Relationship between Depressions Level and Socio-Demographic Characteristics among Adolescent Undergoing Chemotherapy Treatment at Pediatric Teaching Hospitals in Baghdad City

العلاقة بين الخصائص الاجتماعية والديمغرافية و مستوى الكأبة لدى المراهقين الذين يخضعون للعلاج الكيمياوي في مستشفيات الاطفال التعليمية في مدينة بغداد

Ali K. Ouda*
Dr. Qahtan Q. Mohammed**
Dr. Khamees Bandar Obaid***

الخلاصة:

خلفية البحث: المريض المشخص بالسرطان والخاضع للعلاج. سيكون تشخيص الإصابة بالسرطان له تأثير كبير على حياة المرض. قد يكون من الصعب الموازنة بين علاج السرطان والآثار الجانبية ومتطلبات الحياة اليومية. وفقًا للأبحاث، يمكن أن يظهر الإجهاد المرتبط بالسرطان ورعاية مرضى السرطان بعدة طرق، بما في ذلك أعراض الاكتئاب.

الاهداف: تقييم مستوى الاكتئاب بين المراهقين الذين يخضعون للعلاج الكيميائي في مستشفيات الأطفال التعليمية في مدينة بغداد ومعرفة العلاقة بين مستوى الاكتئاب بين المراهقين الذين يخضعون للعلاج الكيميائي وخصائصهم الديموغرافية مثل العمر، الجنس، مستوى التعليم، ومدة العلاج الكيميائي.

المنهجية: أجريت دراسة ارتباطية وصفية، باستخدام منهج التقييم، حيث بدأت الدراسة من 15 / كانون الاول / 2020 ولغاية 15 / تموز / 2021، لتقييم مستوى الاكتئاب لدى المراهقين الذين يخضعون للعلاج الكيميائي في مستشفيات الأطفال في مدينة بغداد. تم تعديل الاستبيان كتقييم ذاتي لغرض الدراسة. تم اختيار عينة قصدية "غير احتمالية" قوامها (45) مراهقا لهذه الدراسة.

النتائج: اشارت نتائج الدراسة إلى أن المراهقين في منتصف العمر والذكور يصابون بأعراض اكتئابيه أكبر من غيرهم بعد علاجهم بالعلاج الكيميائي. اكتئاب المراهقين المصابين بالسرطان له علاقة مهمة للغاية بخصائصهم الاجتماعية والديموغرافية المتمثلة في الانتكاس، والمضاعفات، ووظيفة الأمهات، والجنس، والتعليم، والدخل الشهري، ومدة العلاج، والعمر، ومهنة الأب، وتعليم الآباء، وتعليم الأمهات، والعمر عند التشخيص.

الاستنتاج: يتأثر اكتئاب المراهقين المصابين بالسرطان بخصائصهم الاجتماعية والديموغرافية المتمثلة في الانتكاس، والمضاعفات، ومهنة الأمهات، والجنس، والتعليم، والدخل الشهري، ومدة العلاج، والعمر، ومهنة الأب، وتعليم الآباء، وتعليم الأمهات، والعمر عند التشخيص.

التوصيات: يمكن تقديم برنامج تعليمي جيد مصمم ومبني لهؤلاء المراهقين وأولياء أمورهم بغرض زيادة وعيهم بالمرض وجعلهم قادرين على منع المضاعفات والانتكاس المرتبط بالاكتئاب. يجب إجراء فحوصات دورية ودورية لرصد الحالة الصحية لهم.

الكلمات المفتاحية: علاقة، كأبة، الخصائص الاجتماعية والديمغرافية، مراهقين، علاج كيمياوي.

ABSTRACT:

Background: A patient has being diagnosed with cancer and undergoing treatment. A cancer diagnosis will have a significant impact on one's life. It can be difficult to balance cancer treatment and side effects with the demands of daily life. Stress associated with cancer and it is care, according to study, can display in a many of ways, including depressive symptoms.

Aims of the study: To evaluate depression level among adolescents undergoing chemotherapy treatment at Pediatric teaching hospitals in Baghdad City and find out the relationship between depression level among adolescents undergoing chemotherapy treatment and their demographic characteristics, such as age, gender, level of education, and duration of chemotherapy.

Methodology: A descriptive correlational study, using an assessment evaluation approach was conducted from 15 / December / 2020 to 15/ July / 2021, to assess evaluate the level of depression for adolescents undergoing chemotherapy at pediatric hospitals in Baghdad City. A self-report questionnaire is modified developed for the purpose of the study. A purposive "non- probability" sample, of (45) adolescents, is selected for the present study.

Results: Results of the study indicates that adolescents, who are middle age and males, develop depressive symptoms more than others after being treated with chemotherapy. Adolescents' depression has highly significant relationship with their socio-demographic characteristics of relapse, complications, mothers' occupation, gender, education, and monthly income, duration of treatment, age, fathers' occupation, fathers' education, mothers' education and age at diagnosis.

Conclusion: Adolescents' depression is affected by their socio-demographic characteristics of relapse, complications, mothers' occupation, gender, education, and monthly income, duration of treatment, age, fathers' occupation, fathers' education, mothers' education and age at diagnosis.

Recommendations: Well-designed and constructed education program can be presented to these adolescents and their parents for the purposes of increasing their awareness toward the disease and making them able to prevent complications and declines associated depression. Regular and periodic investigations should be carried out to monitor the adolescents' health status.

Keywords: Socio-Demographic Characteristics, Adolescent, Chemotherapy.

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* MSc., student \ Pediatric Nursing Department \ College of Nursing \ University of Baghdad \ Iraq.
E-Mail: aliamarra92@gmail.com.

** Assist., Prof. \ Psychiatric and Mental Nursing Department \ College of Nursing \ University of Baghdad \ Iraq. E-Mail: qahtan@conursing.uobaghdad.edu.iq.

INTRODUCTION

Chemotherapy is a pharmacological treatment that uses harsh chemicals to destroy body's cells. Chemotherapy is widely used to treat cancer because cancer cells expand and multiply far faster than the rest of the body's cells. Chemotherapy medications come in a variety of forms. Chemotherapy drugs kill cancer cells but can destroy healthy cells as well. Side effects occur when healthy cells are destroyed. Chemotherapy has a wide range of effects on the cells and tissues of the body. Chemotherapy medications impact cells that are actively developing and dividing, such as those in the bone marrow, the mouth, and the gastrointestinal system, and hair follicle cells [1].

A patient's mental health may suffer as a result of being diagnosed with cancer and undergoing treatment. A cancer diagnosis is had a significant impact on one's life. It can be difficult to balance cancer treatment and side effects with the demands of daily life. Stress associated to cancer and care, according to study, can display in many of ways, including depressive symptoms [2].

Females were shown to have greater rates of depressive disorders in teenagers in studies, although there was no statistically significant difference in others, and males were shown to be the majority in a few studies. Other group surveys of adolescents' depressed symptoms revealed that the prevalence of depressed symptoms ranged from 8.3% to 16.3 % (10.0 %). Several studies have indicated no statistically significant difference with age [3].

Epidemiological studies on depression and depressed symptoms in teenagers have revealed discrepancies in the frequencies discovered, the rates of various age groups, and the types of depressive symptoms experienced, and the gender distribution. While it is widely accepted that the frequency of depression and depressive symptoms rises during puberty, the exact timing of this increase is unknown. Because data is few and studies on age and gender disparities have been contradictory, it's also unclear as gender rates climb, with females outnumbering males [4].

The individual who does not have good education level develops deprived of these types of essential social education level and thus has low amount of perception concerning terminal sickness, management consequence, and probable recurrence of the illness which might clue to elevated inner distress, depression, and anxiety. Persons with poor education might have low level of sureness and might be a cause of their proneness toward social inhibition and loneliness. Education levels are a good indicator of a person's socio-economic position and is considered one of the pre-disposing factor toward the use of psychological healthcare services [5].

A long-term disease like cancer require continuous follow-up, which has made the client's state worse. The continuous expenses for cancer have coupled with the existing economic problems and have made the present situation very problematic to handle. Exhausted economic resource may enlarge the influence of a relapse of cancer and it has also made the client's perceived burden of sickness and elevated levels of depression and anxiety. a correlation was found between economic stress and depression in clients with cancer [6]. As per numerous research findings, the severity of psychiatric disorders [7]. Adequate evidence exists to suggest that difference in psychological health status, adjustment, treatment outcomes, and survival may be attributable to low socio-economic status and a poor of insurance coverage [8]. One of possible cause for this result could be that the duration of the treatment in the this study was considered to be range from 1 to 10 year; because of the vast range, the consequence could be confounded and other moderator variables (such as socio-economic status, education, residential status) might affect the result [9].

METHODOLOGY

- **Design of the Study**

From 15 / 12 / 2020 to 15 / 7 / 2021 a descriptive correlational study using assessment evaluation approach is designed to examine the degree of depression among adolescents undergoing chemotherapy at pediatric hospitals in Baghdad City.

- **Ethical Considerations**

The researcher obtained authorized approvals that were taken from College of Nursing with written pledge for ethics of the scientific research and from the health organizations concerned with this study before any data collection begin (see Appendix B-1 and B-2). The assent of every study participants was obtained through an official form arranged for this purpose. Hence, the researcher confirmed the privacy of each single respondent. Consequently, no any personal information was combined into the study; accordingly, anonymity of the respondents was assured.

- **Setting and Sampling of the Study**

The study was conducted at Modified teaching Hospitals in Baghdad City and Central Teaching Hospital of Pediatric in Baghdad city, this hospital and center is the designated agencies for data collection, because it is a specialized for chemotherapy treatment for adolescent, which facilitated the process of data collection. For this analysis, a purposeful "non-probability" sample of (45) adolescents undergoing chemotherapy were chosen. This sample was chosen from Oncology Teaching Center and Central Teaching Hospital of Pediatric in Baghdad city.

- **Instrument of the Study**

A self-report questionnaire is modified developed for the purpose of the study. The study's aim is to create a self-report questionnaire. There are two sections to the research instrument. The beck Depression Scale (10) is used in the second section, which incorporates the patients' socio-demographic characteristics:

- **Part I:** Patients' Socio-demographic Characteristics

Patients' socio-demographic characteristics consist of (9) items which include age, gender, age at diagnosis, education, parents' education, parents' occupation, monthly income, duration of chemotherapy, complications and relapse.

- **Part II:** Beck Depression Scale [10]

This part embraces (21) item which are measured on 3-level type Likert scale of always =3, sometimes =2 and never = 1and valued as mild = (21-35), moderate = (36-49) and high = (50-63).

- **Reliability of the Instrument**

Internal consistency reliability is employed for the study instrument. Split-half technique is performed with computation of the Cronbach's alpha correlation coefficient. Data are collected, for such reliability, from (10) adolescents at pediatric. Based on the study findings, the internal consistency of the instrument is acceptable (0.89), for the Depression Scale. So, the instrument can be considered as adequate measure.

- **Data Collection**

From February 20th to April 10th, 2021, data is collected using the research questionnaire and the self-reported or interview with participants or semi-structure interview if the need to some explanations to the instrument structured interview technique as data collection methods.

- **Data Analysis**

Data are analyzed through the application of the following approaches:

A. Descriptive Statistical Data Analysis Approach.

B. Inferential Statistical Data Analysis Approach.

RESULTS

Table (1): Adolescents' Socio-demographic Characteristics

L.	Characteristics		Frequency	Percent
1	Age (Years)	12-14	22	48.9
		15-18	23	51.1
2	Gender	Male	24	53.3
		Female	21	46.7
3	Age at Diagnosis (Years)	11-15	41	91.2
		16.20	4	8.8
4	Education	Unable read and write	3	6.7
		Read and write	19	42.2
		Primary school graduate	17	37.8
		Middle school graduate	6	13.3
		Secondary school graduate	0	0.0
5	Duration of Chemotherapy (Months)	1-5	23	51.1
		6-10	12	26.7
		11-15	6	13.3
		16-20	2	4.4
		> 20	2	4.4
6	Father's Education	Unable to read and write	1	2.2
		Able to read and write	5	11.1
		Elementary school graduate	7	15.6
		Middle school graduate	17	37.8
		High school graduate	13	28.9
		College graduate	2	4.4
		Postgraduate		
7	Mothers' Education	Unable to read and write	4	8.9
		Able to read and write	12	26.7
		Elementary school graduate	15	33.3
		Middle school graduate	7	15.6
		High school graduate	7	15.6
		College graduate	0	0.0
		Postgraduate	0	0.0
8	Fathers' Occupation	Employed	18	40.0
		Not employed	1	2.2
		Earner	25	55.6
		Retired	1	2.2
9	Mothers' Occupation	Employed	5	11.1
		Earner	2	4.4
		Housewife	38	84.4
10	Monthly Income	Enough	25	55,5
		Almost Enough	12	26.7
		Not Enough	8	17.8
11	Complications	Yes	2	4.4
		No	43	95.6
12	Relapse	Yes	22	49.9
		NO	23	51.1

Results, out of this table, depict that most of the adolescents are (15-18) years old (51.1%), male (53.3%), at (12) and (14) years of age at diagnosis (22.2%) each, read and write (42.2%), have a duration of treatment (1-5) months (51.1%), have enough income (55.5%), their fathers are middle school graduates (37.8%) and mothers are elementary school graduates (33.3%), their father are earners (55.6%) and mothers are housewives (84.4%), have complications associated with depression (95.6%) and relapse (51.1%).

Table (2): Evaluation of adolescents' level of depression

	Mild N(%)	**Moderate** N(%)	**Severe** N(%)
Level of Depression	0(0.0)	35 (77.78%)	10 (22.22%)

Mild (36-49), Moderate (21-35), Sever (50-63).

Results, out of this table, reveal that most of these adolescents have experienced moderate level of depression (77.78%).

Table (3): Principal component analysis for the domains of depression

L.	Domains	Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	Percentage of Variance	Cumulative Percentage	Total	Percentage of Variance	Cumulative Percentage
1.	**Looking Forward**	5.930	28.237	28.237	5.930	28.237	28.237
2.	**Sleeping**	2.630	12.524	40.761	2.630	12.524	40.761
3.	**Feeling**	1.836	8.742	49.503	1.836	8.742	49.503
4.	**Walking**	1.450	6.904	56.407	1.450	6.904	56.407
5.	**Energy**	1.321	6.288	62.695	1.321	6.288	62.695
6.	**Pain**	1.086	5.171	67.866	1.086	5.171	67.866
7.	**Appetite**	1.007	4.793	72.660	1.007	4.793	72.660

Extraction Method: Principal Component Analysis

Results, out of this table, indicate that the most top significant domains of looking forward, sleeping, feeling, walking (recreation), energy, pain and eating (appetite) are found to be more important in dealing with adolescents who are experiencing depressive symptoms.

Table (4): Comparative Differences between Adolescents' Depression with Respect to Their Age and Gender

Variables	Mean	Standard Deviation	Type of test	Degree of Freedom	Significance
Age	55.364	5.141	(F)	43	0.299
Gender	54.435	5.542	(T)	42	0.898

T (t-test, F= variance)

Results, out of this table, show that there is no significant difference between adolescents' depression with respect to their age and gender.

Table (5): Multiple linear regressions for the relationship between adolescents' depression and their socio-demographic characteristics

	Model	Sum of squares	Degree of Freedom	Mean Square	F-Statistics	Significance
1	**Regression**	568.081	12	47.340	2.455	0.021[b]
2	**Residual**	617.119	32	19.285		
	Total	**1185.200**	**44**			

A. Dependent Variable: Adolescents' Depression.

B. Predictors: (Constant), Relapse, Complications, Mothers' occupation, Gender, Education, Monthly income, Duration of treatment, Age, Fathers' occupation, Fathers' education, Mothers' education, and Age at diagnosis.

Results, out of this table, present that Adolescents' Depression has a significant relationship with the socio-demographic characteristics of relapse, complications, mothers' occupation, gender, education, and monthly income, duration of treatment, age, fathers' occupation, fathers' education, mothers' education and age at diagnosis.

DISCUSSION

Part I: Discussion of Adolescents' Socio-demographic Characteristics (Table 4)

Based on these factors, the majority of the adolescents in the present sample who have developed depressive disorders are in their middle years. In terms of gender, the current study discovered that male adolescents shown for more than half of the patients.

Males have a higher relative risk of depression during early and late adolescence than children, according to study findings [11]. They are (43 % females, and (73 %) are (12-17) years old, according to the results [12].

According to the findings, the majority of depressed adolescents is diagnosed between the ages of 12 and 14, and is treated for 1 to 5 months. These results show that these adolescents developed cancer while still in their early teenage years.

Many teenagers and their parents have been reported having low achievement levels in relationship to their education. These results show that low-educated teenagers and their parents are more than to develop depression disorders of not have ever had cancer.

According to the report, more than half of adolescents have sufficient family income, with more than a third of their fathers working and the majority of their mothers being housewives. According to study, a quarter of them (24%) come from low-income households [12].

According to Baker and Syrjala (2018), teenagers are at a higher risk for long-term complications, subsequent malignancies, and the increased onset of common age-related comorbid conditions [13].

Part II: Discussion of Adolescents' Level of Depression (Table 2, 3)

During the data analysis, the researchers discovered that many adolescents developed and endured mild depression as a result of their chemotherapy treatment. This finding suggests that teenagers who are diagnosed with cancer and are undergoing chemotherapy treatment are more likely to experience health problems as a result of the treatment.

The pain, exhaustion, and insomnia that may result from the cancer itself or as side effects of treatment may contribute to or exacerbate depression after diagnosis — the first possible cause [14]. The chemotherapy side effect that can cause confusion, mental fog, and other symptoms.

For someone who has battled cancer, finishing active care is a significant accomplishment. Being cancer-free, on the other hand, does not always offer the peace of mind that patient's desire. Cancer survivors also struggle with depression in addition to the physical side effects of treatment. These feelings may also worsen after treatment in some cases [15]. Looking ahead, sleeping, feeling, walking (recreation), energy, pain, and eating (appetite) are discovered to be more relevant in coping with adolescents who are experiencing depressive symptoms in the current research. These results show that when providing bio-psychosocial services to adolescents with this type of health concern, health care professionals should focus on these issues.

Part III: Discussion of the Comparative Differences between Adolescents' level of depression Relative to their age and Gender (Table 4)

According to the results of such a comparison, middle-aged and male teenagers grow and experience, as well as becoming more susceptible to depression following chemotherapy

treatment, than others. According to a national survey of US adolescents aged 12–17 (N=101 685), the average incidence of depression between the ages of 12 and 17 is (13.6 percent) among male subjects and (36.1 percent) among females.

Female participants are (2.8) times more likely than males to experience depression at the age of twelve, and between (3.1 and 4.0) times more likely to develop depression at the ages of thirteen and fourteen (13 through 16). At the age of 17, the relative risk of (2.2) is smaller than at the age of (12) [16].

Part IV: Discussion of the Relationship between Adolescents' Level of Depression and Their Socio-demographic Characteristics (Table 5)

The socio-demographic features of relapse, complications, parents' occupation, gender, education, and monthly income, period of care, age, parents' education, and age at diagnosis have all been shown to have a significant relationship with adolescent depression. These connections may be interpreted as follows: being vulnerable to the possibility of relapse and other complications; being part of low-income households with low-educated and unemployed parents, and therefore low-educated teenagers; being young adolescents and being diagnosed at a young age.

CONCLUSIONS

The study ascertains that many depressed adolescents have developed complications associated with cancer disease experienced relapse far along. Most of the adolescents have experienced moderate level of depression as a result of their being exposed to the chemotherapy treatment. The study confirms that the issues of looking forward, sleeping, feeling, walking, energy, pain, appetite have major influence on the prognosis of the health problem of depression. Adolescents' depression is affected by their socio-demographic characteristics of relapse, complications, mothers' occupation, gender, education, and monthly income, duration of treatment, age, fathers' occupation, fathers' education, mothers' education and age at diagnosis.

RECOMMENDATIONS

Well-designed and constructed education program can be presented to these adolescents and their parents for the purposes to increase their awareness toward their disease and making them able to prevent complications and relapse that associated depression. Regular and periodic investigations should be carried out to monitor the adolescents' health status. Further research can be conducted on the same topic with wide-range sample size, variety of variables and different settings.

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