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Prof. Mohamed Labib Salem, PhD

### **Factors Affecting Shared Decision-Making in Breast Cancer Surgeries: Egyptian Perspective**

Khaled Abdelwahab, Nashwa Ibrahim, Omar Hamdy, Ahmed  
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## **Welcome letter from Editor-in-Chief**



Welcome to the Int J Cancer and Biomedical Research (IJCBR)!

It is with great pleasure that I write this editorial to welcome you to the IJCBR. This journal provides a platform for publication of original and reviews research articles, short communications, letter to editor, thesis abstract, conference report, and case studies. These types of publication are directed at the interface of the fields of cancer and biomedical research.

The IJCBR relies on a distinguished expert of the Advisory and Editorial Board Members from the top international league covering in depth the related topics. They timely review all manuscripts and maintain highest standards of quality and scientific methodology and ethical concepts. Meanwhile, we take all possible means to keep the time of the publication process as short as possible.

I take this chance to welcome your contributions to the IJCBR and have every expectation that it will soon become one of the most respected journals in both the fields of cancer and biomedical research.

A handwritten signature in blue ink that reads "Mohamed L. Salem". The signature is fluid and cursive.

**Mohamed L. Salem,**

Editor in Chief

## Factors Affecting Shared Decision-Making in Breast Cancer Surgeries: Egyptian Perspective

Khaled Abdelwahab<sup>1</sup>, Nashwa Ibrahim<sup>2</sup>, Omar Hamdy<sup>1</sup>, Ahmed Abdallah<sup>1</sup>, Amir M Zaid<sup>1</sup> and Mosab Shetiwy<sup>1</sup>

<sup>1</sup>*Surgical Oncology Unit, Mansoura Oncology Centre, Faculty of Medicine, Mansoura University, Egypt.*

<sup>2</sup>*Psychiatric and Mental Health Nursing Department, Faculty of Nursing, Mansoura University, Egypt.*

### ABSTRACT

**Background:** Shared decision-making in breast cancer surgeries constitutes interplay between clinicians, patients and family members. More involvement in the decision-making process is associated with high patient satisfaction and better treatment outcomes. **Aim:** The present study aims to develop the first Arabic questionnaire assessing factors affecting patients' involvement in the decision-making of breast cancer surgeries. **Methods:** A total number of 183 female diagnosed with breast cancer were recruited to participate in the current study. **Results:** The results revealed that the majority of the current sample were informed about treatment and surgical options available for them. Almost 60% of women in the current study reported that being married would affect their decision-making process. More than half of the sample reported that their husband opinion matters when it comes to surgical decision making. If breast reconstruction was an available option for women, approximately 57.9% of them would not prefer it. Nearly three quarters of surgeon participants in the current study reported the need for decisional aids to facilitate engagement of the patients in the decision-making process. additionally, 66.7% of surgeons reported that patients' comorbidity profile affects engaging them in surgical decision-making. **Conclusion:** We could conclude that marital status, patients' comorbidity profile, partners' opinion, and the cost of the surgical intervention, age, the social status of the patient, and stage of illness are among the factors that affect shared decision-making.

**Keywords:** Breast Cancer Surgeries, Decisional Aids, Shared Decision-Making, Patients' Engagement.

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#### Correspondence to:

Dr **Khaled Abdelwahab**, PhD  
Surgical Oncology Unit,  
Mansoura Oncology Centre,  
Faculty of Nursing, Mansoura  
University, Egypt  
Tel.: 01001527035  
Email: khaled14eg@hotmail.com

### BACKGROUND

Surgical options for women diagnosed with breast cancer vary from breast-conserving to more aggressive modified radical mastectomy (Lantz et al., 2005). When two or more medically justified treatment options exist, preference-sensitive care should emerge to incorporate sensitively patients' preference to multiple treatment options (Ostermann et al., 2019). Shared decision-making (SDM) involves exchanging information among health care providers, patients, and their family members through an interactive process to enable a shared process to happen (Spatz et al., 2017).

Shared decision-making sheds the light on the over-implementation, under-implementation, and misuse of health care interventions

(Coulter, 2017). Additionally, cost-effectiveness and improved patients' outcomes were associated with SDM (Müller et al., 2019). A systematic review by Joosten et al. (2008) was investigating the impact SDM on patient satisfaction, treatment adherence, and health status. Results of this systematic review reported that shared decision-making is particularly beneficial in the context of chronic illness, long-term decision, and reaching treatment agreement (Joosten et al., 2008).

Egypt enjoys a particular cultural context that affects the SDM process; one of the considerations facing women undergoing breast cancer surgeries in Egypt is their perception of the impact of the surgery on their body image, femininity, and sexuality (Mortada

et al., 2018). Additionally, women in Egypt usually perceive breast cancer diagnosis as a major threat to their lives (Alagizy et al., 2020). Another essential factor that affects the SDM process is the partner's role in the decision-making process. Research reported that male partners of women diagnosed with breast cancer are admitted to hospitals for depression and anxiety (El-Hadidy et al., 2012). Egypt is categorized among "literacy deprived countries" where illiteracy is more prevalent in rural than urban areas. Women constitute nearly 69% of illiteracy rate in Egypt (Sywelem, 2015). According to Davis et al. (2002), illiterate patients have greater complexity in understanding treatment options as well as difficulty in making appropriate health decisions (Davis et al., 2002). Health policies and research that promote adoption of SDM in health care systems will in return improve the quality and cost of care (Légaré & Witteman, 2013). In order to capture factors affecting SDM in breast cancer surgeries, we searched for a questionnaire in Arabic language addressing these factors. However, we could not find an existing questionnaire serving this purpose.

The current study aims to develop questionnaire assessing factors affecting engagement of Egyptian female patients in the decision-making of breast cancer surgeries and assess factors affecting engagement of the Egyptian female patients in the decision-making of breast cancer surgeries using the developed questionnaire

## **METHODS**

Ethical and administrative approvals were obtained prior to commencing with the current study.

### **1. To achieve the first aim of the current study (questionnaire development)**

#### **A. Conceptualization phase**

The aim of this stage is to establish domains of the questionnaire (Rattray & Jones, 2007). Three focus groups (five participants in each) with women admitted for breast cancer surgeries were conducted to generate items and domains of the questionnaire. Women were asked in the focus groups open ended questions about factors affecting their

involvement in the decision-making process. Additionally, reading the literature was part of the conceptualization phase of questionnaire.

#### **B. Development phase**

Two main dimensions were generated after the qualitative analysis of the data of the focus groups; patient related factors domains and surgeon related factors domain. For the patient related factors that affect involvement in the decision making process marital status, husband's opinion and consulting another woman who had undergone a similar surgery were among the factors. The second dimension affecting patients' involvement in the decision making process was surgeon related factors (e.g. age and years of experience of the surgeon). Therefore, these factors were integrated and considered in the questionnaire development. Final draft of the questionnaire included; clinical and demographic data section, thirteen items under patient related factors domain and twelve items under surgeon related factors dimension.

#### **C. Validation phase**

Six breast surgical oncologists were invited to participate in judging the questionnaire. Each item was rated along four-point scale continuum (1 not relevant, 2 somewhat relevant, 3 quite relevant, 4 highly relevant). Items were dichotomized in the analysis into relevant and irrelevant. Four of the breast surgical oncologists rated two items as irrelevant, therefore it was deleted. The overall Content Validity Index (CVI) was 0.83 which reflects adequate and acceptable agreement between breast surgical oncologists (Rubio et al., 2003).

The clarity of the tool was tested with 27 females with a mean age of 50.29 years diagnosed with breast cancer and admitted for breast cancer surgeries. Women were asked to rate each item of the questionnaire as clear or unclear and they were requested to add suggestions if necessary. All participants reported items as clear. Cohen's Kappa was run for patients' related items of the questionnaire in SPSS to determine the level of agreement between two independent assessors (inter-rater reliability). Kappa ranged from 0.54 to

0.82 which means moderate to very good agreement (Viera & Garrett, 2005).

**2. Using the developed and validated questionnaire to achieve the second aim of the current study**

Through a descriptive cross sectional research designs, a total number of 183 recruited through convenient sampling women diagnosed with breast cancer and admitted for breast cancer surgical interventions at Oncology Centre Mansoura University (OCMU) were invited to participate. No age limit was set for including women in the study. An informed consent was taken from women prior to proceeding with the study. The following formula was used for power analysis:

$$n = \frac{N \times p (1 - p)}{[(N - 1) \times (d^2 \div z^2)] + p(1 - p)}$$

Where N refers to the population size, z=degree of freedom for 95% significance. Absolute precision on either side of the proportion p (d)= error percentage (0.05), and d= the probability of occurrence of the event or not (0.5).

Additionally, a total number of 20 surgeons (the number was decided based on the total number of physicians who are specialised in breast surgeries in the centre) was recruited to participate in surgeon related items of the questionnaire.

**Statistical analysis**

For both pilot testing and the larger study, descriptive analysis was conducted: frequency, percent, mean, standard deviation. All data variables were encoded and computerized. Data entry and statistical analysis were performed using the Statistical Package for Social Science (SPSS) version 26 (SPSS Inc., Chicago, Illinois). Categorical data were expressed as number and percentages.

**RESULTS**

A total number of 183 females were recruited to participate in the current study. The mean age of the sample was 52.32 ± 11.86 years and almost half of the sample (49.2%) are illiterate, (49.7%) detected breast cancer through breast self-examination. Table (1) shows participants' characteristics.

Table 1. Participants' characteristics

	No=183	%
<b>Marital status</b>		
Single	4	2.2
Married	154	84.2
Divorced	3	1.6
Widow	22	12.0
<b>Educational status</b>		
Illiterate	90	49.2
Primary education	18	9.8
Preparatory education	14	7.7
Secondary education	51	27.9
University degree	10	5.5
<b>Awareness of the diagnosis</b>		
Yes	171.0	93.4
No	12	6.6
<b>Detection of the tumour</b>		
Accidental	61	33.3
breast self-examination	91	49.7
Discharge from the breast	5	2.7
Tender breasts	16	8.7
Breast abscess	4	2.2

More than half of the sample were informed about both treatment and surgical options. However, nearly 60% of women in the sample preferred removing the tumour only over mastectomy and 57.9 % of the sample would not prefer breast reconstruction if it is available as an option.

Surgeons' related items of the questionnaire that affect SDM were collected through self-reports. All surgeons reported engaging patients in surgical decision-making process. However, 93.3 % of them reported difficulty in the engagement process. Additionally, 46.7 % of the surgeons reported that they engage family members of the patients when they find difficulty in the engaging the patient. The other half of the surgeons reported that they simplify information of surgical options as possible to gain patients' engagement.

Regarding factors that affect engagement process; more than half of the surgeons (53.3%) reported that patients' social level affects engagement process. The majority of surgeons (60.0%) reported that age of patients and stage of illness affect engagement. The majority of surgeons (66.7%) reported that patients' comorbidity profile would affect engaging them in surgical decision-making process.

Table 2. Patients' related factors affecting the SDM

	No=183	%
<b>Have you been informed about available treatment options? Yes</b>	103	56.3
No	80	43.7
<b>Have you been informed about available surgical options? Yes</b>	108	61.9
No	75	38.3
<b>Does the age of the consulting surgeon matters when it comes to choosing from different options? Yes</b>	55	30.1
No	108	59.0
Do not know	20	10.9
<b>Would you choose removing the tumour only or total mastectomy if both options exist for you? Tumour only</b>	110	60.1
Total mastectomy	52	28.4
As my doctor suggests	13	7.1
Do not know	8	4.4
<b>If breast reconstruction was an option for you, will you go for it? Yes</b>	48	26.2
No	106	57.9
Will consult my partner	2	1.1
As my doctor suggests	4	2.2
Do not know	23	12.5
<b>Does being married affects your surgical choice? Yes</b>	109	59.6
No	63	34.4
Do not know	11	6.0
<b>If breast reconstruction was available for you, does your husband opinion matters? Yes</b>	98	53.6
No	59	32.2
Do not know	26	14.2
<b>Have you talked to women who underwent breast cancer surgeries before? Yes</b>	86	47.0
No	97	53
<b>If breast surgical interventions were paid at OCMU, would that affect your decision Yes</b>	88	48.1
No	70	38.3
Do not know	25	13.7

Nearly three quarters of surgeons (73.3%) reported the need of audio-visual and simplified explanatory aids and materials for patients to facilitate their informative understanding of surgical options as the majority of patients in the current sample are illiterate.

## DISCUSSION

Deciding among treatment options in breast cancer is considered an intense emotionally charged experience for women (Brandzel et al., 2017).

In order to achieve aims of the current study, we developed questionnaire assessing factors affecting SDM in breast cancer surgeries. Items of the questionnaire we developed in the current study correspond with the domains of the Consolidated Framework for Implementation Research (CFIR) that guides multilevel implementation contexts of health research. The domains are the intervention characteristics domain, the inner setting domain, the outer setting domain, characteristics of the individual domain and the implementation process domain (Keith et al., 2017).

Although half of the current sample cannot read and write, 49.7% of the sample detected breast cancer through breast self-examination. This may be due to awareness campaigns in Egyptian mass media and television that encourage women to do breast-self-examination. This corresponds with Manzour and Gamal Eldin (2019), in the sense that the majority of female participants get their health information from the mass media which is particularly beneficial for people who cannot read and write.

The majority of patients' participants in the current study do not have a preference for breast reconstruction if the option is available for them. Lay people in Egypt consider breast reconstruction as a cosmetic procedure rather than a reconstruction procedure. Women may be scared to undergo another surgical intervention. According to Khan (2018), decisional aids in the form of awareness events for breast reconstruction, offering internet based-information and resources, and helping patients to talk to others who undergone breast reconstruction surgeries are instrumental tool in SDM process. This is consistent with findings of surgeon related items of the questionnaire in the current study as almost three quarters of surgeons reported a need for decisional aids.

More than half of the surgeons in the current study reported patients' social level affects engaging them in the decision making process. Bride et al. (2013), reported that patients' characteristics and background affect their surgical decision. Development of culturally adapted decisional aids (interventions that provide information about health conditions

and risks and benefits of treatment options to patients) may facilitate patients' engagement in the decision making process (Chenel et al., 2018).

Nearly half of women in the current study reported that husband's opinion matters when it comes to a surgical decision making. In Egypt, many married women are usually scared if they have a serious health problem that their husbands would abandon them or even marry another woman. Female breasts are linked to women femininity, sexuality and body image. According to Martino and Freda (2016), response to changes after treatment are culturally linked to how each culture gives meaning to health and alteration in health status.

Data from this study was recruited from single institution which may be considered a limitation of the current study. The lack of randomisation in sampling is a limitation in the current study.

## CONCLUSION

Results of the current study conclude that marital status, patients' comorbidity profile, partners' opinion, and the cost of the surgical intervention, age, the social status of the patient, and stage of illness are among the factors that affect SDM process.

## IMPLICATIONS FOR PRACTICE

Based on results of the current study, an intervention can be developed aiming at facilitating engagement of Egyptian female patients in the decision making of breast cancer surgeries for example development of patients' sensitive and culturally adapted decisional aids.

## ACKNOWLEDGEMENT

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## LIST OF ABBREVIATIONS

Shared Decision Making= SDM

Content Validity Index=CVI

Consolidated Framework for Implementation Research= CFIR

## CONFLICTS OF INTEREST

All authors have approved this article and declare no conflicts of interest.

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### **Egyptian Association for Cancer Research (EACR)**

<http://eacr.tanta.edu.eg/>

EACR is an NGO society that was declared by the Ministry of Social Solidarity (Egypt) No. 1938 in 19/11/2014 based on the initiative of Prof. Mohamed Labib Salem, the current Chairman of EACR. EACR aims primarily to assist researchers, in particular young researchers in the field of cancer research through workshops, seminars and conferences. Its first international annual conference entitled "Anti-Cancer Drug Discovery" was successfully organized in April 2019 (<http://acdd.tanta.edu.eg>). Additionally, EACR aims to raise the awareness of the society about the importance of scientific research in the field of cancer research in prediction, early diagnosis and treatment of cancer. EACR is also keen to outreach the scientific community with periodicals and news on cancer research including peer-reviewed scientific journals for the publication of cutting-edge research. The official scientific journal of EACR is "International Journal of Cancer and biomedical Research (IJCBR: <https://jcbjournals.ekb.eg>) was successfully issued in 2017 and has been sponsored by the Egyptian Knowledge Bank (EKB: [www.ekb.eg](http://www.ekb.eg)).

**EACR Chairman,**

**Prof. Mohamed Labib Salem, PhD**

Professor of Immunology

Faculty of Science, Tanta University, Egypt

## ABOUT JOURNAL

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International Journal of Cancer and Biomedical Research (IJCBR), a publication of the Egyptian Association for Cancer Research (EACR), is a peer-reviewed online journal published quarterly. The journal allows free access (Open Access) to its contents and permits authors to self-archive a final accepted version of the articles on any OAI-compliant institutional / subject-based repository.

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**Scope:** It is essential reading for all researchers interested in biochemistry, cancer, microbiology, nutrition, physiology, genetics, immunology, epidemiology, medical economics, human biology, bioinformatics, biotechnology, nanotechnology, and disease modeling.

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If the authors resubmit the manuscript, the IJCBR editor will ask the same peer-reviewers to look over the manuscript again to confirm that their concerns have been addressed. This is called re-review process. This second revision (if applicable) takes about another 4 to 6 weeks. At this point, the abstract of the article appears in press. The online publication (the PDF format) of the final version of the manuscript takes from 2 to 4 weeks. As such, the total publication cycle takes from 2 to 4 months. This cycle can be reduced to 4 to 6 weeks (fast track publication) for the manuscripts with outstanding findings.

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## INSTRUCTION TO AUTHORS

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The main aim of IJCBR is to attract the best research in animal and human biology in health and diseases from across the spectrum of the biomedical sciences at the molecular, cellular, organ, and whole animal levels especially those that are related to cancer research, including causes, prediction, diagnosis, prognosis and therapy.

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**Abstract (max 250 words, single paragraph):** The abstract should be complete and understandable without citation, references, table or figure. Use structured abstract: Background, Aim, Materials & Methods, Results and Conclusion. The context and the rationale of the study are presented succinctly to support the objectives. The experimental methods and main results are summarized but should not be overburdened by numerical values or probability values. The abstract ends with a short and clear conclusion.

**Keywords:** Up to five short and specific keywords should complement the title with respect to indicating the subject of the paper in alphabetic order.

**Introduction:** The introduction briefly outlines the context of the work, presents the current issues that the authors are addressing and the rationale to support the objectives, and clearly defines the objectives.

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**Statistical analysis of results:** The statistical design and the models of statistical analysis must be described, as well as each of the statistical methods used. Sufficient statistical details must be given to allow replication of the statistical analysis. The experimental unit should be defined (e.g. individual or group of animals).

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**Acknowledgements:** In this section, the authors may acknowledge (briefly) their support staff.

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- Abbreviations used in tables/figures have to be defined either as footnotes or in the caption.

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- Package the figures in a single PowerPoint file. Each figure in a separate slide.
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- Ensure that the font size is large enough to be readable at the final print size, use Calibri font to ensure that they are consistent throughout the figures.
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