



The Moderating Effect of Empowerment in the Relationship Internet Use in Health and Shared Decision-making between Patient and Doctor

Meryem Zoghlami*, Salma Ayeb, Kaouther Saied Ben Rached

Faculty of Economics and Management of Tunis, University of Tunis El Manar, Business and Research in Marketing (ERMA), Tunisia. *Email: meryem.zoghlami@gmail.com

Received: 15 July 2019

Accepted: 04 August 2019

DOI: <https://doi.org/10.32479/irmm.9012>

ABSTRACT

This paper examines the relationship between patient online health use, empowerment and treatment decision-making. A quantitative survey of 114 patients with chronic diseases highlights the impact of internet use on shared decision-making. The study also examines the moderating effect of patient empowerment. The results indicate that the relationship between online health use and shared decision-making is stronger under a high level of empowerment.

Keywords: Online Health Use, Doctor-patient Relationship, Shared Decision-making, Empowerment

JEL Classifications: I12, M31

1. INTRODUCTION

Health-wise, it should be noted that the treatment and care relationship has changed on several levels (Pellerin, 2002; Pierron, 2007). The “cooperation and advice” approach has begun to lead doctor-patient relationships (Szasz and Hollender, 1956; Kaba and Sooriakumaran, 2007). Now, patients’ position is changing. They are now considered as people in their own right able of making their own choices and aspiring to fruitful exchanges with their doctors (Kaba and Sooriakumaran, 2007; Griffiths et al., 2012). New elements have emerged in the patient-doctor relationship: the demand for patients’ rights, the disappearance of medical paternalism, patients’ growing demand for information, the emergence of patient associations. These elements clearly show that the patient’s opinion is important and should now be taken into account. It is therefore essential to include the patient in the decision-making process, between the medical results and the doctor (Gay and Beaulieu 2004).

Websites that offer patients access to health services (information, advice, appointments, prescriptions for specific well-identified

cases) are interesting innovations (Centola and Rijt, 2014). They contribute to making medicine more interactive. Several studies (Ball and Lillis, 2001; Wald et al. 2007; Erdem and Harrison-Walker, 2006; Shaw et al., 2009; Bartlett and Coulson, 2011) have shown the effect of internet use on how patients manage their health and how they relate to their doctors (Small et al., 2013).

With this patient emancipation movement, the concept of empowerment is gaining momentum. In the social sciences, it consists in “acquiring the strength, confidence and vision to bring about positive changes in people’s lives, under an individual and collective approach” (Eade and Williams, 1995). It is frequently used in the debate linking the health sector to the internet (Chin, 2000; Eysenbach, 2001), and is defined as a process by which people “increase and improve control over their health” (Gibson, 1991; Ouschan et al., 2006).

Like previous research (Cotten and Gupta, 2004; Coulson et al., 2007; De Clercq and Sapienza, 2006; Brodie et al., 2013), which highlighted the impact of empowerment on information sharing

in patient-doctor relationship, we focus on the way this element affects the relationship between online health use and treatment decision-making. Indeed, we believe that patient empowerment eases their ability to use online health services to improve the quality of information exchanged with their doctors to engage in a shared decision-making process.

We believe that highly empowered patients have a strong relationship between online health services use and shared treatment decisions.

Accordingly, we formulate our research problem: How does patient empowerment affect their ability to use online health opportunities in order to take part in the treatment decision?

To answer this research question, we will examine the relationship between internet use and decisions shared by patients and doctors and to assess the moderating role of empowerment in this relationship.

In what follows, we briefly outline the main constructs of our study, our research hypotheses and the model we will test. Then, we present our methodology and the main results. Finally, we outline the theoretical and managerial contributions of our study.

2. THEORY AND RESEARCH HYPOTHESES

2.1. Online Health Use and Shared Decision-making

According to Potter and McKinlay (2005), the surge of medical consumption has reinforced patient position by giving them the right to question their doctor’s opinions and to look for information necessary for an autonomous decision. They dispose of a great deal of control and responsibility to efficiently manage their health (Kaba and Sooriakumaran, 2007). They enquire about their health conditions, analyze and discuss medical diagnosis, show their concerns and express their expectations about and preferences for treatment (Street Jr. et al., 2005). Nowadays, medicine has to opt for a cooperation-based approach that encourages mutual involvement, respect and shared decisions with each patient (Kaba and Sooriakumaran, 2007).

Moreover, the patient-doctor relationship has long been dominated by the doctor. Doctors were considered as health experts. Patients, submitted to the rules of this relationship and play successfully the “role of patient” (Dickerson and Brennan, 2002), often call for the opinions of the medical staff because they lack the knowledge and aptitude needed to take the appropriate decisions.

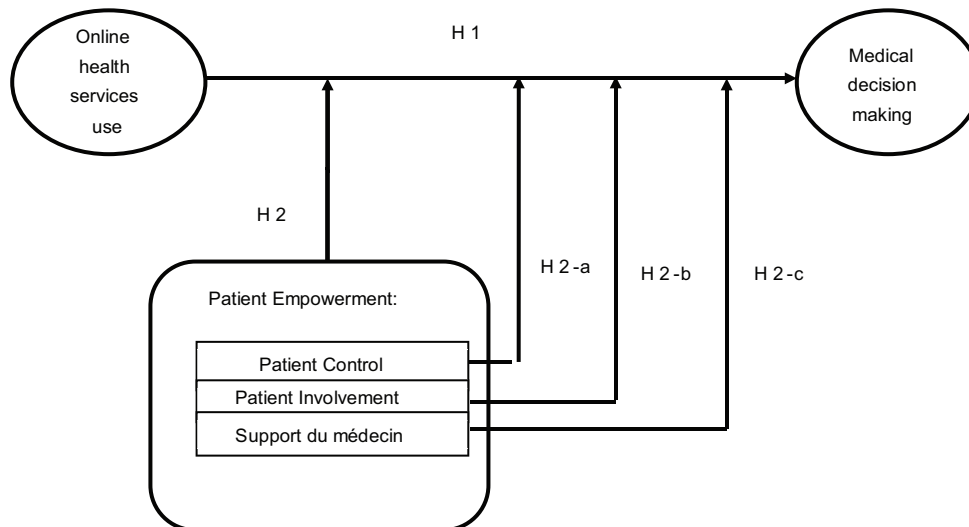
Accordingly, integrating the web into the doctor-patient relationship favors the conception of new cooperative models. New advantages will be offered both for patients and doctors: Better communication, free access to information, patient’s participation in the decision-making process (Jiang et al., 2015). Then, internet advances in health services and the emergence of informed patients favored the change in health services provision. Aspiring to become partners in the treatment of their own health conditions and to profit from online tools – health portals, doctor websites and emails, these new “health consumer” patients have become progressively and actively involved.

Therefore, professionals started to adjust themselves to the needs of these new patients, who have become more informed and receptive of information, making them more responsible. Internet favors also consumer power by allowing them to express and spread their opinions, negative or positive, to a large number of people (Labrecque et al., 2013).

In this paper, online health services use refers to patient use of the different health services available online (Mukherjee and McGinnis, 2007). These include different tools: health websites (research papers on diseases and specific treatments), online patient communities or forums, online discussions between doctors and patients, and personal health data management.

The impact of using internet on the patient-doctor relationship has been largely studied by the literature on patient behavior (Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Li et al., 2009; De Clercq et al., 2010). According to Leaffer and Gonda (2000), most patients who looked for online information and consulted with their doctors are more satisfied with their

Figure 1: Conceptual model



treatments. Indeed, acquiring this information through internet allows for administering treatments in line with patients' preferences (Stevenson et al., 2000). This would reinforce patients' satisfaction with the administered treatment (Wilkins, 1999), and taken decisions (Holmes-Rovner and Rovner, 2001), the medical visit in general and the treating doctor (Khechine et al., 2006). Then, medicine has adopted the "shared" decisions model which essentially rests on: a bilateral information exchange, doctor knowledge transfer to patient and patient preferences transfer to doctor, interaction between patient and doctor in taking therapeutic decisions (Batifoulier et al., 2006).

Indeed, the shared decision-making model is a mechanism that allows for reducing doctor information and power asymmetry, by increasing patient information, autonomy and/or control of treatment decisions that may affect their well-being (Emanuel and Emanuel, 1992). It is a collaboration process involving patients and doctors that enables them to take joint decisions, taking into account, on the one hand, the best available medical data and recent research and evidence, and on the other hand, values, experience and experience of patients. This process offers patients the support they need to take the best decisions in terms of customized treatment, while making doctors feel confident in the treatments they administer.

As for patients, shared decision-taking refers to "the willingness to participate in the decision process and take responsibility of expressing preferences, raising questions, assessing treatment alternatives and formulate a preference for treatment" (Stevenson et al., 2000). Then, use of online health services, whether for the purpose of acquiring information (exchange of or looking for medical information) or sharing personal experiences between patients, may directly affect the patient-doctor relationship (Coulson et al., 2007; Ommen et al., 2008). Using internet, patients gain a form of medical expertise that makes them eager to be involved in consultations and ask for more control. They become more powerful and independent. This new profile of patients wish to develop and maintain sustainable relationships with the doctor through a complete collaboration between parties (Van der Eijk et al., 2013).

Likewise, a partnership relationship between doctor and patient allows for gaining time and resources, giving patients perspective even answers to matters that need visiting the doctor (McMullan, 2006; Erdem and Harrison-Walker, 2006).

Hence, we formulate the following hypothesis:

H₁: Use of online health services by patients positively affects shared decision-taking on treatments.

2.2. The Moderating Role of Empowerment

Many studies found that the impact of empowerment strategies of patients on health is seen in different ways (Wallerstein, 2006):

- In a direct way, it improves efficiency of individual decision-making, management of disease complication and the adoption of health-promoting behavior (Lorig et al., 2003; 2001; Tsay and Hung, 2004).
- In an indirect way, thanks to support groups and health awareness initiatives, there is an increasing satisfaction with

the patient-doctor relationships, as well as a better access and an efficient and less frequent use of health services (Lorig et al., 2003; 2001; Endicott et al., 2003), higher personal education standards (Collins et al., 1998) and better health conditions (Melnyk et al., 2004).

The "patient" approach is a major challenge for modern medicine, as it diminishes recourse to medical resources, reinforces communication between doctor and patient and favors commitment to treatments (Van der Eijk et al., 2013). Following this new conception of patient role, doctors had therefore to look for reasons of patient visit, understand and determine the patient's environment and reach a consensus on a possible solution (Griffiths et al., 2012). Moreover, they should maintain and preserve relationship quality and in particular encourage their patients to adopt health good practices. This way, they encourage them to look for information and participate in discussing medical consultation data (Griffiths et al., 2012).

Ouschan et al. (2006) believe that empowerment can be approached through three dimensions. The first dimension refers to patient control and denotes the patient's psychosocial acceptance of the disease, their willingness, abilities and control towards symptoms, disease progress and treatment procedure (Ouschan et al., 2006). Indeed, it's control of situation, among others, that matters while managing efficiently the symptoms. According to Korp (2006), patient's online access to information and knowledge may have a significant impact on the way they live the disease and their autonomy.

The second dimension is patient involvement, expressed in their behavior during medical consultation. It denotes their attitudes towards medical decisions taken during consultation and the way they react to influence those decisions (Ouschan et al., 2006). This dimension reports to involving patients in decision-making about the treatment. This involvement is founded in the interactions between patient and doctor, in which the patient looks for and provides information to ease the diagnosis process, expressing their preferences for treatments and contributing to choosing the alternative, most adequate to their convictions (Ouschan et al., 2006).

Finally, the last dimension is doctor support which denotes the help offered by the doctor to their patients in view of promoting some competencies through education, self-knowledge and emotional support (Ouschan et al., 2006). According to Lemire et al. (2008), "doctors find themselves in the business of treating individuals able to take the best decisions, to better understand medical data and finally to better commit to treatments." They will be more receptive and available to answer very specific questions and to explain the relevance of the treatment they expect (Lemire et al., 2008). Indeed, information offered online allow internet users to have access to more diversified and richer information than consultations with the doctor. The doctor may find themselves then with a more informed patient or one who perceives themselves more informed (Shaw and Baker, 2004; Ziebland, 2004; Henwood et al., 2003; Hogg et al., 2003).

Indeed, as long as patients use internet, they will be educated and become more fit to assess information (Sillence et al., 2007). For

patients with chronic diseases, their informed behavior allows them to participate actively in managing their health. Many have opted for this type of auto-management by taking the initiative to improve their health and well-being (Small et al., 2013). Today, patient control, involvement and competence are reconsidered by medical staff. According to Kaba and Sooriakumaran (2007), these variables may play an important role in the relationship between patients and doctors, thus allocating new responsibilities for each party. Similarly, De Clercq and Sapienza, (2006) believe that the advantages of sharing information in an organization, in terms of both volume and quality, may be reinforced. Then, we assume that patient's ability to efficiently use online health services will normally lead to active involvement in decision-making, reflected in a more control over the disease, more cooperation during medical consultation and more help and support from the treating doctor. Accordingly, an efficient use of online medical resources may result in a better harmony between doctor and patient and a shared decision-making.

Bearing on the idea that using available online health resources in the patient-doctor relationship may be reinforced by patient involvement and control and doctor support. Our second hypothesis then runs as follows:

H₂: Patient empowerment affects the relationship between internet use and shared decision-making.

H_{2a}: Patient control affects the relationship between internet use and shared decision-making.

H_{2b}: Patient involvement affects the relationship between internet use and shared decision-making.

H_{2c}: Doctor support affects the relationship between internet use and shared decision-making.

The model of the to-be-tested relationships is as follows in Figure 1.

3. METHODOLOGY

In this section, we present our research methodology in terms of sample, questionnaire and analysis method.

3.1. The Sample

The aim of this study is to determine the nature and specificity of the relationship between internet use and shared decision-making and to test the moderating role in this relationship. To test our model, we conducted a face-to-face survey of 114 Tunisian patients with a chronic disease to doctors specializing in pulmonology, endocrinology and cardiology. The selected sample is obtained through a non-probabilistic sampling method.

The final sample consists of 114 patients with chronic diseases. Most of the respondents are females (60.5%), with higher education level (50.9%). Age of respondents range between 20 and 29 years and over 40 years.

Table 1 below presents the descriptive statistics of our sample.

3.2. Measurement Scales

To measure our variables, we used a 5-point Likert scale ranging from (1) Strongly disagree to (5) Strongly agree. These scales were selected because of their psychometric quality and validity.

Table 1: Descriptive statistics

Gender (%)	
Male	39.5
Female	60.5
Age (%)	
<20 years	15.8
20–29 years	26.3
30–39 years	20.2
>40 years	37.7
Type of chronic diseases (%)	
Diabetes	41
Asthma	34.5
Cardiovascular	24.5
Education (%)	
Primary	17.5
Secondary	31.6
University	50.9

Internet use scale is taken from Khechine et al. (2006). This scale consists of 7 items. To measure decision-making, we used the scale of O'Conner (1995), translated by Legaré et al. (2008). This scale consists of 12 items. Empowerment is measured by Ouschan et al.'s three-dimension scale (2006): Patient control, patient involvement and doctor support. Each dimension is operationalized by 3 items.

To determine the relationships between our items, we used a principal components analysis (PCA) with a varimax rotation. PCA aims essentially at looking into the dimensionality of the studied constructs (Evrard et al., 2003; Malhotra et al., 2004), a necessary stage before proceeding to the reliability and validity analysis of the measurement scales (Evrard et al., 2003; Malhotra, 2004).

Dimensions of empowerment show satisfactory coefficients (Cronbach's Alpha is >0,8 for each dimension), with Bartlett's sphericity coefficient, significant at = (0.000). Internet use and decision-making scales are unidimensional in line with the literature. Then, we can conclude that the two constructs show good reliability estimates (0,871 and 0,921) and Kaiser-Meier-Olkin indices are significant (0,771 and 0,815).

3.3. Data Analysis

To validate our research hypotheses, we opted structural equation modeling. We used the partial least square (PLS) technique, as it allows for testing complex models with relatively small sample sizes (Cassell et al., 2000). This method is used when data is not normally distributed because of heterogeneity problems (Streukens et al., 2010).

4. RESULTS

We then performed a confirmatory factor analysis to assess the quality of our research model, followed by an assessment of the structural model and a test of our research hypotheses.

Reliability of the scales is examined by looking into the factor loadings of the measures on the studied constructs (Fernandes, 2012). Loadings should be above 0,6 for exploratory studies and 0,7 for confirmatory studies (Chin, 1998). The obtained

loadings are satisfactory (between 0,61 and 0,94), except for some items: the decision-making items: DES5,6,7,8,9,10,11,12 (Table 2).

After purifying the scales, we proceeded to a confirmatory factor analysis using the PLS. The obtained factor loadings of this confirmatory stage show acceptable coefficients (between 0,61 and 0,94).

4.1. Convergent Validity of the Measurement Scales

For all constructs, validity is confirmed, as Joreskog's ρ is above the recommended threshold of 0,6 (Hair et al., 2014). The convergent validity of the model is confirmed as average variance extracted (AVE) is above the recommended threshold of 0,5 (Fornell and Larcker, 1981). Moreover, unidimensionality and reliability of each construct is validated by high alpha coefficients.

Table 2: Factor loadings

Construct	Items	Loading
Internet use	UI1	0,8064
	UI2	0,7729
	UI3	0,1171
	UI4	0,1152
	UI5	0,0276
	UI6	0,7068
	UI7	0,7305
Decision-making	DES1	0,6168
	DES2	0,1685
	DES3	0,0903
	DES4	0,1299
	DES5	0,8819
	DES6	0,8940
	DES7	0,9204
	DES8	0,0549
	DES9	0,4259
	DES10	0,2351
	DES11	0,4534
Empowerment	CTRL1	0,9318
	CTRL2	0,9106
	CTRL3	0,9297
	PP1	0,9085
	PP2	0,8625
	PP3	0,1074
	SPM1	0,8752
	SPM2	0,9390
SPM3	0,9405	

Table 3: Convergent validity of constructs

Constructs	Average variance extracted	CR	Alpha cronbach	Communality
Internet use	0,5673	0,8394	0,7520	0,5673
Decision-making	0,7220	0,9108	0,8677	0,7220
Patient control	0,8540	0,9461	0,9148	0,8540
Patient involvement	0,9024	0,9486	0,9171	0,9024
Doctor support	0,8440	0,9419	0,8440	0,8440

Table 4: Discriminant validity estimates

	Decision-making	Internet use	Patient control	Patient involvement	Doctor support
Decision-making	1,000				
Internet use	0,6917	1,000			
Patient control	0,5451	0,7577	1,000		
Patient involvement	0,1607	0,1699	0,2577	1,000	
Doctor support	0,9866	0,6453	0,5427	0,1647	1,000

The results of the confirmatory analysis is reported in Table 3.

4.2. Discriminant Validity

Hair et al. (2014) propose that discriminant validity is ensured when the variance shared between the latent constructs is inferior to variance shared by one construct and its dimensions (measure by the square root of AVE). We found similar estimates, leading us to conclude that the discriminant validity estimates of our constructs are satisfactory, in line with the criteria of Fornell and Larcker (1981). Table 4 below presents the discriminant validity estimates of our constructs.

4.3. Hypotheses Testing

This phase is important to our study. It will allow us to validate each of our research hypotheses. Table 5 below presents hypotheses testing results.

Hypothesis 1: This hypothesis assumes that internet use positively affects decision-making. This relationship is significant ($\beta = 0,387$, $t = 1,6764 > 1,64$ at the 10% level). Then, the hypothesis is retained.

Hypothesis 2: This hypothesis assumes that empowerment moderates the relationship between internet use and decision-making. The results indicate a significant effect. On the one hand, we found that the interaction between patient control and internet use positively affects decision-making ($B = 0,7822$, $t = 1,7234 > 1,64$ at the 10% level). Then, hypothesis 2 is retained.

On the other hand, the results indicate that the interaction between patient involvement and internet use and doctor support and internet use positively affects decision-making ($B = 0,1197$; $t = 1,7458$) and ($B = 0,8788$; $t = 2,2457$). This finding allows us to retain these two hypotheses.

5. DISCUSSION AND CONCLUSION

5.1. Theoretical Contributions

Reconsidering internet as a health consultancy tool increases the opportunities to patients to actively engage in their own treatment and care (Lovich et al., 2001). This study allowed us to better understand "connected patient" behavior by examining the relationship between online health services use and decision-making. Then, the study of this relationship highlighted

Table 5: Hypotheses testing results

H	Hypothesis	B	t-value	Accepting/Rejecting hypothesis
H ₁	UIS ->PD	0,387	1,6764	Accepted
H _{2,1}	UIS*Ctrl -> PD	0,7822	1,7234	Accepted
H _{2,2}	UIS*PP -> PD	0,1191	1,7458	Accepted
H _{2,3}	UIS*spm -> PD	0,8788	2,2457	Accepted

the new position of the patient in the decision-making process and the medical treatment system.

Our results indicate that doctors have to change their approach with patients offering them the necessary information about the expected treatment (Kenny et al., 2010) and guiding them towards the best medical information sources. Offering patients a continuous support, whether written or oral, becomes a need for a better management of the relationship (Rozmovits and Ziebland, 2004). Doctors have become real partners, empathetic and friendly with their patients (Kaba and Sooriakunaran, 2007; Griffiths et al., 2012).

Moreover, the studied relationships and the obtained results may be considered a step towards the study of the moderating role of empowerment in the relationship between online health services use and decision-making. The strength of this relationship is likely to vary depending on patient empowerment level (Laschinger et al., 2004). Indeed, shared decision-making on medical diagnosis is not the simple result of an adequate internet use, but of personal attributes like patient control and involvement and doctor support. Then, some people are likely to be more involved, more cooperative in the patient-doctor relationship (Eby et Dobbins, 1997).

Moreover, our results indicate that in order to adopt the shared decision-making model, doctor and patient should cooperate in a high technological context. Accessing a reliable and exhaustive information, the patient should express willingness to participate in the decision-making process and assume the responsibility to express their preferences, ask questions and assess treatment alternatives (Stevenson et al., 2000). However, doctors should be ready to share their knowledge and take into account patient knowledge, their values, representations of their health or the disease.

5.2. Managerial Implications

Practically-speaking, this study showed that patients, consumers of online health services represent a challenge for professional who need to improve their service quality and be as informed as their patients (Green, 2000).

It is important to consider patient control and involvement to increase the use of online health services. This depends on creating reliable and secure medical website, providing quality content, promoting doctor cooperation, encouraging exchange and mutual support. Then, website developer and health professionals have action plans to work on to promote online health platforms.

In Tunisia, in spite of a substantial effort to develop new information and communication technologies, internet use for

health purposes remains limited. Using online health services, medical staff may succeed in meeting the specific and immediate needs of many patients and responding to a strong and unique social effort, which represents an important competitive move.

For internet use to be efficient and leads to a shared decision-making, Tunisian doctors should behave proactively. Indeed, they should show some concern with the physical and psychosocial needs of patients. They should express their willingness and predisposition to set up a partnership with their patients. Finally, it is necessary for them to encourage and facilitate patient involvement in the decision-making process (Arora and McHorney, 2000; Shaw et al., 2009; Lee and Lin, 2011; Van der Eijk et al., 2013). Future research can determine the specific patient profile who uses internet for health purposes (High or low empowerment).

Nevertheless, our study is not without limitations, which we present as future research alternatives. As we did not consider the variables age, gender and education in our model, it would be interesting for future research to include these variables and examine their effect on the medical decision-making process.

REFERENCES

- Arora, N., McHorney, C. (2000), Patient preferences for medical decision making. *Medical Care*, 38(3), 335-341.
- Ball, M.J., Lillis, J. (2001), E-health: Transforming the physician/patient relationship. *International Journal of Medical Informatics*, 61(1), 1-10.
- Batifoulie, P., Biencourt, O., Gadreau, M. (2006), La politique économique de santé et l'émergence d'un consommateur de soins: La construction d'un marché. *Journées des économistes de la santé Français*, 28, 23-24.
- Bartlett, K., Coulson, N.S. (2011), An investigation into the empowerment effects of using online support groups and how this affects health professional/patient counseling. *Patient Education and Counseling*, 83(1), 113-119.
- Brodie, R.J., Hollebeek, L.D., Juric, B., Llic, A. (2013), Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research*, 17(1), 1-20.
- Cassell, J., Bickmore, T., Campbell, L., Vilhjálmsón, H., Yan, H. (2000), Human conversation as a system framework: Designing embodied conversational agents. In: Cassell, D.J., Sullivan, J., Churchill, E., Prevost, S., editors. *Embodied Conversational Agents*. Cambridge: MIT Press. p29-63.
- Centola, D., Rijt, A. (2014), Choosing your network: Social preferences in an online health community. *Social Science and Medicine*, 30, 1-13.
- Chin, W. (2000), Partial Least Square for Researchers: A Overview and Presentation of Recent Advances Using the PLS Approach. Available from: <http://www.discnt.cba.uh.edu/chin/indx.html>.
- Chin, W.W. (1998), The partial least squares approach for structural equation modeling. In: Marcoulides, G.A., editor. *Modern Methods for Business Research*. London: Lawrence Erlbaum Associates. p295-336.
- Collins, M.E., Bybee, D., Mowbray, C.T. (1998), Effectiveness of supported education for individuals with psychiatric disabilities: Results from an experimental study. *Community Mental Health Journal*, 34(6), 595-613.
- Cotten, S., Gupta, S. (2004), Characteristics of online and offline health information seekers and factors that discriminate between them. *Social Science and Medicine*, 59(9), 1795-1806.

- Coulson, N., Buchanan, H., Aubeeluck, A. (2007), Social support in cyberspace: A content analysis of communication within a Huntington's disease online support group. *Patient Education and Counseling*, 68, 173-178.
- De Clercq, D., Dimalov, D., Thongpapanl, T. (2010), The moderating impact of internal social exchange processes on the entrepreneurial orientation-performance relationship. *Journal of Business Venturing*, 25(1), 87-103.
- De Clercq, D., Sapienza, H.J. (2006), Effects of relational capital and commitment on venture capitalists' perception of portfolio company performance. *Journal of Business Venturing*, 21(3), 326-347.
- Dickerson, S.S., Brennan, P.F. (2002), The internet as a catalyst for shifting power in provider-patient relationships. *Nursing Outlook*, 50(5), 195-203.
- Eade, D., Williams, S. (1995), *The Oxfam Handbook of Development and Relief*. Oxford: Oxfam.
- Eby, L.T., Dobbins, G.H. (1997), Collectivistic orientation in teams: An individual and group-level analysis. *Journal of Organizational Behavior*, 18, 275-295.
- Emanuel, E.J., Emanuel, L.L. (1992), Four models of the physician-patient relationship. *The Journal of the American Medical Association*, 267, 2221-2226.
- Endicott, L., Corsello, P., Prinzi, M., Tinkelman, D.G., Schwartz, A. (2003), Operating a sustainable disease management program for chronic obstructive pulmonary disease. *Lippincott's Case Management*, 8(6), 252-262; quiz 263-264.
- Erdem, S.A., Harrison-Walker, J.H. (2006), The role of the internet in physician-patient relationships: The issue of trust. *Business Horizons*, 49(5), 387-393.
- Evrard, Y., Pras B., Roux, E. (2003), *Market Etudes et Recherches en Marketing*. 3th ed. Paris: Dunod.
- Eysenbach, G. (2001), What is e-health. *Journal of Medical Internet Research*, 3, 2-20.
- Fernandes, V. (2012), En quoi l'approche PLS est-elle une method a (re)-découvrir pour les chercheurs en management. *Management*, 15(1), 102-123.
- Fornell, C., Larcker, D.F. (1981), Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(3), 39-50.
- Gay, B., Beaulieu, M.D. (2004), La médecine basée sur les données probantes ou médecine fondée sur des niveaux de preuve: De la pratique à l'enseignement. *Pédagogie Médicale*, 5, 171-183.
- Gibson, C. (1991), A concept analysis of patient empowerment. *Journal of Advanced Nursing*, 16, 354-361.
- Griffiths, F., Cave, J., Boardman, F., Ren, J., Pawlikowska, T., Bail, R., Clarke, A., Cohen, A. (2012), Social networks the future for health care delivery. *Social Science and Medicine*, 75, 2233-2241.
- Green, G., Grimsley, M., Suokas, A., Prescott, M., Jowitt, T., Linacre, R. (2000), *Social Capital, Health and Economy in South Yorkshire Coalfield Communities*. United Kingdom: Centre for Regional Economic and Social Research.
- Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M. (2014), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: SAGE Publications, Library of Congress Cataloging-in-Publication Data.
- Henwood, F., Wyatt, S., Hart, A., Smith, J. (2003), Ignorance is bliss sometimes: Constraints on the emergence of the "informed patient" in the changing landscapes of health information. *Sociology of Health and Illness*, 25(6), 589-607.
- Hogg, G., Laing, A.W., Winkelman, D. (2003), The internet empowered consumer: The professional service encounter in the age of the internet. *Journal of Services Marketing*, 17(5), 476-494.
- Holmes-Rovner, M., Rovner, D.R. (2001), Measuring improved patient choice. *Journal of Evaluation in Clinical Practice*, 6(3), 263-272.
- Jiang, Y., Xu, Z., Gao, M. (2015), Methods for ranking intuitionistic multiplicative numbers by distance measures in decision making. *Computers and Industrial Engineering*, 88, 100-109.
- Kaba, R., Sooriakumaran, P. (2007), The evolution of doctor-patient relationship. *International Journal of Surgery*, 5, 57-65.
- Kenny, D., Veldhuijzen, W., Van der Weijden, T., LeBlanc, A., Lockyer, J., Légruë, F. (2010), Interpersonal perception in the context of doctor-patient relationships: A dyadic analysis of doctor-patient communication. *Social Science and Medicine*, 70, 763-768.
- Khechine, H., Pascot, D., Prémont, P. (2006), Le rôle de l'information sur Internet dans la consommation médicale: Le cas des patients canadiens francophones et anglophones. *Systèmes d'Information et Management*, 11(3), 1-10.
- Korp, P. (2006), Health on the Internet: Implication for health promotion. *Health Education Research*, 21(1), 78-86.
- Labrecque, L.I., Esche, J.V., Mathwick, C., Novak, T.P., Hofacker, C.F. (2013), Consumer power: Evolution in the digital age. *Journal of Interactive Marketing*, 27, 257-269.
- Laschinger, S., Finegan, J.E., Shamian, J., Wilk, P. (2004), A longitudinal analysis of the impact of workplace empowerment on work satisfaction. *Journal of Organizational Behavior*, 25, 527-545.
- Lee, W.I., Lin, C.H. (2011), Consumer hierarchical value map modeling in the healthcare service industry. *African Journal of Business Management*, 5(3), 722-736.
- Leaffer, T., Gonda, B. (2000), The internet: An underutilized tool in patient education. *Computers in Nursing*, 18(1), 47-52.
- Légaré, F., Ratte, S., Gravel, K., Graham, I.D. (2008), Barriers and facilitators to implementing shared decision-making in clinical practice: Update of a systematic review of health professionals' perceptions. *Patient Education and Counseling*, 73, 526-535.
- Lemire, M., Sicotte, M., Paré, G. (2008), Internet use and the logics of personal empowerment in health. *Health Policy*, 88(1), 130-140.
- Li, Y.H., Huang, J.W., Tsai, M.T. (2009), Entrepreneurial orientation and firm performance: The role of knowledge creation process. *Industrial Marketing Management*, 38, 440-449.
- Lorig, K.R., Ritter, P.L., Gonzalez, V.M. (2003), Hispanic chronic disease self-management: A randomized community-based outcome trial. *Nursing Research*, 52(6), 361-369.
- Lorig, K.R., Sobel, D.S., Ritter, P.L., Laurent, D., Hobbs, M. (2001), Effect of a self-management program on patients with chronic disease. *Effective Clinical Practice*, 4, 256-262.
- Lumpkin, T., Dess, G. (2001), Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing*, 16(5), 429-451.
- Lovich, D., Silverstein, M.B., Lesser, R. (2001), *Vital Signs: The Impact of e-health on Patients and Physicians. A Report on the US Market*. Boston: Boston Consulting Group.
- Malhotra, N., Décaudin, J.M., Bouguerra, A. (2007), *Etudes Marketing Avec SPSS*. 5th éd. France: Pearson Education.
- McMullan, M. (2006), Patients using the internet to obtain health information: How this affects the patient-health professional relationship. *Patient Education and Counseling*, 63, 24-28.
- Melnik, B.M., Alpert-Gillis, L., Feinstein, N.F., Crean, H.F., Johnson, J., Fairbanks, E., Small, L., Rubenstein, J., Slota, M., Corbo-Richert, B. (2004), Creating opportunities for parent empowerment program effects on the mental health/coping outcomes of critically ill young children and their mothers. *Pediatrics*, 113(6), e597-e607.
- Mukherjee, A., McGinnis, J. (2007), E-Healthcare: An analysis of key themes in research. *International Journal of Pharmaceutical and Healthcare Marketing*, 1, 349-363.
- O'Conner, A.M. (1995), Validation of a decisional conflict scale. *Medical Decision Making*, 15(1), 25-30.
- Ommen, O., Janssen, C., Neugebauer, E., Bouillon, B., Rehm, K., Rangger, C., Eri, H.J., Pfaff, H. (2008), Trust, social support and patient type associations between patients perceived trust, supportive

- communication and patients preferences in regard to paternalism, clarification and participation of severely injured patients. *Patient Education and Counseling*, 73, 196-204.
- Ouschan, R., Sweeney, J., Jolmsen, L. (2006), Customer empowerment and relationship outcomes in healthcare consultations. *European Journal of Marketing*, 40(9/10), 1068-1086.
- Pellerin, D. (2002), La médecine de demain: Consumérisme ou humanisme? *Problèmes Economiques*, 2750, 1.
- Pierron, J.P. (2007), Une nouvelle figure du patient? Les transformations contemporaines de la relation de soins. *Sciences Sociales et Santé*, 25(2), 43.
- Potter, S., McKinlay, J. (2005), From a relationship to encounter: An examination of longitudinal and lateral dimensions. *Social Science and Medicine*, 61, 465-479.
- Rozmovits, L., Ziebland, S. (2004), What do patients with prostate or breast cancer want from an internet site? A qualitative study of information needs. *Patient Education and Counseling*, 53, 57-64.
- Shaw, A.T., Yeap, B.Y., Mino-Kenudson, M., Digumarthy, S.R., Costa, D.B., Heist, R.S., Solomon, B., Stubbs, H., Admane, S., McDermott, U., Settleman, J., Kobayashi, S., Mark, E.J., Rodig, S.J., Chirieac, L.R., Kwak, E.L., Lynch, T.J., Iafrate, A.J. (2009), Clinical features and outcome of patients with non-small-cell lung cancer who harbor EML4-ALK. *Journal of Clinical Oncology*, 27(26), 4247-4245.
- Shaw, J., Baker, M. (2004), Expert patient: Dream or nightmare? *British Medical Journal*, 328, 723-724.
- Sillence, E., Briggs, P., Harris, P.R., Fishwick, L. (2007), How do patients evaluate and make use of online health information? *Social Science and Medicine*, 64(9), 1853-1862.
- Small, N., Bower, P., Chew-Graham, C., Whalley, D., Protheroe, J. (2013), Patient empowerment in long-term conditions: Development and preliminary testing of a new measure. *BMC Health Services Research*, 13(263), 1-15.
- Stevenson, F.A., Christine, A.B., Nicky, B., Nick, B., Colin, P.B. (2000), Doctor-patient communication about drugs: The evidence for shared decision making. *Social Science and Medicine*, 50, 829-840.
- Street, R. Jr., Gordon, H., Ward, M., Krupat, E., Kravitz, R. (2005), Patient participation in medical consultation: Why some patients are more involved than others. *Medical Care*, 43(10), 960-968.
- Streukens, S., Wetzeles, M., Daryanto, A., De Ruyter, K. (2010), Analyzing factorial experimental data using PLS: An alternative approach and application in an online complaining context. In: Esposito-Vinzi, D.V., Chin, W., Henseler, J., Wand, H., editors. *Handbook of Partial Least Squares: Concept, Methods and Applications*. Berlin: Springer.
- Szasz, T., Hollender, M. (1956), A contribution to the philosophy of medicine: The basic model of the doctor-patient relationship. *JAMA Internal Medicine*, 97, 585-592.
- Tsay, S.L., Hung, L.O. (2004), Empowerment of patients with end-stage renal disease a randomized controlled trial. *International Journal of Nursing Studies*, 41(1), 59-65.
- Van der Eijk, M., Faber, M.J., Aarts, J.W., Kremer, J.A., Munneke, M., Bloem, B.R. (2013), Using online health communities to deliver patient-centered care to people with chronic conditions. *Journal of Medical Internet Research*, 15(6), 115-123.
- Wald, H.S., Dube, C.E., Anthony, D.C. (2007), Untangling the web: The impact of Internet use on health care and the physician patient relationship. *Patient Education and Counseling*, 68, 218-224.
- Wallerstein, N. (2006), *What is the Evidence on Effectiveness of Empowerment to Improve Health?* Copenhagen: WHO Regional Office for Europe, Health Evidence Network Report.
- Wiklund, J., Shepherd, D. (2005), Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing*, 20(1), 71-89.
- Wilkins, A.S. (1999), Expanding internet access for health care consumers. *Health Care Management Review*, 24, 30-41.
- Ziebland, S. (2004), The importance of being expert: The quest for cancer information on the internet. *Social Science and Medicine*, 59(9), 1783-1793.