Article

Correlation Study of Primary Caregiver Burden and Anxiety in Breast Cancer Patients

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Abstract

This article explores the correlation between primary caregiver burden and anxiety in breast cancer patients; in order to increase the social attention to the mental health of this group and improve their quality of life. Using the convenience sampling method, general data, the caregiver burden scale (ZBI) and the anxiety scale (SAS), 207 breast cancer patients admitted to a grade A hospital from September 2023 to October 2023 were sampled. The primary caregiver care burden score was 51.08±14.65 and the anxiety score was （57.62±12.12. The Spearman Correlation analysis indicated a positive association between primary caregiver care burden and anxiety (=0.764, <0.001), with a positive correlation between individual burden and primary caregiver anxiety (=0.759,<0.001) and a positive association between responsibility burden and primary caregiver anxiety (=0.675,<0.001). Regression analysis showed that primary caregiver care burden and dimensional individual burden in breast cancer patients compared with the general information education, work status mainly affected the anxiety level of the primary caregivers of breast cancer patients (=0.652, <0.001). This study concluded from relevant survey analysis that the heavier the caregiving burden of the main caregivers of breast cancer patients, the heavier the anxiety. The society needs to pay attention to the mental health of the main caregivers of breast cancer. When necessary, certain measures can be taken to help this group to reduce the care burden of the main caregivers and relieve anxiety, in order to improve the quality of life of this group.

Keywords: breast cancer; primary caregiver; care burden; anxiety

UNISA university of south africa PRESS
New Voices in Psychology
Volume 15 | 2025 | #17664 | 18 pages

https://doi.org/10.25159/2958-3918/17664
ISSN 2958-3918 (Online)

Introduction

This study aims to explore the correlation between care burden and anxiety of primary caregivers of breast cancer patients, improve social attention to the mental health of this group, and improve the quality of life of breast cancer patients.

Breast cancer is a common female malignant tumour mainly occurring in the ductal epithelium of the breast. It can metastasize to the whole body through blood and lymph fluid, thus endangering the life of patients and has become an important global public health challenge (Harbeck, Penault-Llorca et al. 2019). The latest cancer statistics of WHO put forward that in 2020, the number of new cases of cancer in the world has reached 20 million and there are 4.57 million new cases of cancer in China and the number of global deaths has reached 10 million and the number of deaths in China has reached 3 million and the global cancer burden is serious (Lopez-Munoz and Salamanca-Gomez 2020) .According to relevant data (Harbeck, Penault-Llorca et al. 2019), breast cancer has surpassed lung cancer to become the world's first cancer in 2020. While paying attention to the patient's condition, the social staff should also pay more attention to the carers. The caregiver should pay attention to both the physical and mental health of the patient, which makes the caregiver feel that the burden is heavy. In clinical care, there is often a focus on the needs and health of the patient at the expense of the physical and mental health of the primary caregiver. As mentioned in Peart's study .(Peart 2017), caregiver burden is defined as a multidimensional response to negative evaluation and pressure caused by caring for patients.(Peart 2017)

With the rapid development of society and economy, people pay more attention to mental health while paying more attention to physical health. Foreign research on family caregivers began in the late 1850s and research on caregiver burden began in the 1870s. Research in China started in the mid-1990s, which is relatively late and the domestic research on the burden of breast cancer care mainly focuses on the burden of breast cancer spouse caregivers (Chen, Luo et al. 2022).Corey and Smania et al. (2020) argued that the heavier the caring burden of the primary caregiver is, the quality of life of the patients will decline. Compared with breast cancer patients, primary caregivers also deal with psychological and physical stress (Li, Xie et al. 2022). Fang, Yu et al (2022) conducted a survey on 226 family members accompanying cancer patients and the results pointed out that the mental health of the main caregivers not only affects them, but also affects the emotions of the patients, so it is particularly important to focus on the mental health of this group (Chen et al. 2022, Corey et al. 2020 and Li et al. 2022).

Objects and Methods

Research Object

A convenient sampling method was used to investigate the main caregivers of breast cancer patients who were hospitalised and met the requirements in a Class III hospital

from September 2023 to October 2023. A total of 210 questionnaires were filled in, 207 of which were valid, with an effective rate of 98.57%.

The inclusion criteria were: (1) ≥18 years old; (2) live with the patient, are the patient's parents, spouse, children, friends or other; (3) the main nursing responsibility of breast cancer patients during hospitalisation and a continuous nursing time ≥72 hours. It was ensured that participants signed the informed consent formed, clearly understood their involvement in the study, there were no communication barriers and that they voluntarily cooperated ... Inclusion criteria of breast cancer patients: (1) pathological diagnosis of breast cancer; (2) No other serious diseases; (3) clear consciousness, can communicate normally. Exclusion criteria for patients with breast cancer: patients with cognitive impairment or mental illness. Primary caregiver exclusion criteria: (1) suffering from serious physical or mental illness; (2) the impact of other major stress events within a year.

Research Tools

General Information

Basic personal data were compiled, including eight items such as gender, education background, monthly income and continuous care time of the respondents.

Caregiver Burden Scale (ZBI)

The ZBI involves two dimensions of personal burden and responsibility burden, with a total of 22 questions. Each question is scored according to the rule of 0 to 4 points from "no" to "always", with a total score of 0 to 88 points. The higher the score, the heavier the caregiver burden. The Cronbach's α coefficient of carer burden scale ranged from 0.88 to 0.92 and the retest reliability and validity were 0.71 (Vila, Renones et al. 2017). Wang, Dong et al. (Wang, Dong and Cui 2021) carried out the sinicization of the ZBI and the reliability and validity was 0.87, which had a good reliability and validity.(Vila et al. 2017)

Self-Rating Anxiety Scale (SAS)The SAS adopts a 4-level scoring rule and has good reliability and validity (Zhou and Wang et al. 2020). "1" means no or very little time; "2" represents a small amount of time; "3" represents a considerable amount of time; "4" means most or all of them. There are l5 questions that are stated with negative words, and they are scored according to the order of l to 4 above. For the remaining five questions (N=numbers5, 9, 13, 17 and 19), those who note* are stated in positive words and scored in reverse order. The standard SAS score is 50, 50 to59 is mild anxiety, 60 to 69 is moderate anxiety and 70 or above is severe anxiety.

Statistical Methods

The SPSS26.0 statistical software was used to analyse and make statistics on the results derived from the collected questionnaires. The general data of the main caregivers of

breast cancer were described by frequency, component ratio, single factor analysis, multiple linear regression, test, mean ± standard deviation (±), etc. to describe the anxiety and burden of the main caregivers of different breast cancer patients. <0.001 was statistically significant.

Results

General Information

A total of 210 participants formed part of the survey and three of them were invalid questionnaires. Table 1 shows that the ratio of male to female main caregivers of breast cancer is basically 50/50. The majority of caregivers are between 30 and 50 years old, and nearly half of them have secondary or high school education. Most of them are parents, spouses and children of breast cancer patients. They took care of patients for more than four days and most of them had a monthly income of more than 4 000.

Table 1: General Data of Primary Paregivers of Breast Cancer Patients (n=207)

Project	**Class**	**Example number (n)**	**Constituent ratio (%)**
Sex	Male	102	49.28
	Female	105	50.72
Age	18~<30	62	29.95
	30~<50	94	45.41
	>50	51	24.64
Educational background	Junior high school and below	47	22.71
	Technical secondary school or high school	109	52.66
	College degree or above	51	24.64
Religious belief	Yes	53	25.60
	None	154	74.40
Time spent on caring	Three to four days	48	23.19
	Four to five days	86	41.55
	More than five days	73	35.27
Mode of operation	On the job	146	70.53
	Not on the job/Remote	61	29.47
Relationship with the patient	Father and mother	63	30.43
	Husband and wife	96	46.38
	Sons and daughters	48	23.19
	Friend	0	0
	Other	0	0
Monthly income	Under 2 000	15	7.25
	2 000–4 000	56	27.05
	4 000–6 000	93	44.93
	6 000–8 000	30	14.49
	More than 8 000	13	6.28

Primary Caregiver Burden and Anxiety Scores of Patients With Breast Cancer

The main caregiver burden scores of 207 breast cancer patients were 10–75 (51.08±14.65) points, personal burden scores 6–43 (27.94±8.20) points and role burden scores 1–23 (13.72±4.48) points, of which 2.4% of the main caregivers had no burden. A total of 16.91% had a light burden, 46.86% had a moderate burden and 33.82% had a heavy burden. Most primary caregivers had anxiety. Their anxiety scores ranged from 25 to 80 (57.62±12.12), 8 had no anxiety, 25 had mild anxiety, 94 had moderate anxiety, and 80 had severe anxiety.

Table 2: Primary Caregiver Burden and Anxiety Scores in Breast Cancer Patients

Caregiver burden level	Fraction (score, ±) x s	Number of people (n)
No or little burden	13.80±2.59	5
Mild burden	31.09±6.00	35
Moderate burden	48.78±5.53	97
Heavy burden	66.91±3.81	70
Personal burden	27.94±8.20	
Role burden	13.72±4.48	
Anxiety		
No anxiety	35.38±5.97	8
LA	44.08±2.33	25
Moderate anxiety	51.69±2.13	94
Severe anxiety	71.04±6.36	80

Univariate Analysis of Primary Caregiver Burden and Anxiety in Patients with Breast Cancer

Among the 207 primary caregivers of breast cancer patients investigated in this study, as shown in Table 3, the educational background and monthly income of the primary caregivers are correlated with the caring burden and anxiety level of the primary caregivers of breast cancer (<0.001).

The results of multiple comparisons showed that the level of caregiving burden of those with college degree or above was lower than that of secondary school or senior high school or junior high school or below (F=31.129, P<0.001).The burden level of those who earned high monthly income was lower than that of those with low monthly income (=9.022, <0.001).The anxiety level of high educational level was lower than that of low educational level (=48.357, <0.001). The anxiety level of primary caregivers who earned a monthly income of 6 000–8 000 or more was lower than that of primary caregivers earning a monthly income of 6 000 or less (=5.030, =0.001).

Table 3: Univariate Analysis of Burden and Anxiety in Breast Cancer Patients (n=207)

Variable	Example number	ZBI total points			SAS total points		
		Score (score, ±) $\bar{x}$ s	T / Price F	P price	Score (score, ±) $\bar{x}$ s	T / Price P	P price
Sex			0.577	0.448		0.179	0.673
Male	102	51.86±13.74			57.98±11.63		
Female	105	50.31±15.51			57.27±12.61		
Age			1.199	0.304			
18~<30	62	49.23±14.91			55.56±12.37		
30~<50	94	52.76±13.89			58.60±12.08		
>50	51	50.24±15.60			58.31±11.79		
Record of formal schooling			31.129	<0.001		48.357	<0.001
Junior high school and below	47	63.34±10.44			69.81±9.01		
Technical secondary school or high school	109	49.34±13.25			55.46±10.16		
College degree or above	51	43.49±14.06			51.00±10.62		
Relationship with patient			0.242	0.785		0.452	0.637
Father and mother	63	51.35±15.30			58.25±12.26		
Husband and wife	96	50.38±14.45			56.76±12.07		
Sons and daughters	48	52.13±14.65			58.50±12.16		
Monthly income			9.022	<0.001		5.030	0.001
Under 2 000	15	62.40±8.30			65.53±12.03		
2 000–4 000	56	55.59±11.59			59.13±11.62		
4 0006– 000	93	50.75±13.92			58.28±11.64		
6 0008–000	30	42.63±15.55			51.27±11.24		
More than 8 000	13	40.38±19.00			51.92±12.66		
Time taken to care			1.602	0.204		0.335	0.716
Three days to four days	48	52.85±13.08			57.50±11.69		
Four days to five days	86	48.93±15.74			56.93±12.22		
More than five days	73	51.08±14.65			58.51±12.38		
Operative mode			0.367	0.545		0.201	0.654
On the job	146	50.68±14.89			57.86±11.98		
Not on the job	61	52.03±14.12			57.03±12.53		

Variable	Example number	ZBI total points			SAS total points		
		Score (score, ±) $\bar{x}$ s	T / Price F	P price	Score (score, ±) $\bar{x}$ s	T / Price P	P price
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Age			1.199	0.304			
18–<30	62	49.23±14.91			55.56±12.37		
30–<50	94	52.76±13.89			58.60±12.08		
>50	51	50.24±15.60			58.31±11.79		
Record of formal schooling			31.129	<0.001		48.357	<0.001
Junior high school and below	47	63.34±10.44			69.81±9.01		
Technical secondary school or high school	109	49.34±13.25			55.46±10.16		
College degree or above	51	43.49±14.06			51.00±10.62		
Relationship with patient			0.242	0.785		0.452	0.637
Father and mother	63	51.35±15.30			58.25±12.26		
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Monthly income			9.022	<0.001		5.030	0.001
Under 2 000	15	62.40±8.30			65.53±12.03		
20 00–4 000	56	55.59±11.59			59.13±11.62		
4 000–6 000	93	50.75±13.92			58.28±11.64		
6 000–8 000	30	42.63±15.55			51.27±11.24		
More than 8 000	13	40.38±19.00			51.92±12.66		
Time taken to care			1.602	0.204		0.335	0.716
Three days to four days	48	52.85±13.08			57.50±11.69		
Four days to five days	86	48.93±15.74			56.93±12.22		
More than five days	73	51.08±14.65			58.51±12.38		
Operative mode			0.367	0.545		0.201	0.654
On the job	146	50.68±14.89			57.86±11.98		
Not on the job	61	52.03±14.12			57.03±12.53		

Multivariate Linear Regression Analysis of Factors Affecting Anxiety Level of Primary Caregivers of Breast Cancer Patients

This section analysed the anxiety level of the main caregiver as the dependent variable and the caregiver burden, and its dimensions (personal burden and responsibility burdens) and general data as independent variables for multiple linear regression analysis, as shown in table 5. The model constructed in this study was statistically significant (=36.679, <0.001). The caring burden and dimensions of primary caregivers namely, personal burden and general data, education and working status explain the 65.2% of the total variation in the anxiety level of primary caregivers of breast cancer patients (=0.652).

Table 4: Illustration of the Anxiety-related Variables Assigned for the Primary Caregivers of Breast Cancer Patients

Argument	**Assignment description**
Record of formal schooling	Junior high school and below = one technical secondary school or senior high school = two junior college or above = three
Operative mode	Job = one not employed = two
Take care of the burden	No burden = 0 mild burden = one moderate burden = two severe burdens = three

Table 5: Multiple Linear Regression Analysis of Factors Influencing Anxiety Level in Primary Caregivers of Breast Cancer Patients

Variable	**Partial Regression Coefficient**	**Standard Error**	**Standardised Regression Coefficient**	*T* **price**	*P* **price**
Constant	39.200	5.435	—	7.212	<0.001

Record of formal schooling	-3.112	0.894	-0.177	-3.479	0.001
Operative mode	-2.203	1.140	-0.083	-1.933	0.045
Personal burden	0.344	0.157	0.233	2.185	0.030
Take care of the burden	7.883	1.822	0.501	4.326	<0.001

Correlation Analysis of Primary Caregiver Burden and Anxiety in Patients with Breast Cancer

The primary caregiver burden and its two dimensions (personal and responsibility burden) and anxiety were analysed using the Pearson correlation coefficient, as shown in table 6. The primary caregiver burden and its dimensions were significantly correlated with anxiety (<0.001).

Table 6: Association Analysis of Primary Caregiver Burden and Anxiety in Breast Cancer Patients

	Personal Burden	**The Burden of Responsibility**	**Care Burden Score**	**Anxiety Total Score**
Personal burden	1			
The burden of responsibility	0.821**	1		
Care burden score	0.969**	0.917**	1	
Anxiety total score	0.675**	0.675**	0.764**	1

Note: * * Significant correlation at the 0.01 level (bilateral)

Discussion

Analysis of Primary Caregiver Burden for Breast Cancer Patients

The results of this study showed the total score of the primary caregivers' burden of breast cancer patients to be (51.08 ± 14.65), compared with Luo Jia et al. who also

confirmed that caregivers were mainly at the moderate-to-severe level. Among the main caregivers, no burden accounted for 2.4%, mild burden for 16.10.91%, while moderate burden accounted for 46.86% and severe burden for 33.82%, of which moderate and severe burden accounted for a large proportion. Studies show that breast cancer patient caregivers are mostly at moderate-to-severe levels of care burden. This result may be related to the educational degree and monthly income of the primary caregivers of breast cancer patients. Caregivers with junior high school or less have a higher burden, and the lower the monthly income, the heavier the care burden. The primary caregiver spends not just time but also money while caring for breast cancer patients. Low income makes it difficult to cope with the cost of illness. The weight of care burden with low education level than high education level may lie in the lack of knowledge of the disease, which cannot effectively relieve the burden of taking care of patients. Take care of the length of the caregiver burden also has a certain influence, caregiver initial care of patients often do not handy, take care of the extension of the caregiver social time, have to find a balance between the work, long tight, physical fatigue make caregiver burden, mood with depression, anxiety. It can be inferred from the results that the burden of caregivers with relatively long time has decreased, the reason may be that taking care of the patients for a long time, the caregivers also find some tips to take care of the patients from the daily care, and also have a basic understanding of the disease, and can basically take good care of the patients. Caregivers also find some fulfilment and increasing ease to care for patients. Research shows that a good family income can reduce the burden on caregivers and breast cancer patients during hospitalisation. spending is very big, if the income is low, caregiver also worry medical costs, eat live problem, low income cannot meet the requirements of breast cancer patients and caregivers medical care and living standards, then increase the burden of the caregiver. In the minds of most children, it is necessary to take care of their parents. So, the burden of care for such people is not very heavy (Zhou et al., 2020)(Martin, 2023).

The results of this study showed that the total score of the main caregivers of breast cancer patients was (51.08±14.65), which was similar to the conclusion of Luo Jia et al.(Zhou and Wang et al., 2020), and the caregivers were mainly at the moderate to severe level. Among the primary caregivers, 2.4% had no burden, 16.91% had mild burden, 46.86% had moderate burden, 33.82% had severe burden, and the moderate and severe burden accounted for a larger proportion. Studies have shown that (Martin 2023) most caregivers of breast cancer patients are at the level of moderate to severe care burden. This result may be related to the educational background and monthly income of the main caregivers of breast cancer patients. On the contrary, the burden of caregivers with a junior high school education or below is higher, and the lower the monthly income, the heavier the burden of care. Primary caregivers give not only time but also money to care for breast cancer patients. Low income makes it difficult to cope with the costs of illness. The burden of caring for patients with low education may be heavier than that of high education because the main caregivers of breast cancer patients have insufficient nursing knowledge and far insufficient understanding of the disease, which cannot effectively alleviate the burden of caring for patients. The length of care

time also has a certain impact on the burden of caregivers, caregivers tend to be unable to handle the initial care of patients, the extension of care time reduces the social time of caregivers, and those with jobs have to find a balance between the two, long-term tension and physical fatigue increase the burden of caregivers, and the mood is depressed, resulting in anxiety. It can be seen from the results that the burden of caregivers for a relatively long period of time has decreased, which may be due to the fact that they have been taking care of patients for a long time, and the caregivers have also found some small skills to take care of patients from daily care, and have a basic understanding of this disease, and can basically take good care of patients. Caregivers can also find some sense of accomplishment, and they are becoming more and more comfortable taking care of patients. Studies (Chan and Teleni et al., 2020) show that the family income of a good family can reduce the caregiver's burden of care, and the expenses of breast cancer patients during hospitalization are also very large. If the income is low, the caregiver still must worry about medical expenses, food and housing, and low income cannot meet the medical requirements and living standards of breast cancer patients and caregivers, thus increasing the burden of caregivers. In China, due to the filial piety of parents since the Chinese tradition, and the questionnaire collected in this survey, the relationship with patients is not a small number of children. In the hearts of most children, they feel that it is necessary to take care of their parents. Therefore, the burden of care for such people is not very heavy (Chan et al. 2020).

Analysis of the Factors Influencing the Occurrence of Anxiety in the Primary Caregivers of Breast Cancer Patients

The regression analysis shows that the educational background, monthly income and work status of the main caregivers influences the occurrence of anxiety in the main caregivers of breast cancer patients.

Education Background

Zhang, Rongwei et al. mentioned that most of their life is looking for the meaning of life, lacking the meaning of life, individuals will feel empty, and then produce psychological problems. Caregivers often lose themselves when their lives only revolve around the patient during their hospital stay. They have less contact with the people around them, less social activities and no place to release stress, which results in psychological problems. The majority of the 207 breast cancer patients that were surveyed suffered from anxiety. The results showed that the educational level of the main caregiver was the influencing factor of their anxiety occurrence. The reason may be that the low level of education, being unable to correctly solve their own psychological problems, not talking about the problems, results in more anxiety. (Dong Qiong) The study mentioned that the educational level of caregivers was negatively correlated with the burden of care, limited knowledge and insufficient awareness of the disease, lack of professional knowledge about caring for breast cancer patients and feeling inadequate in their care. Patients are not well taken care of, and caregivers feel

at a loss, which adds to the burden of care. Main caregivers with high level of education, may have some understanding of breast cancer, under the health education of medical staff, learn fast, able to take care of this role, Patients on the other hand are also able to make the correct judgement on relevant information and can adjust their attitude, thus reducing the level of anxiety. Those with the low education level may not accept new things so quickly and lack of knowledge about care and always worry about poor care for patients. This increases the burden on caregivers and make anxiety levels.

Monthly Income

The results of this study show that the monthly income of breast cancer patients is the contributing factor in the anxiety situation of breast cancer patients. The caregivers were not very familiar with the disease before starting the role of caring. The comprehensive care and the cost of treating the disease are very stressful for families with average economic level which then cause psychological problems. Major caregivers with high income can also hire caregivers in order to get rest time; while those that earn low income, do not only worry about the cost of subsequent treatment, but also worry about family food and clothing. Taking care of patients is also stressful to caregivers and is not well communicated. In most societies focuses is put on the disease itself, not the group of caregivers. The caregiver carries the health of the patient, but the heart is not relieved, and then the psychological problems become more and more serious. As the disease worsens, the patient's treatment goes up, the patient's self-care ability dwindles, correspondence with the caregiver–psychological and physical–demand gets higher. The time to nurse the patient's get longer, social participation dwindles, boredom and anxiety and care burden become a vicious cycle.

It emerged from the study that the monthly income of the main caregiver of breast cancer patients contributes to the anxiety suffered by caregivers (Zhang et al. 2022). In concert, Yang Meng, Zhang and Zhang et al. (2022) argue that caregivers do not have a good prior understanding of diseases before taking care of patients. Without comprehensive care from caregivers and the costs treatment, families with low incomes are always under great pressure, which results in psychological problems. The caregiver bears the health of the patient, but the heart cannot be relieved, and then the psychological problems become more and more serious (Viana and Souza et al., 2022).

Working Status

Work status is also the main factor contributing to the caregiver anxiety. Caregivers earning meagre salaries are always worried about hospital expenses and other problems. Borrowing money becomes another burden, which aggravates the anxiety. Research shows that most caregivers both old and young do not only have to pay money, but also pay energy to take care of breast cancer patients. It is difficult to seek medical treatment. With less communication around the caregivers, they are prone to psychological problems. For those who are working, it is always difficult to create balance between

work and taking care of the patients, especially when the condition gets worse as paying more attention to the patient means less time is spent on the job; and more stress for the caregiver (Waluya et al. 2022).

Work status is also a factor affecting the anxiety of primary caregivers, and having a stable job means having a certain income. Caregivers caring for patients are doomed to work cannot do both, low income to worry about hospital fees and other problems, borrowing money is a burden, will only increase the anxiety of caregivers. Studies have shown that (Waluya and Rahayuwati et al., 2022) most caregivers are in the age of the elderly and the young. Caregivers not only have to pay money, but also pay energy to take care of breast cancer patients for a long time. The process of medical treatment is not easy, and the change of patients' physical form leads to low self-esteem, anxiety, depression and other emotions, which also subtly affect the emotions of caregivers. With less and less communication around the caregiver, it is easy to have psychological problems. If you have a job, you should balance the relationship between work and taking care of patients and arrange the time of both. As the disease worsens later, the main caregiver has to pay more and more time, which inevitably leads to the imbalance in work, affecting the work, and caring for patients can not cover all aspects, and the caregiver has less and less time, which makes it difficult to relieve the depressed emotions in the heart. Without a job, medical expenses alone are enough to make caregivers difficult, and property can only go out, and there is always a bottom. The burden on caregivers who do not work is even heavier, not only worried about taking care of patients, but also worried that the problem of food and clothing cannot be solved, in the long run, the psychological problems of caregivers are becoming more and more serious, which also affects the mood of patients and reduces the quality of life of patients.

Correlation of Primary Caregiver Burden with Anxiety Generation in Patients with Breast Cancer

This study showed a positive correlation between primary caregiver burden and anxiety (<0.001), in which anxiety was associated with caregiving burden (=0.764), anxiety with individual burden (=0.675) and responsibility burden (=0.675). The participants had increased anxiety with an increasing care burden. This suggests that anxiety may be related to individual cognition and regulation, and when caregivers have the ability and belief to complete one thing, their anxiety level is low. Caregivers with low education may not be very aware about illness and are relatively slow to receive new knowledge, not to mention older caregivers. In this era of data, the elderly are easily abandoned by the times. People with low education levels take longer to grasp and process new information, which results in poor judgement when it comes to complex matters. This results in heightened anxiety, lack of initiative and hope which impacts on the caregivers participation in caring for patients. Caregivers' one-sided understanding of the disease, lack of knowledge and caring experience, worry about the prognosis of patients and the proper nursing methods, as well as some caregivers face some physical

disability in life, but inferiority, not confidence. Unlike people with low levels of education, highly educated people are able to solve complex problems quickly, learn fast, have high resilience, able to deal with their emotions, which results in low anxiety and less physical and phycological burden. Zhang Pan et al. argued that caregivers have a lower sense of psychological agreement and are more likely to accumulate anxiety in the face of stress, resulting in greater care burden. Helping caregivers to improve the appropriate psychological and social support might improve their confidence when caring for patients, thus reducing the burden of care and eliminating bad emotions and reducing the occurrence of anxiety.

The results of this study showed a positive correlation between caregiver burden and anxiety (<0.001), among which anxiety was correlated with caregiver burden (= 0.764), anxiety was correlated with personal burden (=0.675), and responsibility burden (=0.675). The anxiety level of the study subjects increased with the increase of the caring burden. Studies have shown that anxiety may be related to individual cognition and regulation. When the caregiver has the ability and belief to complete something, the anxiety is less, and the caring burden is also very low. Caregivers with low education levels may not be very knowledgeable about diseases and are relatively slow to accept new knowledge, let alone older caregivers. In this digital age, it is easy for the elderly to be abandoned by The Times. It is even more difficult to accept some new knowledge, and it is difficult to make correct judgments about the more complicated and confusing information around us, which makes the burden of being a caregiver more and more heavy, and then produces anxiety. Anxiety can reduce people's subjective initiative and hope level, thus affecting the caregiver's experience of nursing participation. Caregivers have a one-sided understanding of the disease, lack of knowledge of caring for patients, worry about the prognosis of the patient's disease and whether the nursing method is appropriate, and some caregivers face some physical disabilities of patients in life, but they are inferior and not confident. Resulting in increased anxiety and increased care burden. People with higher education have their own way of solving their own problems, but they look at problems more comprehensively, accept new knowledge faster, know how and what is more beneficial to them, and have higher psychological resilience, which can reduce the adverse impact of negative emotions, thus reducing anxiety and further reducing the physical and psychological burden of caregivers (Li and Li et al., 2022).Zhang Pan (Chen and Luo et al., 2022) .proposed that caregivers have a lower sense of psychological consistency and are more likely to accumulate anxiety in the face of pressure, resulting in heavier caring burden. Helping caregivers to improve appropriate psychological and social support, helping caregivers to improve their confidence in care, is conducive to reducing the burden of care, and then eliminate bad emotions, reduce the occurrence of anxiety.(H. Li et al., 2022)(Chen et al., 2022)

According to Fan Zhenzhen and Chan et al. (2020) aver that a coping style plays a partial intermediary role between care burden and anxiety, and that a comprehensive intervention on caregiver burden and coping style can effectively relieve the anxiety of major caregivers. During hospital visits, health practitioners can help patients and

caregivers with more knowledge and information about the disease in order reduce caregiver burden and improve the quality life of patients.

Conclusion

In summary, this article has argued that the burden and anxiety that primary caregivers of breast cancer patients suffer are mostly at moderate or above levels, and the overall situation is not optimistic. In the single factor analysis of the burden and anxiety of the primary caregiver in breast cancer patients, the educational background and monthly income of the primary caregiver had significant impact. It showed that there is a positive correlation between the higher the burden of the primary caregiver and the higher the degree of anxiety. The article also recommended that health practitioners should help caregivers and patients with more knowledge and information about the disease, the importance of psychological nursing, formulate relevant nursing measures in order to reduce the incidence of adverse emotions of primary caregivers and improve the quality of life of the breast cancer patients.

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