

Effect of Sociodemographic Characteristics on the Attitude and Practice of Adult Cancer Patients Treated in the General Hospitals, Tabuk Region, Saudi Arabia

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ABSTRACT

Background: many types of cancer are easily prevented through screening that can detect the disease during its early stages, resulting in better prognosis and long-term survival. Moreover, compliance of cancer patients with treatment instructions is crucial for better prognosis. Little is known about the effect of sociodemographic factors on attitude and practice of cancer patients.

Objective: The aim of this study was to assess the effect of sociodemographic status on the attitude and practice of adult patients with cancer towards the intent to start the treatment, the adherence to treatment regimen and the prognosis of the disease.

Methods: this study was carried out in the general hospitals, Tabuk Region, Saudi Arabia. Participants were selected from the Oncology Center Outpatient Clinics. A questionnaire designed for cancer patients was used for data collection via direct interview. The questionnaire included questions to record sociodemographic factors, patient's attitude (towards early diagnosis, treatment, and follow up), practice and general health status.

Results: attitude score was significantly higher in the married respondents ($p = 0.015$). Practice score was higher in those aged less than 20 and above 60 years-old ($p = 0.016$), those who were in early stages of cancer ($p = 0.004$) and respondents with positive family history of cancer ($p = 0.019$). The attitude and practice scores were found to have a significant positive and moderate correlation ($r = 0.487$; $p < 0.001$).

Conclusion: the overall attitude and practice of the respondents towards cancer was fair in most of the points. However, their attitude and utilization of screening methods was less than satisfactory. This calls for an action to encourage Saudi population, particularly those at high risk, to seek and receive screening services. Explaining the benefits and the access to free screening services is crucial. Barriers that are responsible for this attitude and practice should be explored and addressed.

Keywords: cancer, attitude, practice, diagnosis, treatment, questionnaire.

INTRODUCTION

Cancer is one of the most common leading causes of death and represents a significant health burden. In spite of the recent advances in cancer therapy, it remains a challenge to prevent and treat⁽¹⁾. One of the strongest prognostic factors is disease stage at the time of diagnosis. Evidence for the link between socioeconomic status (SES) and health/disease has accumulated over the years⁽²⁾.

Several investigators examined the effect of income and education on survival in the general population⁽³⁾. SES is most commonly measured by occupation, place of residence and level of education. More deaths have been noted among cancer patients with lower SES as compared with patients with higher SES⁽⁴⁾. Some authors suggested that differences in education may affect mortality rates, especially among high-income patients. It was noted that patients with lower SES usually seek treatment at a more advanced stage of the disease, which may reduce survival in this group of patients⁽⁵⁾.

Despite advances in knowledge concerning risk factors reduction and improvement in early detection and treatment for several cancers, socioeconomic inequalities persist in cancer incidence, morbidity, mortality and survival^(6,7).

Population-based cancer registry data from the Surveillance, Epidemiology and End Results (SEER) Program at the National Cancer Institute (NCI) are generally the authoritative source of data for describing disparities in cancer burden among racial/ethnic groups. However, these data are mainly based on medical records and administrative information and thus lack individual-level data on SES. Sociodemographic information on individual cancer patients in the NCI's SEER database is limited to age, sex, race/ethnicity, marital status and place of birth and residence. Key measures of individual SES, such as educational attainment, occupation, income and employment status were not available⁽⁸⁾. Educational level also may influence the risk of cancer in several ways. Education is an important guide in the selection of occupation.

This, in turn, is a predictive factor for income and many socioeconomic aspects of life, including residential and lifestyle factors. Health behavior, seeking for and affording healthy food, as well as participation in health promoting and screening programs are all related to educational and socioeconomic factors⁽⁹⁾.

Lung, stomach, esophageal and upper digestive tract cancers have been typically reported to be more common in individuals with low socioeconomic levels, whereas breast and colorectal cancer are more common among people with high socioeconomic levels. The differences have been observed also in comparisons of cancer risks by education level⁽¹⁰⁾. Kingdom of Saudi Arabia is characterized by having different kinds of population and the prevalence of cancer has been increasing in the last few years. The review of literature reported a limited number of research studies correlating the relationship between cancer prognosis and SES in KSA. Therefore, the current study was carried out to assess the effect of sociodemographic status on the attitude and practice of patients with cancer towards the followings: 1-the intent to start the treatment; 2-the adherence to treatment regimen and 3-the prognosis of the disease.

METHODS

Ethical considerations:

Patient's data were kept secured and were only used for the purpose of this study. Approval for the study design and conduction was obtained from the Research Ethics Committee of the Faculty of Medicine, University of Tabuk, KSA. Informed consent was obtained from each patient before starting the process of data retrieval.

Study design, setting and tool:

This study had a cross-sectional design. It was carried out on 101 adult patients with cancer (both males and females), at the Oncology Center Outpatient Clinics of the general hospitals in Tabuk Region, KSA. The study was conducted during the period from October, 2017 to December, 2017.

Patients who approved to participate in this study were included, but those not achieving inclusion criteria and those with incomplete data were excluded from the study.

A structured, Arabic, questionnaire was used for data collection to assess the impact of sociodemographic characteristics on the attitude, practice and prognosis of adult cancer patients. The questionnaire was distributed to the participants by direct contact with them. Data

were confirmed then coded and entered to a personal computer. Thanks and appreciations were used to inspire the participants to be involved in this study.

Scores were assigned to the respondents replies as shown in Appendix-1. Total scores for attitude and practice were computed by summing the individual scores for questions (9 to 14 and 18 to 21 for attitude; 15 to 17 and 22 to 25 for practice).

Statistical Analysis

Data analysis was carried out using SPSS version 22. All numerical variables were checked for normality by Shapiro Wilk test. Abnormally distributed variables were expressed as median and interquartile range (25th- 75th percentile) and differences were tested using Mann-Whitney test (for two groups) or Kruskal Wallis test (for 3 groups or more). Categorical variables were summarized as frequencies and percentages and association between variables was tested using Pearson's Chi square or Fisher-Freeman-Halton Exact Tests as appropriate. A p-value of < 0.05 was considered statistically significant.

RESULTS

In this study, 101 cancer patients were included. More than half of the respondents were females. The highest percentage of respondents was in age group 40 to less than 60 years, followed by 20 to less than 40 (40% and 29% respectively). One third was illiterate; while those who had secondary school or university/postgraduate degree constituted 19.8% each. Most respondents were unemployed (65%), married (58.4%) and had no family history of cancers (71%). The most common types of cancers among the respondents were breast (33.8%), blood (20%), colon (7.5%) and lung (6.3%) cancers. Early discovery occurred in 37.6% of respondents, followed by intermediate (31.7%) and then late discovery in 30.7% (**Table 1**).

As regards the attitude of respondents towards early detection of cancer, the majority of respondents agreed that it is important to have screening, even if they didn't have the disease (66.3%) and that early diagnosis can prevent complications (76%) and decrease cost (65%). The majority also agreed that when having the disease symptoms, early diagnosis can prevent complications (70.3%) and management cost (57.4%) and in that case early management can prevent complications (71.3%). The practices of

the respondents showed that only 20.2% did early detection before getting the disease symptoms. In half of the cases, detection of the cancer was delayed for more than two weeks after development of symptoms. Treatment was delayed for 1 to 2 weeks in 35.6% of cases and for more than 2 weeks in 33.7% (**Table 2**).

Considering the attitude of the respondents towards follow up, the majority agreed that follow up visits would limit the complications (82.2%) and that investigations would help in disease control (77.2%). A lesser percentage of respondents agreed that modification of treatment, based on the investigations, would help in disease control (68.3%). Less than half the respondents (44.6%) believed that modification of bad habits would be helpful. As regards the practices of patients during follow up, most respondents expressed their willingness to commit to regular follow up visits (69.7%), to do the investigations requested by their doctors (78.2%), to modify the treatment (76.2%) and bad habits (63.4%) as requested by their doctors (**Table 3**).

Most respondents felt that their health was better before than their present status (62.4%). The most common reasons for this feeling included lack of early detection or early taking of the medication (24.1% each). One third of the patients had good response to the treatment (36.6%), one quarter had poor response (25.7%) and one fifth (21.8%) suffered rapid deterioration despite treatment (**Table 4**).

Comparison of the attitude and practice scores between different socioeconomic categories of the respondents showed that attitude score was significantly higher in married respondents ($p = 0.015$). Practice score was higher in those aged less than 20 and above 60 years-old ($p = 0.016$), those who were in early stages ($p = 0.004$), and respondents with positive family history of cancer ($p = 0.019$) (**Table 5**). The attitude and practice

scores were found to have a significant positive and moderate correlation ($r = 0.487$; $p < 0.001$) (**Figure 1**).

Table 1: characteristics of the respondents.

			%
Sex	Female	56	55.4%
	Male	45	44.6%
Age (Years)	< 20	5	5.0%
	20 - < 40	29	29.0%
	40 - < 60	40	40.0%
	≥ 60	26	26.0%
Educational level	Illiterate	32	31.7%
	Elementary	18	17.8%
	Intermediate	11	10.9%
	Secondary	20	19.8%
	Bachelor's/postgraduate	20	19.8%
Occupation	Unemployed	65	65.0%
	Manual worker	10	10.0%
	Armed forces	9	9.0%
	Elementary jobs	11	11.0%
	Manager	5	5.0%
Marital status	Single	16	15.8%
	Divorced	4	4.0%
	Widow/er	22	21.8%
	Married	59	58.4%
Type of cancer	Breast	27	33.8%
	Blood	16	20.0%
	Colon cancer	6	7.5%
	Lung	5	6.3%
	Stomach	4	5.0%
	Thyroid	4	5.0%
	Others	18	22.5%
When you discover it	Early	38	37.6%
	Intermediate	32	31.7%
	Late	31	30.7%
Family history of cancers	No	71	71.0%
	Yes	29	29.0%

Table 2: special attitudes and practices about early detection and management

		N	%
Is it important to have screening even if you didn't have the disease?	No	11	11.2%
	I don't know	22	22.4%
	Yes	65	66.3%
Do you think the early diagnosis can save lives and prevent complication?	No	9	9.0%
	I don't know	15	15.0%
	Yes	76	76.0%
Do you think the early diagnosis can decrease the management cost?	No	14	14.0%
	I don't know	21	21.0%
	Yes	65	65.0%
When you have the symptoms of disease, do you think the early diagnosis can help you to prevent the complications?	No	17	16.8%
	I don't know	13	12.9%
	Yes	71	70.3%
When you have the symptoms of disease, do you think the early diagnosis can help you to decrease the cost management?	No	23	22.8%
	I don't know	20	19.8%
	Yes	58	57.4%
When you diagnosed with cancer, do you think the early management can prevent the complications?	No	16	15.8%
	I don't know	13	12.9%
	Yes	72	71.3%
Did you do early detection of the disease before getting the symptoms of that disease?	No	79	79.8%
	Yes	20	20.2%
What is the period between beginning of the symptoms and early detection?	<1 week	30	30.0%
	1 - 2 weeks	20	20.0%
	More than 2 weeks	50	50.0%
What is the period between the diagnosis and beginning of the treatment?	<1 week	31	30.7%
	1 - 2 weeks	36	35.6%
	More than 2 weeks	34	33.7%

Table 3: special attitudes and practices regarding follow up

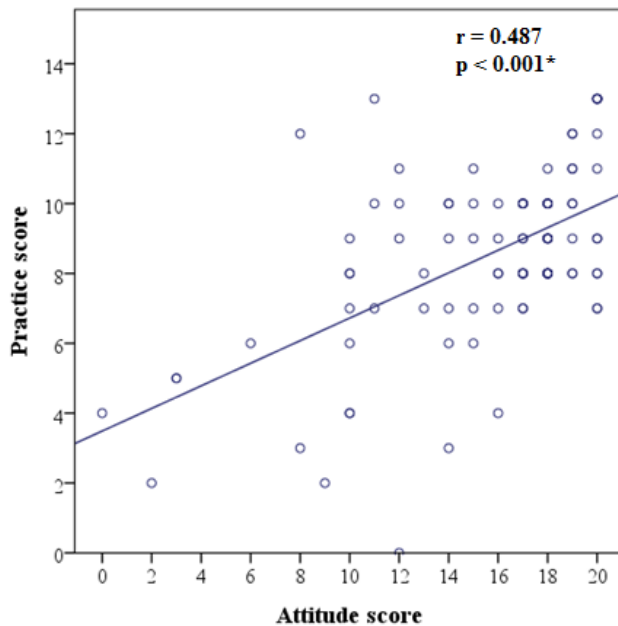
		N	%
Do you think that regular follow up visits will limit the complications of the disease?	No	8	7.9%
	I don't know	10	9.9%
	Yes	83	82.2%
Do you think that doing the investigations will help in the control of the disease?	No	11	10.9%
	I don't know	12	11.9%
	Yes	78	77.2%
Do you think that increasing the dosage, cancelling or changing the medication done by doctor according to your investigations will help in the control of the disease?	No	12	11.9%
	I don't know	20	19.8%
	Yes	69	68.3%
Do you think that the modification of bad habits (smoking and alternative medicine) will help you in the control of the disease?	No	33	32.7%
	I don't know	23	22.8%
	Yes	45	44.6%
Do you committed to regular follow up visits requested by your doctor?	No	11	11.1%
	Sometimes	19	19.2%
	Yes	69	69.7%
Do you consider doing the investigations requested by your doctor at all times?	No	9	8.9%
	Sometimes	13	12.9%
	Yes	79	78.2%
Do you consider increasing the dosage, cancelling or changing the medication requested by your doctor?	No	8	7.9%
	Sometimes	16	15.8%
	Yes	77	76.2%
Do you consider the modification of bad habits that requested by your doctor?	No	15	14.9%
	Sometimes	22	21.8%
	Yes	64	63.4%

Table 4:general health evaluation

		N	%
Do you feel that you were in better health than what you have now?	I don't know	27	26.7%
	No	11	10.9%
	Yes	63	62.4%
If your answer is YES, the reason is	Lack of early detection	20	24.1%
	Lack of early taking of the medication	20	24.1%
	Lack of regular follow up visits	5	6.0%
	Other reasons	38	45.8%
Current situation of the disease	There are no signs of cancer in the body	16	15.8%
	Good response to the treatment	37	36.6%
	Poor response with the treatment	26	25.7%
	Rapid deterioration of the disease in spite of the treatment	22	21.8%

Table 5:total attitude and practice scores in different categories of the respondents.

		Attitude score			Practice score			
		Median	Mean ranks	p	Median	Mean rank	p	
Sex	Female	17.0	51.1	0.407	9.0	52.9	0.118	
	Male	17.0	46.4		8.0	44.1		
Age	< 20	12.0	37.6	0.238	12.0	79.8	0.016*	
	20 - < 40	16.0	44.1		8.5	46.0		
	40 - < 60	18.0	55.1		9.0	53.5		
	≥ 60	17.0	44.6		8.0	39.7		
Educational level	Illiterate	17.0	47.7	0.174	8.0	43.6	0.812	
	Elementary	12.0	36.2		9.5	49.1		
	Intermediate	17.0	48.4		9.0	55.9		
	Secondary	18.0	54.2		9.0	50.6		
	Bachelor's	17.0	61.8		8.5	53.0		
	Postgraduate	14.0	42.9		7.5	48.4		
Occupation	Unemployed	17.0	52.3	0.168	9.0	51.2	0.431	
	Manual worker	14.0	32.7		7.5	36.4		
	Armed forces	14.0	35.0		8.0	41.9		
	Elementary jobs	18.0	52.1		9.5	52.5		
	Manager	17.0	46.3		8.0	36.7		
Marital status	Single	14.0	45.1	0.015*	10.0	60.8	0.158	
	Widow/er	13.0	34.1		Married vs widower	8.0		40.5
	Divorced	14.0	45.0		6.0	37.0		
	Married	18.0	56.4		8.5	60.8		
Type of cancer	Breast	18.0	41.0	0.434	10.0	43.7	0.425	
	Blood	16.5	34.1		8.0	32.3		
	Colon cancer	18.0	45.8		9.0	38.3		
	Lung	20.0	59.3		10.5	56.8		
	Stomach	17.5	38.3		9.5	48.9		
	Thyroid	17.5	35.0		9.0	40.8		
	Others	16.5	36.2		8.5	36.1		
When you discover it	Early	18.0	54.3	0.319	9.0	58.5	0.004*	
	Intermediate	16.0	46.8		9.0	50.8		
	Late	16.0	44.5		8.0	35.8		
Family history of cancers	No	17.0	47.5	0.577	8.0	44.4	0.019*	
	Yes	18.0	51.0		10.0	59.1		



*significant

Figure 1: scatter plot showing correlation between attitude and practice scores.

DISCUSSION

Many types of cancer, particularly breast and colorectal cancers, are easily prevented through screening, which can detect the disease during its early stages, resulting in better prognosis and long-term survival^(11,12). This study has focused on a sample of Saudi cancer patients to evaluate the effect of sociodemographic status on the attitude and practice of patients with cancer towards the intent to start the treatment, the adherence to treatment regimen, and the prognosis of the disease. Therefore, the results of this study are very important for physicians who deal with cancer patients and for policy makers who design educational preventive campaigns for the public.

Our sample was representative of cancer patients of Saudi Arabia. We found that more than half of the respondents were females and the highest percentage of respondents was in the age group 40 to less than 60 years, followed by 20 to less than 40 (40% and 29% respectively). The most common types of cancers among the respondents were breast (33.8%), blood (20%), colon (7.5%) and lung (6.3%) cancers. The higher prevalence of females and age group 40 - 59 in this study may be attributed to the breast cancer being the most frequent type both in KSA, and in this study sample. The median age at diagnosis for breast cancer was reported to be 48 years^(13,14). Analysis of the incidence of cancer in KSA showed that women constituted a higher percentage than men (52.8 and 47.2% respectively). Breast cancer was the most common cancer in females according to the Saudi Cancer Registry in 2014; accounting for 28.7% of all newly diagnosed female cancers in

2014⁽¹⁵⁾. These rates were lower compared to those of the most industrialized Western countries^(14,16). Colorectal cancer was ranked the second most common cause of female cancer and the third most common cancer in males in the year 2012, globally⁽¹⁷⁾. In Saudi Arabia, the incidence of colorectal cancer showed a steady increase in the period between 2001 and 2006, the number of colorectal cancer confirmed cases increases, for both genders and in different agegroups⁽¹⁸⁾. The newly diagnosed colorectal cancer cases in KSA represented 10.4% of all cancers and placed the second after breast cancer⁽¹⁵⁾.

In this study, early discovery occurred in 37.6% of respondents, followed by intermediate (31.7%), and then late discovery in 30.7%. Barriers that delay or prevent the engagement of people in cancer screening should be investigated. Unfortunately, this objective was out of the scope of this study, but a probable factor that appeared in the results was the belief of a considerable proportion that screening is not important if symptoms of the disease are absent. A study carried out in Hail, KSA, on participants who knew someone who had breast cancer, 50.1% admitted that the disease was discovered at a late stage mainly by chance⁽¹⁹⁾. In another study in Jeddah and Makkah cities, KSA, the average delay time of Saudi breast cancer patients was greater than that reported in other countries⁽²⁰⁾. Infiltrating duct carcinoma was the most common breast cancer type reported, reaching up to 78.7% of all cases in KSA⁽¹⁵⁾. Late diagnosis of cancer is common among Arab women and it has been

attributed to the low participation rates of Arab women in cancer screening activities⁽²¹⁾.

Overall, most respondents in this study displayed a good attitude towards early detection and management of cancer. This good attitude was reflected by the agreement of the majority of respondents that early diagnosis can prevent complications (76%), even when having the symptoms of disease (70.3%) and early management can prevent complications (71.3%), which is a good sign in helping to motivate people with implementing screening programs. However, we identified also some points towards which the attitude was less favorable: a less percentage of patients agreed to the importance of screening in absence of disease symptoms (66.3%), and to the effect of early diagnosis on cost of management (57.4%). The study results showed also another defect in practices of early detection and management, as only one fifth have actually done early detection before getting the disease symptoms; and in half of the cases, detection was delayed for more than two weeks after development of symptoms. Also, treatment was delayed for 1 to 2 weeks in about one third of cases and for more than 2 weeks in another third.

Morbidity and mortality have been shown to be effectively reduced by early detection of breast cancer through screening activities⁽²²⁻²⁴⁾. The poor attitude of respondents towards screening methods may be partially explained by the lack of national screening program for breast cancer in Saudi Arabia; and dedication of health education programs to attendee of secondary schools and higher education⁽²⁵⁾. This reluctance and poor engagement in screening programs is a main cause for the relatively high percentage of cancer cases that are discovered in late stages. Similar attitudes from different regions in KSA were reported by various studies; all recording low participation rates in screening programs of breast and colorectal cancers, despite being the commonest types of cancers among Saudis. Low proportions of women who had ever breast cancer screening (5% - 23%) were reported in an earlier study performed on a cohort of Saudi adult women attending primary health care centers in the Al-Ahsa region⁽²⁶⁾ and Riyadh region⁽²⁷⁾. **Hussein et al.**⁽¹⁹⁾ found that half of the female participants aged less than 16 years-old did not practice breast self examination in a study carried out in Hail, KSA. Another study in KSA showed that about 89% of women reported not having a clinical breast examination in the past year, and 92%

reported never having a mammogram⁽²⁸⁾. A study conducted in Al-Madinah city, KSA found that 27.7 and 38.5 % of studied women received mammography and performed breast self-examination, respectively⁽²⁹⁾. Similar low participation rates in breast cancer screening activities have been reported among Arab women^(23,30-32). Early screening tools were reported to be underutilized and mainly used for the diagnosis and /or follow up of an existing lesion⁽²⁶⁾.

A study conducted on Saudi youth who were not suffering from cancer showed that about half of the study group correctly identified screening tools for colorectal cancer⁽³³⁾. Similar low levels of knowledge about prevention of colorectal cancer have been reported^(12,27, 34).

A considerable proportion of participants in the current study did not believe that early detection and screening can decrease cost of management. It is far less expensive to treat patients with early-stage disease than to treat advanced stages⁽³⁵⁾. This point seems not to interest the Saudi population as health services are free to Saudis, but it is of the utmost importance to policy makers. The poor awareness about the benefits and importance of screening methods and early detection in prevention or decreasing the complications of cancer should be vigorously addressed by the health policies to increase knowledge, improve the attitude, and remove all hindering barriers⁽²⁸⁾. The respondents in this study showed also a good attitude towards follow up. The majority agreed that follow up visits would limit the complications (82.2%) and that investigations would help in disease control (77.2%). On the other hand, a lesser percentage of respondents agreed that modification of treatment, based on the investigations, would help in disease control (68.3%), and less than half the respondents (44.6%) believed that modification of bad habits would be helpful. This attitude towards modification of treatment or habits may affect profoundly the compliance to treatment.

Most respondents were committed to regular follow up visits (69.7%) and asserted that they would do the investigations requested by their doctors (78.2%), and modify the treatment (76.2%) and bad habits (63.4%) as requested by their doctors.

Comparison of the attitude and practice scores between different socioeconomic categories of the respondents showed that attitude scores were significantly higher in the married respondents. Practice scores were higher in those aged less than 20 and above 60 years-old, those

who were in early stages of cancer, and respondents with positive family history of cancer. In line with these results, a strong association between older ages and patients' delay was reported^(36,37). Moreover, preventive practices were found to be associated with having family history of colorectal cancer⁽³³⁾. Several studies worldwide have shown inadequate levels of knowledge towards screening, namely clinical breast examination and mammography, even among educated women⁽³⁸⁻⁴¹⁾. The attitude and practice scores were found to have a significant positive and moderate correlation. There was no significant effect of education or occupation on the attitude and practice of the studied sample. Also, **Jassem *et al.***⁽⁴²⁾ found no effect of occupation with delay time in Saudi breast cancer patients. On the other hand, some studies have reported an association between preventive practices with being a male⁽³³⁾, having high education^(29,36,37,43), income, and employment in professional jobs⁽²⁹⁾. Employed breast cancer patients in a study of **Altwalbeh *et al.***⁽²⁰⁾ had significantly longer delay time compared to unemployed patients.

In conclusion, our study showed that the overall attitude and practice of the respondents towards cancer was fair in most points. However, the attitude towards screening methods and their utilization is less than satisfactory. This calls for an action to encourage Saudi population, particularly those at high risk, to seek and receive screening services. Explaining the benefits and the access to free screening services is crucial. Barriers that are responsible for this attitude and practice should be explored and addressed.

Points of strengths:

The study is probably one of the first studies to address the attitude and practice of cancer patients and how they are affected by sociodemographic factors in Tabuk region.

Limitations

This study has some limitations. All our variables were self-reported and may be subject to recall bias. Also barriers to utilization of screening services were not explored.

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