Strategic Marketing Funnel Models in Healthcare: The Role of Healthcare Professionals and Patients in the Referral Paths and the Consumerization of Healthcare Industry

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The purpose of this paper is to assess the dynamics of the interactions of physicians with patients in healthcare, as a result of mapping the pathways of the treatment of the latter. In this context, the influence factors of the decision process of a therapy need to be defined as the output of the interaction of the stakeholders involved in the decision process.

The external landscape of healthcare is examined in depth and relevant literature focusing on the behavioral response models and the hierarchy of the effects models, is leveraged to identify the gaps and answer the key questions. The research of the study contains two surveys with 89 respondents in total, to patients, family caregivers, healthcare professionals, and healthcare business leaders, to define the treatment pathways of patients with severe diseases, as well as the influence factors shaping the decision process of the treatment.

This leads to the development of the healthcare patient referral path and influence drivers' model that attempts to create value and utility within the healthcare industry.

Keywords: healthcare marketing, patients' pathway, healthcare marketing funnel, healthcare consumerization

STATEMENT OF KEY CONTRIBUTIONS

In terms of theoretical and managerial implications of the study, the healthcare patient referral path and influence drivers' model, can add value both on the theory and on its practical implementation as it helps to extend and advance existing theory by also being a useful tool for patients, healthcare professionals and healthcare companies and organizations.

Specifically, there are benefits for patients and healthcare professionals, who look to get the right and most credible information they need, and for healthcare organizations that may use the model to develop the right marketing plans, and the right content that will be distributed via the right channels of communication.

But is this work delivering on the initial objective of the study? The aim of this dissertation was to primarily understand how the decision-making process of serious chronic diseases works for patients and healthcare professionals, and secondarily what are the factors triggering, influencing, and shaping the final decisions towards treatment or therapy. Both queries are answered with the findings of the research and the

model developed, given that the model is indeed mapping the potential stages of the patient pathway and the decision process and then it includes all the forces and the inputs that shape and influence the final decision.

Finally, one key reflection of the project lies on the realization that recent technology changes that democratized information, the continuous breakthrough innovations in healthcare tools as well as the effects of recent global pandemic COVID-19, have massively disrupted the nature of the habits, relationships, connections, channels of communication and pathways of modern patients. What needs to be granularly examined further, is whether in this new world, we have the right fundamentals, the right regulations, and the right platforms to meet the same or even better quality of patient care.

INTRODUCTION

The constant transformation of healthcare because of the digitalization and the supply of massive information and data available to patients, family caregivers and physicians, leads to the "Consumerization of Healthcare" (Ekram, 2022). Although this is a trend that generates growth opportunities for the industry, it also creates the need to better understand the healthcare industry and map the patients' treatment pathways, to enable healthcare organizations to put an order on the available content and thereafter optimize the value of it.

Healthcare is now a complicated market with multiple pillars like provision care, diagnosis, care financing and others. Given that the medical innovation of healthcare is more essential than ever, the industry is highly regulated to rightfully protect the safety of patients. Moreover, there are two recent trends, related with the digital and information era we are living in, that are disrupting the industry; the adoption of digital solutions across all healthcare domains and the fact that patients and family caregivers, seek and now have access to more information around diseases and therapies. Such information was not available at the same quantity and quality some decades ago.

Because of that, it is important to identify the dynamics of the patients' interactions with physicians in healthcare as a result of mapping the pathways of treatment. Furthermore, as part of this effort we need to understand the factors influencing the decision process of a treatment or a therapy as the output of a fermentation process of the key stakeholders involved in the decision process (patients, family caregivers, physicians, healthcare organizations).

STUDY BACKGROUND

Patients and healthcare consumers take the advantage of unprecedented access to a wider amount of information to be more informed about their health and examine information about therapies or treatments. According to PWC, the emerging power of the patients as the end healthcare consumers, is creating new global markets and is suggesting new models of care. Therefore, patients are demanding more convenient, personalised, and affordable services (Price-Waterhouse Coopers, 2021).

Consequently, patients also tend to accept responsibility and accountability for their health by welcoming the flexibility that technology brings to their care. They may be willing to be monitored wirelessly, or even receiving - traditionally hospital based medical treatments - at home. Another example is the reports generated from devices like electro-cardiograms, or defibrillators, which may traditionally have required a physical visit, can now be also done through a mobile phone, and can be wirelessly sent to physicians (Price-Waterhouse Coopers, 2021).

Since 2020 and primarily because of COVID-19 pandemic, there is also the observation that consumers and patients are taking charge of their health more than ever before. Patients are now learning about their health risks, therapies, and treatment options and are leveraging digital communication with their doctors. There are four trends that were enhanced during the pandemic and are expected to further grow in the future (Betts, et. Al, 2020, Deloitte, 2020): i) many consumers show engagement by openly disagreeing with the doctors if they have different opinions, ii) consumers are using virtual visits more than ever before, iii)

more consumers are using technology for health monitoring and are willing to share their data and iv) clinician relationship keeps being the most important factor of influence (Betts, et. Al, 2020).

The acceleration of technology and the quality and quantity of available information has also an impact into the role of healthcare professionals; in healthcare systems around the world, the adoption of digital and analytical tools and methods have step-changed their work. Telemedicine, i.e., the capability of leveraging teleconferencing technologies for medical consultation, has been more adopted (Bestsennyy, et al, 2020). Digital collaboration and analytics (such as digital therapeutics and software disease prevention and management programs) have been deployed at scale to improve patient outcomes and enhance productivity as healthcare delivery gradually shifts to home care (Agrawal, et al, 2020).

Furthermore, companies in the Medical Device sector have accelerated their digital transformations and added more roles and channels, including self-service portals, webinars and social-media content to support remote interactions with healthcare professionals, hospital leaders, and procurement professionals. As a result, healthcare industry companies are shifting from a traditional model that revolves around sales representatives, to a hybrid / omnichannel world in which healthcare professionals can access information as and when they need it.

RESEARCH METHODOLOGIES AND DATA

The purpose of the study is to provide answers to the following questions: i) what is the funnel pathway of patients' decisions, ii) what are the key factors influencing the decision of the therapy for patients and healthcare professionals, iii) what is the weight of each of those factors at each stage of the funnel and iv) are there stages in the funnel (awareness, consideration, action) being more sensitive to external factors than others?

For this work, a survey to an adequate sample of patients and family caregivers (n=34), was developed, activated, and utilized to identify the influence of external drivers towards patients' reactions. Additionally, a second, mirror survey for healthcare professionals and leaders of healthcare companies was designed (n=55). The objective of this survey was to examine the influence factors from the side of the healthcare professionals.

The output, the analysis, and the integration of the two pieces of research, suggest the development of a new model that maps the patient journeys and referral paths, along with the influence factors of those paths.

For both surveys, 89 respondents in total participated (18.0% patients, 20.2% family caregivers, 20.2% healthcare professionals, and 41.6% healthcare business leaders) from 21 countries.

The diseases in the scope of the survey included i) cardiovascular diseases and strokes, ii) respiratory diseases & lower respiratory infections, iii) cancer, iv) Alzheimer's disease and other dementias, v) diabetes, vi) arthritis diseases, vii) obesity and other nutrition related diseases. According to World Health Organization, the seven deadliest diseases that are depicted in the surveys, accounted for approximately 44% of the global deaths in 2019 (World Health Organization, 2020).

For the design of the surveys, two questionnaires were developed: one for healthcare professionals and one for patients and caregivers. The surveys were designed in Microsoft Forms and distributed via the network of the University of Warwick, Warwick Business School, Edwards Lifesciences company, as well as my personal network, leveraging social media. The sample of the two surveys is quite wide (89 respondents) and diverse as there is participation from respondents from 21 countries mainly from Europe and North America. It is also fairly distributed in terms of gender (55% male, 45% female) and age group (respondents born: 1950 - 2001).

Lastly, one interview is leveraged for the last part of the dissertation not as a core part of the research, rather than the lever to validate the model that I attempt to develop in the analysis section. For this, a short interview was conducted with a high-level marketing executive of Edwards Lifesciences, world's leader in artificial heart valves.

ANALYSIS AND RESULTS

Application of Cognitive Approach Models in Healthcare

For this work, the cognitive approach theory is applied in healthcare because of the complexity of patients' treatments, as well as the importance of the several different steps that the protagonists of this model (patients) go through before there is a final decision on the potential therapy.

Within this approach, I further examine the "Consumer Decision Model" (also known as the Engel-Blackwell Model) that was originally developed by Engel, Kollat, and Blackwell. The model is structured around a decision process with seven steps: the need recognition followed by the search of information both internally and externally, the evaluation of alternatives, purchase, post purchase reflection, and divestment. These decisions are influenced by two main factors. Firstly, stimuli are received and processed by the consumers in combination with previous memories depicted from past experiences, and secondly, external variables in the form of either environmental influences or individual differences. The environmental influences include culture, social class, and others, while the individual influences include consumer resource, motivation, knowledge, and others (Blackwell, Miniard, 2001).

The model and the process of consumer decisions is applied to healthcare consumers and patients. The decision process step contains the most relevant step in the process. This is because the patients don't necessarily own information available for their internal search - "memory" on treatments and therapies (input and information processing steps). Therefore, when the need is recognized at the decision process stage, when patients are informed on their disease that requires action, the initiation of the search from the patients is essential to understand and pre-evaluate alternatives that will lead to the choice of the right medical treatment (the right surgery, the right drug, medical management, etc.).

Moreover, the external factors ("variables influencing decision process" step) are also very critical and influential to shaping the decision. Those are usually stakeholders' opinions on the treatment (input from family, patient advocacy, information available from hospitals, etc.), with the most important being the opinion and the role of the healthcare professionals involved, either if they are referring practitioners, or interventional doctors.

Hierarchy of Effects and Funnelling of Healthcare Marketing

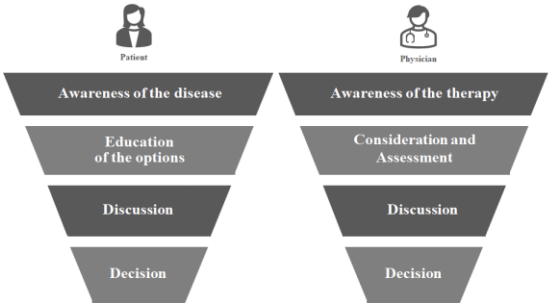
The first hierarchy of effects model was introduced over a century ago to map consumers' and shoppers' decision process towards consumption. Ever since the evolution of the customer path indicated through the "attention", "interest, "desire and "action" model in the 1900s (Dukesmith, 1904; Elmo Lewis, 1909), the hierarchical frameworks have witnessed a transformation thought time. According to Chakravarty and Sarma, the models have been changed to meet the needs of different periods: i) the traditional phase, ii) the pre-connectivity phase and iii) the digital phase (Chakravarty, Sarma, 2021) assessing different dynamics and drivers of the respective eras. Still the "funnel structure" contains the core of those models, trying to map the consumers decision process from the time they are aware of a need, to the time they finally choose the product or service to fulfill this need.

Development of the Healthcare Patient Journey: Version I. Deductive Approach

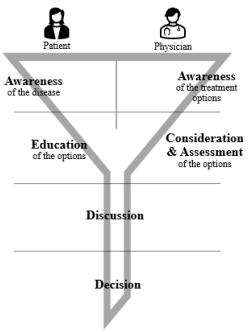
In this section, the traditional Marketing funnel model is attempted to be used in healthcare to particularly understand the unique characteristics of this industry. For this, the AIDA model is adapted to both stakeholders in scope, with the objective to deductively develop the first version of healthcare funnel model by using the existing theory of the "Hierarchy of Effects" or marketing funnel models.

FIGURE 1
APPLICATION OF AIDA MODEL TO HEALTHCARE INDUSTRY
(PATIENTS AND HEALTHCARE PROFESSIONALS)

The AIDA Marketing Funnel Model



The Healthcare Decision Funnel Model Version 0.5



The Healthcare Decision Funnel Model Version I

Specifically, Attention, Interest, Desire and Action may be translated to different stages for patients and healthcare professionals. In the case of patients for instance, "attention" is this awareness stage that patients get into regarding their disease. In the second stage they will try to educate themselves by seeking further information around potential therapy options. Then a discussion will be developed between themselves and the respective doctors ("desire" to learn more) and this may lead to the "action" stage that will form the final decision of which therapy will be followed.

Respectively for healthcare professionals, the first stage of the funnel may represent their awareness of therapies of certain diseases, then they may assess the options and consider further information like specialty guidelines. When moving down the funnel, the discussion with the patients will take place and this should lead to the decision of the treatment.

Since the third and the fourth stages of the two individual funnels are the same for the patients and the healthcare professionals, we can integrate the two funnels to one. This first version of our model may help the healthcare organizations and businesses to map the steps of patients' treatment paths and enable them to develop more efficient, effective, and valuable communication and marketing plans for the patients and the healthcare systems.

This model gives a sufficient answer on the first part of the problem of the dissertation, i.e., mapping the pathways of patients and healthcare professionals. What is missing from this first version of the model is to answer the second part of the question and identify the factors that influence the patients and healthcare professionals at each stage of the marketing funnel.

Influential Factors of Healthcare Professionals and Patient Engagement

The two surveys conducted for this study to patients and healthcare professionals, highlighted several factors influencing the information that the respective stakeholders seek during the patient pathway. Specifically, the research showed the following:

1. Patients and Family Caregivers: There are various influence factors for the patients and the family caregivers with the opinion of the interventional doctor being the most important one (was chosen from 70.6% of the sample), followed by the opinion of the referral doctor (67.6%), the "risk / benefit" of the treatment (67.6%) and the lifestyle implications (67.6%) or side effects / implications of the therapy (55.9%). Other less chosen factors, follow in the ranking like for example the role of research and the new treatments, the opinion of other patients, the information coming from the websites of companies or hospitals, the complexity or the pain of the treatment, the cost of the therapy and the insurance coverage, and the opinion of patients' associations and advocacy.

2. Healthcare Professionals: Publications and relevant literature is considered the most important factor of influence to healthcare professionals together with specialty guidelines (both were chosen by 78.2% of the sample), followed by the "risk vs. Benefit" assessment of the treatment (70.9%), patient's preference (69.1%) and other factors like the cost of therapy, the complexity of the treatment, the implications of the therapy and the side effects, the research and the availability of new, innovative treatments, the opinion of other doctors and finally information from health companies or hospital websites.

Furthermore, a very interesting finding of the study is that different influence factors represent inputs of the patients' pathway at different stages of the funnel. The opinion of the patient associations, for instance, is more influential to patients at the first stage (52.9%) of the funnel ("awareness" stage) while the implications of the therapy or side effects (70.6%) are an influencing factor when they assess and discuss therapy options with the doctors; the "discussion" stage.

The second important finding of this part of the research is that not all stages of the funnel are "born equal". The "discussion" stage between the doctors and the patients contains the most influential and statistically significant stage in the funnel. For both the stakeholders, this is the stage that is the most important to define the decision of the therapy or treatment that will follow.

Development of the Healthcare Patient Journey, Version II. Inductive Approach

The funnel model that has been designed after leveraging the existing literature has three limitations: i) it doesn't charter the factors inputting and influencing each stage, ii) it doesn't consider the stage or stages that are more influential than others and iii) it doesn't represent a dynamic cognitive information process, but rather a static map.

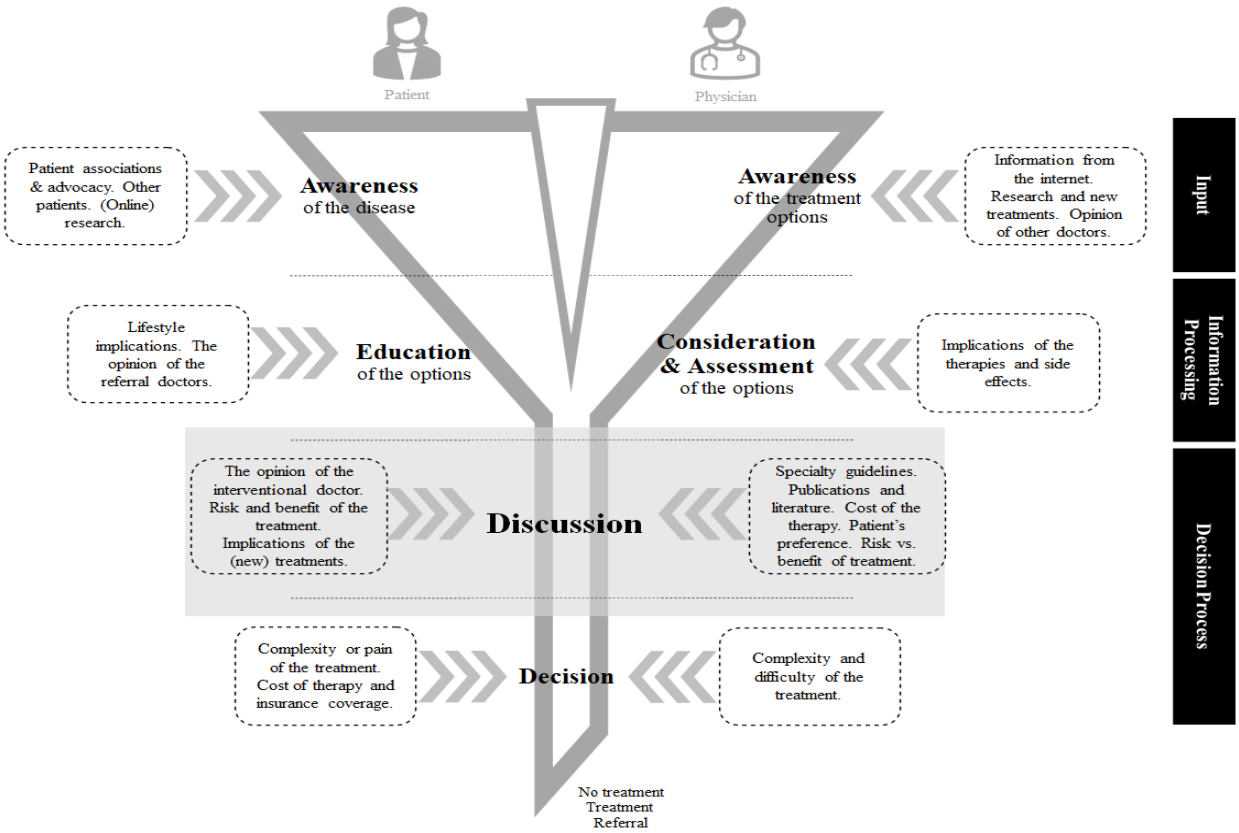
The key points that are highlighted and surfaced from the surveys' findings can inductively and further nurture the progress of this healthcare decision funnel model that was developed earlier.

Specifically, the factors that were identified as influential can be assigned to each stakeholder at each stage based on the weight of responses of the study. Moreover, as the research proved, the discussion part of the model is the most essential step of the treatment path. At this stage, the two stakeholders, the patients and the physicians meet and interact. This is therefore what leads to the decision.

Considering all those inputs, I suggest the "Healthcare Decision Funnel Model Version II". On top of the influence factors that were allocated to each stage of the model, I also applied the same pillars of information management from the Engel – Blackwell model.

This model, as its previous version, suggests a tool to map the treatment path for patients and healthcare professionals and integrates it to a common funnel format. Additionally, the model includes and separates the influence factors per stage and highlights the most essential step regarding the final decision.

FIGURE 2
HEALTHCARE PATIENT REFERRAL PATH AND INFLUENCE DRIVERS MODEL



The Healthcare Decision Funnel Model Version II

The awareness stages for the patients and the healthcare professionals attract most of the inputs that will be needed for the cognitive information processing which represents the second stage ("education" for patients and "consideration" of options for the healthcare professionals). Lastly, the decision process starts with the common step of the interaction between the two stakeholders and is completed with the final decision that may be treatment or no treatment, or referral of the patient to another doctor (e.g., referral to surgery), etc. Specifically:

1. Stage 1: "Awareness" for the of the disease for the patients and "Awareness" of the treatment options for the healthcare professionals. At this stage there are different factors influencing the respective stakeholders. Patient advocacy and online search may be a key factor of early awareness for patients, while healthcare professionals look for relevant content and information from online sources regarding research on (new) treatments and the opinion of other doctors.
2. Stage 2: "Education" of the potential treatment options for the patients that are mainly influenced by the opinion of the referral doctors and by the lifestyle implications, and "Consideration" and assessment of the treatment options for the healthcare professionals that are influenced by the implications of the therapies and side effects.
3. Stage 3: "Discussion" (common stage to both stakeholders) where patients may be influenced by the opinion of the interventional doctors, risk and benefit of the treatment and implications of the (new) treatments, while healthcare professionals may be influenced by the specialty guidelines, the respective publications and literature, cost of the therapy, patient's preference, and risk vs. benefit of the treatment.

4. Stage 4: "Decision" (common stage). At this final stage, patients may be influenced by the complexity or pain of the treatment, cost of therapy and insurance coverage, while healthcare professionals, by the complexity and the difficulty of the treatment.

Finally, we need to highlight that the factors are not solely influencing the specific stages that are assigned to. They may have an importance within other stages as well but may have been relatively less important in other stages.

Managerial Implications

For assessing the managerial implications, the healthcare patient referral path and influence drivers' model will be applied to cardiovascular diseases. I will specifically review aortic stenosis, that is the most common valvular heart disease (Berglund, Mattsson, Magnusson, 2018).

In the adaptation of this model, the patients are the Aortic Stenosis patients, and the physicians are the Cardiologists. Moreover, all the relevant aspects of the disease and the practice of the cardiology, have been adjusted to the model. For instance, as implication of therapies, here we may refer to the choice of treatment between i) transcatheter therapies and ii) surgical therapies. All those different categories and subcategories of therapies have pros and cons related to paravalvular leak, valve performance, valve durability, leaflet thrombosis, stroke and other factors (Terre, George, Smith, 2017). Lastly, the decision process of the model may lead to the decision of no treatment of the patient, or to ongoing medical management, surgical repair of the heart valve or treatment with transcatheter intervention, or surgical replacement (Vahanian, Beyersdorf, 2022).

But what is the benefit of such a model for the industry? Specifically, for a company that is manufacturing artificial heart valves? For this, I interviewed Mr. Peter Clayton, Vice President Marketing Surgical Structural Heart in Edwards Lifesciences, world's leader of artificial heart valves and hemodynamic monitoring.

First of all, according to Mr. Clayton*, "in the last years, patients have been using internet search, advocacy and patient groups on social media to obtain information about heart valve diseases"*. He also adds that *"this type of research is being done by care givers, a spouse or child, almost as often as the patient"*.

So, we do understand that due to the quantity of the available communication, patients are indeed looking for information but what about the quality of the information?

What Mr. Clayton sees within the medical device industry related to the patients' pathway, are the following points: *"Healthcare is fragmented into disease or procedural specialties which creates silos of information. Additionally, not all healthcare providers have the same level or training, exposure, or peer-support which results in disparate knowledge levels. Patients have no way of validating an HCP's knowledge or expertise and therefore must have blind trust in the direction received"* and then adds *"having disease and device data in the public domain for patients to access, helps level the information playing field, however most patients who are already overwhelmed with their disease, find the data intimidating and either give up looking for what is best for their situation or get confused"*.

Those responses, justify the need of the right and most credible information possible, to the right stakeholder, at the right time / stage of the patients' pathways.

And lastly, when it comes to the utility of the model, Mr. Clayton says that *"without a doubt this model will help with strategic marketing for the following reasons: Understanding the differences in the needs of the patient vs. the cardiologist as well as the timing for when each is looking for information, is beneficial. Medical device manufacturers are oriented to working with healthcare professionals and so recognizing the need to address patients' questions in an easily digestible manner is crucial. Finally, recognizing when the patient engages the cardiologist and for what purposes, enables medical device manufacturers to appropriately inform and prepare with information both parties for the discussion and decision stages".*

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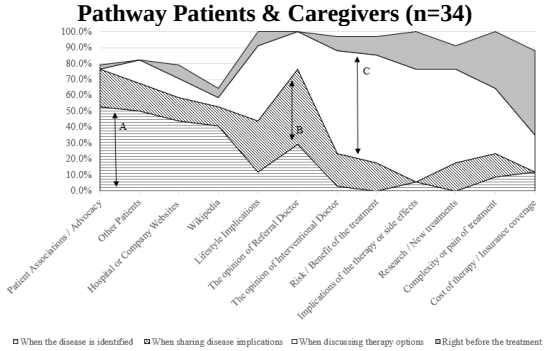
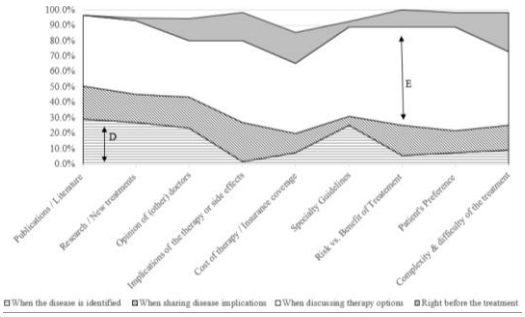
APPENDIX: TABLES AND FIGURES

Influence Factors per Stage of the Treatment Pathway Patients & Caregivers (n=34)



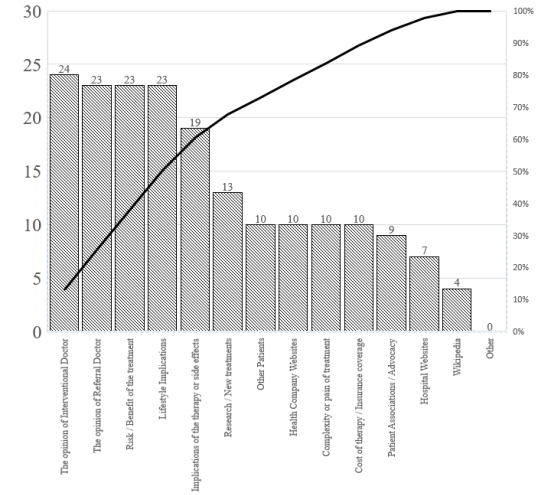
The Importance of Influence Factors at each stage of the decision process according to Patients & Caregivers. (Zervas, 2022)

Influence Factors per Stage of the Treatment Pathway Healthcare Professionals (n=55)



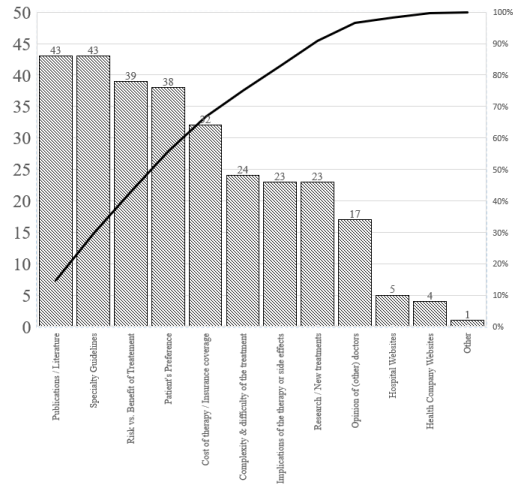
The Importance of Influence Factors at each stage of the decision process according to Healthcare Professionals. (Zervas, 2022)

Influence Factors of Therapy Patients & Caregivers (n=34)



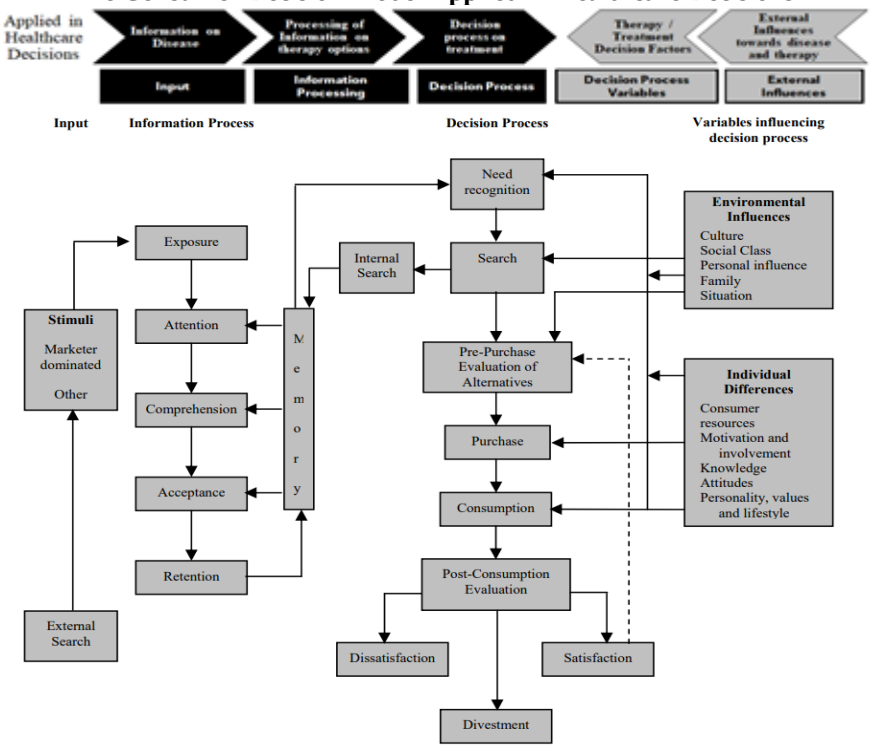
The Weight of Influence Factors to the Decision of Treatment According to Patients & Caregivers. Pareto Chart (Zervas, 2022)

Influence Factors of Therapy Healthcare Professionals (n=55)



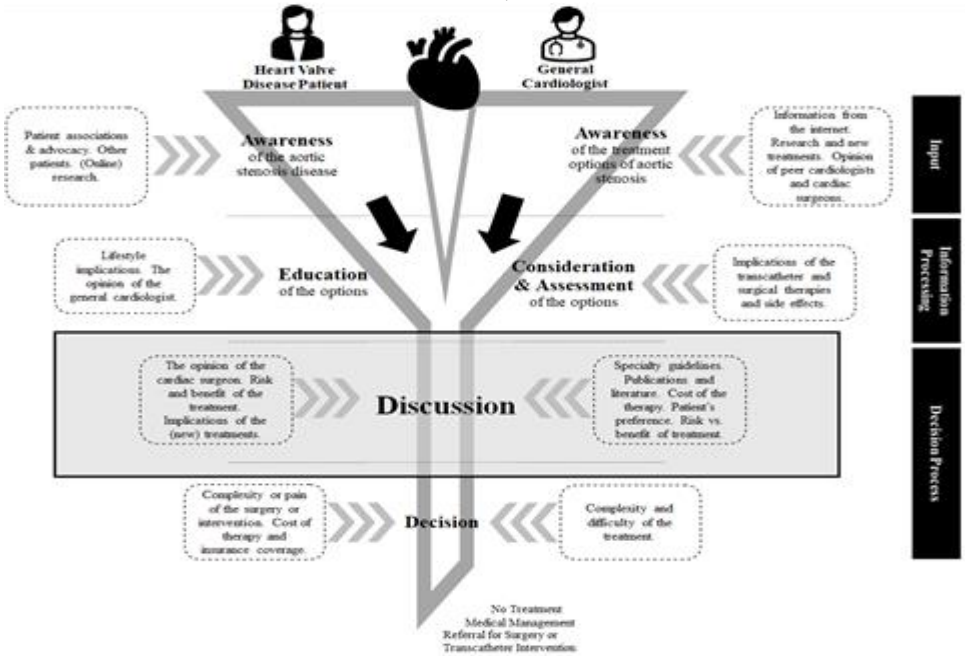
The Weight of Influence Factors to the Decision of Treatment According to Healthcare Professionals. Pareto Chart (Zervas, 2022)

The Consumer Decision Model Applied in Healthcare Decisions



The Consumer Decision Model
(Blackwell, Miniard et al. 2001)

Healthcare Patient Referral Path and Influence Drivers Model applied to Cardiovasular diseases. Heart Valve Disease; Aortic Stenosis



The Healthcare Decision Funnel Model Version II applied to Cardiovascular Disease
(Zervas, 2022)