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Introduction

Cancer is a complex disease characterized by the uncontrolled growth and spread of abnormal cells. It is one of the foremost causes of death worldwide (Chandraprasad et al., 2022). Although anti-cancer therapies have made significant progress, patients face various physical and psychological challenges. They perceive their illness as closely associated with both their physical and emotional health. Thus, addressing individual differences is essential (George et al., 2021). In

Association Between Self-Efficacy and Performance Status Among Cancer Patients: A Cross-Sectional Study

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ABSTRACT

Objective: This study aimed to evaluate the relationship between self-efficacy and performance status among cancer patients. Additionally, it examined the influence of socio-demographic variables on both constructs.

Methods and Materials: A descriptive correlational study was conducted from October 2024 to June 2025 at two oncology centers in Al-Hillah, Iraq. A convenience sample of 325 cancer patients was selected using non-probability sampling. Data were collected using a structured questionnaire comprising three sections: socio-demographic characteristics, the General Self-Efficacy Scale (6 items), and the Zubrod Performance Status (ZPS) scale. Validity was ensured through expert review, and statistical analyses were performed using SPSS-23. Descriptive and inferential statistics (Kruskal-Wallis, Pearson correlation, linear regression) were applied, with a significance level set at $p \leq 0.05$.

Findings: Of the 325 participants, 66.5% had high self-efficacy, while 72.9% showed high functional performance (low ZPS scores). A strong negative relationship was found between self-efficacy and ZPS ($\beta = -0.798$, $p < 0.001$), indicating that higher self-efficacy was associated with better functional status. Socio-demographic variables such as education, income, and occupation were significantly associated with both self-efficacy and performance status. Age was negatively correlated with self-efficacy and positively correlated with ZPS.

Conclusion: Self-efficacy significantly influences the functional capacity of cancer patients. Enhancing patients' belief in their ability to manage disease-related challenges could improve performance outcomes. Integrating self-efficacy training into psycho-oncological care is recommended.

Keywords: self-efficacy, performance status, cancer, demographic data.

their Cancer Behavior Inventory (CBI), self-efficacy is particularly linked to cancer coping behaviors and to communicating effectively with healthcare providers (Kurtz et al., 2008).

Self-efficacy plays a crucial role in improving both psychological and physical health outcomes for cancer patients. Individuals with higher self-efficacy experience better symptom management. It significantly influences cancer patients' coping mechanisms, treatment adherence, and overall well-being (Abbass, 2024). It is associated with positive health behaviors and is a central

component of psychological interventions for cancer patients (Merluzzi et al., 2018). Bandura defined self-efficacy as one's judgment of one's competence in performing specific activities (Kurtz et al., 2008). Moreover, higher self-efficacy levels are associated with greater physical functioning, health status, and satisfaction with the performance (Martinez-Calderon et al., 2018). Self-efficacy simultaneously influences performance status by shaping patients' ability to self-manage symptoms, adhere to treatment regimens, and maintain independence (Fang, 2020).

Performance status (PS) is a crucial measure in oncology that assesses a person affected by most cancers' functional ability and overall fitness. It is essential to determine tolerance to remedies, anticipate diagnosis, and guide healing choices (Simcock & Wright, 2020). A lower performance frame is often associated with poor outcomes (Roca et al., 2019). Studies show that most cancer patients with higher self-efficacy engage more frequently in physical activity, creating an immediate pathway to improved performance reputation (Hardcastle et al., 2021).

Additionally, demographic variables affect self-efficacy and performance status in cancer patients (Karademas et al., 2023). Younger patients have higher self-efficacy due to greater physical resilience (Ma et al., 2024). Older patients are more likely to have physical impairments that can exacerbate the impact of most cancers on PS (Roca et al., 2019). Women may also show lower self-efficacy than men due to cultural or social expectations (Hashim & Khalil, 2018). Educated patients who are married and have a better economic status (ES) are much more likely to adopt self-management techniques (Masoompour et al., 2017), have a right of entry to healthcare services (Bourgeois et al., 2024), and receive emotional and practical support from caregivers (Wang et al., 2022).

The objectives of the current study are to assess the performance status of patients with cancer, determine whether self-efficacy predicts performance status, and investigate variation in performance status and self-efficacy among patients with cancer across sociodemographic characteristics.

Methods and Materials

This study employs a descriptive correlational design, used in this quantitative research to accomplish the objectives: an assessment of the influence of self-efficacy on performance status in patients with cancer in Al-Hillah City. The study was conducted over eight months, from October 1, 2024, to June 7, 2025, at Al-Hillah City, in oncology centers and hospitals that house an oncology center, including Imam AL-Sadiq Teaching Hospital and Babylon Oncology Center, which is located at Marjan Teaching Hospital.

A Convenience sample of (N=325) patients was selected by utilization of the nonprobability sampling method. The patients comprised (2062). It was distributed throughout the Babylon Oncology Center and Imam Al-Sadiq Hospital. The required sample size was calculated to be 325 patients. The sample size was proportionate to the total population while maintaining the desired confidence level and precision. The data were gathered through a questionnaire and interviews with participants. Comprising socio-demographic.

Instruments

Content validity of the questionnaire was established through a panel of 18 experts in different specialties related to the field of the present study. To determine the Questionnaire's visibility and competence to clarify these phenomena, to assess the performance status in patients with cancer, as well as identify if self-efficacy can serve as a predictive variable of performance status, and investigate the variation in performance status and self-efficacy in patients with cancer with respect to socio-demographic characteristics—a preliminary Arabic and English version of the questionnaire distributed among (17) experts.

The study instrument was a special questionnaire consisting of closed-ended questions that was also prepared. The questionnaire consisted of three parts. The first part included Socio-demographic characteristics, consisting of (6-items) (Gender, Patient age, Marital status, Level of education, Occupation, Monthly income). The second part is the Self-Efficacy for Managing Chronic Disease Scale: General self-efficacy scale (GES). This part consists of (6) items, each asking participants to rate their confidence on a scale from 1 (not confident) to 10 (totally confident), which are

concerned with assessing cancer patients' confidence in managing various aspects of their health. The third part is the Performance Status (Zubrod Performance Status, ZPS). The ZPS scale will be used to evaluate patients' functional capacity, specifically their ability to perform daily tasks. The ZPS scale ranges from "fully active" (score 0) to "completely disabled" (score 4).

Data Analysis

All statistical analyses were performed using both SPSS-23 and Microsoft Excel (2010) programs. Both descriptive and inferential statistical methods were used to analyze all data. Descriptive statistics were used to summarize the socio-demographic characteristics of the participants and to evaluate overall study parameters among patients with cancer. Inferential statistics: the choice of non-parametric tests (Kruskal-Wallis H test) was appropriate to assess variations in dependent variables concerning independent variables. Additionally, Pearson's Correlation Coefficient and

Simple Linear Regression were used to evaluate any statistical association. Statistical significance was set at $P \leq 0.05$.

Findings and Results

Table 1 explains that the socio-demographic characteristics of the study sample reveal that the majority of cancer patients are aged 60 years and older (34.8%), with a mean age of 55.49 ± 12.70 years. Most participants are female (68.0%). Regarding education, nearly one-fourth of the sample (24.3%) is illiterate, and only 12.9% have attained higher education. Marital status data indicate that most participants are married (86.8%), while smaller proportions are single (7.1%), divorced (2.5%), or widowed (3.7%). Employment status shows that a significant portion (57.8%) of patients are unemployed, with 23.4% being retired. The income distribution shows that 53.8% of participants report sufficient income.

Table 1

Socio-demographic data

SDVs	Classification	No.	%
Age (years)	<30	13	4.0
	30-39	27	8.3
	40-49	43	13.2
	50-59	113	34.8
	≥ 60	129	39.7
	<i>M \pm SD</i>	55.49 ± 12.701	
Sex	Male	104	32.0
	Female	221	68.0
Education level	Illiterate	79	24.3
	Reads and writes	52	16.0
	Elementary	53	16.3
	Intermediate	38	11.7
	Preparatory	61	18.8
	Institute or college	42	12.9
Marital status	Single	23	7.1
	Married	282	86.8
	Divorced	8	2.5
	Widowed	12	3.7
Occupation	Employee	39	12.0
	Self-employed	22	6.8
	Retired	76	23.4
	Unemployed	188	57.8
Income/monthly	Not enough	122	37.5
	Somewhat enough	28	8.6
	Enough	175	53.8

M: Mean for total score, SD: SD = SD=Standard Deviation for total score

Table 2 gives an overall evaluation of key study parameters among cancer patients—the Self-Efficacy for Managing Chronic Disease. The 6-item scale indicates

that a majority of patients (66.5%) had high self-efficacy (scores >42), with a mean score of 44.99 ± 13.745 , suggesting strong confidence in managing their

condition. Meanwhile, 21.5% exhibited moderate self-efficacy (24.1-42), and 12.0% had low self-efficacy (<24).

The Zubrod Performance Status (ZPS), which assesses functional performance and activity levels, indicates that 72.9% of patients had a high performance status (≤ 1.33), meaning they were mostly active. However, 15.7% had

low performance status (> 2.66), indicating significant functional impairment, while 11.4% were in the moderate category (1.34-2.66). The mean ZPS score of 1.32 ± 1.037 suggests that most patients had good functional capacity.

Table 2

Overall Evaluation of Study Parameters among Patients with Cancer

Variables	Score	No.	%	Eva.
Self-Efficacy for Managing Chronic Disease 6-item Scale	Low (<24)	39	12.0	44.99 \pm 13.745
	Moderate (24.1-42)	70	21.5	
	High (>42)	216	66.5	
	Total	325	100.0	
Zubrod Performance Status (ZPS)	High (≤ 1.33)	237	72.9	1.32 \pm 1.037
	Moderate (1.34-2.66)	37	11.4	
	Low (> 2.66)	51	15.7	
	Total	325	100.0	

M: Mean for total score, SD: SD = Standard Deviation for total score

Self-efficacy has a significant adverse effect on performance status (ZPS) ($\beta = -0.798$; $p < .001$). Since lower ZPS scores indicate better functional status, this

negative relationship suggests that higher self-efficacy is associated with improved performance status ($R^2 = 0.6367$) as shown in Table 3 and Figure 1.

Table 3

Influence of Self-Efficacy on Performance Status in Patients with Cancer

Variables	Unstandardized Coefficients		Standardized Coefficients		T	Sig.
	B	Std. Error	Beta			
ZPS	-.060	.003	-.798		-23.791	.000

Independent Variables: Self-efficacy

Figure 1

Relationship between Self-Efficacy and Performance Status in Patients with Cancer

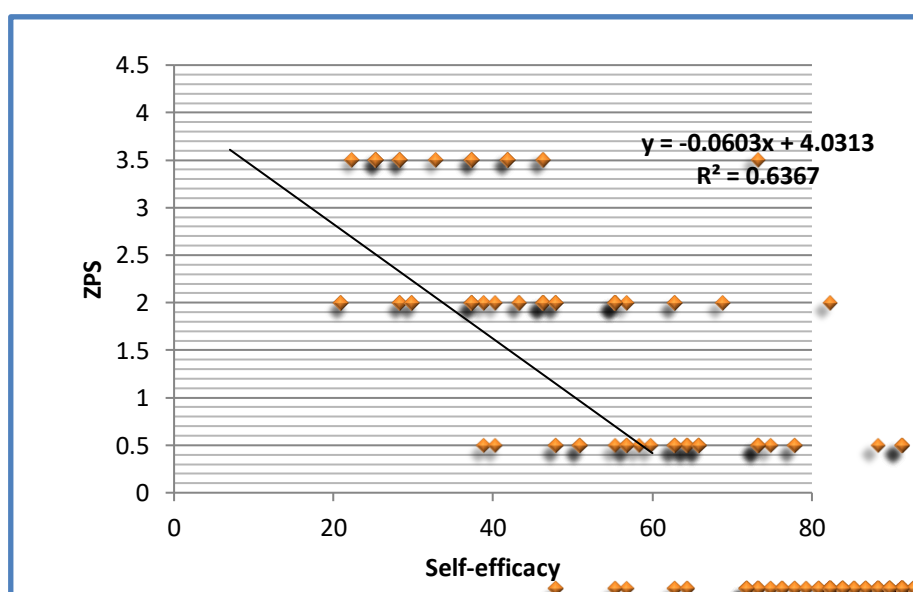


Table 4 shows that the correlation analysis indicates that age is negatively correlated with self-efficacy ($r = -0.265$, $p < .01$), suggesting that older patients have lower self-efficacy and engage less. Additionally, age is

positively correlated with performance status ($r = 0.282$, $p < .01$), indicating that older patients tend to have poorer functional status, as lower ZPS scores indicate better performance (Figure 2).

Table 4

Relationship between Self-efficacy, Performance Status, and Age

Correlations	1
1. Age	1
2. Self-efficacy	-.265**
4. ZPS	.282**

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 2

Relationship between Age and Self-efficacy

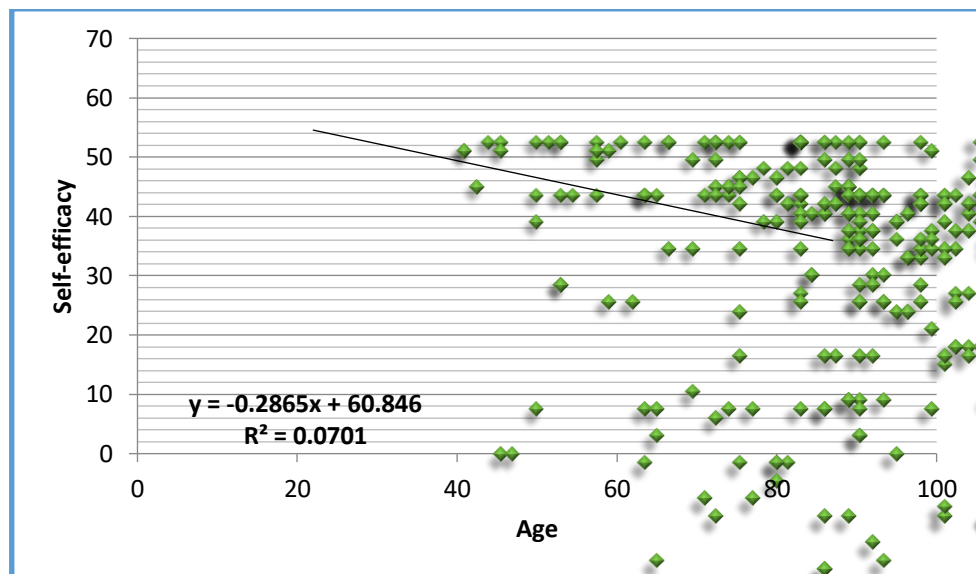


Table 5 reveals the significant differences present in self-efficacy among cancer patients based on gender ($\chi^2 = 4.570$, $p = .033$), education level ($\chi^2 = 24.214$, $p = .001$), occupation ($\chi^2 = 9.248$, $p = .026$), and monthly income ($\chi^2 = 12.233$, $p = .002$). Males, those with higher education,

employed or retired individuals, and those with sufficient income tend to have higher self-efficacy. However, no significant differences were found based on marital status ($\chi^2 = 3.443$, $p = .238$).

Table 5

Statistical Differences in Self-efficacy in Patients with Cancer between Groups of Socio-demographic Characteristics

Variables	Ranks			χ^2	Sig.
	Class	No.	Mean Rank		
Gender	Male	104	170.63	4.570	.033
	Female	221	146.79		
Education level	Illiterate	79	120.59	24.214	.001
	Reads and writes	52	167.68		
	Elementary	53	162.80		
	Intermediate	38	184.59		
	Preparatory	61	183.11		
Marital status	Institute or college	42	188.46	3.443	.238
	Single	23	171.26		

Occupation	Married	282	148.11	9.248	.026
	Divorced	8	217.50		
	Widowed	12	181.08		
	Employee	39	184.14		
	Self-employed	22	143.18		
Monthly income	Retired	76	180.70	12.233	.002
	Unemployed	188	150.09		
	Not enough	122	141.28		
	Somewhat enough	28	150.41		
	Enough	175	179.11		

^b= Kruskal Wallis Test; n= number;; sig.= significant level at ≤ 0.05 .

Table 6 shows that the analysis reveals significant differences in performance status (ZPS) among cancer patients based on education level ($\chi^2 = 14.412$, $p = .013$), occupation ($\chi^2 = 9.223$, $p = .026$), and monthly income ($\chi^2 = 8.803$, $p = .012$). Patients with higher education,

employment, and sufficient income tend to have better performance status (lower ZPS scores). However, gender ($\chi^2 = 1.157$, $p = .282$) and marital status ($\chi^2 = 4.140$, $p = .247$) did not show significant differences.

Table 6

Statistical Differences in Performance Status (ZPS) in Patients with Cancer between Groups of Socio-demographic Characteristics.

Variables	Ranks	No.	Mean Rank	^b χ^2	Sig.
Gender	Class			1.157	.282
	Male	104	170.35		
Education level	Female	221	159.54	14.412	.013
	Female	221	159.54		
	Illiterate	79	190.58		
	Reads and writes	52	172.28		
	Elementary	53	152.26		
Marital status	Intermediate	38	152.96	4.140	.247
	Preparatory	61	146.76		
	Institute or college	42	145.86		
	Single	23	133.59		
	Married	282	166.29		
Occupation	Divorced	8	166.69	9.223	.026
	Widowed	12	139.71		
	Employee	39	139.29		
	Self-employed	22	177.98		
	Retired	76	146.47		
Monthly income	Unemployed	188	172.85	8.803	.012
	Not enough	122	180.94		
	Somewhat enough	28	152.66		
	Enough	175	152.15		

^b= Kruskal Wallis Test; n= number;; sig.= significant level at 0.05.

Discussion and Conclusion

Study sample demographic characteristics according to Table 1 results: the survey participants' ages (≥ 60 years old) were recorded, with the highest percentage (39.7%). These results support those of a study in which the majority of the samples were aged 56-70 years. This finding clearly indicates that the disease occurs mainly in advanced age, as age is associated with declines in physical and psychological functions (64) (42.7%). Those of a study applied by another study in 2021 (Hashim, 2021). In our opinion, there is an Accumulation

of genetic mutations with age. Over time, the body's cells are exposed to a range of environmental factors (such as smoking, radiation, and pollution) and internal factors (such as gene copying errors), leading to the accumulation of mutations in the DNA. As the number of these mutations increases, the likelihood that cancer cells will develop increases. The immune system also weakens with age, reducing its ability to detect and destroy abnormal cells before they develop into tumors.

According to the sex of the study, the results showed that the study participants were primarily women (221; 68.0% of the study sample). This result matches that of Shakya's (2018) study, which found that the majority of

the subjects were female. More than half of the patients were females (56.5%). In our opinion Some types of cancer are linked to female hormones due Biological and hormonal differences, such as breast and uterine cancer, which are more common among women, also Women are more likely than men to undergo screening and early detection, leading to more cases being diagnosed, especially at early stages, which increases the incidence rate and In some societies, women live longer than men, making them more susceptible to age-related cancers.

Regarding educational level, most of the study sample (79) were illiterate, with the highest percentage (24.3%). This finding is in agreement with [Shakya \(2018\)](#). found that the highest rate was related to educational level, with more than half (53.8%) being illiterate. In our opinion, there are various reasons, such as Low education, which is often associated with a lack of knowledge about cancer risk factors, such as smoking, poor nutrition, or chronic exposure to pollutants. Uneducated individuals usually do not seek early screening or are unaware of the importance of early symptoms, leading to late-stage diagnosis.

Regarding Marital status, the findings indicate that married patients accounted for the majority. Of the total number (282), the highest percentage (86.8%) was recorded among those with advanced age. Also, married patients were the majority of the study conducted in Germany, as linked to the patients' age ([Christiansen et al., 2021](#)). One hundred seventy-four of the total number were recorded, with the highest percentage (86.8%). In our opinion, it can be explained by several social and demographic factors, and marriage itself is not necessarily a direct cause. Instead, it is because marriage is common in older age groups that, as people age, the likelihood of developing cancer increases. Most married people are older, making them the most vulnerable group to the disease. Married people are more stable and tend to seek medical care, which may increase the chances of diagnosis and detection. They are more likely to be recorded as confirmed cases than unmarried people. Socioeconomic status, married people are overrepresented in society, especially at older ages, which may reflect sample size rather than a causal relationship.

Regarding Occupation, the findings indicate that Unemployed patients were the majority. They accounted for 188 of the total, representing the highest percentage

(57.8%) of unemployed patents. This result agrees with that of the study by Mhamad et al. (2024), which found that participants in the Taiwan sample had the highest unemployment rate (73.6%). In our opinion, the reasons for the high rate of cancer patients among the unemployed are due to environmental exposure and pollution. Many unemployed people live in polluted environments that increase their risk of cancer. Lack of healthcare and unemployment reduce the chances of getting screening and early detection, and unemployment causes stress and depression, which weakens the body's immune system.

Regarding income distribution, 175 participants (53.8%) report insufficient income. This result is the opposite of that reported in a study conducted in Iraq by Ali (2019). which stated that patients(69) (62.2%). do not have sufficient monthly income. In our opinion, most cancer patients are of sufficient income because they have greater access to testing and diagnosis than poorer groups, which increases the number of cases. Unhealthy lifestyles, such as sedentary behavior and consumption of processed foods, are prevalent despite their available income.

Regarding the findings, present an overall evaluation of key study parameters among cancer patients. The Self-Efficacy for Managing Chronic Disease 6-item Scale indicates that a majority of patients (66.5%) had high self-efficacy (scores >42), with a mean score of 44.99 ± 13.745 , suggesting strong confidence in managing their condition which is close to the results measured by ([Karademas et al., 2023](#)) To investigate if breast cancer patients' self-efficacy in managing their disease evolves. Thus, participants (N = 404) from four countries were recruited a few weeks after breast surgery or biopsy. Self-efficacy in managing cancer was evaluated. For around 15% of patients, coping self-efficacy increased over time. Moreover, the other findings of this study were that the mean self-efficacy scores were higher than the present finding, 146.3 ± 22.9 (range: 54 to 190). Self-efficacious individuals are more driven to overcome obstacles and adopt self-care practices. According to Bandura's theory, a person's perceived self-efficacy plays a crucial role in how well they perform, as it operates independently of their fundamental abilities. According to Bandura, self-efficacy dictates motivations, emotions, and actions ([Masoompour et al., 2017](#)). In our opinion, the reason for the high self-efficacy rate among

cancer patients is psychological maturity and emotional stability. At the age of 60 years and above, many individuals reach a level of maturity and psychological stability that enables them to manage anxiety, accept their illness, and adopt positive coping strategies. And they are often surrounded by family support. This support is an essential factor in enhancing self-efficacy, encouraging treatment adherence, and fostering positive interactions with the healthcare team (Davoudi-Monfared et al., 2023).

The Zubrod Performance Status (ZPS), which assesses functional performance and activity levels, indicates that 72.9% of patients had a high performance status (≤ 1.33), meaning they were mostly active. The mean ZPS score of 1.32 ± 1.037 suggests that most patients had good functional capacity. These results are contrary to a study by Alam et al. (2020), which found that 43.7% of patients had poor performance status. Another study found that more than one-third (39.2%) of patients were able to perform only limited self-care, spending more than 50% of their waking hours confined to a bed or chair. In our opinion, the high performance status observed in this study may be due to patients often being in the early stages of cancer, having no comorbidities, and being health-conscious, which helped them detect the disease early. These factors contributed to their energy and daily activity.

According to the effect of Self-Efficacy on Performance Status in Cancer Patients in Table 3, the study found that self-efficacy has a significant adverse impact on performance status (ZPS) ($\beta = -0.798$; $p < .001$). Since lower ZPS scores indicate better functional status, this negative relationship suggests that higher self-efficacy is associated with improved performance status ($R^2 = 0.6367$). These results come along with a study by (White et al., 2019) Proposed Higher general self-efficacy was linked to better performance outcomes and better symptom management, according to eight studies. As well, higher self-efficacy for managing symptoms was related to greater functional ability, and higher self-efficacy for managing fatigue was linked to higher physical functional status. In our opinion the study showed that high-performing patients were often in the early stages of cancer, had no comorbidities, and were health-conscious, which helped them detect the disease early. These factors contributed to their energy and daily activity.

According to the Relationship between Self-efficacy, Performance Status and Age in Table 4, the correlation analysis indicates that age is negatively correlated with self-efficacy ($r = -0.265$, $p < .01$), suggesting that older patients have lower self-efficacy. These findings are supported by another study (Shakya, 2018). Self-efficacy decreased with increasing age. This is because, with increasing age, patients have less energy and willpower to take care of themselves, and the disease will also progress. Conversely, other research was carried out in California, Iran, and South Africa, and compared with younger age groups, elderly cancer patients reported higher levels of self-efficacy ($p < 0.05$). This may be because they had prior positive experiences handling difficult circumstances; thus, they had greater self-confidence in managing treatment-related symptoms (Al-Harithy & Wazqar, 2021). Additionally, age is positively correlated with performance status ($r = 0.282$, $p < .01$), meaning that older patients tend to have poorer functional status. Since lower ZPS scores indicate better performance, this suggests that aging is associated with declining physical function. A study by Al-Mamoori (2019) supports this finding. Patient age has been highly influential on performance status ($p\text{-value} < 0.01$). In our opinion, the negative relationship between age and self-efficacy may be attributed to the psychological and physical changes that accompany aging. As people age, confidence in their ability to cope with health challenges, especially complex conditions such as cancer, may decrease due to declining physical function or previous experiences with the disease. Conversely, the positive relationship between age and performance status may be linked to older patients' maturation in coping with the disease and their possession of more effective coping strategies as a result of accumulated life experiences, which improves their assessment of their functional status or daily performance despite the disease.

According to Statistical variance in Self-efficacy in Patients with Cancer between Socio-demographic group Characteristics in table 5, the analysis reveals significant differences in self-efficacy among cancer patients based on gender ($\chi^2 = 4.570$, $p = .033$), education level ($\chi^2 = 24.214$, $p = .001$), and monthly income ($\chi^2 = 12.233$, $p = .002$). Males, those with higher education, employed or retired individuals, and those with sufficient income tend to have higher self-efficacy. This finding agrees with a study conducted in Saudi Arabia (SA) on cancer patients,

which found significant effects of gender and education level on self-efficacy. Women reported a lower average degree than men for positive attitude, and education level ($r = 0.28$, $p < .01$) was correlated significantly with making hard decisions. Researchers also confirmed other studies that state found that patients who were male ($p < .05$), had a college education ($p < .001$) had significantly higher self-efficacy scores (White et al., 2019) in our opinion males demonstrate higher self-efficacy due to socialization that fosters independence and self-confidence, while women may face social constraints that hinder the development of this competence, additionally education provides individuals with skills and knowledge that enhance their confidence in their ability to deal with challenges.

According to Statistical Differences in Self-efficacy in Patients with Cancer by Socio-demographic Characteristics in Table 5, the analysis reveals significant differences in self-efficacy among cancer patients by occupation. However, no significant differences were found based on marital status. These findings, which differ from those of Al-Harithy & Wazqar (2021), indicate that self-efficacy was substantially related to marital status and that participants without jobs scored higher, on average, when making decisions than participants who were working or retired ($F = 3.17$, $p = .027$). One study showed that being married was substantially associated with better levels of self-efficacy; a happy marriage can increase self-efficacy in managing one's health and cultivate a sense of responsibility (Al-Harithy & Wazqar, 2021).

In our opinion, employees have higher self-efficacy due to their exposure to successful professional experiences and challenges that boost self-confidence, as well as workplace support and interaction. Marital status does not clearly affect self-efficacy because feelings of competence depend more on individual factors such as education and experience than on social status.

According to Statistical Differences in Self-efficacy in Patients with Cancer between Groups of Socio-demographic Characteristics in Table 5, based on monthly income, the analysis reveals significant differences in self-efficacy among cancer patients ($\chi^2 = 12.233$, $p = .002$). These findings are consistent with Shakya's (2018) study, which found that Self-efficacy has a significant positive correlation with monthly family income. In our opinion, a sufficient monthly income is

positively associated with self-efficacy because it reduces psychological stress, provides economic security, and affords access to supportive resources, thereby enhancing an individual's sense of control and achievement.

According to Statistical Differences in Performance Status (ZPS) in Patients with Cancer between Groups of Socio-demographic Characteristics in table 6 found significant differences in performance status (ZPS) among cancer patients based on education level ($\chi^2 = 14.412$, $p = .013$), occupation ($\chi^2 = 9.223$, $p = .026$), and monthly income ($\chi^2 = 8.803$, $p = .012$). Patients with higher education, employment, and sufficient income tend to have better performance status (lower ZPS scores). This result agrees with the study conducted by Al-Maamouri (2019), which found that patients' marital status, education level, occupation, and economic status were significantly associated with their performance status (p -value < 0.05). In our opinion, a working person is more active and energetic, which helps them maintain their physical and mental abilities. A sufficient monthly income enables them to meet their health and living needs, such as access to treatment or proper nutrition, which improves their daily performance. As for educational level, it provides individuals with a better understanding of their health condition and the ability to correctly follow medical advice, thereby improving their physical and psychological condition and enhancing their efficiency in performing daily activities.

According to Statistical Differences in Performance Status (ZPS) in Patients with Cancer between Groups of Socio-demographic Characteristics in Table 6, no significant differences were observed by gender or marital status. In our opinion The lack of association between gender and marital status with performance status in cancer patients is explained by the fact that the influence of disease and health factors is stronger than social or individual differences, as performance focuses on physical and psychological capacity affected by treatment and symptoms, rather than whether the patient is male or female, married or unmarried, which makes these factors less influential on performance status.

In conclusion, the majority of patients in this study are ≥ 60 years old. Married female, Illiterate, and had enough income, the majority of patients regarding Self-Efficacy Scale had high self-efficacy levels and Most of patients

regarding Zubrod Performance Status (ZPS) Scale were high level, Most of patients regarding age is negatively correlated with self-efficacy. Additionally, age is positively correlated with performance status, additionally gender, education level, occupation and monthly income had significant differences in self-efficacy among cancer patients furthermore, education level occupation, and monthly income had substantial differences in performance status (ZPS) among cancer patients and found There was considerable negative influence of self-efficacy on performance status (ZPS). Since lower ZPS scores indicate better functional status among patients.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study included the fact that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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