

# Psychiatric morbidity among Egyptian breast cancer patients and their partners and its impact on surgical decision-making

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**Introduction:** Psychiatric morbidities, especially cases of anxiety and depression, are prevalent among breast cancer patients and their partners.

**Patients and methods:** Fifty-four early diagnosed breast cancer patients and their partners were compared with 50 healthy couples to assess psychiatric morbidity and the impact of various factors upon patients' surgical choice.

**Results:** It was found that 18.5%, 22.2%, and 3.7% of husbands had generalized anxiety disorder, major depressive disorder, and panic disorder, respectively. It was also found that 38.8%, 29.6%, and 9.2% of the patients had major depressive disorder, generalized anxiety disorder, and panic disorder, respectively. Depression and anxiety scores were high in both partners in love-based, well-adjusted marriages, within the middle socioeconomic class, and among educated couples. Among the well-known factors related to surgical treatment choice (age, parity, tumor size, pathology, grade, lymph node status), only age and psychological morbidity (in the patients and their partners) had a significant impact on treatment choice.

**Conclusion:** Patients of middle socioeconomic class, the well educated, and those in love-based marriages had a higher likelihood of suffering different types of psychological morbidities and were more likely to choose breast conservation or reconstruction than mastectomy.

**Keywords:** anxiety, Arab, conservative, depression, mastectomy, reconstruction

## Introduction

Breast cancer is the most commonly diagnosed malignancy in women<sup>1</sup> and is becoming more prevalent in many developing countries.<sup>2</sup> In Egypt, breast cancer is the most common cancer among women, representing 18.9% of total cancer cases,<sup>3</sup> with an age-adjusted rate of 49.6 per 100,000 population.<sup>4</sup>

Physicians dealing with breast cancer have three surgical options for treating local disease: breast-conserving surgery (BCS), mastectomy, or mastectomy and reconstruction. The treatment decision is based on tumor characteristics, the surgeon's experience, and the patient's preference.<sup>5</sup> If treatment preferences of the patients can be understood, more effective decision-making can be established.<sup>1</sup> A couple of studies have investigated the factors that affect patients in their choice of surgery; these factors are age, tumor size, socioeconomic factors, race, and marital status.<sup>6,7</sup>

The psychological impact of different surgical treatment on patients with breast cancer has been thoroughly investigated,<sup>8</sup> but no studies have focused on the impact of psychological background upon surgical treatment choice.

Among the malignancies women are subject to, breast cancer is particularly important in its psychological aspect. It can affect patients' self-esteem, confidence,

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and the socially accepted role of women, especially in Arab countries. This special importance may be accounted for in terms of two major threats facing Arab women who become breast cancer patients. The first threat concerns the woman's life, breast cancer being the second most common cause of cancer death among women.<sup>9</sup> The second threat concerns her psychological image as a competent woman, particularly in relation to sexuality, femininity, body image, and maternal issues. This image can be significantly altered after surgical excision of this commonly accepted cultural symbol of femininity. Therefore, it is quite common that a significant proportion of breast cancer patients experience psychiatric morbidity.<sup>10</sup> Depression and anxiety are the commonest psychiatric disorders after diagnosis of breast cancer.<sup>11</sup> In predicting these disorders following breast cancer diagnosis, low social support has been found to be an independent predictor and therefore may have a causal role.<sup>12</sup>

A small-scale study published has suggested that major psychosocial problems develop in the partners of cancer patients.<sup>13</sup> The male partners of women with breast cancer were almost 40% more likely than other men to be hospitalized for severe depression and anxiety.<sup>13</sup> To our knowledge, there has been no research considering the psychological state of the partners of breast cancer patients in Arab countries. In Egypt and most Arab countries, these partners have a major role in treatment decision-making.

In this study, we aimed to obtain data relevant to the assessment of psychiatric morbidity among some Egyptian patients recently diagnosed as having breast cancer and among their partners, in comparison to healthy couples from the same population. Moreover, the impact of different tumor- and patient-related factors, including psychiatric morbidity, upon the choice of surgical treatment option (made by the patients and their partners) was investigated.

## Patients and methods

All participants were randomly chosen by their order of contact with the Mansoura Faculty of Medicine Oncology Center for breast examination and were diagnosed as having breast cancer. The study was performed in the period from May 2010 to April 2011. A convenience sample comprising all patients who had come to the outpatient clinic during this period was examined for the patients' suitability to participate in the study by applying the inclusion and exclusion criteria. The control group comprised 50 healthy couples, selected from hospital employees in Mansoura Hospital, with no personal or family history of psychiatric disorders.

All patients and their partners were interviewed using the Arabic version of the Mini International Neuropsychiatry Interview<sup>14</sup> and were diagnosed according to *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) criteria.<sup>15</sup> A specially designed sheet was used to collect personal data and marital history (type and duration of marriage, age difference between husband and wife). All couples were assessed for the following variables: socioeconomic standard using the Egyptian classification of socioeconomic standard of Fahmy and El-Sherbini,<sup>16</sup> intelligence quotient using the Wechsler Adult Intelligence Scale – Revised,<sup>17</sup> anxiety by the Arabic version of the Hamilton Anxiety Scale (HAM-A),<sup>18,19</sup> depression using the Arabic form of the Beck Depression Inventory (BDI),<sup>20,21</sup> self-esteem using the Arabic translation of the Rosenberg Self-Esteem Scale,<sup>22,23</sup> and types of personality disorders using the Arabic version of the Structured Clinical Interview for DSM-IV Axis I personality disorders.<sup>24,25</sup>

Inclusion criteria comprised the following: currently married female patients, newly diagnosed as having breast cancer (within the last 6 months), had come for examination accompanied by their partners, candidates for surgery (nonmetastatic and medically fit for surgery), and acceptance to participate in the study by giving written consent. The exclusion criteria comprised the following: male breast cancer patients; single, widowed, or divorced patients; patients who had come for breast examination without their partners; cases of mental retardation (intelligence quotient below 70); medical or neurological problems (there was evidence from the history, physical examination, or laboratory findings that these patients had an illness that is known to have direct physiological effects on mood and anxiety); patients known to have primary major psychiatric disorders before breast cancer was diagnosed; hearing or visual disability; and history of recent substance abuse, or treatment by medications that can affect the mood state (eg, chemotherapy, steroids). The total sample examined in this study was 297 patients. After applying inclusion and exclusion criteria, 73 patients were excluded from the study for being not currently married, 108 were excluded due to absence of their spouse during breast and psychiatric examination, and 35 were excluded due to presence of medical illness, usage of drugs that can alter the mental state, or for being not physically fit for operation. A total of 27 couples refused to participate in the study due to the length of time taken for psychiatric assessment, which in some cases could take up to 90 minutes for each partner (3 hours for a couple), or they refused to participate for other reasons. Finally, only 54 couples were included in the study.

The second aim of the study was to assess the impact of various factors upon patients' surgical choice. These factors were age, parity, lactation, tumor size, stage, presence of enlarged lymph nodes, and psychological background of both the patient and her partner. After completion of assessment of psychological morbidity of the patients and their partners, they were interviewed by the surgeons. Patients with early stage breast cancer who were candidates for breast conservation were offered the choice of one of the three surgical treatment options (mastectomy, BCS, or mastectomy and reconstruction). Patients with more advanced stages and those who were not good oncological candidates for BCS were offered the choice of either mastectomy or mastectomy and reconstruction. The choice of surgical option was investigated for correlation with the aforementioned factors.

Review by institutional review board was not available in our institution. Written informed consent was obtained in accordance with the Helsinki II declaration.

## Statistical analysis

Parametric data were summarized as means and standard deviations. Nonparametric data were described as frequencies and percentages. Chi-square was used to measure associations found in different nonparametric data, and *t*-test in parametric data. The main findings were presented as proportions with 95% confidence intervals. The results were computed

on a personal computer using the Statistical Package for the Social Sciences 15 for Windows (IBM, Armonk, NY).

## Results

Table 1 summarizes the demographic data of the patients and control groups. After conducting the interviews and applying DSM-IV criteria, it was found that ten husbands (18.5%) had generalized anxiety disorders, compared with only two husbands in the control group ( $P < 0.001$ ). It was also found that twelve husbands (22.2%) had major depressive disorders and two husbands (3.7%) panic disorders, while none of the husbands in the control group complained of any of these disorders.

The results of the current study also revealed that 26 patients (48%) had psychiatric problems. Twenty-one patients (38.8%) suffered from major depressive disorder versus none in the control. Sixteen patients (29.6%) complained of generalized anxiety disorders, compared to four wives only in the control group ( $P < 0.001$ ). Panic disorders were present in five patients (9.2%) versus none in the control group.

Suicidal tendencies were found in only one patient but in none of the husbands. None of the breast cancer patients or their partners fulfilled the diagnostic criteria of manic episode, psychotic disorders, alcohol or other substance abuse, dysthymic disorder, agoraphobia, obsessive-compulsive

**Table 1** Cross-tabulation of sociodemographic factors among participants in the control and the study groups

P	$\chi^2$	Diagnosis			
		Case	Control		
0.415	0.193	39	38	Rural	Residence
		15	12	Urban	
0.823	0.390	15	13	Low	Socioeconomic status
		6	4	Middle	
		33	33	Very low	
		0	0	High	
0.554	0.005	36	33	Arranged	Marriage type
		18	17	Love-based	
0.497	0.042	27	24	<6 years	Education wife
		27	26	>6 years	
0.366	0.293	22	23	<6 years	Education husband
		32	27	>6 years	
	<b>t</b>				
0.369	-0.903	48.35 $\pm$ 5.23	47.16 $\pm$ 8.03	Mean $\pm$ SD	Age wife
0.581	-0.554	54.70 $\pm$ 5.78	53.92 $\pm$ 8.47	Mean $\pm$ SD	Age husband
0.577	0.559	6.35 $\pm$ 3.64	6.76 $\pm$ 3.7	Mean $\pm$ SD	Age difference between couple
0.201	1.287	86.22 $\pm$ 5.57	87.54 $\pm$ 4.80	Mean $\pm$ SD	IQ husband
0.362	0.916	87.20 $\pm$ 4.57	88.04 $\pm$ 4.73	Mean $\pm$ SD	IQ wife
0.106	1.631	18.96 $\pm$ 12.21	22.60 $\pm$ 10.35	Mean $\pm$ SD	Marriage length
		54	50	Total	

**Abbreviation:** SD, standard deviation.

disorder, anorexia nervosa, bulimia nervosa, posttraumatic stress disorder, antisocial personality disorder, or any other personality disorders.

Duration of marital relation was directly related to scores on BDI and HAM-A in both partners and indirectly related to scores on the Rosenberg Self-Esteem Scale of both partners with statistically significant differences (Table 2). Moreover, scores on HAM-A or BDI of one partner were directly correlated to scores on HAM-A and BDI of the other partner. Tumor size, stage, and associated lymph node infiltration were not correlated with scores on BDI or HAM-A of both partners (Table 2).

The differences in the scores of depression and anxiety of both partners were more statistically significant in love-based, well-adjusted marriages, in the middle socioeconomic class, and among educated husbands, than in arranged, mal-adjusted marriages, in the low or very low socioeconomic classes, and among the less-educated husbands. Depression and anxiety scores were higher among educated patients than among less-educated patients (Table 3).

On assessment of the potential variables that may affect the choice of surgical treatment made by the patients and their partners, only age and psychological background were significant.

Sixteen patients (29.6%) were early stage and candidates for breast conservation, which was chosen by ten of them, while three preferred mastectomy and the other patients preferred mastectomy and reconstruction. The other 38 patients

(70.4%) were late stage and/or not candidates for breast conservation; 29 cases (53.7%) preferred mastectomy and nine cases (16.7%) preferred mastectomy and reconstruction.

In the breast-conservation group ( $n = 10$ ), the mean age of the patients was 33.7 years (range 18–52 years). Psychological morbidity was present in eight cases (80%). In the mastectomy group ( $n = 32$ ), the mean age was 47.3 years (range 22–70 years), and psychological morbidity was present in twelve cases (37.5%). The mean age in the mastectomy and reconstruction group ( $n = 12$ ) was 43.6 years (range 24–66 years), and psychological morbidity was present in six cases (50%). The difference in age and psychological morbidity was statistically significant between the BCS group and the mastectomy group ( $P < 0.003$ ,  $P < 0.001$ , respectively) but was insignificant between other groups.

Seventeen partners (31.5%) complained of different types of psychological morbidity. Eight of them (14.8%) preferred BCS for their wives, four (7.4%) chose mastectomy, and five (9.2%) preferred mastectomy and reconstruction. The difference in partners' psychological morbidity was significant between the BCS group and the other two groups ( $P < 0.002$ ) (Table 4).

## Discussion

Cultural nuances may influence the relation between the cancer experience and marital issues, specifically for the partner.<sup>26</sup> The present research aimed to study the sociodemographic and disease factors related to the Egyptian culture and their

**Table 2** Pearson correlations of anxiety and depressive symptoms in the patient group with psychosocial and tumor factors

Psychometric scales						
Rosenberg self-esteem wife	Rosenberg self-esteem husband	HAM-A husband	HAM-A wife	BDI husband	BDI wife	
0.003	-0.079	0.048	-0.023	-0.001	0.094	Age wife
-0.077	-0.180	0.211	0.033	0.080	0.194	Age husband
-0.125	-0.173	0.265	0.086	0.129	0.173	Age difference between couple
0.037	-0.193	0.218	0.065	0.066	0.167	IQ husband
-0.194	0.037	-0.046	0.147	0.036	0.046	IQ wife
-0.410**	-0.281*	0.285*	0.404**	0.322*	0.576**	Marriage duration
-0.655**	-0.789**	0.772**	0.632**	0.800**	I	BDI wife
-0.536**	-0.785**	0.778**	0.557**	I	0.800**	BDI husband
-0.956**	-0.622**	0.566**	I	0.557**	0.632**	HAM-A wife
-0.594**	-0.951**	I	0.566**	0.778**	0.772**	HAM-A husband
0.638**	I	-0.951**	-0.622**	-0.785**	-0.789**	Rosenberg self-esteem husband
I	0.638**	-0.594**	-0.956**	-0.536**	-0.655**	Rosenberg self-esteem wife
0.149	0.141	-0.109	-0.209	-0.208	-0.135	Tumor size
0.116	0.092	-0.040	-0.194	-0.198	-0.124	Tumor stage
0.049	-0.040	0.097	-0.010	-0.015	-0.022	Lymph node

**Note:** \* $P < 0.05$  (two-tailed); \*\* $P < 0.01$  (two-tailed).

**Abbreviations:** BDI, Beck Depression Inventory score; HAM-A, Hamilton Anxiety Scale score; IQ, intelligence quotient.

**Table 3** Correlation of anxiety and depression with type of marriage, social class, and level of education

Psychometric scales					
BDI husband (mean $\pm$ SD)	HAM-A Husband (mean $\pm$ SD)	BDI wife (mean $\pm$ D)	HAM-A wife (mean $\pm$ SD)		
24.88 $\pm$ 14.90**	25.00 $\pm$ 11.08**	34.61 $\pm$ 15.86**	24.22 $\pm$ 11.95**	Love-based	Marriage type
5.0 $\pm$ 5.26**	6.47 $\pm$ 5.49**	11.44 $\pm$ 11.30**	15.41 $\pm$ 11.31**	Arranged	
10.56 $\pm$ 12.97	11.58 $\pm$ 11.16	17.82 $\pm$ 16.08	17.82 $\pm$ 11.81	Rural	Residence
14.40 $\pm$ 14.5	15.4 $\pm$ 13.0	22.6 $\pm$ 19.09	19.73 $\pm$ 13.37	Urban	
9.58 $\pm$ 12.0	10.93 $\pm$ 10.72	17.08 $\pm$ 15.8	17.2 $\pm$ 11.9	Low or very low	Socioeconomic status
28.0 $\pm$ 13.37**	26.33 $\pm$ 10.89**	35.83 $\pm$ 17.58**	27.1 $\pm$ 11.3*	Middle or high	
6.18 $\pm$ 9.2**	8.59 $\pm$ 8.87*	7.81 $\pm$ 12.4**	13.18 $\pm$ 11.94**	<6 years	Education husband
15.3 $\pm$ 14.5**	15.43 $\pm$ 12.69*	26.9 $\pm$ 15.18**	21.9 $\pm$ 11.15**	>6 years	
10.48 $\pm$ 13.9	11.37 $\pm$ 10.90	13.29 $\pm$ 16.26**	14.62 $\pm$ 10.92*	<6 years	Education wife
12.77 $\pm$ 12.93	13.92 $\pm$ 12.53	25.03 $\pm$ 15.75**	22.07 $\pm$ 12.39*	>6 years	

**Note:** \* $P < 0.05$  (two-tailed); \*\* $P < 0.01$  (two-tailed).

**Abbreviations:** BDI, Beck Depression Inventory score; HAM-A, Hamilton Anxiety Scale score; SD, standard deviation.

impact on surgical decision-making. It showed that 29.6%, 38.8%, and 9.2% of patients with breast cancer, compared to only 8%, 0%, and 0% wives in the control group ( $P < 0.001$ ), were diagnosed as having generalized anxiety disorders, major depressive disorders, and panic disorders, respectively. Similar results were found in Egyptian studies that revealed anxiety disorders and mood disorders to be the most prevalent diagnoses among breast cancer patients.<sup>27,28</sup>

The prevalence of depression and anxiety in this study may be slightly higher than in some previous studies.<sup>29–32</sup> This may be due to the tools and criteria used in the diagnosis, cultural differences, or the type of patients selected in this study, who had been diagnosed within the last 6 months. Similar results were recorded by Burgess et al,<sup>33</sup> who reported that, in women with early breast cancer, the prevalence of depression, anxiety, or both in the year after diagnosis is around twice that of the general female population.

The present study showed that 18.5% of breast cancer patients' husbands had generalized anxiety disorders, compared with only 4% of the husbands in the control group ( $P = 0.000$ ). The study also demonstrated that 22.2% and 3.7% of breast cancer patients' husbands had major depressive and panic disorders, respectively, while none of the husbands

in the control group was found to complain from these same disorders. These results could be due to the fact that men may be stressed by factors such as the demands of intense care their wives require and the emotional pain arising from the possibility of losing their partners, to whom they have been most attached for a long time. "Emotional contagion," which is the spread of a person's emotions to a significant other, is yet another factor increasing the husband's state of depression and anxiety. Thus, the wife suffering from breast cancer may be vulnerable to depression, which spreads to her husband. The current study demonstrates that the scores on HAM-A or BDI of one partner are directly correlated with the scores on HAM-A and BDI of the other partner. This finding agrees with previous research showing that the depressed mood of the diagnosed wife affects the spouse's mood.<sup>34–36</sup> The present study also revealed that self-esteem is another important factor that correlates with the degree of anxiety or depression in both partners.

Early studies illustrated that marital adjustment significantly affects the spouse's mood.<sup>35,37</sup> The present study showed that differences in the scores of depression and anxiety of both partners were more statistically significant in love-based and well-adjusted marriages of a longer duration

**Table 4** Surgical choice according to patient and husband's psychiatric problem

	Breast-conserving surgery (n = 10)		Mastectomy (n = 32)		Mastectomy with reconstruction (n = 12)	
	Patient	Partner	Patient	Partner	Patient	Partner
Major depressive disorder	2	3	4	2	2	1
Generalized anxiety disorder	0	1	2	1	1	1
Panic disorder	1	0	1	0	0	1
Major depressive disorder + generalized anxiety disorder	3	3	4	1	3	2
Depression + generalized anxiety disorder + panic disorder	2	1	1	0	0	0



than those of partners in arranged, maladjusted, or recent marriages. This may be because in cases of maladjusted marriages, neither partner is in a close relationship with the other; therefore, husbands may not be overly worried about their partner's fate. In Egypt, especially in rural areas, it is culturally accepted that in maladjusted marriages the husband usually shows very little emotional reaction to the health status of his partner and sometimes asks his wife to go to her parents' home to be treated and not to return to him until she has recovered. However, in well-adjusted, love-based marriages, threats to one partner are stressful for both partners and entail fear about their future.<sup>38,39</sup>

The present study showed that depression and anxiety scores were higher among husbands from the middle socioeconomic class and among well-educated partners or patients. This may be because less-educated couples from lower social classes are less aware of the risks of cancer and the extent to which it could threaten their lives. Moreover, they tend to believe more in God and in faith treatment, which provides unrealistic hope of cure.<sup>40</sup> In contrast, educated partners belonging to the middle or higher socioeconomic classes have more knowledge about the true risks of cancer and more contact with health-care providers who clarify issues relating to prognosis. This may have negative effects, leading to increased stress, anxiety, and depression. These findings are in agreement with those obtained by Lewis et al,<sup>41</sup> who found that middle-class, well-educated spouses were depressed by the threat of losing their wife because of cancer and by the related uncertainty in their personal and work life.

The current study found that none of the well-known factors related to surgical treatment choice (tumor size, pathology, grade, lymph node status, parity) reached statistical significance. Only age and psychological morbidity (in the patients and their partners) had a significant impact on treatment choice.

As a component of breast cancer treatment, surgery will be faced by most women. Mastectomy is a treatment of choice, regardless of the patient's age. In early stage breast cancer, BCS is equivalent to mastectomy in terms of survival. Studies have shown that as well as clinical factors like tumor size or nodal involvement, nonclinical factors like age, socioeconomic status, and race were also important variables in predicting the choice of mastectomy or BCS; younger and married patients and those with a higher stage of cancer were shown to be more likely to choose mastectomy. In the current study, there was a significant relationship between age and choice of surgery; in the mastectomy group, the mean age was 47.3 years versus 33.7 years in the BCS group. Stanton

et al<sup>42</sup> mentioned that older women considered maintenance of attractiveness, femininity, and sexuality less important than younger women.

In general, psychological distress (eg, depression, anxiety about recurrence, anger) observed in patients who are diagnosed with cancer is greater than that in any other diseases.<sup>43</sup> Some of the psychosocial factors that predominantly affect the breast cancer patient's therapeutic decision-making and psychological adaptation after surgery are: social support from physician, nurse, partner, family, and colleagues; degree of involvement of the patient; the patient's expectations and values; the patient's personality; and the degree of the patient's satisfaction with surgical treatment.<sup>44</sup> For married women, husbands are influential in decision-making, and negativity from the husband has a greater influence on a married woman's well-being than his positive involvement.<sup>44</sup>

In discussing psychological support for patients around the time of breast surgery, it is important to consider how patients' values, especially regarding body image<sup>45</sup> and sexuality, can be related to other aspects such as anxiety over recurrence and whether they will be able to make appropriate decisions on their own.<sup>46</sup> Physicians are often reluctant to involve patients in clinical decisions because of lack of training, pessimism about patient ability to assume a more active role, and concerns that it may take more of their time.<sup>47</sup>

## Strengths and limitations

Although there are many studies considering breast cancer in Egypt and Arab countries, to the best of our knowledge no study has examined the psychological impact of breast cancer on patients' partners. Also, the role of patients' partners in choice of type of operation, which we consider a very important role, especially in Arab culture, has not been well studied in the literature. One of the most important limitations of this study was the limited number of patients, which may be related to a study design that insisted on currently married female patients with breast cancer. This meant that we excluded all single, divorced, and widowed patients. Widowed patients represent a considerable proportion of patients because of the culturally accepted wide range between the ages of the partners, usually with the male being the older of the two – sometimes, this gap can reach up to 20 years. As breast cancer is common in the elderly, so it is common to find that many patients with breast cancer are widows. Further, the study design insisted on the presence of both partners during the examination, which excluded many patients who came with a parent for treatment – a culturally accepted practice in

many Nile Delta cities. Moreover, it is a tradition in Egypt, and especially in rural areas, that a female family member usually accompanies female patients. As most patients at breast cancer clinics are female, it would be unusual if a male accompanied the patient, as such an issue is considered part of women's affairs.

## Conclusion

Breast cancer represents a major stress factor affecting the patient's and her partner's mood. This change is more prevalent in love-based, well-adjusted marriages and among educated couples. These findings may be of high significance, since they highlight the importance of identifying anxiety and depression symptoms in both partners in each case of breast cancer before tailoring the surgical treatment option. When interviewing patients, the surgeon has to be aware that middle-class, well-educated patients and those in love-based marriages have a higher likelihood of exhibiting different types of psychological morbidities. Those patients will usually choose breast conservation or reconstruction rather than mastectomy. Every attempt should be made to meet their desire of preserving their self-esteem and body image.

## Disclosure

The authors declare no conflicts of interest in this work. This study was not supported by any funding from or relationships with any institute or company that may pose a conflict of interest.

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