



Evaluating Patients' Knowledge about Lymph Node Cancer and Its Relationship to the Family's Genetic History in the Cancer Center

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Abstract. Lymphoma is a type of cancer that begins in the lymphatic system, which is part of the body's immune system. The lymphatic system consists of lymph nodes (lymph nodes), lymph vessels, the spleen, bone marrow, and other organs. Lymphoma occurs when lymphocytes multiply abnormally. Lymphoma is one of the most common cancers, affecting approximately 8 million people worldwide annually. These statistics should not be underestimated, but should be taken into consideration. This study aimed to assess the level of knowledge of patients with lymphoma and to investigate the relationship between family history and risk of developing the disease. A descriptive and analytical cross-sectional study was conducted at a final center in Wasit Governorate, Iraq, from January 2024 to March 2025. Forty patients were included in the study, who were diagnosed with lymphoma and had their lymph nodes sorted. Data were collected through a structured questionnaire covering demographics, family history, and knowledge about the disease. Data were analyzed using SPSS and Excel, with descriptive statistics and chi-square testing applied to determine statistical relationships (at a significance level of ≤ 0.05). The study was conducted using a descriptive analytical approach at the Oncology Center in Wasit Governorate, Iraq, from January 2024 to March 2025. The sample included 40 female patients diagnosed with lymphoma. Data were collected through a structured questionnaire covering demographics, family history, and knowledge about the disease. Data were analyzed using SPSS and Excel, using descriptive statistics and the chi-square test to determine statistical relationships (at a significance level of ≤ 0.05). Most of the participants (61%) had poor knowledge of lymphoma, particularly about its signs and symptoms, risk factors, and preventive measures.

Keywords: Cancer Awareness, Family History, Iraq, Oncology Education, Patient Knowledge

1. BACKGROUND

Lymphoma constitutes a category of neoplasms of the blood cells arising from lymphocytes located within the lymphatic system, where an endothelial network is formed in these cells. This name also often refers to malignant variants of such tumors, and the signs and symptoms associated with the disease are swollen lymph nodes, fever, profuse sweating mostly at night, weight loss, itching, and fatigue. Although the swollen lymph nodes are usually painless, they remain one of the most common clinical indicators (Jaffe & Arber, 2022; Swerdlow et al., 2016). There are dozens of subtypes of lymphoma, with the two main types being Hodgkin lymphoma and non-Hodgkin lymphoma, the latter being considered more serious. In addition, another classification of lymphoma, according to the World Health Organization, consists of multiple myeloma and immune-proliferative diseases. Although various subtypes exist, roughly 90% are non-Hodgkin lymphomas (Morton et al., 2006).

In recent decades, increasing attention has been paid to elucidating some of the genetic factors associated with lymphomas, particularly after observing several instances of

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lymphomas within the same family (Cerhan & Slager, 2015), and numerous studies have established an association between family history and risk of lymphoma, particularly among first-degree relatives

such as siblings or offspring (Shu et al., 1995). This correlation is attributed to inherited genetic mutations that may alter cell-growth regulation or immune-mediated responses, such as mutations in genes like BCL2, MYC, and TP53 (Tiacchi et al., 2018). Moreover, the risk of lymphoma may also increase in some inherited immunodeficiency syndromes; Werner syndrome or Bloom syndrome, for instance (Hartge & Smith, 2007).

While some environmental factors such as radiation contribute to the evolution of this disease, including certain infections like that caused by the Epstein-Barr virus, hereditary predisposition remains a very important factor for the prevention and early diagnosis of lymphoma (Hartge & Smith, 2007; Cerhan & Slager, 2015). Therefore, understanding the relationship between genetics and lymphoma will improve efforts toward early screening strategies and aid in the development of individualized or gene-based treatments that increase survival and inhibit disease progression.

There are many risk factors for Hodgkin lymphoma, including Epstein-Barr virus infection and family history, whereas the risk factors for non-Hodgkin lymphoma depend on the specific subtype. These include several viruses that cause AIDS, immunosuppressive drugs, and some pesticides. Furthermore, consuming red meat in large quantities may also increase one's risk of the disease (Jaffe & Arber, 2022; Cerhan & Slager, 2015).

2. METHODOLOGY

Study Design

This is a descriptive-analytical (cross-sectional or retrospective) study conducted to investigate the relationship between family history and the incidence of lymph node cancer among female patients.

Study Setting and Duration

Location: Oncology Center, Wasit Governorate, Iraq. From January 2024 to March 2025 this Study Period.

Study Population

The study Sample composed from 40 patients diagnosed with lymph node cancer. Which selected depended on the criteria such as: patients confirmed to have lymph node cancer

by an oncologist, Availability of complete medical records, Patients willing to participate and provide additional information if needed

Data Collection Tools

Data were collected by used questionnaire as study instrument which is fully by patients after get consent:

a. Data Collected Included:

Educational level, family history for recent exposed tor cancer, Marital status, Patient's personal medical history (chronic diseases, prior treatments).

b. Data Analysis

Data were analyzed using SPSS or Microsoft Excel. Descriptive statistics (frequencies, percentages) were used to describe demographic and clinical variables, Chi-square test was used to assess the association between family history and lymph node cancer, p -value < 0.05 was considered statistically significant.

c. Ethical Considerations

Approval was obtained from the Oncology Center administration, Patient confidentiality was strictly maintained, Verbal or written informed consent was obtained from all participants after explaining the purpose of the study.

3. RESULTS

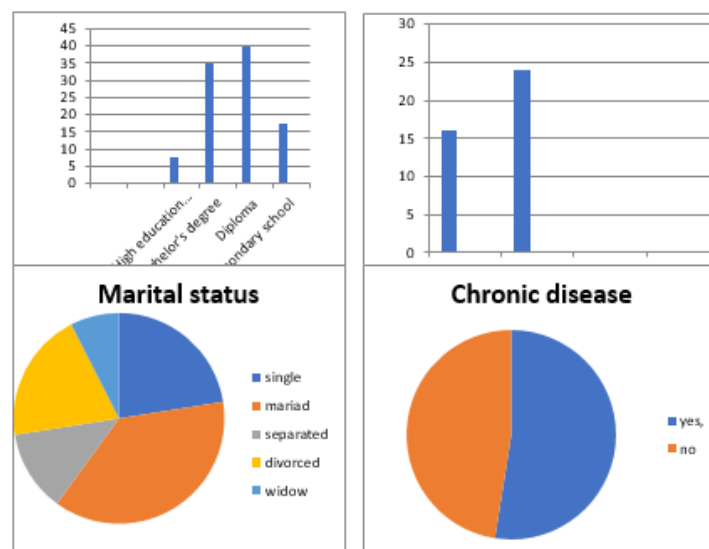


Figure 1. For Educational level, family history for recent exposed for cancer, Marital status, Patient's personal medical history (chronic diseases, prior treatments).

Table 1. Measuring knowledge of patients concerning lymphoid node cancer

No	Questionnaire	Corrected answer		Incorrect answer	
		f.	%	f	%
1	General Knowledge				
1.1	Lymphoma is a type of cancer that affects the lymphatic system.	7	17.5	33	82.5
1.2	There are two main types of lymphoma: Hodgkin and non-Hodgkin lymphoma.	2	5	38	95
1.3	Lymphoma only affects older adults.	1	2.5	39	97.5
1.4	Lymph nodes are part of the immune system.	5	15	35	85
1.5	All swollen lymph nodes indicate cancer.	7	17.5	33	82.5
2	Symptoms				
2.1	Painless swelling of lymph nodes is a common symptom of lymphoma.	2	5	38	95
2.2	Persistent fatigue can be a symptom of lymphoma.	10	25	30	75
2.3	Night sweats and unexplained weight loss may be signs of lymphoma.	1	2.5	29	97.5
2.4	Lymphoma always causes pain in affected areas.	10	25	30	75
2.5	Fever without infection can be a warning sign of lymphoma.	10	25	30	75
3	Risk Factors				
3.1	A family history of lymphoma increases your risk of developing the disease.	2	5	38	95
3.2	Exposure to certain viruses, such as Epstein-Barr Virus (EBV), may increase lymphoma risk.	1	2.5	39	97.5
3.3	People with weakened immune systems are more vulnerable to lymphoma.	5	12.5	35	87.5
3.4	Lymphoma can be caused by lifestyle choices such as smoking or diet alone.	13	32.5	27	67.5
3.5	HIV infection increases the risk of developing lymphoma.	11	22.5	29	77.5
4	Diagnosis				
4.1	A biopsy is necessary to confirm a diagnosis of lymphoma.	11	27.5	29	72.5
4.2	Blood tests alone are enough to diagnose lymphoma.	16	40	24	60
4.3	Imaging tests like CT or PET scans help determine the spread of the disease.	1	2.5	39	97.5
4.4	Lymphoma can be diagnosed during a routine physical examination.	5	12.5	35	87.5
4.5	Early diagnosis improves the chances of successful treatment.	7	17.5	33	82.5
5	Treatment & Management				
5.1	Chemotherapy is commonly used to treat lymphoma.	2	5	38	95

5.2	Radiation therapy is never used for lymphoma treatment.	10	25	30	75
5.3	Some types of lymphoma are curable.	10	25	30	75
5.4	Lymphoma patients may need bone marrow or stem cell transplants.	8	20	32	80
5.5	Treatment side effects include hair loss, nausea, and fatigue.	12	30	28	70
6	Prevention & Lifestyle				
6.1	Lymphoma is a contagious disease.	2	5	38	95
6.2	Regular medical check-ups can help in early detection of lymphoma.	1	2.5	39	97.5
6.3	Following a healthy lifestyle can support recovery and improve quality of life.	5	15	35	85
6.4	Health education increases awareness and helps patients manage lymphoma better.	7	17.5	33	82.5
total			15.2		84.8

Table 2. The relationship between knowledge about lymph node cancer and demographic data.

Variables		Knowledge of patient with lymph node cancer (n = 40)						
		Sum of Squares	d.f	F	$P \leq 0.05$	Sig.		
Level of education	Between Groups	15.008	16	0.938	1.567	0.007	N. S	
	Within Groups	13.767	23	0.599				
	Total	28.775	39					
Marital status	Between Groups	10.833	16	0.677	1.034	0.001	S	
	Within Groups	15.067	23	0.655				
	Total	25.900	39					
Family history	Between Groups	6.483	16	0.405	0.520	0.000	H. S	
	Within Groups	17.917	23	0.779				
	Total	24.400	39					
Type of cancer found in family	Between Groups	18.500	16	1.156	2.829	0.001	S	
	Within Groups	9.400	23	0.409				
	Total	27.900	39					

Patient's personal medical history (chronic diseases, prior treatments).	Between Groups	18.500	16	1.156	2.829	0.002	S
	Within Groups	9.400	23	0.409			
	Total	27.900	39				

4. DISCUSSION

The researchers sought out to determine the extent of knowledge possessed by those diagnosed with lymphoma and to examine the relationships between the personal backgrounds of these participants and the actual conception of their disease. Data analyzed depicted that most of the study subjects were poorly knowledgeable about lymphoma, as only 39% could answer key questions correctly especially those related to the symptoms, causes, risk factors, and prevention of the disease while the remaining 61% gave wrong answers. These findings are compatible with those of previous studies, since they pointed toward a generally insufficient level of cancer awareness (Rahman et al., 2018). In Bangladesh, similar findings had been shown among a sample of individuals with blood-related cancers, most of whom displayed a moderate level of awareness, thereby pointing toward the global nature of this knowledge gap (Khan et al., 2019). Moreover, knowledge of the illness tended to be limited among those who were younger and single in Ethiopia, potentially because they had fewer health-related responsibilities or less exposure to health education messages (Tadesse & Alemayehu, 2020). This concurs with the findings of this study, as most of the study's sample consisted of persons younger than 30 years, thereby forming the crux of awareness interventions for younger patients.

Family studies showed that 46% were couples, whereas only 1% were nuclear single mothers with their children. Regarding place of residence, 73% of participants lived in urban areas, which theoretically afford better access to information and healthcare services. However, urban patients still registered low health literacy scores, which can best be explained by one or two factors: either information overload or the use of non-credible sources. This finding matches results from a study in Cameroon, where patients exposed to an environment full of people were more at risk because of the concentration of clinics and late diagnosis (Ngono et al., 2017).

Almost half of the participants were married, so there might be a risk of transmission to the home, especially in viral-associated lymphomas such as EBV and HIV cases. Similarly, in a

Southern Italian study, Feretti et al. observed that cancer patients' ignorance contributed to delays in family screening and early intervention (Rossi et al., 2020).

Taking into consideration that 76.7% represents a quite massive majority, this, in fact, provides a window of opportunity for educational intervention. If taught structured cancer education, these people might be most receptive to such teachings when they are incorporated into routine health services, such as patient education during follow-up visits or community awareness programs. Moreover, the same recommendations were made by Jokhio et al. (2010), who underscored the significance of education toward early detection and treatment compliance.

5. CONCLUSION

Following the above study, it is determined that patients with lymphoma in Wasit Governorate are very poorly informed on the nature, transmission, risk factors, and prevention of lymph node cancer. Despite a relatively high percentage of the sample with formal education and residence in urban areas, the awareness tends to be very little, especially from among the younger and unmarried. This knowledge gap constitutes a big problem from a public health perspective, especially considering late diagnosis, less adherence to treatment, and increased family risk among married persons. Accordingly, the study calls for direct educational interventions to be operationalized within routine health services to maximize health literacy among lymphoma patients. Further research is warranted to study the influence of custom-made awareness programs and how health workers can promote early detection and treatment of lymph node cancer.

Ethical consideration

This study was conducted in accordance with the ethical standards for research involving human subjects, and official permission had to be obtained from the Oncology Center in Al-Kut City, Wasit Governorate, Iraq, before data collection could take place. In addition, the study was approved by the relevant health authority and the institutional review board, wherever applicable.

Participants were fully informed about the nature, purpose, and objectives of the study. Participation was entirely voluntary, and written informed consent was obtained from all participants before enrollment in the study. Participants were assured that their responses would be kept confidential and used exclusively for scientific research purposes. No identifying personal information was collected or disclosed.

The study ensured respect for the dignity, rights, and welfare of all participants. They were given the right to withdraw from the study at any time without any consequences to their current or future medical care.

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