

Analysis of the Current Status and Influencing Factors of Caring Ability of Main Relatives and Caregivers of Patients with Esophageal Cancer

Weijing Wei*, Dandan Liu*, Kunlin Tu, Chuanzhen Li#, Jiudi Zhong#

Division of Thoracic Surgery, Sun Yat-sen University Cancer Center, Guangzhou, China

Email: *lichzh@sysucc.org.cn, #zhongjd@sysucc.org.cn

How to cite this paper: Wei, W.J., Liu, D.D., Tu, K.L., Li, C.Z. and Zhong, J.D. (2022) Analysis of the Current Status and Influencing Factors of Caring Ability of Main Relatives and Caregivers of Patients with Esophageal Cancer. *Open Journal of Nursing*, 12, 399-410.

<https://doi.org/10.4236/ojn.2022.126027>

Received: May 9, 2022

Accepted: June 21, 2022

Published: June 24, 2022

Copyright © 2022 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Objective: To investigate the caring ability of the main relatives of postoperative patients with esophageal cancer, and to analyze the influencing factors. **Methods:** From May 2019 to May 2021, 290 esophageal cancer patients and their main relatives were selected by convenience sampling method in a Grade III a cancer hospital in Guangzhou; the general data questionnaire and the Chinese version of the scale of care ability of relatives' caregivers were used. **Results:** The total average score of caring ability of the main relatives' caregivers after esophageal cancer operation was (32.99 ± 3.01) . Multiple stepwise regression analysis showed that the age of the caregiver, the length of stay, the family income per capita and the experience of caring were the influencing factors. **Conclusion:** The caring ability of the main relatives of the patients with esophageal cancer after operation is moderate and low. The medical staff should improve the caring ability of the caregivers and take effective measures according to different influencing factors to improve the psychological state of the caregivers.

Keywords

Esophageal Cancer, Relatives, Caregiver, Capacity for Care

1. Introduction

Esophageal cancer, one of the common malignant tumors occurred in the digestive tract, is the eighth common cancer in the world and the sixth common cause of death [1], which the incidence and mortality in China are both the first in the

*Weijing Wei and Dandan Liu are the co-first authors.

#Corresponding authors.

world [2]. Surgical resection, one of the main treatments of esophageal cancer, involves multiple parts such as the thorax, abdomen and neck [3], but can cause a series of complications due to the complex anatomical structure of the esophagus itself and the high transfer rate of postoperative lymph nodes [4], such as postoperative malnutrition, anastomotic fistula, recurrent laryngeal nerve injury, lung infection, high recurrence rate and so on, which is a huge challenge to the family caregiver who takes care of the postoperative patients' daily life. The family caregiver not only needs to know the nursing and first-aid knowledge related to disease, but also needs to balance the psychological burden and pressure of the patients and themselves, which is a serious challenge to the caring ability of the family caregiver. The caring ability is the ability of caregivers to maintain the health of the patients and themselves [5], which directly or indirectly affects the postoperative rehabilitation quality of the patients with esophageal cancer, so it deserves more attention and concern. This study intends to investigate the caring ability and influencing factors of the family caregiver of patients with esophageal cancer, explores its relationship with the caring burden, and provides a reference for effectively evaluating and improving the caring ability of caregivers.

2. Objects and Methods

2.1. Objects

According to the number of items of the relevant use scale, from May 2019 to May 2021, 290 radical postoperative patients with esophageal cancer and their family caregivers were selected as the objects by the convenience sampling method in a Class III Grade A tertiary tumor hospital in Guangzhou. And the questionnaire survey was taken. Inclusion criteria of patients: 1) The radical postoperative patients with esophageal cancer who is diagnosed in the histopathology; 2) The patients who are over 18 years old, conscious and able to communicate; 3) The patients whose esophageal cancer is primary lesion and non-metastatic; 4) The patients who are informed consent to this study and volunteered to participate in this study. Exclusion criteria: 1) The patients with mental disorder; 2) The patients unwilling to cooperate; 3) The patients with acute and critical diseases of other systems. Inclusion criteria of primary caregiver: 1) To be the main family caregiver of the patient (with the longest daily caring time, or identified by the patient in the case of multiple family caregivers); 2) The caregivers who are over 18 years old, conscious and able to cognitively communicate; 3) The patients who are informed consent to this study and volunteered to participate in this study. Exclusion criteria: 1) The person with mental disorders or cognitive abnormalities, who is unable to fill in the questionnaire; 2) The employed caregivers.

2.2. Tools

- 1) General data questionnaire

The questionnaire includes the patients' age, gender, education level, marital status, medical payment mode, the length of stay and whether the complication occurs; family caregivers' age, gender, relationship with patients, education level, marital status, residence, family monthly income, chronic disease, regular job and caring experience.

2) Family caregiver task inventory, FCTI

The FCTI, prepared by American scholar Clark *et al.* [6] in 1983 and translated and revised by numbers of scholars [7] [8] [9], is used to evaluate the tasks of patients' family caregivers, getting extensive reliability and validity tests. The FCTI contains a total of 5 dimensions with 25 items, including learning and adapting to the role of caregivers (5), assistance provided as required by the patients (5), management of individual emotion (5), evaluation of the supporting resources of the family and the society (5), and balancing of the caregiving needs and the personal needs (5). Likert Level 3 scoring method is used in each item, in which no difficulty = 0, difficulty = 1, and high difficulty = 2. Total score of the FCTI is 0 - 50, and a higher score indicates a poorer level of caring ability. In this study, the Cronbach's α coefficient of the FCTI is 0.932 and the test-retest reliability is 0.791.

2.3. Research Method

A cross-sectional survey was used in this study, and the researcher himself explained the survey objective and how to fill to the respondents with a unified guidance, distributed the questionnaires uniformly after informed consent, and retrieved the questionnaires on the spot after completing the filling. Check for any error or missing of filling, timely improve the questionnaire to ensure the integrity, guide the respondents who have doubts in time, but do not interfere with and or imply any filling. There are 298 pieces of questionnaire released in total, with 290 valid ones taken back at the effective rate of 97.3%.

2.4. Statistical Method

SPSS 25.0 software is used for statistical analysis, and the enumeration data are described with frequency and percentage. The normally distributed measurement data are described with $\bar{x} \pm s$; the comparison among groups is analyzed by t test or single factor; and for multiple-factor analysis, multiple linear stepwise regression analysis applies. It is statistically significant if P is <0.05.

3. Results

3.1. Current Status of Caring Ability of Family Caregivers of Postoperative Patients with Esophageal Cancer

According to the results, the total average score of caring ability of family caregivers of postoperative patients with esophageal cancer was (32.99 ± 3.01), as shown in **Table 1** for details.

Table 1. Scores of caring ability of the family caregivers.

Item	Number of item	Total average score	Average score for the item	Scoring rate (%)
Learn and adapt to the role of caregivers	5	6.34 ± 1.28	1.27 ± 0.27	63.4
Assistance provided as required by the patients	5	6.53 ± 1.19	1.31 ± 0.23	65.3
Management of individual emotion	5	6.73 ± 1.18	1.35 ± 0.19	67.1
Evaluation of the supporting resources of the family and the society	5	6.71 ± 1.24	1.34 ± 0.21	67.1
Balancing of the caregiving needs and the personal needs	5	6.69 ± 1.33	1.34 ± 0.22	66.9
Total score of FCTI	25	32.99 ± 3.01	1.32 ± 0.12	65.9

3.2. Single-Factor Analysis of Common Features and Caring Ability of the Family Caregivers of Postoperative Patients with Esophageal Cancer

According to the results, the ages of the patients range from 37 to 82 (61.47 ± 8.41) years old, and the ages of the family caregivers range from 23 to 71 (46.75 ± 12.98) years old in this study. The statistical difference ($P < 0.05$) is found by comparing the scores of the patients' age, education level, length of stay and any complications, his/her caregivers' age, education level, residence and have any chronic diseases, family income per capita, any stable job and experience of caring, as shown in **Table 2** and **Table 3** for details.

3.3. Multiple Stepwise Regression Analysis on Influencing Factors of Caring Ability of the Main Family Caregivers of Postoperative Patients with Esophageal Cancer

Multiple linear stepwise regression analysis is carried out through taking total FCTI score as a dependent variable and 10 variables with the statistical significance of single-factor analysis as independent variables. See the assignment methods of the independent variables in **Table 4**. The independent variables including the age of the caregiver, the length of stay, the family income per capita, and whether having the experience of caring enter a regression equation, as shown in **Table 5** for details.

4. Conclusion

4.1. Caring Ability of Family Caregivers of Postoperative Patients with Esophageal Cancer to Be Improved

The total average score of caring ability of family caregivers of postoperative

Table 2. Comparison on FCTI scores of patients with different features (n = 290).

Item	Number of cases (%)	Total score of FCTI	t/ χ^2	P
Age/years old			7.928	0.037
18 - 40	4 (1.38)	30.11 \pm 2.94		
41 - 60	122 (42.07)	32.96 \pm 3.04		
>60	164 (56.55)	33.06 \pm 2.98		
Gender			-6.858	0.074
Male	219 (75.52)	33.80 \pm 2.96		
Female	71 (24.48)	33.56 \pm 3.08		
Education level			8.815	0.016
Primary school and below	135 (46.55)	35.66 \pm 3.16		
Middle school	90 (31.03)	33.43 \pm 2.93		
High school	38 (13.10)	32.03 \pm 2.85		
Secondary specialized school and college for professional training	23 (7.93)	30.61 \pm 2.39		
Bachelor degree and above	4 (1.38)	30.25 \pm 2.22		
Marital status			7.031	0.215
Married	277 (95.52)	32.02 \pm 2.99		
Unmarried	3 (1.03)	33.67 \pm 4.93		
Celibate	2 (0.69)	32.50 \pm 3.54		
Widowed	8 (2.76)	32.13 \pm 3.36		
Payment method			8.258	0.855
Self-paying	40 (13.79)	33.30 \pm 2.98		
Medical insurance	5 (1.72)	33.40 \pm 2.51		
Other	3 (1.03)	32.67 \pm 4.93		
Length of stay			3.764	<0.001
\leq 9 days	58 (20)	33.13 \pm 3.36		
10 - 30 days	146 (50.3)	32.77 \pm 3.14		
\geq 31 days	86 (29.7)	30.30 \pm 2.98		
Any complications			7.361	0.142
Yes	197 (67.9)	32.78 \pm 2.89		
No	93 (32.1)	32.43 \pm 3.44		

Table 3. Comparison on FCTI scores of caregivers with different features (n = 290).

Item	Number of cases (%)	Total score of FCTI	t/ χ^2	P
Age/years old			8.745	0.035
18 - 40	90 (31.03)	30.31 ± 3.32		
41 - 60	128 (44.13)	31.84 ± 2.25		
>60	72 (24.82)	35.86 ± 2.36		
Gender			7.614	0.124
Male	122 (42.07)	32.90 ± 2.92		
Female	168 (57.93)	33.05 ± 3.07		
Relationship with patients			6.760	0.518
Spouse	119 (41.03)	33.03 ± 2.24		
Children	144 (49.66)	33.13 ± 2.27		
Spouses of children	3 (1.03)	31.67 ± 2.85		
Siblings	24 (8.28)	32.65 ± 3.68		
Education level			4.183	0.009
Primary school and below	49 (16.90)	35.96 ± 2.38		
Middle school	76 (26.21)	33.96 ± 2.32		
High school	65 (22.41)	32.98 ± 3.43		
Secondary specialized school and college for professional training	56 (19.31)	30.27 ± 2.46		
Undergraduate	37 (12.76)	29.70 ± 2.42		
Master degree and above	7 (2.41)	30.29 ± 2.89		
Marital status			8.175	0.310
Married	256 (88.28)	33.07 ± 2.98		
Unmarried	21 (7.24)	32.05 ± 3.35		
Celibate	11 (3.79)	32.99 ± 3.01		
Widowed	1 (0.34)	32		
Place of residence			6.419	0.026
Village	52 (17.93)	34.69 ± 2.75		
Town	138 (47.59)	31.12 ± 3.08		
City	100 (34.48)	30.99 ± 3.05		
Have any chronic diseases			7.869	0.006
Yes	31 (10.69)	34.90 ± 3.08		
No	259 (89.31)	30.00 ± 3.01		

Continued

A stable job			-7.834	0.007
Yes	222 (76.55)	30.07 ± 3.02		
No	68 (23.45)	33.72 ± 2.97		
Family income per capita/yuan			6.233	<0.001
<2000	44 (15.17)	35.91 ± 3.06		
2000 - 6000	147 (50.69)	31.91 ± 3.05		
6000 - 10,000	81 (27.93)	29.22 ± 3.03		
>10,000	18 (6.21)	30.78 ± 2.58		
Any experience in caregiving			-5.260	<0.001
Yes	61 (21.03)	29.94 ± 2.97		
No	229 (78.97)	33.03 ± 3.02		

Table 4. Assignment of independent variables.

Independent variable	Assignment method
Age	18 - 40 = 1; 41 - 60 = 2; >60 = 3;
Education level	Primary school and below = 1; Junior middle school = 2; Senior high school = 3; Secondary specialized school and College for professional training = 4; Bachelor degree = 5; Master degree and above = 6
Place of residence	Village = 1; Town = 2; City = 3
Length of stay	≤9 days = 1; 10 - 30 days = 2; ≥31 days = 3
Have any chronic diseases	Yes = 1; No = 0
A stable job	Yes = 1; No = 0
Family income per capita/yuan	<2000 yuan = 1; 2000 - 6000 yuan = 2; 6000 - 10,000 yuan = 3; >10,000 = 4
Any experience in caregiving	Yes = 1; No = 0

Table 5. Multiple linear regression analysis of influencing factors of caring ability of family caregivers (n = 290).

Item	Partial regression coefficient	Standard error	Standardized regression coefficient	t value	P value
Constant term	33.761	4.377	-	12.671	<0.001
Age of the caregiver	-2.781	1.881	-0.771	-2.861	0.006
Length of stay	2.318	1.582	0.782	2.751	0.017
Family income per capita/yuan	-3.793	2.044	-1.021	-3.802	0.012
Any experience in caregiving	3.672	2.857	0.852	4.012	0.002

Note: F = 16.652, R² = 0.235, Adjustment R² = 0.227, P < 0.001.

patients with esophageal cancer was (32.99 ± 3.01), and the overall scoring rate is 65.9%, which are consistent with the research, made by Lyu Lulu, *et al.* [10], about the comprehensive caring ability of the main relatives of patients with cerebral stroke. The reasons are analyzed as follows: most patients with esophageal cancer are middle and old aged men, and most family caregivers are female, which are consistent with the study results of Wen Ziyi, *et al.* [11]. Caregivers cannot master all nursing knowledge of esophageal cancer due to variety and complicatedness. In addition, the patient after the operation needs to be continuously nursed when going home, especially systematic learning is needed for nursing a parenteral nutritional canal during a fasting period; however, the education level of most relatives is relatively low, most relatives are poor in receptivity, do not have fixed time and do not care the patients systematically, as a result, the caring ability is relatively low on the whole. The scores, from high to low, of FCTI in all dimensions are described as follows: management of individual emotion, evaluation of the supporting resources of the family and the society, balancing of the caregiving needs and the personal needs, assistance provided as required by the patients, and learning and adapting to the role of caregivers, indicating that the caregiver is the poorest in the management of individual emotion, which is probably because that the caregiver feels stressed, nervous, anxious and the like after long-time caregiving. During the process getting along with the patient, some emotional changes of the patient can also affect the personal emotion of the caregiver; in the aspects of evaluation of the supporting resources of the family and the society, and balancing of the caregiving needs and the personal needs, the caring ability of the caregiver who is jobless or has low household income is relatively low, which is probably because that cancer needs support from all aspects and the caregiver cannot balance all needs; and in the aspects of learning and adapting to the role of caregivers, and assistance provided as required by the patients, most caregivers cannot adapt to the role from the beginning, and as time goes by, the caregivers gradually adapt to their roles and can provide assistances in multiple aspects [12] [13] [14]. It indicates that the medical staff should provide targeted assistance and psychological support for the caregivers, enhance the household nursing training of the patients with esophageal cancer after operation for the caregivers, effectively improve the sense of self-support of the caregivers, advocate the patient to establish the response plan of household nursing, and take the improvement of the life quality of the patient oriented.

4.2. Analysis of Influencing Factors of Caring Ability of Family Caregivers of Postoperative Patients with Esophageal Cancer

4.2.1. Age of the Caregivers

According to the study, the caring ability and the age of the caregiver are inversely correlated, that is, the younger the caregiver is, the higher the caring ability is. According to the study, the caregivers at the age of 60 or above account for 24.8%, wherein most caregivers also suffer from chronic diseases and lack energy

and strength; however, postoperative patients with esophageal cancer carry multiple catheters and the caring details are tedious, so that the caregivers need to master related knowledge and skills. The elder caregivers always feel powerless to further affect personal emotions, as a result, most caregivers feel anxious and helpless. The study result is the same with Wei Shuna, *et al.* [15]. According to certain study [16], the caring burden of the caregivers is obviously increased when the caring time exceeds 12 hours, as a result, the caring ability and the caring quality are affected. It indicates that we shall attach great importance to personal factors of the caregivers, help them ease and manage negative emotion, improve the response ability of the caregivers, and comprehensively improve the caring ability of the caregivers from multiple aspects.

4.2.2. Length of Stay

According to the study, the caring ability of the relatives of patients who are in hospital for a long time is higher. Most postoperative patients with esophageal cancer need to fast for more than two weeks. The time for starting feeding is determined according to the growth condition of an incision. Most patients need household enteral nutrition for a period of time even if they leave hospital, which indicates that the caregivers need to continuously look after the patients. With the accumulation of time and experience, the caregivers gradually master disease knowledge and nursing skills. In addition, according to this study, the patients having post-operative complications account for 67.9%. Long-time in-hospital supporting caring enables the caregivers to systematically learn the caring contents and the caregivers gradually form their caring modes.

4.2.3. Household Incomes Per Capita

According to the study result, the caring ability of the caregiver with high household incomes per capita is the highest, followed by the caring ability of the caregiver with medium household incomes per capita, and the caring ability of the caregiver with low household incomes per capita is the lowest. The economic burden has a huge impact on the treatment and recovery of the patient and also causes high and low caring pressure of the caregiver. The study result of Yi Lina, *et al.* [17] indicates that most caregivers will face the economic burden during the caring. Some caregivers who have a tight life not only undertake high treatment and nursing cost and sometimes also need to pay lost wage, nutrition fee and other economic costs generated by diseases. The economic limitation enables the caregivers to feel more powerless when they care the patients. The incapacity of meeting the material needs and psychological needs of the patients may probably enable the caregivers to lose caring confidence, as a result, the caring ability of the caregivers is reduced. This suggests that when caring for patients and relatives with poor family financial status, we should help them seek more social support, provide nursing guidance in conjunction with community health care, cut unnecessary treatments and medications, and try to save medical costs while not affecting the patient's recovery. Most importantly, we should pro-

mote the improvement of medical insurance. More expensive treatments and high-priced drugs should be included in medical insurance reimbursement. Targeted guidance and assistance should be provided to those families with cancer patients who have difficulties in caring for them by the community, so as to effectively improve the quality of patients' recovery and enhance the caregivers' caring ability.

4.2.4. Availability of Caring Experience

This study showed that caregivers with previous caring experience had high ability scores, which is consistent with the findings of Sun *et al.* [18] in stroke patients. Those experience caregivers have a high level of knowledge and application related to esophageal cancer, and a better capacity to both seek medical resources and guide rehabilitation. Therefore, this suggests that health care workers should identify caregivers with low caring ability at an early stage. Especially for those who are aged, poorly educated, and lack caring experience, they should develop targeted caring intervention programs to help caregivers learn more knowledge and skills, provide more communication and emotional support, improve their capacity, and train caregivers to do their job more professionally.

5. Conclusion

This study showed that the ability of primary family caregivers to care for post-operative patients with esophageal cancer is obviously insufficient. The factors for caregivers' ability include their per capita family income, availability of caring experience, and level of caring burden. Health care workers should pay more attention to the caring ability for primary family caregivers of patients with post-operative esophageal cancer, and provide targeted knowledge and emotional support to enhance their caring ability and effectively improve patients' postoperative recovery and quality of life. In this study, most of the subjects were female, and most of the caregivers were middle-aged or elderly. A large number of the caregivers had low education levels. The sample characteristics were limited due to the lack of a sample of young caregivers, and the scope of this study only involved a tertiary oncology hospital and did not include community outpatient clinics. Therefore, the sample was not highly representative, and the later study is expected to make up for the shortcomings in order to obtain more objective and comprehensive research data.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Ferlay, J., Soerjomataram, I., Dikshit, R., *et al.* (2015) Cancer Incidence and Mortality Worldwide: Sources, Methods and Major Patterns in GLOBOCAN 2012. *Inter-*

- national Journal of Cancer*, **136**, E359-E386. <https://doi.org/10.1002/ijc.29210>
- [2] He, Y.T., Li, D.J., Liang, D., *et al.* (2017) Estimation of Esophageal Cancer Incidence and Death in China in 2013. *Chinese Journal of Oncology*, **39**, 315-320.
 - [3] Kassebaum, N.J., Smith, A.G.C., Bemnabé, E., *et al.* (2017) Global, Regional, and National Prevalence, Incidence, and Disability-Adjusted Life Years for Oral Conditions for 195 Countries, 1990-2015: A Systematic Analysis for the Global Burden of Diseases, Injuries, and Risk Factors. *Journal of Dental Research*, **96**, 380-387. <https://doi.org/10.1177/0022034517693566>
 - [4] Li, J.M. (2017) Analysis of Postoperative Complications of Esophageal Cancer Grading and Their Influencing Factors. *Chinese Clinical Journal of Thoracic and Cardiovascular Surgery*, No. 4, 259-264.
 - [5] Qian, S.J. (2016) Adaptation of the Caring Ability Scale for Family Caregivers of Malignant Blood Disorders. Soochow University, Suzhou.
 - [6] Clark, N.M. and Rakowski, W. (1983) Family Caregiver of Older Adults: Improving Helping Skills. *Gerontologist*, **23**, 637-642. <https://doi.org/10.1093/geront/23.6.637>
 - [7] Lee, R.L. and Mok, E.S. (2011) Evaluation of the Psychometric Properties of a Modified Chinese Version of the Caregiver Task Inventory. *Journal of Clinical Nursing*, **20**, 3452-3462. <https://doi.org/10.1111/j.1365-2702.2011.03729.x>
 - [8] Wang, S.S., Xue, X.L., Yang, X.F., *et al.* (2015) Reliability and Validity Study of the Chinese Version of the Family Caregiver Caring Ability Scale among Families of Patients with Acute Myocardial Infarction. *Chinese Journal of Modern Nursing*, **21**, 645.
 - [9] Liang, P.R., Shen, M., Ma, J.L., Wu, H.F. and Chan, Y.Y. (2019) Reliability and Validity Analysis of the Chinese Version of the Universal Family Caring Ability Scale in the Application to Caregivers of Children with Leukemia. *General Practice Nursing*, **17**, 4070-4073.
 - [10] Lyu, L., Guo, H., Hu, L.Y., Liu, Q.X. and Xu, X.J. (2016) Analysis of the Current Situation and Influencing Factors of Comprehensive Caring Abilities of Caregivers of Stroke Patients. *Journal of Nursing Science*, **31**, 1-4.
 - [11] Wen, Z.Y., Xu, L.H. and Zhang, M. (2016) Current Status and Influencing Factors of Family Caregiver Burden and Stress in Alzheimer's Patients. *Chinese Journal of Gerontology*, No. 12, 3025-3027.
 - [12] Kershaw, T., Northouse, L., Kritpracha, C., *et al.* (2004) Coping Strategies and Quality of Life in Women with Advanced Breast Cancer and Their Family Caregivers. *Psychology & Health*, **19**, 139-155. <https://doi.org/10.1080/08870440310001652687>
 - [13] Bonanno, G.A. (2004) Loss, Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive After Extremely Aversive Events. *American Psychologist*, **59**, 20-28. <https://doi.org/10.1037/0003-066X.59.1.20>
 - [14] Chen, L.Y., Yang, Z.H., Li, R.N., Li, W.Y., Cao, W.H. and Zhang, L.L. (2019) A Qualitative Study on Positive Experiences of Family Caregivers of Terminally Ill Cancer Patients at Home under the Nimble Care Model. *Nursing Journal of Chinese People's Liberation Army*, **36**, 12-14.
 - [15] Wei, S.N. (2017) Effect of WeChat-Based Continuous Nursing Care on Emotions and Caring Abilities of Family Caregivers with Esophageal Cancer. *Journal of Nurses Training*, **32**, 1527-1529.
 - [16] Wang, H.P., Chen, J.L., Guo, Y.L., Li, L.M. and Wang, A.X. (2010) Study on the Burden and Influencing Factors of Primary Caregivers of Hospitalized Stroke Pa-

tients. *Nursing Journal of Chinese People's Liberation Army*, **27**, 1210-1213.

- [17] Yi, L.N. and Yu, C.M. (2014) Study on the Caring Ability of Family Caregivers of Stroke Patients and Their Influencing Factors. *Chinese Nursing Research*, **28**, 814-816.
- [18] Sun, X., Mao, Y.F., Shi, Y., *et al.* (2015) Survey on the Knowledge of Disease-Related Knowledge of Home Caregivers of Stroke Patients. *Chinese Nursing Research*, **29**, 185-188.