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MEDICINE FIELD

The Health Care services Marketing in a Department of Surgical Oncology

The Abstract of the PhD thesis

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Introduction

Oncology surgery is the branch of surgery applied to oncology that focuses on the surgical management of tumors, in particular, cancerous tumors. Although there have been advances in medical and radiological oncology, surgery is still the only way with the potential to cure the most serious forms of cancer.

Achieving communication as part of health education at all levels is essential to prepare healthcare providers to manage such difficult situations. In most developed countries, medical schools teach and assess communication skills throughout the curriculum. Medical school education is a good start, but it is not enough. Recent years have brought increasing recognition of the specific communication challenges faced by the oncology surgery department, stimulating research and interventions for a more effective understanding and improvement of cancer care communication – with both doctors in training (residents) and practitioners.

Patient satisfaction reflects how well the patient's needs, expectations, or preferences are being met. In oncology, some studies support the idea that communication skills are linked to patient satisfaction in several areas. Health care marketing is the process of creating and delivering valid health information and interventions, using science-based and consumer-oriented strategies, to promote better healthcare.

Oncology is a dynamic field that requires marketers to remain vigilant as new developments emerge. Achieving flexibility while maintaining a coherent identity can be difficult, especially in an ever-changing scientific field such as oncology.

The aim of this research is to investigate the effectiveness of marketing strategies that can be applied in an oncology surgery department. More specifically, through this research was determined, through an interdisciplinary approach, the patient's experience in an oncological surgery department, by using both the principles of Marketing and the characteristics of the oncological surgery activity.

Chapter 1.
The health care system

All modern concepts of health recognize health as more than the absence of disease, implying the individual's ability for self-realization and self-fulfillment. The plurality of health definitions reflects the variety of contexts in which health is elaborated and it becomes essential to know, identify and draw the boundary and content of that phenomenon. Thus, a correct conceptualization locates and assigns identity, content, or meaning. Today's society is a complex, high-cost society in which citizens constantly need to learn and update their knowledge and skills in order to be able to manage their own lives. To appreciate concepts and conceptualizations, knowledge has become an essential quality in the digital society. Health concepts – especially the concepts we use to explain, treat, cure or cope with illness – are words we also use as search tools.

Chapter 2.
Health care services

Health services are essential to the population, representing a necessary for medical needs, and digitalization, along with customer requirements, have led to new challenges for medical organizations, obtaining value through technological innovations, as well as developing new digital capabilities.

Developing and implementing measures to improve the quality of the overall health system and how it is transforming requires the use of indicators that can demonstrate how the system, including customers, providers and public health, influences health at population level.

A medical service tends to be an experience that is consumed at the point where it is contacted and cannot be owned since it is an activity. Thus, for Health Services Marketing it becomes essential to know the service climate in order to develop and implement appropriate service strategies from the perspective of Marketing typology.

Chapter 3.
Communication in the Department of Surgical Oncology

Oncology surgery is the branch of surgery applied to oncology that focuses on the surgical management of tumors, especially cancerous tumors. Despite advances in medical and radiological oncology, surgery is still the only way with the potential to cure the most solid forms of cancer. Surgeons play a pivotal role in cancer treatments and research, discovering new ways to diagnose and treat most cancers.

However, cancer care has evolved very rapidly in recent decades and therefore a new type of surgery is needed to keep up with all these changes. For most solid malignancies, a combination of surgery and multimodal therapies (focused radiotherapy, molecular therapies and polycystotherapy) is required, making it a modern standard of care.

Breast cancer is that which develops in breast tissue. Signs of breast cancer may include some form of swelling in the breast, a change in breast shape, skin shrinkage, etc. In patients with distant spread of the disease, bone pain, inflamed lymph nodes, shortness of breath or yellow skin may occur. Sometimes breast cancer can spread to lymph nodes under the arm or around the collar bone and cause swelling, even before the initial tumor in the breast is large enough to be felt on palpation.

Risk factors for developing breast cancer in women include obesity, lack of exercise, alcohol consumption, hormone replacement therapy during menopause, ionizing radiation, age at the beginning of menstruation, old age, the presence of cancer in the family history.
Inflammatory breast cancer is a rare condition (seen in less than 5% of breast cancer diagnoses), but it is an aggressive form of breast cancer characterized by inflamed red areas formed in the upper part of the breast. The visual effects of inflammatory breast cancer are the result of a blockage of lymphatic vessels by cancer cells. This type of breast cancer is commonly seen at younger ages. In rare cases, what initially appears as a fibroadenoma might actually be a phyllode tumor. Tumor follicles are formed in the connective tissue of the breast and contain glandular and stromal tissue.

The importance of the patient-physician communication in the Department of Surgical Oncology

The importance of good communication during specialist care can add value to the experience of the patient and their family, while also impacting their health. This is supported

not only by anecdotal evidence, but also by scientific research, which focuses mainly on the doctor-patient relationship. The result of good doctor-patient communication is clear – patients make more informed decisions, receive better quality of care and have a lower incidence of anxiety.

Conducting communication as part of medical education at all levels is essential to prepare healthcare providers to manage such difficult situations. In most developed countries, medical schools teach and assess communication skills throughout the curriculum. Medical school education is a good start, but it is not enough. Recent years have brought increasing recognition of the specific communication challenges facing the oncology surgery department, stimulating research and interventions to better understand and improve communication in cancer care – with both doctors in training (residents) and practitioners.

Communication between doctors and patients is a multidimensional concept and involves the content of dialogue, the affective component (that is, what happens emotionally with the doctor and patient during the meeting), as well as nonverbal behaviors.

In oncology, communication skills are the key to achieving important goals of clinical interaction. These objectives include the following:

- Trust building
- The information collection from the patients and their families
- Information offer about the disease
- Concern removal.

Doctors can help patients communicate their problems empathically by showing them that they are well understood and encouraging them. Studies on pain perception find that, similar to the placebo effect, treating the patient with care throughout their medical course can significantly reduce anxiety, thus leading to less pain.

However, these concerns of oncology patients can be diminished or improved by a wide range of technologically advanced devices. Moreover, these devices will even improve doctor-patient communication and treatment compliance.

The impact of digitalization on the patient-physician relationship

The digital revolution is having a profound impact on how doctors and healthcare delivery organizations interact with patients and the wider community. In the coming decades,

personal doctor-patient contacts will become rarer, and exchanges between consumers and providers will increasingly be mediated by digital devices.

In the era when the Internet allows the digitization of the organization and its expansion globally, online reviews/comments are particularly important and easily accessible to the population. Based on these carefully studied reviews/comments by patients, some medical organizations are chosen or avoided.

Thus, cultivating valuable relationships with patients can lead to improving the image of the medical brand, and word-of-mouth references increase the possibility for patients to recommend the medical organization to others because of pleasant experiences.

Chapter 4.
Marketing principles in the Department of Surgical Oncology

To move in this new direction, oncologists need to reconsider their engagement strategies, looking beyond the approach they have developed to ensure patients are supported and prepared to actively engage in decision-making. To this end, emphasis should be placed on individualised messages that inform and support each patient in the context of their unique treatment journey.

In oncology, cancer control and treatment varies through a combination of surgery, radiation, and chemotherapy. Treatment measures can be effective in stopping tumor progression, managing pain, and prolonging life. They may be accompanied by side effects, ranging from short duration and transient periods to long and persistent periods that may occur later.

In recent years, there has been an increase in the acceptance and use of Internet of Things (IoT) technologies in various fields, such as manufacturing, transport and agriculture, but also in healthcare. The need to find solutions to ease pressure on health systems while maintaining the provision of quality healthcare with IoT technologies is already recognised. Although the use of IoT technologies in healthcare is still in its infancy, its potential application in more medical cases has become relevant. For example, even before the pandemic, health systems around the world were striving to provide quality healthcare to patients, and healthcare professionals were looking for solutions with the aim of reducing expenses associated with a steady ageing population and the growth associated with chronic diseases.

Remote monitoring focuses on real-time data collection, even by children, the elderly or patients suffering from chronic diseases. Remote access to the sensors allows for early detection and interventions by doctors, but there is also the possibility that people with various cognitive and physical impairments can live independently and more comfortably.

Special Part

Aim and objectives

The purpose of this research is to investigate the effectiveness of marketing strategies that can be applied in an oncology surgery department. More specifically, through this research was determined, through an interdisciplinary approach, the patient's experience in an oncological surgery department, by using both the principles of Marketing and the characteristics of the oncological surgery activity.

The specific objectives were:

1. The determination of the demographic and medical profile of the patients hospitalized in the Surgical Oncology II Department of the “Prof. Dr. Al. Trestioreanu” Oncology Institute;
2. Identifying patients' perceptions regarding the quality of services provided by treating physicians;
3. Identifying patients' perceptions regarding the quality of services provided by medical staff;
4. Determining patients' perceptions of the treating doctor's communication with them;
5. Identification of measures to improve the quality of medical services through variables other than doctor-patient communication;
6. Identification of statistically significant differences in patients' perceptions of the quality of health services provided by treating physicians and medical staff and communication with them depending on demographic variables, such as age and gender, type of admission and request for consultation by a particular doctor.
7. Determining the patients' intention to recommend the health services of the Surgical Oncology II Department of the “Prof. Dr. Al. Trestioreanu” Oncology Institute.

Methodology

In order to achieve the proposed objectives, the study was observational, descriptive, respectively, opinion survey.

The research focused on a group of patients hospitalized in the Oncological Surgery II department of the "Prof. Dr. Al. Trestioreanu" Institute of Oncology in Bucharest. Thus, the group consisted of 157 patients, and the sampling method was non-probabilistic, of convenience. Among the advantages offered by non-probabilistic sampling are those related to the fact that it is easier to perform, faster and with less financial resources compared to the probabilistic sampling method. Moreover, this type of selection also allows a generalization of the results obtained, respectively the investigation of specific groups.

However, the individuals included in the study were selected based on the following criteria:

- Patients were hospitalized in the „Prof. Dr. Alexandru Trestioreanu" Oncology Institute;
- Patients have their age over 18 years;
- Patients did not have any mental illnesses;
- Patients understand the Romanian language;
- Patients approved to take part in the research.

The agreement to participate in the study was confirmed before the start of the research, being presented with the conditions of confidentiality and anonymity, the purpose of the study and the use of the data provided.

The study also received the ethics opinion no. 11765/ 26.05.2020 from the Commission of the Oncological Institute "Prof. Dr. Al. Trestioreanu".

Collection and data processing

The tool used to collect the data was a self-administered paper opinion questionnaire with closed questions as follows:

- Part I contains closed questions that helped in collecting socio-demographic and medical data of patients;
- Part II includes closed questions about participants' perceptions of the quality of oncological surgery services provided by treating physicians and medical staff, doctor-patient communication and identification of other factors that could improve the quality of services offered.

The completed questionnaires were processed anonymously and validated individually, verifying compliance with the inclusion criteria of the subjects, as well as with the validation criteria of the instrument, respectively at least 30% completion level.

Initially, 170 questionnaires were processed, but several were invalidated because more than 30% were not completed.

The statistical analysis of the data

Statistical analysis was performed using IBM SPSS Statistics 20 and Microsoft Office Excel/Word 2013. The categorial (nominal) variables were expressed in absolute or percentage form in a contingency table. These were validated using Fisher's Exact Test. Z tests with Bonferroni correction were performed to detail the results obtained in the contingency tables.

Results

The data in Table 1 and Figure 1 represent the gender distribution of participants. The majority of participants in the study were female (96.2%).

The data in Table 2 and Figure 2 represent the age-related distribution of participants. Most participants in the study were aged 48-53 years (32.5%) or 54-59 years (31.8%).

The data in Table 3 and Figure 3 represent the distribution of participants' responses to the question "Have you checked in through the emergency service?". Only 5.7% of participants said they were admitted through the emergency service.

The data in Table 5 and Figure 5 represent the distribution of participants relative to the answers to the question "Did you request a specific doctor during admission?". Most participants stated that they had requested a specific doctor during admission (87.3%).

The data in Table 6 and Figure 6 represent the distribution of participants relative to the answers to the question "How long have you been hospitalized, have you requested other medical opinions regarding the diagnosis?". Only 7% of participants said they had asked for other medical opinions.

The data in Table 7 and Figure 7 represent the distribution of participants' responses to the question "How satisfied are you with the quality of health care services (in general) within the Oncology Surgery II section?". Most participants in the study responded that they were satisfied (56.7%) or very satisfied (41.4%) with the quality of health care services.

The data in Table 8 and Figure 8 represent the distribution of participants relative to the answers to the question "How satisfied are you with the way you were consulted by your treating doctor?". Most participants in the study responded that they were satisfied (51.6%) or very satisfied (47.1%) with the way the attending physician performed the consultation.

The data in Table 9 and Figure 9 represent the distribution of participants relative to the answers to the question "How satisfied are you with the treatment received during admission?".

Most participants in the study responded that they were satisfied (47.8%) or very satisfied (51%) with the treatment they received during admission.

The data in Table 10 and Figure 10 represent the distribution of participants relative to the answers to the question "To what extent have healthcare professionals shown interest in solving your problem?". Most participants in the study responded that to a large extent (43.9%) or to a very large extent (53.5%) medical staff showed interest in solving their problems.

The data in Table 11 and Figure 11 represent the distribution of participants relative to the answers to the question "To what extent are you satisfied with the quality of care provided?". The majority of participants in the study responded that to a large extent (41.4%) or to a very large extent (45.9%) they are satisfied with the quality of care.

The data in Table 12 and Figure 12 represent the distribution of participants relative to the answers to the question "How was your overall experience in Cancer Surgery II?". Most participants in the study answered that the overall experience in the ward was pleasant (45.9%) or very pleasant (52.9%).

The data in Table 13 and Figure 13 represent the distribution of participants relative to the answers to the question "To what extent did the medical staff answer your questions?". Most participants in the study responded that to a large extent (47.8%) or to a very large extent (40.8%) medical staff answered their questions.

The data in Table 14 and Figure 14 represent the distribution of participants relative to the answers to the question "To what extent did healthcare professionals respect treatment times?". Most participants in the study responded that to a large extent (43.9%) or to a very large extent (51.6%) the medical staff respected the schedule for administering the treatment.

The data in Table 15 and Figure 15 represent the distribution of participants relative to the answers to the question "To what extent has healthcare professionals expressed interest in treating your problems?". The majority of participants in the study responded that to a large extent (39.5%) or to a very large extent (56.1%) medical staff expressed interest in treating their problems.

The data in Table 16 and Figure 16 represent the distribution of participants relative to the answers to the question "Did healthcare professionals have a positive attitude?". Most participants felt that medical staff had a positive attitude towards them (98.7%).

The data in Table 17 and Figure 17 represent the distribution of participants relative to the answers to the question "To what extent did the treating physician answer your questions?".

Most participants in the study answered that to a large extent (38.2%) or to a very large extent (58.6%) their questions were answered by their treating doctor.

The data in Table 18 and Figure 18 represent the distribution of participants relative to the answers to the question "Have you been involved and informed about care decisions?". Most participants were engaged and informed (98.7%).

The data in Table 19 and Figure 19 represent the distribution of participants relative to the answers to the question "To what extent have you been informed about the medical examination procedure?". Most participants in the study responded that to a large extent (40.8%) or to a very large extent (52.2%) they were informed about the medical examination procedure.

The data in Table 20 and Figure 20 represent the distribution of participants relative to the answers to the question "To what extent was the result of medical tests explained?". Most participants in the study responded that to a large extent (54.8%) or to a very large extent (38.9%) they were explained the result of medical tests.

The data in Table 21 and Figure 21 represent the distribution of participants relative to the answers to the question "How convenient are we as an oncology service provider in the following areas: Location?". Most participants in the study considered the location of the ward to be convenient (31.2%) or very convenient (49.7%).

The data in Table 22 and Figure 22 represent the distribution of participants relative to the answers to the question "How convenient are we as an oncology service provider in the following areas: Staff availability?". Most participants in the study considered the availability of staff in the department to be convenient (42.7%) or very convenient (51.6%).

The data in Table 23 and Figure 23 represent the distribution of participants relative to the answers to the question "How convenient are we as an oncology service provider in the following areas: Patient comfort?". Most participants in the study considered the comfort offered to the patient within the ward as convenient (43.9%) or very convenient (45.9%).

The data in Table 24 and Figure 24 represent the distribution of participants relative to the answers to the question "How convenient are we as an oncology service provider in the following areas: Staff attention to the patient during admission?". The majority of participants in the study considered the attention of the staff offered to the patient in the ward to be convenient (30.6%) or very convenient (64.3%).

The data in Table 25 and Figure 25 represent the distribution of participants relative to the answers to the question "Using a smartphone or tablet?". Most participants said they use a smartphone or tablet (87.9%).

The data in Table 26 and Figure 26 represent the distribution of participants relative to the answers to the question "Do you agree with the installation and use of a specially developed smartphone/tablet application that incorporates digital health tools as support for preventive care or treatment?". Most participants answered yes about installing and using a specially developed application (87.9%). Participants who answered negatively are those who do not use smartphones or tablets.

The data in Table 27 and Figure 27 represent the distribution of participants relative to the answers to the question "Do you think we could improve your experience in the department through the aforementioned application?". The majority of participants answered yes about the possibility of improving the experience through an app (87.9%). Participants who answered negatively are those who do not use smartphones or tablets.

The data in Table 28 and Figure 28 represent the distribution of participants in relation to the existence of smartphone use and to the answers given to the question "How satisfied are you with the way you were consulted by your treating doctor?". The differences observed between groups are significant according to the Fisher test (p=0.002), and the Z tests with Bonferroni correction show that participants who responded that they were dissatisfied (5.3% vs. 0%) or satisfied (78.9% vs. 47.8%) with the consultation more frequently stated that they did not use a smartphone or tablet, while participants who responded that they were very satisfied with the consultation more frequently stated that they used a smartphone (51.4% vs. 15.8%).

Discussion

The aim of this research was to investigate the application of marketing strategies in an oncology surgery department. In order to achieve this goal, seven specific objectives have been outlined, which will be described below, together with the results achieved.

The first objective focused on determining a demographic and medical profile of patients admitted to the Oncological Surgery II section of the Prof. Dr. Al. Trestionareanu Institute of Oncology in Bucharest. Thus, most patients were female, given that the specificity of the ward is breast cancer (96.20%). Although breast cancer is a neoplastic disease specific to women, there were also 6 cases of breast cancer in men (3.8%). Regarding the age of patients, the majority were aged between 48-53 years (32.5%) or between 54-59 years (31.8%). According to Table II in the results section, the specific age of breast cancer has changed and there are people with breast cancer aged up to 18 years (1.3%) and 18-23 years (2.5%). Also,

5.7% of participants were admitted through the emergency service, and during hospitalization 87.3% requested to be consulted by a certain doctor.

The second objective referred to identifying patients' perceptions of the quality of services provided by treating physicians. Thus, most participants in the study answered that they were satisfied (56.7%) or very satisfied (41.4%) with the quality of services offered. Also, most respondents were satisfied (51.6%) or very satisfied (47.1%) with the way the consultation was carried out by the attending physician.

Regarding the third objective, participants responded that to a large extent (47.8%) or to a very large extent (40.8%) the medical staff answered their questions and that to a large extent (43.9%) or to a very large extent (51.6%) the medical staff respected the schedule for administering the treatment.

The fourth objective reflects patients' perceptions of the treating doctor's communication with them. The participants stated that the attending physicians answered their questions largely (38.20%) and to a very large extent (58.60%). Moreover, 98.70% of respondents stated that they were informed and involved in the decision-making process of medical care. Similarly, the medical examination procedure was presented to participants to a large extent (40.80%) and to a very large extent (52.20%). The results of medical tests were explained to a large extent (54.80%) and to a very large extent (38.90%). So it can be concluded that the study participants communicated effectively with their treating physicians, being both informed and involved in the medical care decision-making process.

Goal five revealed that the location of the healthcare organization is somewhat convenient (31.2%) and very convenient (49.7%), availability of medical staff was convenient (42.7%) and very convenient (51.6%), and patient comfort reached a convenient level (43.9%) and very convenient (45.9%).

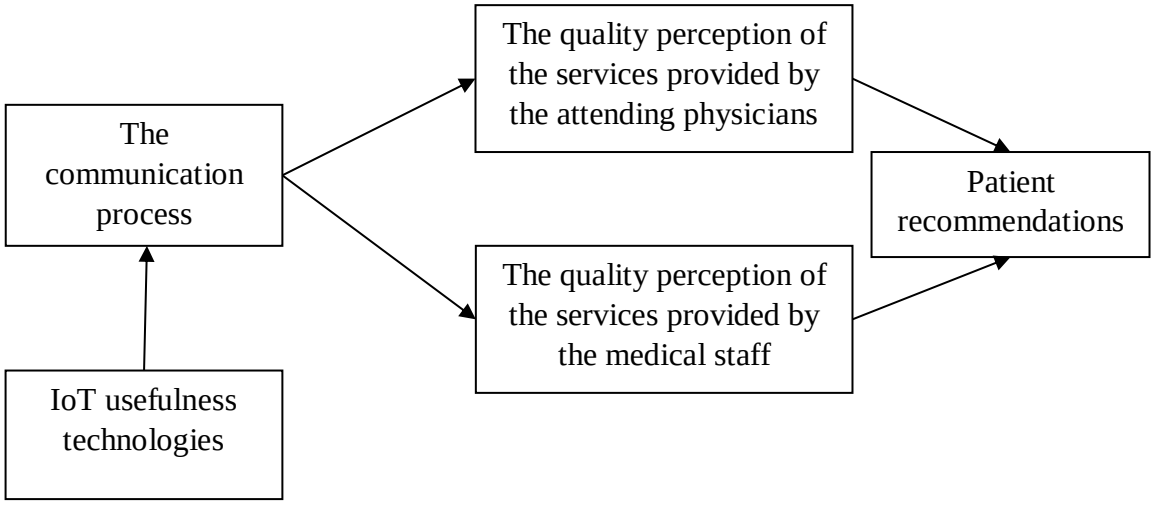
In order to streamline the medical act, respondents were asked if IoT applications of medical care would be useful in supporting them in preventive care or in the treatment followed. 87.9% of them answered yes and 87.9% said that the medical experience within the department could be improved through an IoT application. Considering the novelty of this strategy, the author of the thesis conducted a more thorough investigation. Thus, participants who use a tablet or smartphone are more likely to accept the use of an IoT application, although they are satisfied with the way they were consulted by their treating physicians (51.4% vs 15.8%), were very satisfied with the treatment received during admission (54.3% vs 26.3%) and the attending physicians answered in a very large proportion to the questions asked (61.6% vs 36.8%). Moreover, although some participants stated that the location and accessibility of staff is

inconvenient, they would not even show a tendency to use a smartphone or tablet in preventive care or treatment.

For goal 6, male participants were older than 60 years old, and women used a smartphone or tablet more often. Participants aged 60 and older responded that they were more frequently very dissatisfied than very satisfied with the quality of service, while participants aged 36-41 responded that they were more frequently dissatisfied than satisfied with the quality of service (50% vs 2.2%). Also, participants aged under 18 years (9.1% vs 0.7%) responded more frequently that during admission they requested other medical opinions regarding the diagnosis, while participants aged 54-59 years (34.2% vs 0%) answered more frequently that they did not request other medical opinions during admission. Participants aged under 18 years (11.1 vs 0%) or between 18-23 years (11.1% vs 0%) responded that the results of medical tests were explained to them in a more frequently medium than high proportion, while participants aged 36-41 years responded that the test results were explained in a more frequently lower than average proportion, high or very high (100% vs 0%/ 3.5%/ 8.2%).

The last objective revealed that the majority of participants said they would recommend the services of the oncology surgery department (98.1%).

Concluding, the results of this study could be the basis of an empirical model with applicability in health care services, making a connection with the trend of integrating IoT technologies in all fields, especially in the medical one. The model would consist of five variables, illustrated in the figure below, which would have the following explanation: IoT technologies would lead to effective doctor-patient-healthcare communication, which in turn would increase the perception of the quality of services provided by treating physicians and healthcare. The end result of this model would be to raise the level of recommendations of medical services.



A model with possible applicability in Surgical Oncology

Conclusions

Although the medical specialty of oncology is a team work, oncological surgery becomes more complex given the existence of a high diversity of neoplastic diseases. The Department of Oncological Surgery of the Oncological Institute „Prof. Dr. Al. Trestioreanu" focuses on breast cancer, and following this research it was concluded that the doctor-patient-healthcare communication process, as well as patients' perceptions of the quality of health care services provided by doctors and healthcare are optimal, but they can be improved by using IoT technologies.

The model proposed at the end of the research outlined the use of IoT technology variables, which improve doctor-patient-healthcare communication and which in turn can significantly contribute to increasing perceptions of the quality of healthcare services. The purpose of the model is to increase patient recommendations on oncological surgery services.

Selective References

Ahmad I. 40+ Video Marketing Statistics for 2019 [Infographic] (Social Media Today, Accesat 14.01.2019). https://www.socialmediatoday.com/news/40-video-marketing-statistics-for-2019-infographic/545887/

Ammentorp J, Kofoed PE, Laulund LW. Impact of communication skills training on parents' perception of care: intervention study. J Adv Nurs. 2011;67:394–400.

An overview of endocrine tumours. MACMILLAN (May 11, 2016). Retrieved from: https://www.macmillan.org.uk/cancerinformation/cancertypes/endocrine/endocrinetumours.aspx

Anghel, R. (coord) (2020). Oncologie general. Manual universitar. Editura Universitară Carol Davila, București.

Anik, A., Abaci, A. (2014). Endocrine cancer syndromes: an update. Minerva Pedriatica, 66(6), 533-547.

Armean, P. (2004). Management sanitar. Noțiuni fundamentale de sănătate publică, Editura Coresi, București

Baile WF, Kudelka AP, Beale EA et al. Communication skills training in oncology. Description and preliminary outcomes of workshops on breaking bad news and managing patient reactions to illness. Cancer 1999;86:887–897.

Baile, W.F., Aaron, J. (2005). Patient-physician communication in oncology: past, present, and future. Curr. Opin. Oncol., 17(4), 331-335.

Baile, W.F., Communication competency in oncology: legal, ethical and humanistic imperatives. 2006.

Balin, S., Giard, V., A process oriented approach to the service concepts (Lamsade, Université Paris-Dauphine, Place de Lattre de Tassigny, pdf).

Balteș, L.P. (2015). Content marketimg- the fundamental tool of digital marketing, Bulletin of the Transilvania University of Brasov, Series V: Economic Sciences, 111-118.

Bergmann J, Chandaria V, McGregor A. Wearable and implantable sensors: the patient's perspective. Sensors. 2012; 12 (12): 16695-16709. doi: 10.3390/s121216695

Blidaru, A. (2003). Melanomul malign. Editura Universitară Carol Davila, București.

Blidaru, A., Bordea, C., Voinea, S., Houcheimi, B., Condrea, I., Albert, P. (2006). Rezultatele protocolului de validare a tehnicii de identificare și biopsie a ganglionului santinelă în cancerul glandei mamare folosind Trasor radioactive la Institutul Oncologic București, Chirurgia, 4.

Bourhis RY, Roth S, MacQueen G. Communication in the hospital setting: a survey of medical and everyday language use amongst patients, nurses and doctors. Soc Sci Med 1989;28:339–346.

Branding stats. Retrieved from: https://brandbuddha.com/branding-stats/

Brown RF, Butow PN, Henman M, Dunn SM, Boyle F, Tattersall MH. Responding to the active and passive patient: flexibility is the key. Health Expectations 2002;5(3):236e45.

Butow PN, Dunn SM, Tattersall MHN, Jones Q. Computer-based interaction analysis of the cancer consultation. Br J Cancer 1995;71:1115–1121.

Butow, P.N., Maclean, M., Dunn, S.M., et al. (1997). The dynamics of change: cancer patients' preferences for information, involvement and support. Annuals of Oncology, 8(9), 857-863.

Cady, B. (1997). Basic principles in Surgical Oncology. Archives of Surgery, 132(4), 338-346.

Ciurea, A.V., Ciobotaru, V.G., Avram, E. (2006). Management în unitățile medico-sanitare. Editura Universitară, București.

Dever, A. (1984). Epidemiology in Health Services Management, Aspen Publication

Dhanvijay MM, Patil SC. Internet of Things: A survey of enabling technologies in healthcare and its applications. Computer Networks. 2019; 153: 113-131. doi: 10.1016/j.comnet.2019.03.006
Donnellan, W.L. (1961). Surgical anatomy of adrenal glands. Annals of Surgery, 154(6), 298.
Dowsett SM, Saul JL, Butow PN et al. Communication styles in the cancer consultation: preferences for a patient centred approach. Psycho-Oncology 2000;9:147–156.
Dreher N, Hadeler EK, Hartman SJ, Wong EC, Acerbi I, Rugo HS, Majure MC, Chien AJ, Esserman LJ, Melisko ME. Fitbit Usage in Patients With Breast Cancer Undergoing Chemotherapy. Clin. Breast Cancer. 2019; 19: 443-449. doi: 10.1016/j.clbc.2019.05.005
Fernández-Caramés T, Fraga-Lamas P. Towards the Internet-of-smart-clothing: a review on IoT wearables and garments for creating intelligent connected E-textiles. Electronics. 2018; 7 (12): 405. doi: 10.3390/electronics7120405
Forbes Corporate Communications. Customers Like to Research Online but Make Big Purchases in Stores, Says New Retailer Study (May 25, 2016)
Fortunka, K. (2020). Factors affecting human health in the modern world. Journal of Education, Health and Sport, 10(4), 75-81.
Frost & Sullivan. Multi Channel Marketing to Prove Crucial for Competitiveness of Healthcare Industry. (May, 23, 2017). Retrieved from: https://www.prnewswire.com/news-releases/multi-channel-marketing-to-prove-crucial-for-competitiveness-of-healthcare-industry-300462109.html
Furtunescu, F., Mincă, D.G. (2010). Managementul serviciilor de sănătate. Abordare prin proiecte. Editura Universitară Carol Davila, București
Galvagno, M., Dalli, D. (2014). Theory of value co-creation. A systematic literature review. Journal of Service Theory and Practice, 24(6), 643-683.
Geurts, J.L., Strong, E.A., Wang, T.S., Evans, D.B., Clarke, C.N. (2020). Guidelines & reccommendations for patients at high risk of developing endorine cancers. Journal of Surgical Oncology, 121(6), 975-983.
Ianovici, C., Purcărea, V.L., Gheorghe, I.R., Blidaru, A. (2023). The complexity of physician-patient communication and its impact in non-medical fields. A surgical oncology approach. Journal of Medicine and Life, 16(4), 631-634.
Ianovici, C., Purcărea, V.L., Gheorghe, I.R., Blidaru, A. (2023). Stories for a sustainable healthcare future: the perspectives of healthcare IoT technologies in Surgical Oncology. Journal of Medicine and Life, 16(5), 638-641.
Kotler, Ph. (2006). Management Marketing, Editura Teora, București
Maguire P. Barriers to psychological care of the dying. Br Med J 1985;291:1711–1713.
Marketing Charts. 9 in 10 Believe Multichannel Marketing to Boost Sales, Profit. Retrieved from: https://www.marketingcharts.com/uncategorized-22906 (August 8, 2012)
Maxwell-Smith C, Hince D, Cohen P, Bulsara M, Boyle T, Platell C, et al. A randomized controlled trial of WATAAP to promote physical activity in colorectal and endometrial cancer survivors. Psycho-Oncol. 2019; 28 (7): 1420-1429. doi: 10.1002/pon.5090.
Mazzarello, S., Clemons, M., Graham, I.D., Joy, A.A., Smith, S., Jacobs, C. (2015). Third-party online surveys- science, selling, or sugging? Current Oncology, 22(3).
McCann L, McMillan KA, Pugh G. Digital interventions to support adolescents and young adults with cancer: Systematic review. J. Med. Internet Res. 2019; 5(2): e12071. doi: 10.2196/12071.
Mesko B, Győrffy Z. The Rise of the Empowered Physician in the Digital Health Era: Viewpoint. J Med Internet Res 2019;21(3):e12490. DOI: 10.2196/12490; PMID: 30912758; PMCID: 6454334
Miller BE, Pittman B, Strong C. Gynecologic cancer patients' psychosocial needs and their views on the physician's role in meeting those needs. Int J Gynecol Cancer 2003;13:111–119.

Moreira, A., Duarte, J., Santos, M.F. (2023). Case study of multichannel interaction in healthcare services. Information, 14(1), 37.
Penson RT, Dignan FL, Canellos GP, et al. Burnout: caring for the caregivers. Oncologist. 2000;5:425–434.
Perumal K, Manohar M. A survey on internet of things: case studies, applications, and future directions. Internet of Things: Novel Advances and Envisioned Applications, Springer International Publishing, pp. 281–297.
Popa, F., Purcărea, V.L., Purcărea, Th., Raţiu, M.P., Marketingul îngrijirilor de sănătate, Editura Universitară ,,Carol Davila", Bucureşti, 2007
Porter, G.A., Skibber, J.M. (2000). Outcomes research in Surgical Oncology. Annals of Surgucal Oncology, 7, 367-375.
Purcărea, V.L. (2010). Marketingul îngrijirilor de sănătate. Manual Universitar, Ediţia a- II-a, Editura Universitară ,,Carol Davila", Bucureşti.
Purcărea, V.L. (2017). Marketingul îngrijirilor de sănătate. Curs universitar, Editura Universitară Carol Davila, București
Radu, A. (2018). Marketingul online în serviciile de sănătate. Editura Universitară Carol Davila, București.
Rădulescu, V. (2008). Marketingul serviciilor de sănătate. Editura Uranus, București
Yin Y, Zeng Y, Chen X, Fan Y. The Internet of Things in healthcare: An overview. J. Ind. Inf. Integr. 2016; 1: 3–13. doi: 10.1016/j.jii.2016.03.00
Zachariae, R. Pedersen, C.G., Jensen, A.B., Ehrnrooth, E. (2003). Association of perceived physician communication style with patient satisfaction, distress, cancer-related self-efficacy, and perceived control over the disease. Br. J. Cancer, 88(5), 658-665.
Zeadally S, Bello O. Harnessing the power of Internet of Things based connectivity to improve healthcare. Internet of Things. 2021; 14: 100074. doi: 10.1016/j.iot.2019.100074
Zeithaml, V., Bitner, M.J., Gremler, D., Mende, M. (2010). Services Marketing: Integrating Customer Focus Across the Firm, 8th Edition, McGraw Hill.