, Interpersonal Manner, Communication, Time Spent with Caregivers and Availability & Convenience. These clusters in turn have sub-criteria that are based on factors that possibly affect patient satisfaction, which are the same factors that are included in the PSQ (see Figure 9). All sub-criteria within each criterion are compared to each other, to identify what factors are the most important ones, in terms of the patients to be as satisfied as possible. Lastly, the five criteria are compared to each other, to identify what criteria is the most important one. Each sub-criteria are then multiplied with the importance for the corresponding criteria. The product is a priority of the sub-criteria. In total, six patients and ten caregivers answered the pairwise comparison questions, and all within the valid limit of the consistency ratio of 10 %.

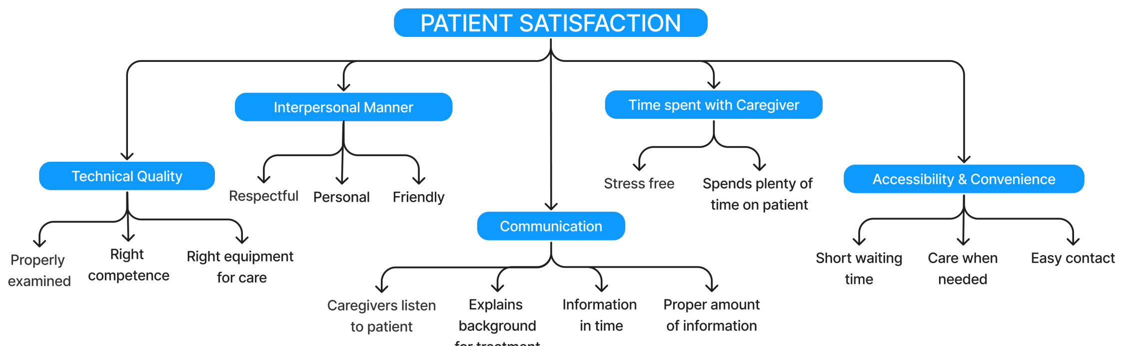


Figure 9. Analytic Hieracrchy Process - hierarchy for patient satisfaction

3.3 Research Quality

When looking at the quality of research, there are several aspects that are relevant and important to consider. This part of the chapter will cover the quality of the method and research.

3.3.1 Trustworthiness

For securing trustworthiness and quality for the research, it is important to consider the level of reliability, replicability and validity of the research (Bell et. al, 2022). Replicability means how easy it is to replicate the performed research for other researchers. Not only that they can redo the same method, but also gather similar results. Reliability is about how reliability the result from the study is, how well the chosen research method provides correct answers. Both aspects are considered a hard task for qualitative research (Bell et. al, 2022). When using a qualitative research method, involving different individuals and different opinions, it can be hard to

replicate if performing the same research again. The number of interviews and collection of data is determined after how much is needed until it could be considered as saturated, which Bell et al. (2022) mentioned as a reasonable argument. The structure for the questions in the questionnaires were also reviewed multiple times, mostly after the pilot interview.

An important criterion for quality, especially when performing quantitative research, is validity (Eriksson & Wiedersheim-Paul, 2008). Validity can be seen as both internal and external. To prove the external validity, the researchers need to look over if the observations made and results are fitting for the theoretical aspect. Due to the interviews performed and the quantitative data taken from the source of the hospital, the staff and directly affected patients, the validity can be ensured. Furthermore, all the measurements were chosen based on the literature and past preferred studies which give further insurance of validity.

Triangulation was further used during the whole process to ensure credibility for the research. Triangulation is when a researcher is utilizing multiple sources of both theory, data and methods (Bell et al., 2022). This was applicable for the research when using information given from interviews of the personnel at Östra Hospital and comparing it to information given from the literature review and interviewed patients. Triangulation is suitable when the research applies both qualitative and quantitative data thus this can be used to cover the potential weakness of one method with a strength from another.

Moreover, the researchers performed a reliability test for cross-checking the method for the interview questions (Eriksson & Wiedersheim-Paul, 2008). This was performed both by reviewing the questions before the interview, and later also reviewing them after each interview and adapting them if needed.

3.4 Ethics & Morality

Ethical and moral considerations should always be present in research. In this context, these aspects are particularly vital, as the research is conducted at a hospital and involves patients (Tee & Lathlean, 2004). Principles such as voluntary participation, informed consent, anonymity, confidentiality, the potential for harm and transparent communication are essential guidelines to ensure ethics and morality (Bell et al., 2022; Badampudi et al., 2022). A contract from Sahlgrenska University Hospital was signed by both researchers to manage confidential patient information. During the initial contact with all respondents, consent was obtained from

all parties involved and a guaranteed anonymity. Additionally, the respondents received information about the purpose of the research and clarification that not all questions had to be answered was provided to show respect.

Throughout the research, the artificial intelligence program ChatGPT from OpenAI was employed. OpenAI's tools served as inspiration for language assistance in writing the research. Additionally, these tools were valuable for summarizing articles during the literature review and served as an initial source for gaining insights into various subjects. It is important to note that ChatGPT was not utilized as a primary source in any situation due to its lack of references. This can be linked to the ethical aspects of using ChatGPT in terms of plagiarism, where using ChatGPT as a primary source can be problematic for academic integrity (Salvagno et al., 2023). ChatGPT is an excellent tool to ease processes, like the ones stated above, that are normally very time-consuming for humans. However, ChatGPT should not replace the human ability to analyze and critically review data (Salvagno et al., 2023).

4. Empirical Findings

This chapter delves into the empirical finding of the research with the aim to dissolve the current level of performance of the received care for patients. Furthermore, the importance of the factors is presented for both patients and caregivers. The empirical findings are based on the data collected from surveys and interviews.

4.1 Performance of Care from The Patients' Perspective

The empirical findings for the current performance of the gynecological care according to the 24 patients are based on the questions covered in the digital survey (see Appendix C) and the semi-structured interviews with patients (see Appendix B). The mean for the whole digital survey is 4,12 out of 5, which is of a relatively high level.

4.1.1 Technical Quality

The results from the survey for the experienced Technical Quality shows high confidence and trust from patients in the competence of the caregivers and that they have had access to the equipment needed. The trust in the competence of their caregivers appears somewhat different when specifically inquiring about doctors and nurses. In this matter, 83% of the patients believed that their doctors had the right competence, while 96% believed the nurses had the right competence (see Figure 10). Furthermore, the result shows a high majority of 83% with the confidence of trusting their doctors to have checked them properly. When asked about the nurses, 88% consider them to have been properly examined. The theme of ranking the nurses a bit higher than the doctors is something seen regularly from both the qualitative interviews and the digital survey. Regarding the question about whether the patients thought the hospital had access to the right equipment, a majority of 75% agreed fully, 17% agreed somewhat and 8% stated to be neutral in the question.

From the qualitative interviews, the area of Technical Quality was not the main aspect that the patient brought up. However, most of the interviewed patients answered like the survey about their trust in their caregiver's competence. During the interviews, the high competence of the nurses was often mentioned when patients were talking about their memories from their time at Östra. P7 mentioned she had prepared questions before arriving at the hospital and asked the nurses to take some time answering them, which was no problem.

Furthermore, P7 explains that "*I was very worried before the surgery about the anesthetic but the way they explained everything made me calmer about the surgery and their competence.*

They explained how the surgery will be performed and showed it on pictures and with other instruments to visualize it."

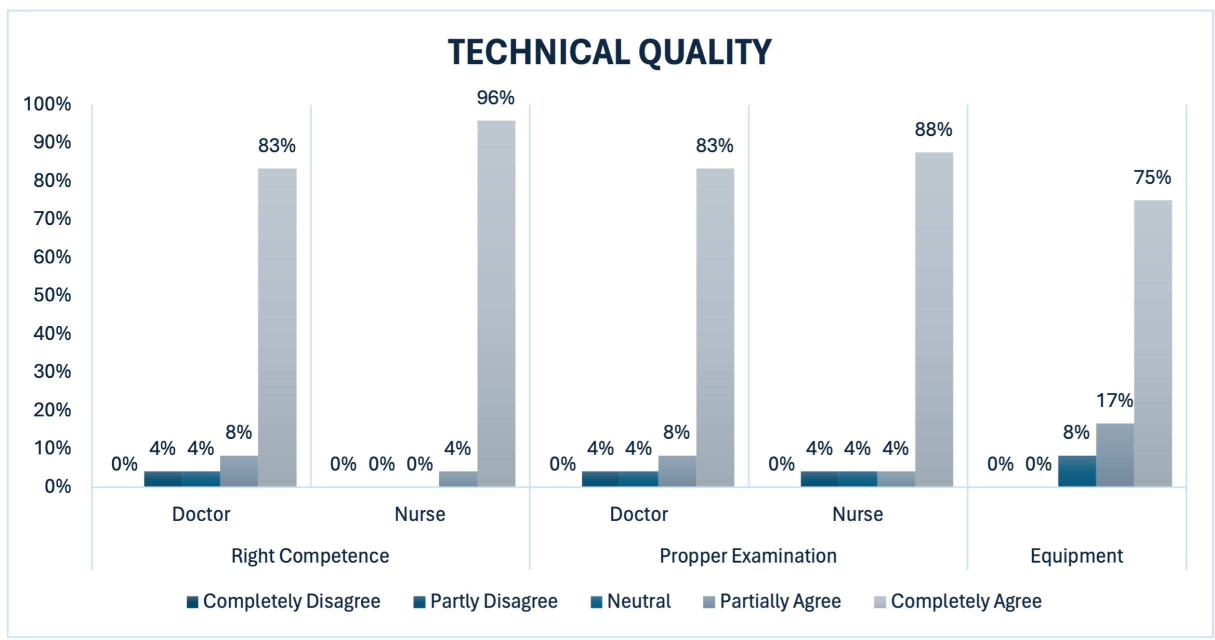


Figure 10. Bar chart of Technical Quality performance.

4.1.2 Interpersonal Manner

Generally, the result for Interpersonal Manner showed that the patients experienced a high quality when being treated at the gynecological department. The questions from the digital survey in this category were divided into doctors and nurses. A predominant majority of the patients considered that both doctors and nurses were personal, respectful and pleasant. Even though the doctors had a somewhat lower rate in all three aspects (see Figure 11). To be precise, 92% of the respondents answered "strongly agree" when they were asked if the nurses were respectful and friendly. Additionally, 71% responded that the nurses also were personal. Regarding the Interpersonal Manner of the doctors, 75% claimed that they strongly agreed that the doctors were respectful and friendly, whereas only 46% said that the doctors were personal.

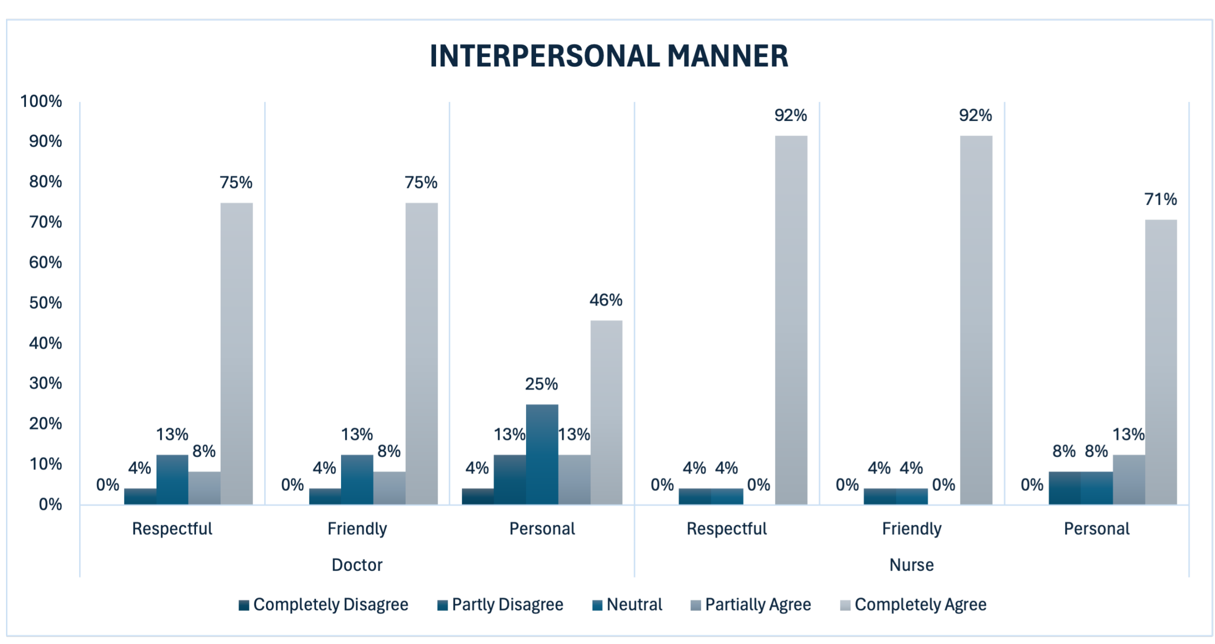


Figure 11. Bar chart of Interpersonal Manner performance.

During the qualitative interviews, when the patients received the question regarding what they believe is the most important thing to be satisfied with their care pathway, everyone mentioned this specific category, the caregivers Interpersonal Manner. This was further a theme throughout most of the interviews, where the patients at multiple times highlighted their positive thoughts about their greetings at Sahlgrenska and the professional level all the employees had shown. For example, P5 expressed "*the nurses were so positive and friendly, it really felt like they truly cared about us feeling good which is so important since they are the ones me as a patient spend the most time with.*" This was also agreed by P1, who said "*everyone was respectful and kind, especially the assistant nurses who were fantastic and were by my side all night and took care of me so much.*" Another patient, P3, mentioned the sense of stress and low on staff at the operations department, but that the caregivers still managed to treat her well, she says "*the caregivers at the post-operation were clearly stressed, they were under a lot of pressure and short on staff, but still they were so professional and treated me well.*"

Even though most patients appeared pleased with their relations and interaction with the caregiver, there were still some misunderstandings. P4 mentioned a scenario where she did not feel seen by the caregivers. When she arrived at the surgery floor, she felt deprioritized and unseen. The respondent ended up asking for a bit of extra care and understanding, which she got and left feeling satisfied. However, she would have wished not to ask for it but for it to come more naturally. P4 mentioned that even though she was not the patient with the highest need of attention in the form of what the surgery was in for, that it does not equate to not being

afraid or nervous for the surgery. The respondent said she felt *"...like just a person among the machines"*.

4.1.3 Communication

The next criteria addressed the Communication aspect of quality for gynecological care. Regarding the information flow, most patients experience that the information has the right amount and is provided in time. Most respondents, 79 %, strongly agree that they receive the right amount of information and 83% strongly agree that the information is on time (see Figure 12). When the patients were asked if the doctors explained the background for treatment, 67% strongly agreed and 21% partly agreed and 13% were neutral to the statement. The result regarding the patients' experience that the doctors and nurses listen to what they say, 92% stated to strongly agree that the nurses listened but only 71% stated to strongly agree that the doctors listened.

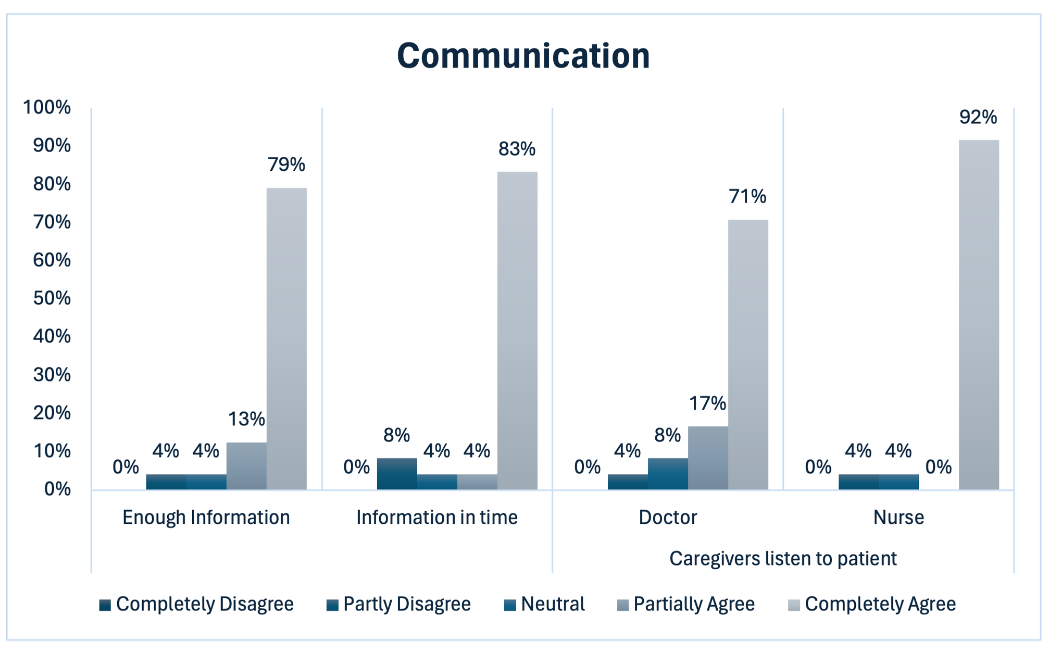


Figure 12. Bar chart of Communication performance.

Despite the overall positive response regarding communication among respondents from the digital survey, the qualitative data from the interviews revealed a different perspective on information handling. This was a subject that several of the interviewees highlighted. P1 was critical about the information handling both before and after operation. The respondent describes *"I did not get my appointment notice because it was a last-minute surgery, and for that reason, it felt like I did not have all the information I needed."* The lack of information pre-operation caused anxiety. When she finally had all the information, it was right before the

operation. This was mainly due to getting a last-minute surgery slot, but the respondent suggests that she could have received the information earlier, possibly digitally, while waiting for her operation appointment. Furthermore, she says "*If I had received more information before the meeting and the opportunity to read up on the various options, I might have followed along better during the information meeting. This would have made me calmer and reduced anxiety. Now I only had it explained verbally.*" Once she had the necessary information, it made her question whether the operation was worth it since the doctor mentioned potential complications. P1 mentions that "*At first, I wanted the surgery because I had some big issues and hoped for a better quality of life. But, of course, there is always the worry about things going wrong, so you must consider both the pros and the cons to see if it is worth it*".

Even after the surgery, before being discharged, the patients considered the information to be too much to handle at once. Especially since you were a bit dazed after the surgery. The information was considered unstructured due to the number of papers, and for that reason, P1 wished for one place where all the information was gathered. Another suggestion discussed during the interviews was the possibility to have more information accessible digitally, might even in a video format with examples of what it can look and feel like. Additionally, the information was seen as too general and missed out on information that was individually connected to the patient's specific case. P4 mentioned that she would have appreciated getting more information about what the performed surgery really meant. The respondent would have wanted more info about how it is normal to feel and look after the surgery, and she would have wanted to hear it from the doctor before going home. That is something she needed to grasp on her own afterwards. This is what P4 expressed *"Now, post-surgery I have experienced pain and it is hard to know what is normal and what is not, I would have liked more information from the doctor about what they had done and how it is supposed to feel.*" Contrary to the previously mentioned patients, P1 and P4, P5 said that the given information was clear and structured. She further mentioned getting a call after surgery just for checking in on her which made her feel well taken care of.

P3 mentioned getting informed while still being on her meds (drugs), and meaning she was not in the right state of mind in general to get important information. She did not feel any pain or discomfort until a day or two after the surgery and then she did not remember what had been said before leaving the hospital, *"There was a lot of information after the surgery when I was still on drugs"*. P3 further mentions *"I wished I received more information regarding the*

surgery and its effects so I could have been more prepared". Another mention of the medication was from P5, who felt she did not get enough information, or even the right information, about the choice of anesthesia beforehand. The only thing she had been able to read about and what she had been told was that the drug would be a local anesthesia. The respondent felt nervous before the surgery for this reason, thus she would prefer to be sedated due to the area for surgery being in a more private part. However, the anesthesia they used did make her sedated. Knowing this beforehand would have, according to P5, led her to be less worried and more confident about the upcoming surgery.

Regarding information while waiting for surgery, P2 mentioned feeling almost forgotten and without any info while waiting for getting a call for surgery. P2 waited almost 2 years and she got her surgery canceled once from the hospital side. She would have appreciated a message saying to hang in there and that they had not forgotten her, even though she knew they had not forgotten her. While P4, who waited four years and, got that message saying they were working on getting her surgery.

4.1.4 Time Spent with Caregiver

The result for Time Spent with Caregivers involves examining doctors and nurses separately to discern any disparities. The findings show diverse answers ranging from both strongly agree to strongly disagree. There were two questions regarding this area, *"I believe the caregivers spend enough time with me"* and *"I believe the caregivers were stressed when they treated me"*. When asked about the time spent with patients, 83% answered the nurses spent a proper amount of time on them, while 63% answered they fully agreed that doctors did the same (see Figure 13). The question asking about if the caregivers were stressed during the treatment gave the same result for both doctors and nurses were 63% of the patients did not agree at all that the personnel were stressed during treatment. However, 8% did agree fully that the caregivers appeared stressed.

As mentioned in *Section 4.1.1*, P7 mentioned how satisfied she was from getting answers to all her questions and that the caregivers spent the time needed on her. P7 further mentioned no sense of stress from the caregivers, "*I did not experience any stress from any of the caregivers during my time at Östra*". P6 mentioned not even meeting her operating doctor before the surgery and that it felt a bit strange to meet them in the operation room. She said that she understands the stressful situation the doctor and all caregivers are in, but if they could have

done it again, she would have tried harder to meet the operating doctor beforehand. She would also appreciate being able to ask questions before the surgery, which P7 mentions she got and appreciated it. P3 got a check-in call a week after the surgery from the operator due to low blood levels, which of course made her worry at first but ended the call feeling good and valued. P7 also mentioned "*my doctor has called me several times just to check-in how I was feeling*."

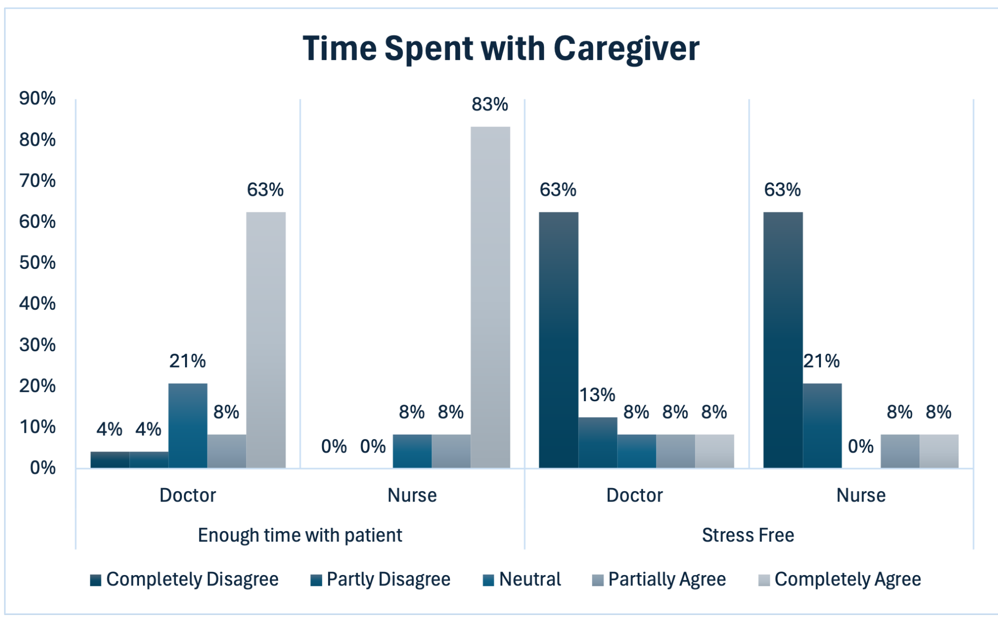


Figure 13. Bar chart of Time Spent with Caregivers performance.

4.1.5 Accessibility & Convenience

The perceived quality in respect of Accessibility & Convenience exhibits high variation depending on the aspect under consideration. Specifically, regarding the waiting queues for gynecological surgeries, respondents fell into two distinct groups. While 38% strongly disagree with the adequacy of the current waiting times, 25% claimed the opposite and instead strongly agreed with the statement (see Figure 14). However, even though most of the respondents expressed dissatisfaction with the waiting time, 42% still believe they receive care when needed. Lastly, in terms of ease of contacting the right person, 46% of respondents strongly agreed with the statement.

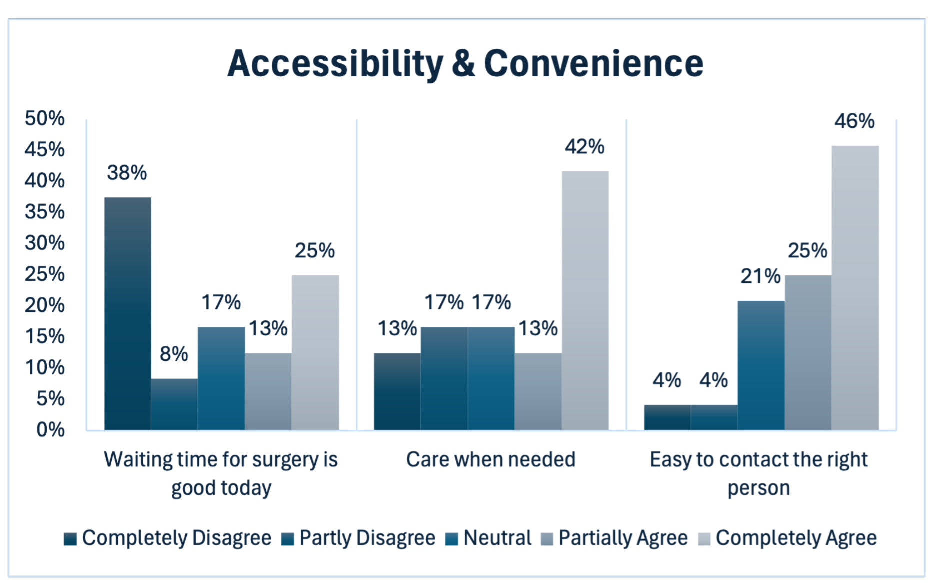


Figure 14. Bar chart of Accessibility & Convenience performance.

Some of the respondents in the interviews experienced it difficult to receive information and get in contact with the caregivers after they had left the hospital. This was needed since some new questions arise with time. Respondents wanted it to be easier to contact the caregivers from the department/reception instead of having a long waiting time to reach a "prerecorded robot" and first then be connected further. P1 expressed, *"I have questions now afterwards, but I hesitate to call and ask because I am afraid, I will not get in touch with the right person, and I do not want to be troublesome"*. The same respondent suggests a chat would be one alternative to make it easier to ask questions and increase the Accessibility & Convenience.

Furthermore, there are a couple of patients fully satisfied with their accessibility to healthcare in the form of reaching the right personnel or department when needed. There are also several mentions that even if they know who to contact, they avoid doing it nonetheless to not be a burden. P2 said *"All staff have been good, but there has been a long time in between, and I have not received good information. Which has been difficult, since I do not want to be the one who calls and is bothersome even though I know I can"*. There are at the same time patients mentioning they have not had the need for contacting Östra and for that reason cannot relate to what level of accessibility there is hence they have not tried using it. It is worth mentioning that both P5 and P6 mentioned 1177 as a good tool for information both before and after the surgery. As it is a good way of getting hold of information both online and calling them, without burdening the caregivers at Östra. P5 had called 1177 for more general information about how she felt after the surgery that did not need specific caregivers' advice. However, the same

respondent also mentioned she would appreciate a simpler way of reaching out to the department and people involved in their surgery if they wanted to ask more specific questions.

A frequently mentioned topic for the patient interviews, not only from asking about it but also highlighted several times during the interviews, was the waiting time for surgery. P5 mentioned she knew people had it worse and could for that reason not complain about waiting longer for her surgery. A common thought from the patients was that they were not surprised they had to wait longer for their surgeries, from knowing how the healthcare sector looks like these days. Still, *P1* quotes *"The waiting queues are not acceptable! Even if you do not have the highest prioritized problem, it should not take that long before surgery. Most patients have probably suffered for a long period and tried to find solutions on their own and when we finally ask for help it takes too long. (...) Turning to healthcare for help is not the first thing you do, it is the last resort "*.

P3 was pleased with the waiting time for her surgery, as it was only a few weeks. On the other hand, she mentioned the waiting time while at Östra was a bit too long. She has had other surgeries before and said it was noticeable more waiting time during this visit. P4 as well mentioned the waiting time while at the hospital. She would have wished to be informed beforehand to be more prepared for the waiting times. She arrived in the morning and waited several hours before her actual surgery, *"I just sat there waiting for hours, I even fell asleep a quick moment"*.

4.1.6 General Satisfaction

In addition to addressing specific factors affecting patient satisfaction, respondents also shared their overall perception of the quality of gynecological care at Östra. For the question of whether the received care is more or less perfect, 54% strongly agreed that it was and 71% claimed they have no complaints (see Figure 15). However, 17% expressed some dissatisfaction regarding some parts of the gynecological care pathway.

Figure 15. Bar chart of General Satisfaction performance.

The question with the most variation in the performance questionnaire concerned the gender of the doctors, where 22% were neutral regarding their preferences for a doctor with the same sex. However, 26% strongly disagreed with preferring the same sex, while 35% strongly agreed that having a doctor of the same sex would be preferable. The remaining respondents were evenly distributed across the spectrum.

P5 describes the scenario for gender as none-relevant for her. She could understand that if a person has had problems with a specific gender on their doctor before, and in the context of Gynecologic which is commonly seen as a sensitive and private area for most, it could be a problem. She said that one can assume they are professional and do not have another agenda behind the treatment. P5 means that *"He is not there for any other reason than for doing his job. (...) So no, I still do not think it matters. It is the doctors' level of professionalism I am looking for"*. For P2, who on the other hand had past bad experiences with a specific gender in the context of gynecology doctors, she did care which gender her caregiver or more specifically doctor had. It was for this reason important for P2 to meet her operating doctor before the surgery to feel safe.

4.2 Importance of Factors Affecting Satisfaction

The Analytic Hierarchy Process resulted in a priority of what factors are the most important ones to achieve patient satisfaction. The matrix shows the relation between all combinations of factors, while the weight vector, W, is the compiled relative importance of each factor. All numbers in the matrix and the weight vector, W, are based on the geometric mean (see Section

2.3). The answers of caregivers' and patients from the comparison questions can be found further down (see Appendix F) and the calculations (see Appendix G).

4.2.1 Technical Quality

The factors examined for the technical quality are having the right competence for the care, having the right equipment for the care and being examined properly. Examining the pairwise comparison matrix reveals that according to the patients, being examined properly is 1.2 times more important than having the right equipment, while having the right competence in comparison, is 1.2 times more important than being examined properly (see Figure 16). The caregivers pairwise comparison matrix in contrast shows that proper examination and right equipment is equally important, and that competence is almost twice as important as the other factors. The most important factor for both patients and caregivers was right competence, followed by a proper examination, and lastly having the right equipment for the care (see Table 4). Even though the patients and the caregivers had the same priority order, how much more important each factor differed slightly. The biggest difference between patients and caregivers was the relation between competence and equipment. While the caregivers almost valued these factors equally, the patients prioritized examination over equipment to a larger extent.

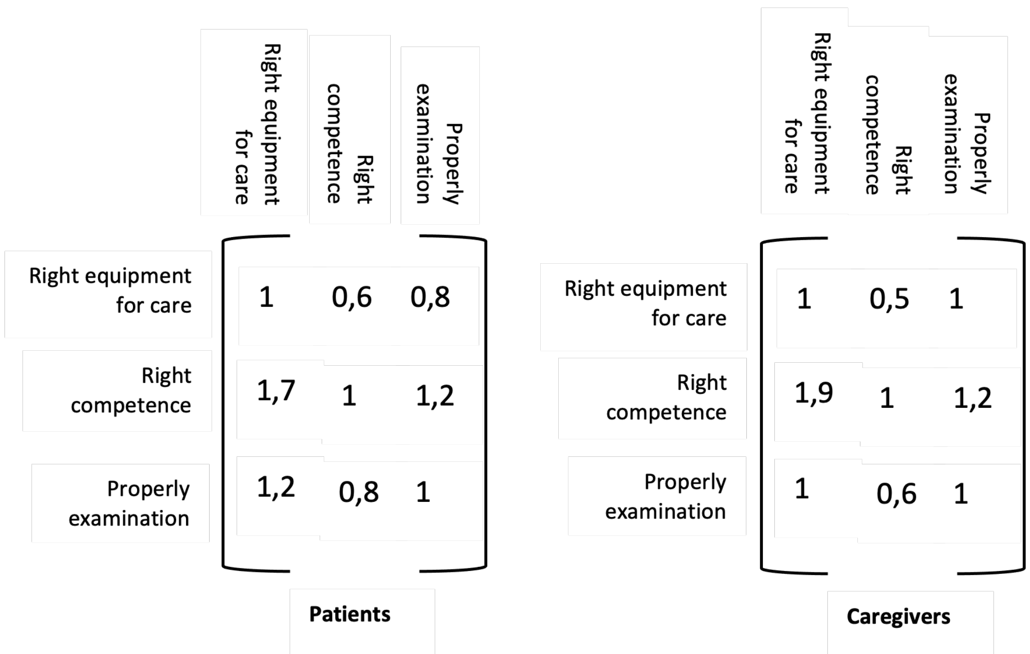


Figure 16. Pairwise comparison matrix with respect to Technical Quality.

Table 4. The relative importance with respect to Technical Quality.

	W for Patients	W for Caregivers
Right equipment for care	0,26 (3rd)	0,26 (2nd)
Right competence	0,41 (1st)	0,48 (1st)
Properly examined	0,33 (2nd)	0,26 (2nd)

4.2.2 Interpersonal Manner

The Interpersonal Manner, in this case, refers to being treated with respect, friendly caregivers and personal caregivers. The pairwise comparison matrix indicates that being treated respectfully as a patient is approximately three times more important than being treated friendly, and six times more important than being personal, according to both patients and caregivers (see Figure 17). However, patients prioritized being treated friendly higher than the caregivers did. The relative importance for each factor, from both perspectives, is presented in the table below (See Table 5).

Figure 17. Pairwise comparison matrix with respect to Interpersonal Manner.

Table 5. The relative importance with respect to Interpersonal Manner

	W for Patients	W for Caregivers
Respectful	0,66 (1st)	0,64 (1st)
Personal	0,08 (3rd)	0,09 (3rd)
Friendly	0,25 (2nd)	0,27 (2nd)

4.2.3 Communication

For the Communication criteria, the factors included explaining reasons for care, information in time, right amount of information and caregivers listening to the patients. In the pairwise comparison matrix, the relation between all factors is presented. For example, it is seen that patients consider explanations for treatment more than two times more important than receiving the information in time (see Figure 18). For this category as well, patients and caregivers have ranked the factors in the same order, although with a greater variation in how important the different options are. The most significant factors for achieving patient satisfaction, for both caregivers and patients, is the following order: caregivers listening to the patients, explaining reasons for care, right amount of information and lastly, information in time (see Table 6). However, patients value explaining reasons for care more than the caregivers.

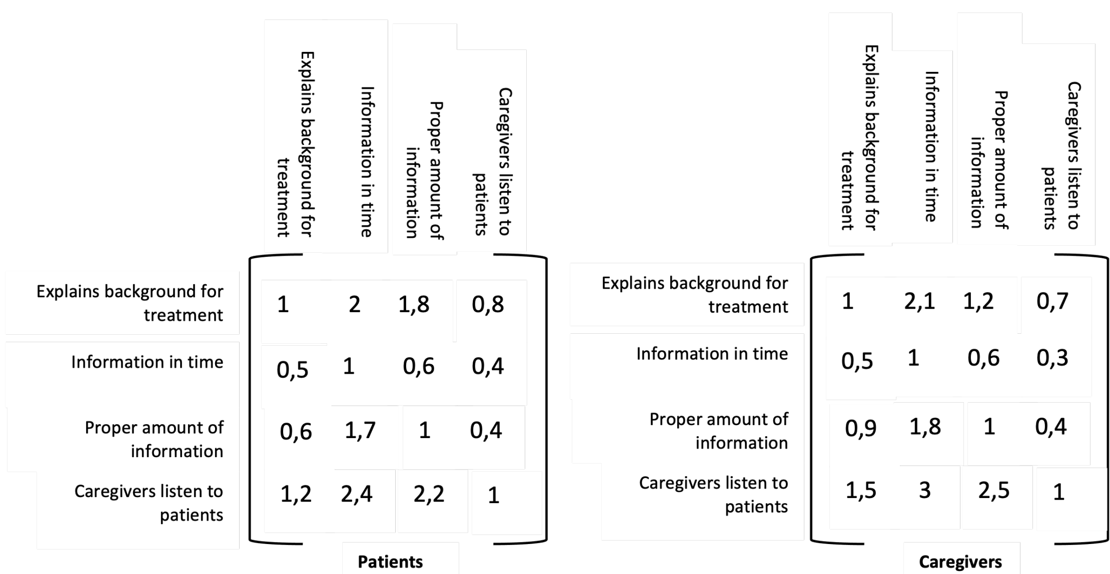


Figure 18. Pairwise comparison matrix with respect to Communication.

Table 6. The relative importance with respect to Communication

	W for Patients	W for Caregivers
Explains background for treatment	0,30 (2nd)	0,26 (2nd)
Information in time	0,14 (4th)	0,13 (4th)
Proper amount of information	0,19 (3rd)	0,20 (3rd)
Caregivers listen to patient	0,37 (1st)	0,41 (1st)

4.2.4 Time Spent with Caregivers

In this category, caregivers being stress free when treating the patient is compared to caregivers spending plenty of time on the patient. This result shows clearly that stress free caregivers result in a more satisfied patient than if the caregivers spent plenty of time on the patient (see Table 7). Both patients and caregivers claim that stress free caregivers are more than six times as important as having plenty of time with the caregivers, to be as satisfied as possible (see Figure 19).

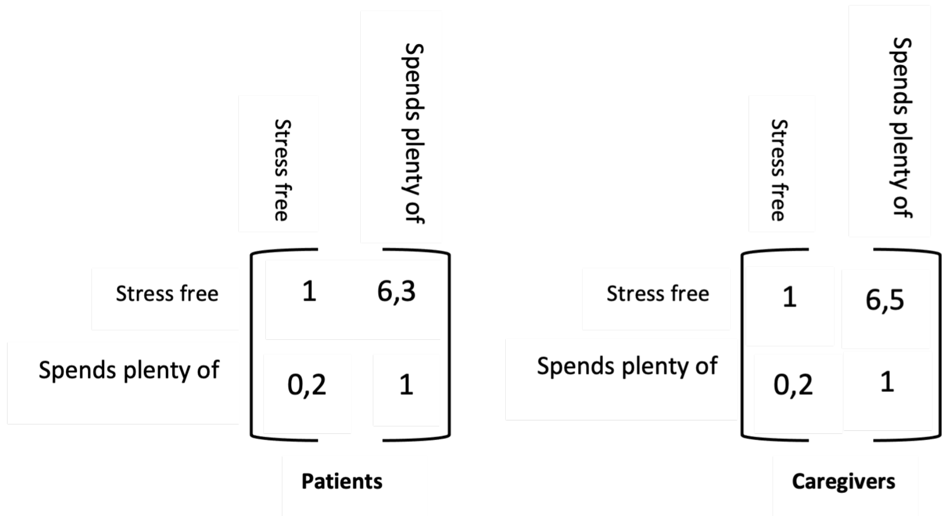


Figure 19. Pairwise comparison matrix with respect to Time Spent with Caregivers.

Table 7. The relative importance with respect to Time Spent with Caregivers

	W for Patients	W for Caregivers
Stress free	0,86 (1st)	0,87 (1st)
Spends plenty of time on patient	0,14 (2nd)	0,13 (2nd)

4.2.5 Accessibility & Convenience

In this case, Accessibility & Convenience refers to short waiting times, being able to receive care when needed and the ease of getting in contact with caregivers. The patients' result indicates that receiving care when needed is two times more important than the ease of getting in contact with caregivers, while receiving care when needed is 2,4 times more important than short waiting times (see Figure 20). The caregivers, on the other hand, mean that receiving care when needed is three times more important than the ease of getting in contact with caregivers, while receiving care when needed is 2 times more important than short waiting times. However, both parties have the same order for relative importance of the factors (see Table 8).

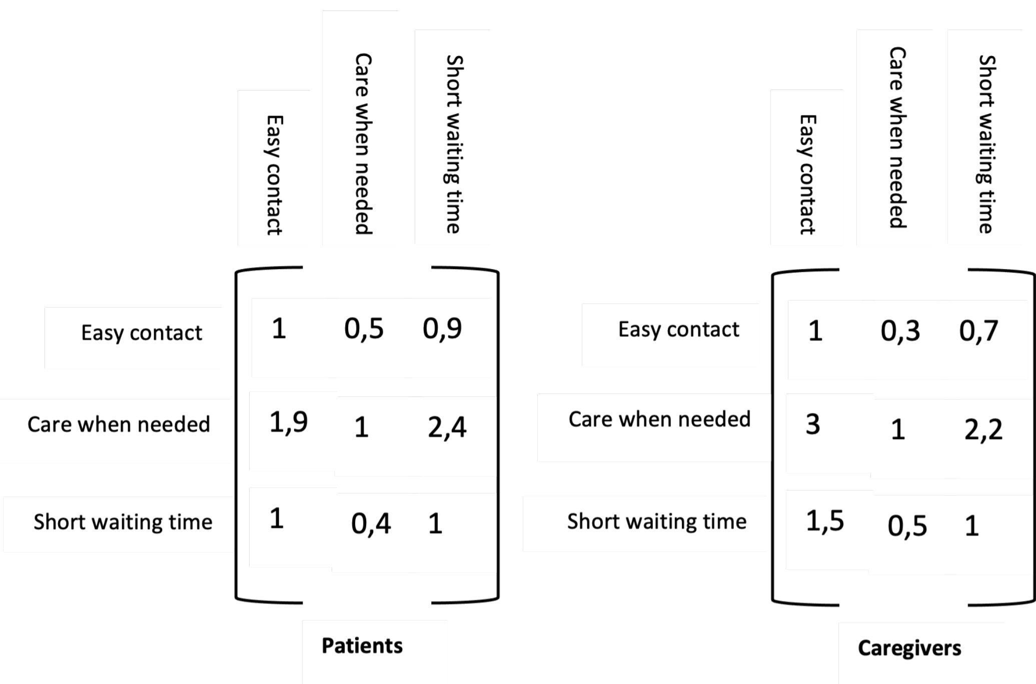


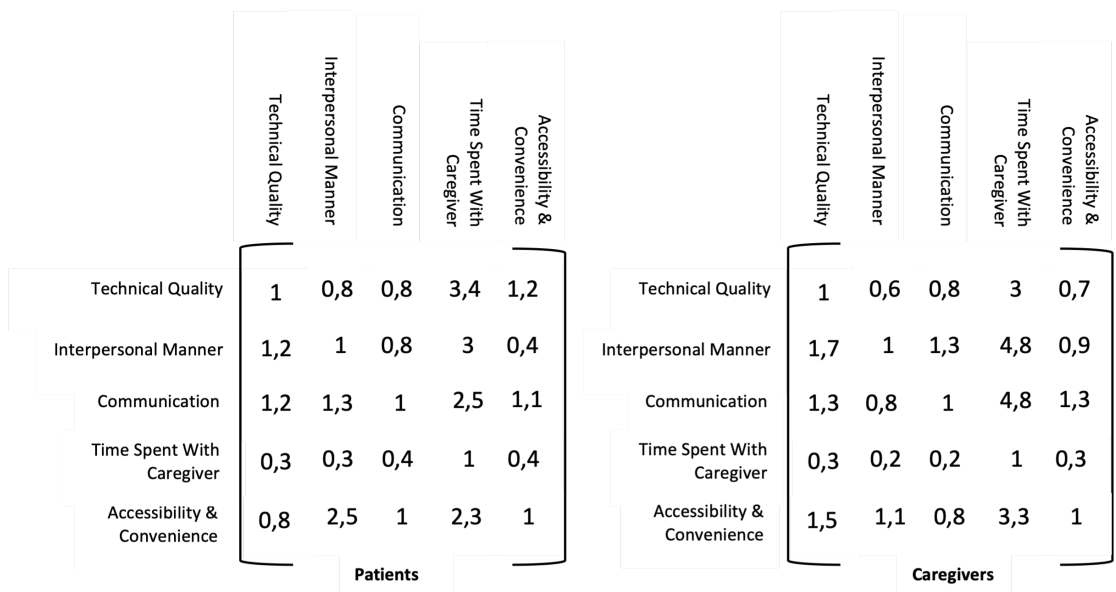
Figure 20. Pairwise comparison matrix with respect to Accessibility & Convenience.

Table 8. The relative importance with respect to Accessibility & Convenience

	W for Patients	W for Caregivers
Easy contact	0,25 (2nd)	0,18 (3rd)
Care when needed	0,52 (1st)	0,56 (1st)
Short waiting time	0,23 (3rd)	0,26 (2nd)

4.2.6 Criteria

While the other categories compared sub-criteria within each category, this part compared the criteria against each other. The criteria included in the comparison were Technical Quality, Interpersonal Manner, Communication, Time spent with caregivers and Accessibility & Convenience. Examining the patients and the caregivers pairwise comparison matrix, one can tell that all factors are viewed quite similarly when it comes to achieving patient satisfaction, except for the criteria time spent with caregivers (see Figure 21). What sets the patients' valuation apart from the employees is that the patients believe that Technical Quality is more important than what the employees think. Instead, the caregivers value the Interpersonal Manner higher than what the patients do (see Table 9).



Patients

	Technical Quality	Interpersonal Manner	Communication	Time Spent With Caregiver	Accessibility & Convenience
Technical Quality	1	0,8	0,8	3,4	1,2
Interpersonal Manner	1,2	1	0,8	3	0,4
Communication	1,2	1,3	1	2,5	1,1
Time Spent With Caregiver	0,3	0,3	0,4	1	0,4
Accessibility & Convenience	0,8	2,5	1	2,3	1

Caregivers

	Technical Quality	Interpersonal Manner	Communication	Time Spent With Caregiver	Accessibility & Convenience
Technical Quality	1	0,6	0,8	3	0,7
Interpersonal Manner	1,7	1	1,3	4,8	0,9
Communication	1,3	0,8	1	4,8	1,3
Time Spent With Caregiver	0,3	0,2	0,2	1	0,3
Accessibility & Convenience	1,5	1,1	0,8	3,3	1

Figure 21. Pairwise comparison matrix with respect to criteria.

Table 9. The relative importance with respect to criteria.

	W for Patients	W for Caregivers
Technical Quality	0,23 (3rd)	0,17 (4th)
Interpersonal Manner	0,19 (4th)	0,28 (1st)
Communication	0,25 (1st)	0,25 (3rd)
Time Spent with Caregiver	0,08 (5th)	0,06 (5th)
Accessibility & Convenience	0,25 (1st)	0,24 (2nd)

4.2.7 Final Priority of Importance

In the figures below, each criteria and sub-criteria weight vector, in other words, the relative importance is presented in the hierarchy, for both patients (see Figure 22) and caregivers (see Figure 23).

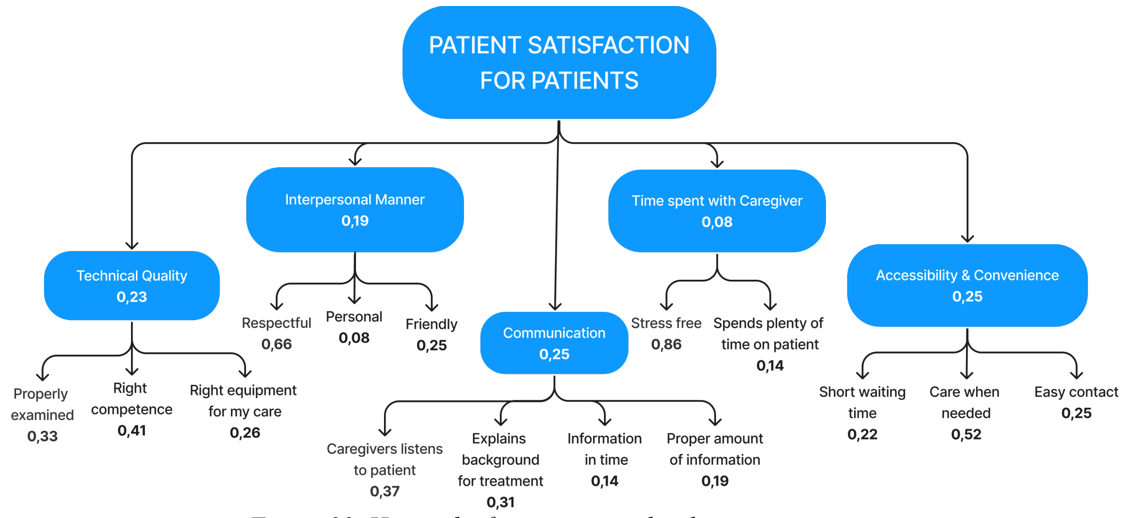


Figure 22. Hierarchy for patients with relative importance.

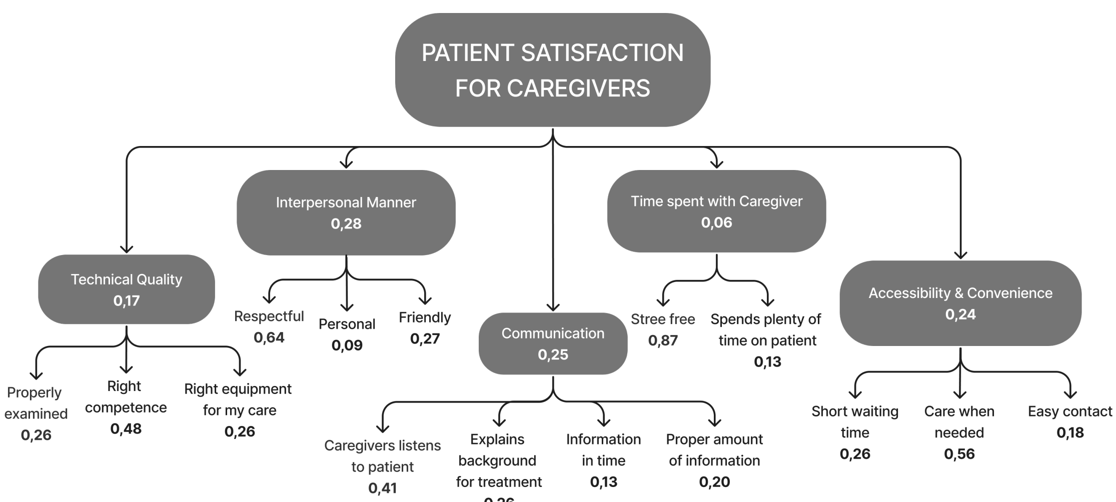


Figure 23. Hierarchy for caregivers with relative importance.

To receive the final priorities of factors affecting patient satisfaction, the sub-criteria and criteria from the hierarchy were compiled together (see Figure 24). This means that the final priority is based partly on the importance of the specific factor and partly on how important the overall category was. This also means considering how factors from different groups relate to each other. The patient's priority is like the caregivers (see Table 10). Both parties' top four most important factors for patient satisfaction care when needed, respect, competence, and caregiver listening to the patient. The only difference between the patients' and the caregivers' opinion is that patients value care when needed over respect.

Even if the factors included in the top four are the same for both cases, how important each factor is differing. The three least important factors for patients and caregivers are also the same, which are time spent with caregivers, being treated personally and information in time. In the middle of the priority list, there are the same factors but the order of them differs slightly. The biggest difference between the patient and the caregiver is the importance of being treated with respect, proper examination and being treated friendly.

Table 10. Priority of factors

	Priority of factors - Patients	**Priority of factors - Caregivers**
1	Care when needed	Respectful
2	Respectful	Care when needed
3	Competence	Caregivers listen
4	Caregivers listen	Competence
5	Explain background	Friendly
6	Proper examination	Explain background
7	Stress free	Short waiting times
8	Easy contact	Stress free
9	Right equipment	Right amount of info
10	Short waiting times	Proper examination
11	Friendly	Right equipment
12	Right amount of info	Easy contact
13	Info on time	Info on time
14	Personal	Personal
15	Spend plenty of time	Spend plenty of time

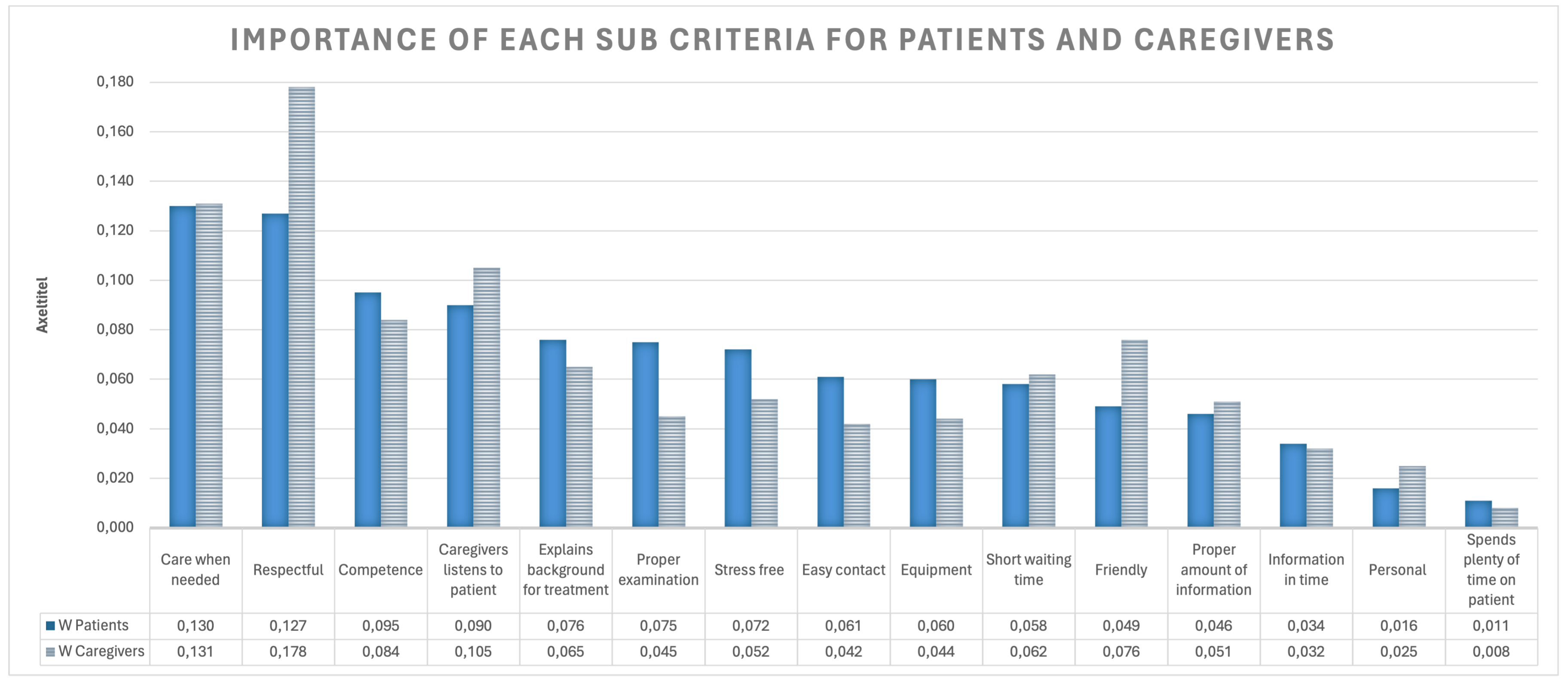


Figure 24. Importance of each factor for patients and caregivers

5. Discussion

The following chapter discusses the empirical finding with respect to the literature review. The findings of the top ranking of criteria and sub-criteria for patients and caregivers will be compared and analyzed.

5.1 An Analysis of Performance

One factor often discussed during interviews was the flow of information, according to the caregivers they gave information in time when they had the opportunity for it. When the information was given a bit too close to the surgery, it was mostly caused due to the surgery being rescheduled and booked close into the date. This was agreed by the patients, the patients that mentioned the information was a bit overloaded and given too close to the surgery did at the same time mention they understood it was due to getting a last-minute slot. However, something discussed with the patients was having access to more information online. This is something that Östra, or the healthcare sector in general, could consider doing.

Depending on which surgery is being performed, the patients would have appreciated being able to read the information and answers to potential questions online instead of being given a lot of information orally and on paper. They did want to have it orally still, by having access to more information online as a complement. The point here is that the patient also does not always know what to ask when the information is first given to them. Easier access to information and answers to common questions that pop up first after coming home, online would be beneficial for minimizing anxiety about doing surgery and misunderstandings. Some patients search about the surgery online to find information about how it will feel after and how it would be performed. But when they do not find everything, misunderstandings such as not knowing which type of anesthesia they will get and being more nervous than needed occur.

According to the theory by Janssen and Largo-Janssen (2012), there is a preference to have a female as a gynecologist for reasons such as a female gynecologist having more patient centered communication style. This was both denied by some patients and confirmed by others during the interviews and the digital survey as shown in section 4.1.6. It is a more personal preference than a general one for this thesis. Whereas some patients believe gender does not matter when it comes to the professional delivery of the doctor. While there were patients that had more personal bad experiences with male gynecologists which made them more determined to have a female as gynecologist.

Both Yeh et al. (2010) and Akbaş (2019) mentions communication as important factors regarding patient satisfaction and furthermore within gynecology. Akbaş (2019) highlights the importance of the service that nurses do and this is something that was confirmed several times by the patients. It seems to be of highest importance how the nurses treat the patients, as they are the ones interacting with patients the most. The factors that Akbaş (2019) mentions with regular check-ins and being there when needed, are confirmed by patients that it was something they highly appreciated with their nurses. They felt truly seen and that it was notable that the nurses were under a lot of stress but still acted mostly calmly and professionally towards the patients.

One critique of the result and method is that when the interviews and digital survey was performed, the patients recently had their surgery. It is believed that this could have affected the answers and why the performance showed such a high result of satisfaction. If the survey and interviews had been performed longer after the surgery, the patients would have had more time to reflect and perhaps answered differently.

5.2 An Analysis of Importance

There are several factors that could have affected the result for what factors were ranked to be most important for patient satisfaction. Many of the factors go hand in hand, which could have affected the result. Some of the factors could be seen as a must which may lead to them out-competing other factors that probably are very important to patients, such as information in time. Information was highlighted as very important during the qualitative interviews, still among the other factors in the pairwise comparison, the factor was placed at the bottom. This can be since the current performance in information handling is working well and for that reason is something that might be forgotten when doing the prioritization.

Respect was prioritized as the most important factor by the caregivers, and the second most important factor for the patients. We believe that this factor is important within the entire healthcare sector but probably even more important within the gynecological area. This belief is since the gynecological context involves such an intimate area and can be an unusual and sensitive thing to talk about with a stranger, which the caregivers are. This theory can also be applied to the factor being treated personally but in the opposite way. Beginning treatment personally was ranked as the second least important one according to both patients and caregivers which can be linked to that since it is such a private part of the female body, the

women might be ashamed and feeling uncomfortable with diseases and surgeries regarding this area, making the greeting and professionalization of the caregiver even more important.

Some of the factors were also hard to understand, which could also have had significance for the outcome. For example, many of the respondents had a hard time understanding the definition of the factor being treated personally, which in the end was one of the factors ranked least important for patient satisfaction. If the definition for being treated personally was different, this factor may have had greater importance in the result. Another factor that could have affected the result is the amount of time that went by between surgery performed and the interview. For example, the factor easy to get in contact, may not be that prioritized if you have not been in a situation where you need to get in contact with the hospital. If there has been a longer period since the patients were discharged from the hospital and went home, there is a greater chance that there have been occasions where you need to get in contact with caregivers. If the interviews were held at a later stage, it is possible that this factor would have been prioritized with greater importance.

The factors for patient satisfaction mentioned in the theory turned out to be significant in this context as well. One factor that was highlighted by Akbaş (2019) was being noticed by the caregivers and being extra taken care of this was confirmed and repeated frequently by the patients during the study as something that was significant. Additionally, Hussain et al. (2019) mentioned in the theory that patients being able to ask questions increases patient satisfaction. This is strongly connected to the factor caregivers listen to the patient, which even in this study turned out to be very important for satisfaction, since this factor was ranked as the top four most important factors.

5.3 Comparison of Patients' & Caregivers' Importance

As presented in the result, the perception between the patients and caregivers of what factors are the most valuable for satisfaction had a similar outcome. This could possibly be because some of the factors are so fundamental that it becomes obvious that those should be most important, such as care when needed and being treated with respect.

Both perspectives having the same view on what factors are the most important ones is beneficial since it means that the caregivers know their patients well which is important in order

to create value and make them satisfied. This is in line with what Mohammed & Mahmood (2022) claimed in the theory chapter, if you do not understand your customer and fail to reach their expectations, it will most likely lead to a dissatisfied one.

There are some factors that are underestimated by the caregivers, where the patients believe factors are more important than the caregivers believe (see Figure 25). The underestimation was calculated by subtracting the relative importance of a factor for patients with the relative importance for the caregivers, from figure 24. These factors are competence, explained background for treatment, proper examination, stress free caregivers, easy to get in contact with and right equipment. The problem with this underestimation by the caregivers is that the potential patient satisfaction that could be achieved is not achieved since the caregivers do not have the same perception of how important the factors are. In the same way as some factors are underestimated by the caregivers, some are overestimated by the caregivers. This means that the caregivers put more value on the factors than the patients. Some examples of this are being treated with respect, caregivers listening to the patient and being treated friendly. The dilemma is that caregivers possibly put more effort into these matters than patients believe is necessary. Since the focus should always be to do activities that create value for the patients, less focus on these factors could be an option since patients find them less important than the caregivers do.

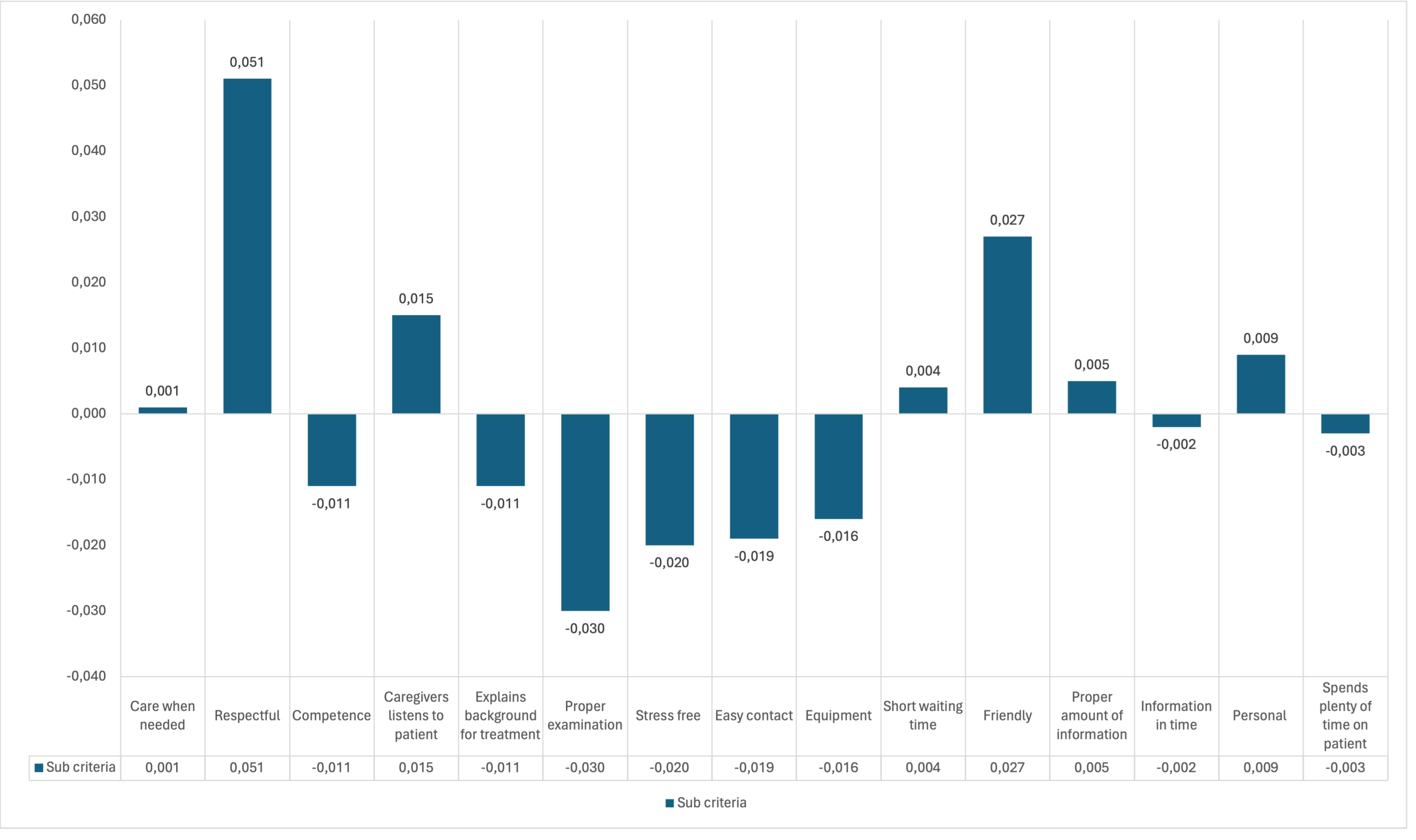


Figure 25. Representation of difference between the importance sub-criteria for patients and caregivers

One observation from the pairwise comparison interviews was that caregivers found it particularly challenging to prioritize between factors and their importance. While all respondents, including patients, found this difficult, caregivers were noticeably struggling more. This was especially true for those working in strategic roles, many of whom expressed that everything seemed equally important. Even if all factors are considered important, it is crucial in these roles to be able to identify and prioritize the most critical ones.

In improvement work, it is impossible to address every issue, especially when operating on a budget and with limited resources. Therefore, the ability to focus on the most significant factors is essential.

5.4 A Comparison of Performance & Importance

In this study, a presentation of the patients' experience of the current level of performance was presented. As well as an analysis of what factors are the most important to achieve patient satisfaction, according to both patients and caregivers. The most optimal outcome would be if the factors that received a high score for the performance also were prioritized highly for the importance aspect. The same for the other way around, the factors that received a low score in the performance would preferably be rated low for the importance aspect. If this outcome has this outcome, the resources are utilized in an effective way. It is more important to prioritize the performance for the factors that will contribute to the most patient satisfaction. Even though previous studies show that all factors in this study contribute to patient satisfaction, this study shows that all factors are not equally important.

The top four most important factors; care when needed, respect, competence, and caregivers listening to the patient receive diverse answers when it comes to performance (see Figure 26 and Table 11). The size of the dot for Figure 26 represents the size of the standard deviation for the result of the performance. Care when needed was expressed as vital for patient satisfaction by both patients and caregivers, yet many of the respondents did not agree that they received care when they needed it. The factors being treated with respect and the right competence on the other hand, received a high score even for performance, both for doctors and nurses. When it comes to caregivers listening to the patients, the respondents experienced that the nurses listened to the patients somewhat more than the doctors did, only 73% strongly agreed that the doctors listened. Considering how important these four factors were to achieve patient satisfaction, care when needed and being listened to as a patient would be something that the

gynecological care should focus on. Worth mentioning is that receiving care in terms of getting a slot for surgery is difficult for only the gynecological department to solve, since it is a national challenge with the long queues for healthcare and cuts in resources, but receiving care also refers to being supported while waiting for a surgery.

What can be further viewed when putting performance and importance in contrast to each other is that several of the lower important sub-criteria showed a high result in performance. For example, the three least important factors for patient satisfaction according to the result for this thesis all three showed high level of performance. These three are caregivers spend plenty of time on the patient, being treated personally and information in time. Regarding being treated personally and receiving information in time, the patients experienced being strongly agreed that they were being treated personally and received information in time. However, patients did not believe that the doctors spent a lot of time on them, but if looking at the priority list this was not what the respondents valued the most. Using this argument, it also means that the caregivers could put less effort into being personal and providing information in time. At the same time, these factors are still listed as factors contributing to patient satisfaction, even though it is not to the same extent, they could still be worth keeping up to a certain level.

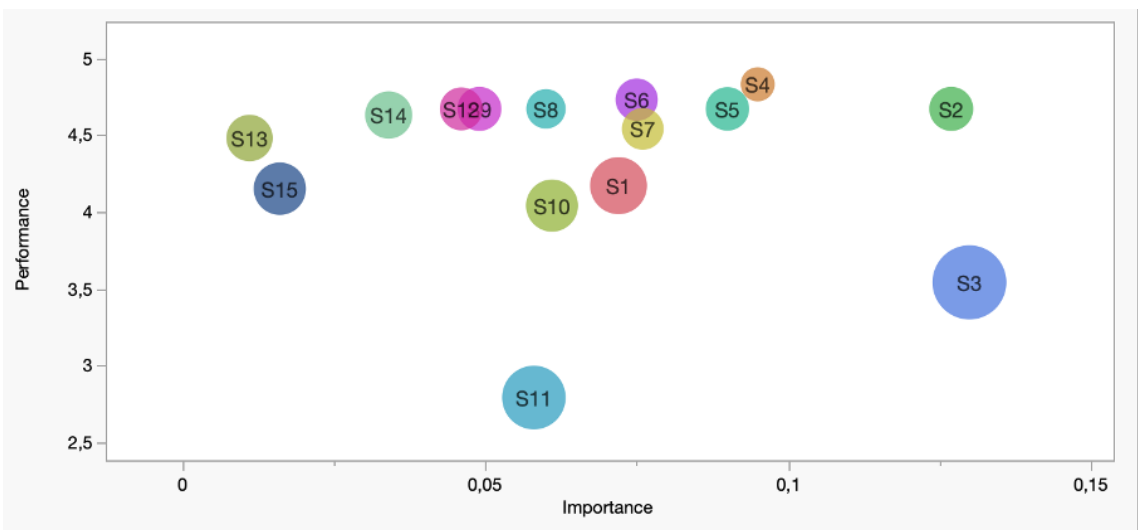


Figure 26. Visualization of importance in relation to performance for patients.

Table 11. Sub-criteria with belonging number to support figure 26

Order	Sub-criteria
S1	Stress free
S2	Respectful
S3	Care when needed
S4	Competence
S5	Caregivers listen to patient
S6	Proper Examination
S7	Explains background for treatment
S8	Equipment
S9	Friendly
S10	Easy contact
S11	Short waiting time
S12	Proper amount of information
S13	Spends plenty of time on patient
S14	Information in time
S15	Personal

5.5 Recommendations

The next step for Östra Hospital is first to commend the caregivers of the gynecological department for their excellent result when it comes to the current level of performance for the 16 patient satisfaction factors. Moreover, a recommendation is to use the result from this research as a guideline in future strategic improvement work. This is an indication of what creates value and contributes to patient satisfaction. The four most important factors according to AHP was the same top four, for both patient and caregivers, should be prioritized to look over. Even though three of these did receive a high performance, there is still a value to look for what could be the reasons for this to be working as good as it is today. This could potentially lead to a discovery that could be used for adding higher performance on other factors as well. The fourth factor, that did not receive as high level of performance was Care when needed. This should be of the highest prioritization due to the low performance and high importance. But due to the complexity behind this sub-criterion and there is a lot affecting the performance of this, it is taken into consideration it is not an easy task to solve and a sub-criteria that the hospital already are aware of.

Currently, strategic decisions are made based on what benefits the caregivers and what the company believes the patients need. Using this result, the strategic decision making can be based on what the patients prefer.

6. Conclusions

This chapter will present the conclusions for the research questions, RQ1 and RQ2. The chapter will further discuss the limitations and generalizability of the research.

RQ1: What is the current level of patient satisfaction at the gynecological unit?

The current level of patient satisfaction can be considered relatively high. The high mean of 4,12 out of 5 for the digital survey results provides trust in that the 16 factors for patient satisfaction all have a high quality of performance for gynecological care. The factors that received the highest score for the current performance are being treated with respect and a belief that the caregivers have a high competence. On the other hand, the factor with the lowest score of performance was the waiting time. Many people have experienced the current waiting times as too long, which is a common factor of dissatisfaction within the public healthcare sector.

RQ2: Is there a discrepancy between patients' & caregivers' perspective on patient satisfaction?

To summarize the results of the second research question, it is stated that both patients and caregivers have similar perceptions of which factors contribute most to patient satisfaction. The rating of these factors may vary slightly, but overall, the ranking is very similar. Thus, there is a discrepancy between their perceptions, whereas some factors are overestimated, and some are underestimated by the caregivers. Even though there is some overestimations and underestimations, the similarities in ranking of the factors indicates that the caregivers know their patients well, something that is beneficial for achieving high patient satisfaction.

Limitations & Future Research

Even though this research was conducted in a specific hospital and focused on gynecological care, some parts of the research can be applied to various contexts, at least within other healthcare environments. For example, the prioritization of factors contributing to patient satisfaction could potentially be generalized. This belief is since the factors used in the research are commonly used in the healthcare sector and are broad enough to fit multiple areas. However, the results of research question one is likely not applicable to other areas, as performance is closely tied to the specific environment and the caregivers in that department, which can vary significantly between locations.

A suggestion for further research is to investigate to see if the set factors for patient satisfaction could be used in other sectors outside the healthcare sector. Either in other service sectors, where the gap between customers and employees can be analyzed. Another suggestion for further research is to take the research to a more hierarchical business environment in which the patients are exchanged to employees and the caregivers are exchanged to leaders.

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Appendices

Appendix A: Interview Guide with Employees

	Questions	Type
1	• Berätta om dig själv och din yrkesroll o Vilken avdelning tillhör du? o Vad har du för roll? o Hur länge har du jobbat inom vården/på denna avdelning?	Open ended
2	• Vad är dina tankar kring hur vården fungerar på de avdelningar som gyn-patienter genomgår?	Open ended
3	Finns det någon specifik process som tar längre tid än resterande?	Open ended
4	• Är det vanligt att operationer ställs in? o Varför? o Har du idéer för hur detta kan förhindras?	Open ended
5	• Hur fungerar samarbetet mellan er och de andra avdelningarna i gyn-flödet?	Open ended
6	• Hur fungerar informationsflödet till patienter? o Händer det att patienter inte fått rätt information?	Open ended
7	• Hur arbetar ni med patientnöjdhet idag? o Tar ni emot feedback? Hur? o Hur går ni vidare med feedbacken?	Open ended
8	• Vi har hört att ni har en stor personalbrist, hur tror du att detta påverkar patientens vård och nöjdhet?	Open ended
9	• Vad i patientens vårdväg tror ni att patienten tycker fungerar bra?	Open ended
10	• Vad i patientens vårdväg tror ni att patienten tycker fungerar mindre bra?	Open ended

Appendix B: Qualitative Interview Guide with Patients

Introduktion

- Du får gärna börja med att berätta om bakgrunden till varför du har fått vård av gyn på Östra

- Vill du berätta lite kort om din resa på Östra?

- Hur länge fick du vänta på din operation?

Generella upplevelsen

- Hur har du upplevt din vårdresa? (från att du fick din kallelse till gyn till att du skrevs ut)

- Vad har varit bra med din vårdresa?

- Vad har varit mindre bra med din vårdresa?

- Vad hade du velat ändra med din vårdresa?

- Hur var relationen mellan dig och din läkare/sköterska?

- Uppstod några missar/problem under din vårdresa?

- Finns det någon del av din vårdresa som du tror hade kunnat effektiviseras?

- Om du skulle betygsätta hur nöjd du är generellt med din vårdresa, på en skala 1-5, vad hade du valt då?
  - Varför är ditt betyg så pass högt/lågt?
  - Hur resonerade du när du valde den siffra du valde?
  - Vilka faktorer tror du påverkar hur nöjd du är?

Appendix C: Digital Survey Questions for Patients

1	Hur gammal är du?	Question with options
2	Vilken gynekologisk operation har du gjort?	Open ended
3	Har du fått din gynekologiska operation inställd eller flyttad?	Question with options
4	Kötiderna för en gynekologisk operation är i dagsläget bra	PSQ based, likert scale options
5	Jag får vård när jag behöver det	PSQ based, likert scale options
6	Jag upplever att vårdpersonalen spenderar tillräckligt mycket tid på mig	PSQ based, likert scale options
7	Jag upplever att vårdpersonalen är stressade när de vårdar mig	PSQ based, likert scale options
8	Jag upplever att vårdpersonalen är personliga mot mig	PSQ based, likert scale options
9	Jag upplever att vårdpersonalen är respektfulla	PSQ based, likert scale options
10	Jag upplever att vårdpersonalen är trevliga	PSQ based, likert scale options
11	Jag litar på att vårdpersonalen har rätt kompetens	PSQ based, likert scale options
12	Jag litar på att läkaren har fastställt rätt diagnos	PSQ based, likert scale options
13	Vårdpersonalen undersöker mig tillräckligt noga	PSQ based, likert scale options
14	Jag upplever att vårdpersonalen lyssnar på det jag säger	PSQ based, likert scale options
15	Läkarna är bra på att förklara bakgrunden till min behandling	PSQ based, likert scale options
16	Jag upplever att det är enkelt för mig att komma i kontakt med den personal jag vill	PSQ based, likert scale options
17	Jag skulle föredra att min läkare	Based on literature, likert scale

	är av samma kön som mig	options
18	Jag upplever att den utrustning som behövs för min vård finns	PSQ based, likert scale options
19	Jag upplever att jag fått rätt mängd information inför min gynekologiska operation	Based on current problems at the department, likert scale options
20	Jag upplever att jag fått informationen i tid inför min gynekologiska operation	Based on current problems at the department, likert scale options
21	Jag är missnöjd med vissa delar av min vård på Östra	PSQ based, likert scale options
22	Vården jag har fått för min gynekologiska sjukdom är så gott som perfekt	PSQ based, likert scale options
23	Är det något du vill tillägga?	Open ended

If not wanting to be a part of interview, they got asked the following questions

24	Vad har varit bra med din vårdresa?	Open ended
25	Vad har varit mindre bra med din vårdresa?	Open ended
26	Har du några förbättringsförslag?	Open ended

Appendix D: Promotion poster with QR-code for Digital Survey

Vill du utvärdera din egen vårdväg?

Vad är detta?

Vi är två studenter från Chalmers tekniska högskola som utför en studie tillsammans med kvinnokliniken på Östra Sjukhuset där vi undersöker **patientens väg** genom vården för **gynekologiska operationer.**

Skanna QR-koden!

Det är en kort undersökning på ca 3-5 minuter.

Skanna QR-koden med mobilkameran!

Vi ser fram emot att höra om er upplevelse,

Viktoria Erhardsson & Amanda Skagerström

Appendix E: Patient Satisfaction Questionnaire-18

PSQ 1	Doctors are good about explaining the reasons for medical tests
PSQ 2	I think my doctor's office has everything needed to provide complete care
PSQ 3	The Medical Care I have been receiving is just about perfect
PSQ 4	Sometimes doctors make me wonder if their diagnosis is correct
PSQ 5	I feel confident that I can get the medical care I need without being set back financially
PSQ 6	When I go for medical care, they are careful to check everything when treating and examining me
PSQ 7	I have to pay for more of my medical care than I can afford
PSQ 8	I have easy access to the medical specialists I need
PSQ 9	Where I get medical care, people have to wait too long for emergency treatment
PSQ 10	Doctors act too businesslike and impersonal toward me
PSQ 11	My doctors treat me in a very friendly and courteous manner
PSQ 12	Those who provide my medical care sometimes hurry too much when they treat me
PSQ 13	Doctors sometimes ignore what I tell them
PSQ 14	I have some doubts about the ability of the doctors who treat me
PSQ 15	Doctors usually spend plenty of time with me
PSQ 16	I find it hard to get an appointment for medical care right away
PSQ 17	I am Dissatisfied with some things about the medical care I receive
PSQ 18	I am able to get medical care whenever I need it

Appendix F: The Analytic Hierarchy Process questionnaire, with answers

Grupp 1: Teknisk kvalitet

1. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att rätt utrustning för min vård finns jämfört med att vårdpersonalen har rätt kompetens?

Answers Caregivers: 1, 1, 1, ⅓, ⅕, 1, ⅓, ¼

Answers Patients: 1/3, 1/7, 1, 1, 1, 1

2. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen undersöker mig tillräckligt noga jämfört med att vårdpersonalen har rätt kompetens?

Answers Caregivers: 1, ⅓, 1, ⅓, ½, 1/7, 1, 1

Answers Patients: 1, 1, ⅓, 1, 1, 1

3. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att rätt utrustning för min vård finns jämfört med att vårdpersonalen undersöker mig tillräckligt noga?

Answers Caregivers: 1, 1, 1, 2, ⅕, 5, 1, 1/2

Answers Patients: 1, 1/9, 3, 1, 1, 1

Grupp 2: Bemötande

4. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen är personlig jämfört med att vårdpersonalen är respektfull?

Answers Caregivers: 1/9, ⅕, 1/9, ⅓, 1/9, 1/9, 1/9, ⅓

Answers Patients: 1/7, 1/8, 1/9, 1/7, ¼, ⅕

5. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen är personlig jämfört med att vårdpersonalen är trevlig?

Answers Caregivers: 1/9, 1, 1/9, 1, ⅕, 1/9, 1, ⅕
Answers Patients: 1/5, ⅓, 1/5, ⅕, ⅓, ⅓

6. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen är trevlig jämfört med att vårdpersonalen är respektfull?

Answers Caregivers: 1, ⅕, 1, 1/2, ⅕, 1, 1/9, ⅕
Answers Patients: 1, 1/7, ⅕, ⅓, ¼, ⅓

Grupp 3: Kommunikation

7. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att läkaren är bra på att förklara bakgrunden till min behandling jämfört med att få information i tid kring min gynekologiska behandling?

Answers Caregivers: 1, 5, 1, 2, 1, 7, 1, 5

Answers Patients: ⅕, 7, 7, 7, 1, 1

8. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att läkaren är bra på att förklara bakgrunden till min behandling jämfört med att få rätt mängd information kring min gynekologiska behandling?

Answers Caregivers: 1, 1, 1, 1, 1/7, 7, 1, 3

Answers Patients: ⅓, 7, 5, 1, 3, 1

9. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att läkaren är bra på att förklara bakgrunden till min behandling jämfört med att vårdpersonalen lyssnar på det jag säger?

Answers Caregivers: 1, 1, 1, 1, ⅓, 1, 1/7, 1

Answers Patients: ⅓, 1, 1, 1, 1, 1

10. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att få rätt mängd information kring min gynekologiska behandling jämfört med att få information i tid kring min gynekologiska behandling?

Answers Caregivers: 1, 3, 1, 2, 7, 5, 1, ½

Answers Patients: ⅕, 3, 6, 7, ⅓, 3

11. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen lyssnar på det jag säger jämfört med att få information i tid kring min gynekologiska behandling?

Answers Caregivers: 1, 7, 4, 2, 3, 7, 5, 1

Answers Patients: 1, 5, 7, 1, 1, 5

12. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen lyssnar på det jag säger jämfört med att få rätt mängd information kring min gynekologiska behandling?

Answers Caregivers: 1, 5, 1, 2, 1, 5, 7, 4

Answers Patients: 5, 3, 7, ⅓, 3, 1

Grupp 4: Tid spenderad med läkare

13. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen är stressfria när de vårdar mig jämfört med att vårdpersonalen spenderar mycket tid på mig?

Answers Caregivers: 9, 7, 8, 3, 6, 7, 7, 7

Answers Patients: 7, 7, 7, 7, 5, 5

Grupp 5: Tillgänglighet och bekvämlighet

14. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktigt är det med enkelt att komma i kontakt med den personal jag vill jämfört med att jag får vård när jag behöver det?

Answers Caregivers: 1, 3, ⅛, 1/4, ⅓, 1/7, 1/7, ⅕

Answers Patients: 1/7, 1/9, 1, 7, 1/7, 1

15. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att det är enkelt att komma i kontakt med den personal jag vill jämfört med att kötiderna för en gynekologisk operation är korta?

Answers Caregivers: 1, 6, 1, ½, 1, 1/9, 1/9, 1

Answers Patients: ½, 1, 5, 3, ¼, ½

16. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det med kötiderna för en gynekologisk operation är korta jämfört med att jag får vård när jag behöver det?

Answers Caregivers: 1, ⅕, 1/9, ⅕, 1, 1, 1, ½

Answers Patients: 1/7, 1/5, ⅕, 1, ⅕, 5

Gruppjämförelser:

17. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är bemötande jämfört med kommunikation?

Answers Caregivers: 1, 1, 1, 5, ⅓, 5, 1, 1

Answers Patients: 3, 1, 1, 1/7, 3, ⅕

18. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är teknisk kvalitet jämfört med bemötande?

Answers Caregivers: 1, 1, 1, ⅕, ⅕, 1, 1, ⅓

Answers Patients: ⅓, 1, 7, 1, ⅓, 3

19. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är bemötande jämfört med tid spenderad med läkare?

Answers Caregivers: 3, 5, 7, 3, 3, 5, 9, 7

Answers Patients: 3, 3, 5, 5, 3, 1

20. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är bemötande jämfört med tillgänglighet och bekvämlighet?

Answers Caregivers: 1, 3, 1, 2, 1/7, 1, ⅕, 3

Answers Patients: 1, 1, ⅓, ⅕, ⅓, ⅕

21. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är teknisk kvalitet jämfört med kommunikation?

Answers Caregivers: 1, 1, 1, ⅕, ⅓, 3, 1/7, 5

Answers Patients: 1, 1, 3, ⅕, 3, ⅕

22. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är kommunikation jämfört med tid spenderad med läkare?

Answers Caregivers: 3, 4, 8, 3, 5, 5, 9, 4

Answers Patients: 1, 3, 5, 5, 3, 1

23. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är kommunikation jämfört med tillgänglighet och bekvämlighet?

Answers Caregivers: 1, 3, 7, 2, ⅓, ⅕, 1, 3

Answers Patients: ⅓, 1, 1, 5, 1, 1

24. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är teknisk kvalitet jämfört med tid spenderad med läkare?

Answers Caregivers: 3, 5, 9, ⅓, ½, 7, 7, 7

Answers Patients: 3, 7, 5, 5, 3, 1

25. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är teknisk kvalitet jämfört med tillgänglighet och bekvämlighet?

Answers Caregivers: 1, 1, 1, 1, ⅕, ⅕, 1/7, 6

Answers Patients: 1, 1, 3, 1, 1, 1

26. Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är tid spenderad med läkare jämfört med tillgänglighet och bekvämlighet?

Answers Caregivers : ⅓, 1, 1/7, 1, ⅕, 1/7, 1/9, ½

Answers Patients: ⅓, 1, 1/3, ⅕, ⅓, 1

Appendix G: Calculations for the Analytic Hierarchy Process – With the criteria Technical Quality as an example

Calculation 1, The geometric mean:

$$\sqrt[P]{a_{ij}^{1} \times a_{ij}^{2} \times a_{ij}^{3} \ldots a_{ij}^{P}}$$

Grupp 1: Teknisk kvalitet

Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att rätt utrustning för min vård finns jämfört med att vårdpersonalen har rätt kompetens?

Patienter: $\sqrt[6]{(1/3) * (1/7) * 1 * 1 * 1 * 1}$ = 0.602046613

Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att vårdpersonalen undersöker mig tillräckligt noga jämfört med att vårdpersonalen har rätt kompetens?

Patienter: $\sqrt[6]{1 * 1 * (1/3) * 1 * 1 * 1}$ = 0.832683178

Med avseende att uppnå så nöjda patienter som möjligt för det gynekologiska flödet, hur viktig är det att rätt utrustning för min vård finns jämfört med att vårdpersonalen undersöker mig tillräckligt noga?

Patienter: $\sqrt[6]{1 * (1/9) * 3 * 1 * 1 * 1}$ = 0,832683178

Calculation 2, Matrix:

	Utrustning	**Kompetens**	**Undersöker**
Utrustning	1	0,6	0,8
Kompetens	$\frac{1}{0,6}$	1	$\frac{1}{0,8}$
Undersöker	$\frac{1}{0,8}$	0,8	1

	Utrustning	Kompetens	Undersöker
Utrustning	1	0,6	0,8
Kompetens	1,7	1	1,2
Undersöker	1,2	0,8	1

Calculation 3, Weight vector, W, (The relative importance of the factor):

$$W_{ij} = \frac{\sqrt[n]{\prod_{j=1}^{n} a_{ij}}}{\sum_{i=1}^{n} \sqrt[n]{\prod_{j=1}^{n} a_{ij}}}$$

$$W_{Utrustning} = \frac{\left(\sqrt[3]{1 \cdot 0{,}602046613 \cdot 0{,}832683178}\right)}{\left(\sqrt[3]{1 \cdot 0{,}602046613 \cdot 0{,}832683178} + \sqrt[3]{1{,}661000956 \cdot 1 \cdot 1{,}200936955} + \sqrt[3]{1{,}200936955 \cdot 0{,}832683178 \cdot 1}\right)} = 0{,}2601832447$$

$$W_{Kompetens} = \frac{\left(\sqrt[3]{1{,}661000956 \cdot 1 \cdot 1{,}200936955}\right)}{\left(\sqrt[3]{1 \cdot 0{,}602046613 \cdot 0{,}832683178} + \sqrt[3]{1{,}661000956 \cdot 1 \cdot 1{,}200936955} + \sqrt[3]{1{,}200936955 \cdot 0{,}832683178 \cdot 1}\right)} = 0{,}4122930871$$

$$W_{Undersöker} = \frac{\left(\sqrt[3]{1{,}200936955 \cdot 0{,}832683178 \cdot 1}\right)}{\left(\sqrt[3]{1 \cdot 0{,}602046613 \cdot 0{,}832683178} + \sqrt[3]{1{,}661000956 \cdot 1 \cdot 1{,}200936955} + \sqrt[3]{1{,}200936955 \cdot 0{,}832683178 \cdot 1}\right)} = 0{,}3275236682$$

Calculation 4, Group consistency ratio:

Equation 4, λmax:

$$\lambda_{max} = \frac{\begin{pmatrix} 1.7 \;\; 1 \\ 1.2 \end{pmatrix} * \begin{pmatrix} 0.26 \\ 0.41 \\ 0.33 \end{pmatrix}}{0.41} = 3.00$$

Checking group consistency by choosing a row from the matrix in calculation 2, in this case the row competence.

Equation 5, Group Consistency Index:

$$CI = \frac{\lambda max - n}{n - 1}$$

CI = (3.00-3)/ (3-1) = 0,001108096091

Equation 6, Group Consistency ratio: $CR = \frac{CI}{RI}$

RI= 0,58, see Table 2.

CR = 0,001108096091 / 0,58 = 0,001910510502 = 0,19 %

DEPARTMENT OF TECHNOLOGY MANAGEMENT AND ECONOMICS
DIVISION OF INNOVATION AND R&D MANAGEMENT
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden
www.chalmers.se