

## Assessment of Performance Status on Physical and Psychological Problems Related to Chemotherapy among Patients with Cancer

تقييم حالة الأداء على المشاكل الجسدية والنفسية ذات الصلة للعلاج الكيميائي بين مرضى السرطان

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### الخلاصة

**الهدف:** الهدف الرئيسي من هذه الدراسة هو تقييم حالة الأداء على المشاكل الجسدية والنفسية ذات الصلة للعلاج الكيميائي بين مرضى السرطان ومعرفة العلاقة بين نتائج الدراسة والمتغيرات المختارة.  
**المنهجية:** أجريت دراسة وصفية على مائة من مرضى السرطان تحت العلاج الكيميائي والتي تم جمعها من العيادات الخارجية، عيادة الأورام، مستشفى الإمامين الكاظميين للفترة من الأول من شهر حزيران إلى الأول من شهر أيلول ٢٠١٦. استخدمت الدراسة استبيان حول مقياس الأداء والمشاكل الجسدية والنفسية المتعلقة بالعلاج الكيميائي بين مرضى السرطان.  
**النتائج:** كان التعب وفقدان الشعور وطعم معدني في الفم وقرحة الفم وفقدان الشهية والغثيان والقيء من الأعراض الجسدية الأكثر شيوعاً من ذوي الخبرة والأكثر إضعافاً وشدة. وكان ما يقرب من أقل من نصف المشاركين يمتلكون مستويات الحد الفاصل أو السريرية من القلق والإكتئاب. على الرغم من أن نسبياً حالة الأداء وصلت مستوى (١-٠) ٩١% من نشاط المريض أي تراوحت بين كامل نشاط وبعض مقيد. أخيراً، هناك اختلافات كبيرة بين الوضع، الأداء إلى المشاكل الجسدية والنفسية في قيمة ف ٠.٠٠١. تم تحليل البيانات باستخدام نظام SPSS نسخة ٢٢.  
**الاستنتاج:** أظهرت الدراسة وجود مشاكل جسدية ونفسية للمرضى المصابين بالسرطان وعلاقته مع حالة أداء النشاط والتقييد لتلك العينة.  
**التوصيات:** توصي الدراسة بتعزيز البرامج التعليمية والصحية العامة لرفع مستوى الوعي بشأن ضرورة دعم المرضى الذين يشكون من مرض السرطان في العراق.

### Abstract

**Objectives:** The main aim of the study was to assess the performance statue on physical and psychological problems related to chemotherapy among patients with cancer and find out the relationship between study findings and selected variables

**Methodology:** A study conducted descriptive on one hundred of cancer patients under chemotherapy collected from Outpatient Clinic of the Oncology Imamenn Al-Kazemi Hospital during period from June to September 2016. The study utilized the questionnaire about performance, physical and psychological problems related to chemotherapy among patients with cancer:

**Results:** Fatigue, hair loss, metallic taste in mouth, Sore mouth, appetite loss, nausea, and vomiting were the most commonly experienced and most debilitating and severity physical symptoms. Approximately less than half of participants had borderline or clinical levels of anxiety and depression. Although relatively performance grade range (0-1) levels were 91% of patient s activity ranged between full active and some restricted. finally, there is significant differences between performance status to their physical & psychological problems at P value 0.001. The data were analyzed by using the SPSS, version 22.

**Conclusions:** The study showed the presence of physical and psychological problems for patients with cancer and its relationship with the state of performance of activities and adherence to that sample.

**Recommendation:** The study recommended to promoting public health educational programs to elevate the level of awareness regarding the necessity to support patients complaining of cancer in Iraq.

**Key words:** performance status, Physiology, anxiety, depression, oncology.

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## Introduction

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. It is the second most common cause of death in the US, exceeded only by heart disease, and accounts for nearly 1 of every 4 deaths. Around 14.5 million Americans with a history of cancer were alive on January, 2014. Some of these individuals were diagnosed recently and are actively undergoing treatment, while others were diagnosed many years ago with no current evidence of cancer<sup>(1)</sup>. Cancer is caused by external factors, such as tobacco, infectious organisms, and an unhealthy diet, and internal factors, such as inherited genetic mutations, hormones, and immune conditions. These factors may act together or in sequence to cause cancer. Ten years or more often pass between exposure to external factors and detectable cancer<sup>(1)</sup>. GLOBOCAN 2012, provides the most recent estimates for 28 types of cancer in 184 countries worldwide and offers a comprehensive overview of the global cancer burden that vary in their onset age, diagnostic detectability, rate of growth, state of cellular differentiation, invasiveness, potential metastatic, prognosis and response to treatment<sup>(2,3)</sup>. Treatments include surgery, radiation, chemotherapy, hormone therapy, immune therapy, and targeted therapy (drugs that specifically interfere with cancer cell growth)<sup>(4)</sup>. Cancer chemotherapy is the treatment method which uses drugs to kill cancer cells or to inhibit their growth<sup>(5)</sup>.

Chemo can work throughout the whole body. Chemo can kill cancer cells that have metastasized or spread to parts of the body far away from the primary tumor. More than 100 chemo drugs are used in many combinations. A single chemo drug can be used to treat cancer, but often multiple drugs are used in a certain order or in certain combinations (called combination chemotherapy). Multiple drugs with different actions can work together to kill more cancer cells. This can also reduce the chance that the cancer may become resistant to any chemo drug. Cancer cells tend to grow fast, and chemo drugs kill fast-growing cells. But because these drugs travel throughout the body, they can affect normal, healthy cells that are fast growing, too. Damage to healthy cells causes side effects. The normal cells most likely to be damaged by chemo are blood-forming cells in the bone marrow; hair follicles; and cells in the mouth, digestive tract, and reproductive system. Some chemo drugs can damage cells in the heart, kidneys, bladder, lungs, and nervous system<sup>(6)</sup>.

A study that evaluated the quality of life of cancer patients who had refused, discontinued, or completed chemotherapy revealed that the quality of life of patients who refused or discontinued chemotherapy was no different than that of patients who completed treatment<sup>(7)</sup>.

Chemo can bring major changes to life. It can affect overall health, threaten sense of well-being, disrupt daily routines with physical symptoms as diverse as fatigue, nausea, vomiting, hair loss, appetite loss, diarrhea, constipation, difficulty sleeping, pain, fluctuations in weight and amenorrhea. It's normal and understandable for patient and family to feel sad, scared, anxious, angry, or depressed. There are ways to cope with these emotional side effects, just as there are ways to cope with the physical side effects<sup>(6,8)</sup>.

## Methodology:

**1- Design of the study:** Descriptive analytical.

**2- Sample of the study:** One hundred of cancer patients under chemotherapy collected during 2016

**3- Setting of the study:** The data were collected from Outpatient Clinic of the Oncology Imameen Al-Kazemi Hospital during period from 1<sup>st</sup> June to 1<sup>st</sup> September 2016.

**4- Instrument construction:** The study utilized the questionnaire about performance problems related to chemotherapy among patients with cancer, the questionnaire which include:

**Part I:** demographic and clinical variables (i.e., age, marital status, educational level, occupational status, residence, pathological staging, time since diagnosis, types of cancers, current drugs, method of drug administration chemotherapy, radiation therapy and last treatment session at clinic).

**Part II:** consisting of two aspects: 1-Patients answered questions to assess their levels of anxiety and depression (Anxiety and Depression Scale), 2-The prevalence and severity of physical symptoms experienced by patients attending an outpatient medical oncology department and Performance Status of 14 physical symptoms

**Part III:** ECOG Performance Status of WHO

All items were scored in a 3-point Likert scale (3-Always; 2-Sometimes; 1-never). The cut-off point was (2); where items were considered in the levels of evaluation as the following:

Cut of point =  $(3+2+1)/3 * 100 = 33.3$ . Range = Maximum score (100%) - minimum score (33%) = 67. Interval =  $67/3 = 22$  33+ 22= 55 (Low), 56+ 22= 78 (Moderate), 78+ 22= 100 (High). Depending on these results the levels were estimated as: Low= ≤ 56, Moderate= 56 – 78, High= 78-100. The data were analyzed by using the SPSS, version 22. The descriptive and inferential statistical data analysis approaches were used in the analysis.

**Results:**

**Table 1: Distribution of the sample by their socio-demography characteristics**

Variables		Number	Percentage
<b>Age (years)</b>	Less than 30	11	11
	30-39	10	10
	40-49	20	20
	50-59	20	20
	60-69	20	20
	More than 70	9	9
		<b>Mean=50.12 ±14.97</b>	
<b>Gender</b>	Male	54	54
	Female	46	46
<b>Marital status</b>	Married	51	51
	Single	22	22
	Widowed	24	24
	Divorced	3	3
<b>Educational Level</b>	Not read and write	12	12
	Read and write	21	21
	Primary school	24	24
	Intermediate	22	22
	Secondary	7	7
	College graduate and above	14	14
<b>Occupation status</b>	Un employed	29	29
	Retired	15	15
	Employed	12	12
	Housewife	36	36
	student	8	8
Residency	Rural area	59	59
	Urban area	41	41

Table 1 shows that there were slightly more men than women; ages ranged between 18 and 73 years and the majority of the sample (25%) were within age groups of (30-39 and (40-49) years (Mean=50.12 ±14.97), 51% were married, half of participants were low education level, 36% were housewife, the highest percentage (59%) of the study sample were living in rural residential area.

**Table 2: Distribution of the sample by their clinical characteristics**

Variables		Number	Percentage
<b>Pathological staging</b>	1	3	3
	2	33	33
	3	60	60
	4	4	4
<b>Time since diagnosis/mon.</b>	Up to 6 months	32	32
	More than 6 months	68	68
<b>Types of cancers</b>	Colorectal	16	16
	Breast	24	24
	bladder	6	6
	Stomach	3	3
	Lung	10	10
	Lymphoma	11	11
	Thyroid	3	3
	Prostate	5	5
	Ovary	4	4
	Skin	3	3
	brain	3	3
	Other	12	12
	<b>Current drugs</b>	Current drugs* (extracted from records)	19
Fluorouracil		15	15
Cyclophosphamide		8	8
Doxorubicin		4	4
Carboplatin		3	3
Vincristine		12	12
Cisplatin		16	16
Mitomycin C		3	3
Mitoxantrone		5	5
oxaliplatin		11	11
Taxol		14	14
Other		18	18
<b>Main method of drug administration</b>	Iv	97	97
	Oral	3	3
<b>Surgery</b>	Yes	76	76
	No	24	24
<b>Radiation therapy</b>	Yes	65	65
	No	35	35
<b>Last treatment session at clinic</b>	In last 7 days	1	1
	1 - 2 weeks ago	2	2
	2 - 3 weeks ago	50	50
	More than 3 weeks ago	47	47

\*Totals do not add to 100% as many participants were receiving more than one drug.

Table (2) demonstrates the distribution of clinical characteristics. Over half the participants had been diagnosed with Stage 3 cancers; and diagnosis more than 6 months; breast cancers and colorectal represented the most common primary sites, accounting for over 40% of all participants; the vast majority of participants received

their chemotherapy intravenously; and fluorouracil, cyclophosphamide, Cisplatin & Taxol were the four most commonly prescribed drugs – usually in one of a variety of combinations; 76% of sample done surgery; 65% of the sample treated by radiation and half of participants were last treatment session at clinic of 2-3 weeks ago.

**Table 3: Assessment of physical problems in the Study sample**

Physical problems	Always	Sometime	Never	MS	R.S%	Assessment
Fatigue	91	8	1	2.9	96.7	High
Nausea	64	29	7	2.57	85.7	High
Hair loss	92	8	0	2.92	97.3	High
Metallic taste in mouth	72	27	1	2.71	90.3	High
Appetite loss	74	23	3	2.71	90.3	High
Sore mouth	75	22	3	2.72	90.7	High
Menstrual changes (28*)	13	15	0	2.10	70	Moderate
Constipation	12	11	77	1.35	45	Low
vomiting	59	30	11	2.48	82.7	High
Diarrhea	5	34	61	1.44	48	Low
Unusually prone to sunburn	1	8	91	1.1	36.7	Low
Skin rash	3	11	86	1.17	39	Low
Pain in injected limb (97)*	27	5	65	1.56	52	Low
Hot flushes (46)*	9	30	7	2.04	68	Moderate
Total of MS				2.20	73.3	Moderate

Mean of score(MS) relative sufficiency (RS) ; high= more than 78); moderate=56-78; low= (less than 56 );\*

These symptoms were asked of limited patient groups: menstrual changes of women aged under 55 years only; hot flushes of women only; and pain in the injected limb of patients having drugs injected only

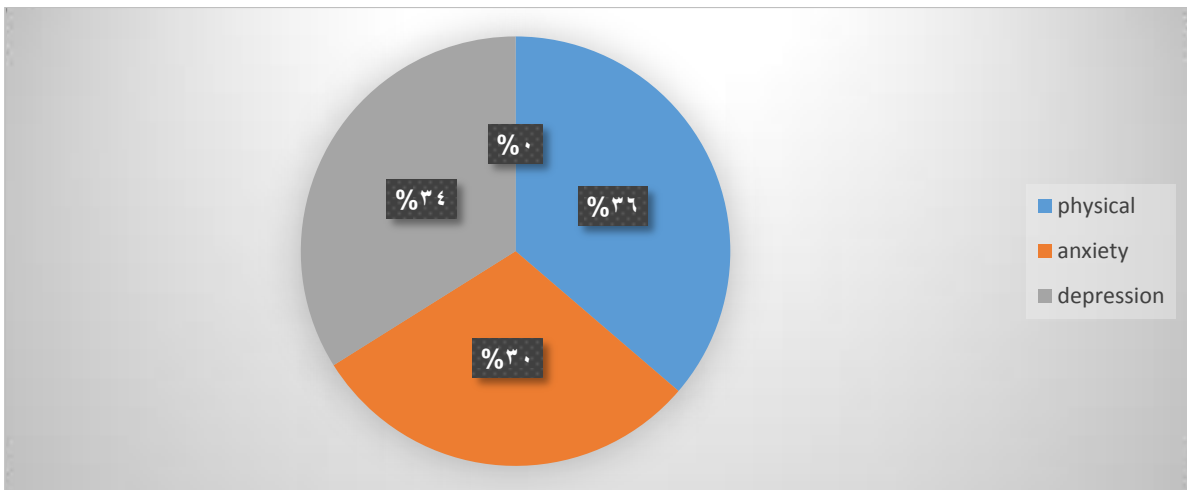
Table (2) presented the mean of score, relative sufficiency and levels of assessment physical problems. The findings in this table show that seven high of assessment were in the physical symptoms (fatigue, hair loss, metallic taste in mouth, Sore mouth, appetite loss, nausea, and vomiting) menstrual changes & Hot flushes were moderate and the ermine symptoms were low assessment. Overall, the total average of MS was moderate.

**Table 4: Assessment of anxiety and depression levels in the Study sample**

anxiety and depression	always	sometime	never.	MS	R.S%	Assessment
<b>Bad Dreams</b>	3	17	80	1.23	41	Low
<b>Emotion and trembling</b>	12	23	65	1.47	49	Low
<b>Upset for no reason</b>	11	22	67	1.44	48	Low
<b>fear</b>	30	29	41	1.89	63	Moderate
<b>Dispersion and confusion</b>	47	25	28	2.19	73	Moderate
<b>fainting</b>	28	17	55	1.73	57.7	Moderate
<b>Tense and nervous</b>	20	46	34	1.86	62	Moderate
<b>Discomfort</b>	53	46	33	2.84	94.7	High
<b>a heart that beats</b>	12	8	80	1.32	44	Low
<b>grief</b>	46	17	37	2.09	69.7	Moderate
<b>Total of Anxiety</b>				1.806	60.2	Moderate
<b>upset</b>	16	49	35	1.81	60.3	Moderate
<b>Periods of sadness</b>	59	6	35	2.24	74.7	Moderate
<b>Hate yourself?</b>	7	38	55	1.52	50.7	Low
<b>Lose concern for others</b>	4	56	40	1.64	54.7	Low
<b>croak</b>	24	45	31	1.93	64.3	Moderate
<b>Tired of life</b>	87	4	9	2.78	92.7	High
<b>Remorse for actions</b>	23	53	24	1.99	66.3	Moderate
<b>Tired of life</b>	87	4	9	2.78	92.7	High
<b>An extraordinary effort</b>	44	11	45	1.99	66.3	Moderate
<b>The need to cry</b>	28	32	40	1.88	62.7	Moderate
<b>Total of Depression</b>				2.056	68.5	Moderate

Mean of score (MS) relative sufficiency (RS) ; high(H)= more than78); moderate(M)=56-78; low(L) = (less than 56)

Table 4, presented the mean of score, relative sufficiency and levels of assessment anxiety and depression scales, show that in both scales were moderate of assessment levels.



**Figure 1: Distribution of physical (36%), anxiety(30%) and depression(34%)**

**Table 5: Assessment of performance status in the Study sample**

Grade	Explanation of activity	Frequency	Percentage
0	Fully active, able to carry on all pre-disease performance without restriction	42	42
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work	49	49
2	Ambulatory and capable of all self care but unable to carry out any work activities. Up and about more than 50% of waking hours	6	6
3	Capable of only limited self care, confined to bed or chair more than 50% of waking hours	2	2
4	Completely disabled. Cannot carry on any self care. Totally confined to bed or chair	2	2
<b>Total</b>		<b>100</b>	<b>100</b>

Table 4 shows that, the majority of the research sample 49% have grade 1 which includes that, fully active, able to carry on all pre-disease performance without restriction and 42% have grade 2 which includes that the patients are Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work .

**Table 6: Association between performance status and some variables**

Items	variables	Contingency Coefficients	Approx. Sig.	C.S.(*)
performance status	Age Groups	0.603	.000	HS
	Marital Status	0.464	.000	HS
	Level of Education	0.557	.000	HS
	Physical symptoms	0.067	.000	HS
	Psychological problems	0.176	.000	HS

\*HS: highly significant= at p value  $\leq 0.01$ , C.S=correlation significant

Table 6 reveals that there were highly significant association between performance status and some variables (age, marital status, educational level, and physical & psychological problems) at  $p \leq 0.01$  value.

## Discussion

This study aimed to assess the performance statue on physical and psychological problems among patients attending an outpatient medical oncology department under chemotherapy treatment.

This study showed that most participating women had college education (28%) of sample. However, the results suggest that these patients experienced a wide range of these problems. In our result the physical Symptoms were fatigue, hair loss, metallic



taste in mouth, Sore mouth, appetite loss, nausea, and vomiting were the most commonly experienced and most debilitating and severity. The levels of physical symptoms found were mostly consistent with previous similar studies (9,10,11).

The present findings show that of 53% with depression and 47% of patient's anxiety. A study result of 24% of patients classified as having borderline or clinical anxiety and 23% with borderline or clinical depression with outpatients(12).

Participants experiencing moderate levels of physical symptoms (73.3%) were much more likely to have levels of anxiety (60.2%) and depression (68.5%) total of score. Although a causal relationship cannot be established, this suggests some inter-relation between these problems. Therefore, managing one of these problems could result in improvements in the others physical (36%) and psychological (anxiety 30% and depression 34%)

Our findings, majority of the research sample range between grade (0-1) 49% have grade 1 which includes that, Fully active, able to carry on all pre-disease performance without restriction and 42% have grade 0 which includes that the patients are Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work.

This result agrees with Schuell, et al. 2005 explained in their study that the majority of sample according to WHO performance status score are in grade 0-1(13). Loss of physical performance and fatigue are frequent problems of cancer patients undergoing chemotherapy.

After discharge from the hospital, the majority of patients find it difficult to perform daily activities. Moreover, some patients may require weeks to months to regain their pretreatment level of fitness. This impairment in physical fitness is a substantial contributor to reduced quality of life in cancer patients(10).

### **Conclusions:**

The study showed the presence of physical and psychological problems for patients with cancer and its relationship with the state of performance of activities and adherence to that sample.

### **recommendations:**

The study urges promoting public health educational programs to elevate the level of awareness regarding the necessity to support patients complaining of cancer in Iraq. Provide assistance when cancer patients complain from fatigue and teaching their families to provide assistance to their patient at home in appropriate ways.

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