

Effect of Caregivers Home Health Care on Quality of Life of Patients with Brain Tumors

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Abstract

Background: Brain tumors is a leading cause of morbidity and mortality worldwide and results in significant increasing economic and social burden. **Aim:** This study aimed to evaluate the effect of caregivers' home health care on quality of life of patients with brain tumors. **Research design:** Quasi experimental design was used in this study. **Setting:** This study was conducted at home of brain tumor patients and their caregivers who were taken from a Neurosurgery Outpatient Clinic at Nasser Institute Hospital. **Sample:** Simple random sample was used in this study to choose 110 patients and their caregivers. **Tools:** Three tools used in this study. **Tool I:** Structured interviewing to assess socio-demographic characteristics of caregivers and studied patients, and Knowledge of caregivers about brain tumor and home health care. **Tool II:** Quality of life scale for patients with brain tumor. **Tool III** Observe caregivers' home health care practices among patients with brain tumor. **Result:** 54.5 % of the studied caregivers aged ≥ 40 years, 80 % were female, 44.5 % had secondary education, 15.5% of the studied caregivers had good total knowledge level at preprogram which increased to 59.1% post home health care program implementation. 18.2 % of the studied patients had high level of total quality of life at preprogram while increased to 61.8 % post program implementation. 40% of the studied caregivers had satisfactory home health care practices regarding their patients with brain tumors pre home health care program, while this percentage increased to 82.7% post home health care program implementation. **Conclusion:** Caregivers' home health care succeeded in improving caregivers' knowledge and practices which is reflected on improving quality of life patients with brain tumor ($p < 0.001$). **Recommendation:** Continuous home health care programs for caregivers to improve their knowledge and practices about brain tumor patients.

Keywords: Brain tumor, Caregivers, Quality of life.

Introduction

A brain tumor is a collection of cells that multiply out of control within the brain. Also called a neoplasm, growth, mass, or lesion, a brain tumor is classified as either primary or secondary (metastatic) and can be benign or malignant. Primary brain tumors develop and generally remain in the brain, Secondary brain tumors, or metastatic brain tumors, are cancers that develop elsewhere in the body

and spread to the brain. The most common cancers that spread to the brain are lung, breast, melanoma, colon, and kidney cancers, malignant brain tumors grow rapidly and compress and/or invade normal brain tissue (Manimekalai et al., 2021).

Caregivers are people who have the capacity to provide care for someone else, importance of caregiving caring for loved ones with brain tumors means that the

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caregivers are dealing with medical issues, at the same time serving as a source of important emotional support for the person facing cancer. Caregivers are called upon to perform a large variety of tasks to provide care for loved one. For example, caregivers: Organize and administer medications, communicate with physicians, nurses, and social workers, provide transportation, take care of home chores including cooking and cleaning, help with dressing changes, assist with physical therapy and occupational therapy exercises Research and negotiate medical insurance benefits and submit claims Attend to business, legal, and financial matters, Monitor medication side effects for most caregivers (**Moglia et al., 2021**).

Some of the challenges faced by family caregivers are high levels of stress and poor physical and emotional health, as well as career sacrifices, monetary losses, and workplace discrimination. In the setting of a brain tumor, family caregivers face special challenges posed by the neurocognitive and neurobehavioral effects. Brain tumor patients make up a unique diagnostic and treatment group. The diagnosis is catastrophic, often made after a sudden symptom onset such as a seizure or significant change in cognition. Following the sentinel event, ongoing limitations in physical and cognitive function and quality of life are prevalent and bring additional coping challenges for family caregivers (**Irmak, 2021**).

Home health care is the component of a continuum of comprehensive health care where by health services are provided to individuals and families in their places of residence for the purpose of promoting, maintaining, restoring health, maximizing the level of independence and minimizing the effects of disability and illness including terminal illness. Benefits of home health care:

Greater Independence: One of the primary benefits of home health care is that it helps chronic ill patient as brain tumor continue doing everyday tasks like walking, bathing, dressing and preparing meals. This way, they can live independently at home as long as possible (**Goh & Zhu, 2018**).

Quality of life, (QOL) is a concept that encompasses the multidimensional well-being of a person and reflects an individual's overall satisfaction with life. QOL is a broad term that involves several dimensions, including physical or functional status, emotional well-being, and social well-being (**Park et al., 2021**).

The community Health Nurse (CHN) has the opportunity to assist the brain tumor patient and family caregivers, not only through hospitalization but also through long term rehabilitation care at home. The needs of patients and family caregivers require ongoing nursing assessment and adaptation of intervention in response to changing needs to optimize quality of life for both the patient and family caregivers. The CHN also develops partnerships with patients to achieve behavior changes that promote, maintain or restore health. This partnership focuses on self-care, the ability to effectively advocate and manage a persons' own health (**Nazir et al., 2021**).

There is no dispute that the CNS is the key element for maintaining critical functions related to human independence and autonomy, which may be compromised when affected by a tumor. Therefore, caring for and understanding patients with brain tumor is paramount to promoting the autonomy, trust, acceptance of treatment, and rehabilitation while respecting the limitations, values, and beliefs. In this sense, cross-disciplinary interventions are needed to minimize impairments and improve the

patients' quality of life. The role the nurse plays in this dynamic is important because these professionals are in a position to care for patients in an active and individualized manner, and to help them achieve those goals (Ranjbarzadeh et al., 2021).

Significance of the study:

Regarding the American society of clinical oncology (ASCO) a primary brain or spinal cord tumor is a tumor that starts in the brain or spinal cord. An estimated 25,050 adults (14,170 men and 10,880 women) in the United States will be diagnosed with primary cancerous tumors of the brain and spinal cord. A person's likelihood of developing this type of tumor in their lifetime is less than 1%. Brain tumors account for 85% to 90% of all primary central nervous system (CNS) tumors. Worldwide, an estimated 308,102 people were diagnosed with a primary brain or spinal cord tumor in 2020. About 4,170 children under the age of 15 will also be diagnosed with a brain or CNS tumor in the United States (American Society Of Clinical Oncology (ASCO), 2022).

In Egypt; Primary Central Nervous System (CNS) tumors are relatively not common, their overall incidence is estimated as 19.34/100,000 persons per year. Generally, males are reported to have higher rates of primary malignant CNS tumors; however, females have higher rates of benign tumors, including meningioma. Among pediatric population, primary CNS tumors constitute about 20% of all solid tumors, only preceded by leukemia (Iman et al., 2018). In view of the important role that caregivers play towards patients with brain tumors, this study was designed to improved knowledge and practices regarding home health care which is reflected on improving quality of life.

Aim of the Study:

The study aimed to evaluate the effect of caregivers' home health care on quality of life of patients with brain tumors.

Research hypothesis:

Caregivers who will receive home health care program their knowledge and practices regarding home health care will improved which will be reflectd on improving quality of life patients with brain tumor.

Subjects and Method

Research design: Quasi-experimental research design was utilized to conduct this study.

Research Setting: This study was conducted at home of brain tumor patients and their caregivers' who were met in a Neurosurgery Outpatient Clinic at Nasser Institute Hospital for research and treatment, Cairo, Egypt, affiliated to the Ministry of Health, to take patients' address then followed by home visit.

Sampling:

Simple random sample was used in this study. 25% was taken of patients attended to the above-mentioned setting throughout one year. The total numbers of patients who underwent operations of brain tumors last year were (440 patient). The total number of samples is 110 patients and their caregivers who were discharged from hospital and in the first 6 months post operation was chosen.

Tools of data collection:

The following tools were used to collect data
Tool (I):- A Structured Interviewing Questionnaire Which consists of three parts:Part1: socio-demographic data of the studied caregivers. It included age, gender, education level, occupation, marital status, staying with the patient, monthly income & caregivers' relationship degree of the patient.

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B-Socio-demographic characteristics of the studied patients. It included age, gender, education level, occupation, marital status, residence place, family type & monthly income.

Part II: included a- Knowledge of studied caregivers about brain tumor. which included the meaning, causes, risk factors, signs and symptoms, primary manifestations, complications, complication after surgical operation, benefits of good nutrition, Factor that effect on given nutrition, Obstacles that impede taking an adequate amount of food, suitable food, foods to avoid, primary prevention methods and secondary prevention methods.

B-Knowledge of the studied caregivers about home health care. Which included concept, objectives, component, physical, psychological and social for brain tumor.

Knowledge total score=40:

Knowledge score for each question was calculated as follows: 2= correct and complete answer,1= correct and incomplete answer,0 = don't know answer. The total knowledge scores was considered good if the score of the total knowledge > 75% >30 point, while considered average if it equals 50<75 % 20 < 30 point, and considered poor if it is 50% <20 points.

The second tool: Was concerned with quality-of-life scale for patients with brain tumor to measure physical, psychological, and social domain adopted from **(Hollen, and Gralla 1994)**. and modified by researcher as following; physical QOL domain It included 12 items, Psychological QOL domain It included 7items and social QOL domain it included 17 items.

Scoring system for caregivers QOL:

Each response done was scored 2 for rarely answers, 1 for sometimes and 0 for always answers total score of items =72.

vice versa for positive statements, The total points was considered high level of QOL > 75% >54 point, while considered moderate level of QOL 50 - 75 % 36 - 54 point and considered low level of QOL < 50% < 36 point.

The third tool: designed to observe caregivers home health care practices among patients with brain tumor, this part included main domain included nutrition, bathing and personal hygiene, comfort, treatment, sport, Psychosocial needs economic and financial needs and problems.

Scoring system:

The scoring system for caregiver's home health care practices among patients were calculated as follows 1 score for done, and 0 for not done practicing total score =30. The total home health care practices points was considered done if the score of the total home health care practice > 75% >23 points while considered not done if it is 50:<75 % 15 < 23 points.

Content Reliability:

Reliability of the tool was applied by researcher for testing the internal consistency of the tool, by administration of the same tools to the same subjects under similar condition on one or more occasion. Answers from repeated testing were compared (test-retest reliability). Reliability for caregivers' knowledge= 0.801, reliability for QOL questionnaire= 0.927 while reliability for caregiver's home health care practice= 0.907.

Content validity:

The tool validity was done by five of Faculty's staff nursing experts from Community Health Nursing department who reviewed the tools for clarity, relevance, comprehensive, applicability and easiness for implementation and according to their opinion minor modification were carried out

Ethical consideration:

Approval and an informed oral consent from all study participants was obtained after explaining the purpose of the study to gain their trust and cooperation. Each patient informed that he has the right to withdraw from the study. Privacy and confidentiality were assured. Ethics, values, culture, and beliefs were respected.

Pilot Study:

The pilot study was carried out on (10%) of the study sample which include to test the clarity, objectivity, feasibility and applicability of tools, as well as to estimate the time needed for data collection. According to the results obtained from data analysis, no modifications were done so, the pilot study sample was included to the total sample.

Home health care Program:

The home health care Program was designed by the researcher after reviewing the related literature; it was implemented through three phases:

Phase (I) : Program Preparation :

Based on pretest data obtained from interviewing questionnaire and observational checklist, as well as literature review, the program was developed by researcher. it was implemented immediately after the pre-test.

General objective of the Program:

Improving the degree of knowledge and home health care practices of caregivers for patients with brain tumors.

Content of Program: The content of the Program was designed to meet the Caregivers' needs and to fit into their interest and level of understanding, its content were:

- The basic anatomy of the brain and its main functions
- Meaning brain tumors
- Types of primary and secondary brain tumors

- Causes of brain tumors and the contributing factors
- Symptoms and signs of a brain tumor
- How to diagnose a brain tumor?
- Treatment methods: (surgery- radiotherapy- chemotherapy- marrow transplant - biological treatment)
- The side effects of the treatment
- Home health care
- How to deal with brain tumor problems
- The follow-up
- The rehabilitation
- The methods to prevent brain tumors

Teaching methods:

The Program content using the same teaching methods, there were:

- Lecture
- Discussion

Teaching media:

Suitable teaching aids were especially prepared for the program as follows: Practical training, booklet and illustrations boards.

Phase (II): Implementation Phase:

The researcher visited home of brain tumor patient and their caregivers who were taken form a Neurosurgery Outpatient Clinic at Nasser Institute Hospital for research and treatment, three days per week (Saturdays, Mondays and Thursdays) from 10 am to12am. The questionnaires were collected by the researcher after discharge from the hospital (6 months' post discharge). The actual field work lasted over a period of (6 months) which started from the beginning of June 2021 to the end of December 2021. Pre-test was collected within first one month for all the caregivers. The teaching sessions were conducted at home. The program contents and its objectives were developed by the researcher in the form of 8 sessions, (5 theoretical hours, 3practical hours) each session duration was about 30- 60 minutes

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according to the caregivers understanding and span of attention. At the beginning of the first session, the aim of the study and orientation of educational program were explained for the all caregivers prior to data collection to take their approval for participation in the study and confirmed the right to withdrawal at any time of the study. The importance and benefits of the program were explained to all caregivers under the study to motivate them to follow the included instructions.

Phase (III): Evaluation Phase:

Evaluation of program was done immediately after the end of the program by using the same pre/ post questionnaire.

Statistical analysis:

The collected data were organized and analyzed using appropriate statistically significant tests. The data were collected and coded using the Computer Statistical Package for Social Science (SPSS), version 20, and was also used to do the statistical analysis of data, also Microsoft office Excel was used for data handling and graphical presentation. Quantitative data were expressed as mean \pm standard deviation (SD). Qualitative data were expressed as frequency and percentage. Chi-square, and r-Pearson tests for Correlation. The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following:

- P-value <0.05 was considered significant.
- P-value <0.001 was considered as highly significant.
- P-value >0.05 was considered insignificant.

Results:

Table (1): Shows that; 54.5 % of the studied caregivers aged ≥ 40 years with Mean \pm SD= (42.51 \pm 5.62), 80 % were females, 44.5 % had secondary education and 62.7% didn't work.

Also, 83.6% were married and 58.2 % their family income had no enough. 27.3 % of the studied caregivers were daughters.

Table (2): Clarifies that; 62.7 % of the studied patients aged ≥ 40 years with Mean \pm SD= (45.71 \pm 8.12), 57.3 % were female, 40.9 % of them didn't read and write and 40 % of them were housewife. Also, 70 % of the studied patients were married and 72.7 % of them were from rural areas, 70 % of them their family type were single parent family and 73.6% of them their family income didn't enough.

Figure (1): Illustrates that; 15.5 % of the studied caregivers had good total knowledge level at preprogram which increased to 59.1 % post home health care program implementation, while 53.6% % of them had poor total knowledge level at preprogram and then this percentage decreased to only 13.6 % post home health care program implementation.

Figure (2): Shows that 18.2 % of the studied patients had high level of total quality of life at preprogram while increased to 61.8 % post home health care program implementation.

Figure (3): Illustrates that; there were 40% of the studied caregivers had satisfactory home health care practices regarding their patients with brain tumors pre home health care program, while this percentage increased to 82.7% post home health care program implementation.

Table (3): Shows that; there were highly statistically significant correlation between caregiver's total knowledge, home health care practices regarding brain tumor and total quality of life of the studied patients pre and post home health care program implementation, $p < 0.001$.

Table (1): Frequency distribution of the studied caregivers regarding their socio demographic characteristics (n=110).

| Socio demographic characteristics | N | |
|---|----|-------------|
| Age /years | | |
| 20: <30 | 25 | 22.7 |
| 30:<40 | 25 | 22.7 |
| 40 and more | 60 | 54.5 |
| Mean \pmSD = (42.51\pm5.62) | | |
| Gender | | |
| Male | 22 | 20.0 |
| Female | 88 | 80.0 |
| Educational level | | |
| Don't read and write | 41 | 37.3 |
| Basic education | 12 | 10.9 |
| Secondary education | 49 | 44.5 |
| University education and above | 8 | 7.3 |
| Occupation | | |
| Student | 16 | 14.5 |
| Governmental employee | 2 | 1.8 |
| free business | 21 | 19.1 |
| Pension | 2 | 1.8 |
| No work | 69 | 62.7 |
| Marital status | | |
| Single | 18 | 16.4 |
| Married | 92 | 83.6 |
| Staying with the patient | | |
| Yes | 91 | 82.7 |
| No | 19 | 17.3 |
| Monthly income | | |
| Enough and saved | 10 | 9.1 |
| Enough only | 36 | 32.7 |
| Not enough | 64 | 58.2 |
| Caregivers relationship degree of the patient | | |
| Wife | 13 | 11.8 |
| Son | 14 | 12.7 |
| Daughter | 30 | 27.3 |
| Uncle/ante | 2 | 1.8 |
| Father | 17 | 15.5 |
| Mother | 15 | 13.6 |
| Sister | 19 | 17.3 |

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Table (2): Frequency distribution of the studied patients regarding their socio demographic characteristics (n=110).

| Socio demographic characteristics | No | % |
|--|----|-------------|
| Age / years | | |
| 10 :< 20 | 18 | 16.4 |
| 20 :< 30 | 2 | 1.8 |
| 30:< 40 | 21 | 19.1 |
| | 69 | 62.7 |
| Mean \pmSD = (45.71\pm8.12) | | |
| Gender | | |
| Male | 47 | 42.7 |
| Female | 63 | 57.3 |
| Education level | | |
| Don't read and write | 45 | 40.9 |
| Basic education | 14 | 12.7 |
| Secondary education | 43 | 39.1 |
| tertiary education and above | 8 | 7.3 |
| Occupation | | |
| Student | 12 | 10.9 |
| Governmental employee | 23 | 20.9 |
| Free business | 9 | 8.2 |
| On Pension | 2 | 1.8 |
| | 44 | 40.0 |
| No work | 20 | 18.2 |
| Marital status | | |
| Single | 20 | 18.2 |
| Married | 77 | 70.0 |
| Widow | 13 | 11.8 |
| Residence place | | |
| Rural | 80 | 72.7 |
| Urban | 30 | 27.3 |
| Family type | | |
| Nuclear family | 12 | 10.9 |
| Extended family | 21 | 19.1 |
| Single parent family | 77 | 70.0 |
| Monthly income | | |
| Enough and saved | 29 | 26.4 |
| Not enough | 81 | 73.6 |

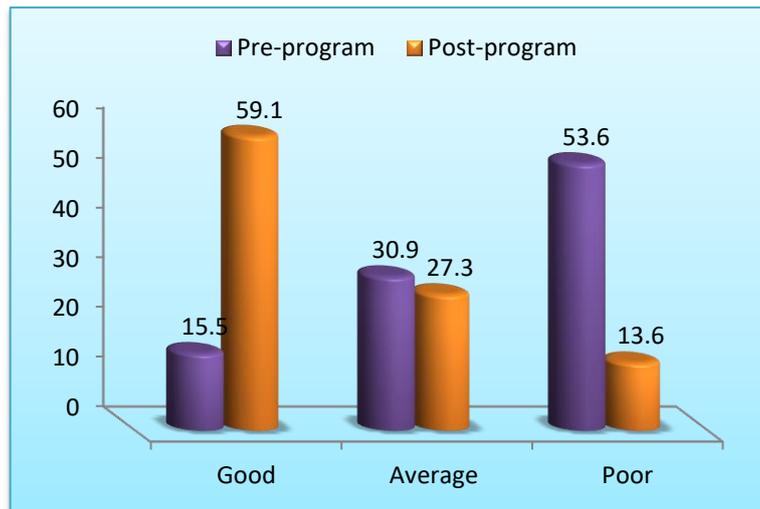


Figure (1): Percentage distribution of the studied caregiver's total knowledge level regarding brain tumor pre and post home health care program implementation (n=110).

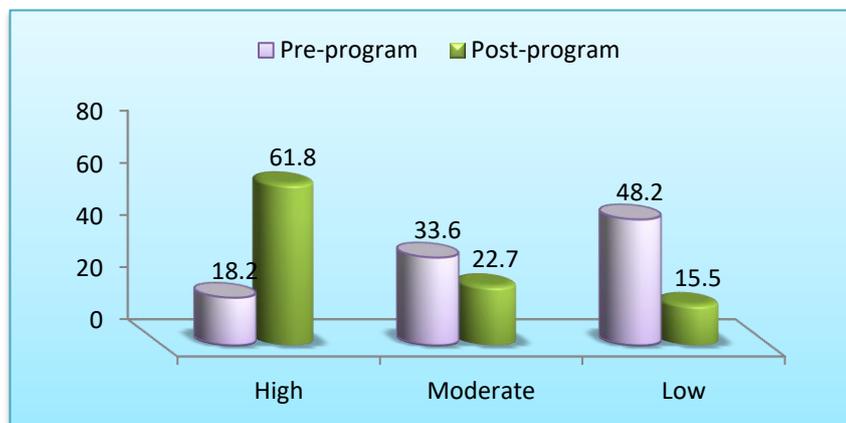


Figure (2): Percentage distribution of studied patients' total quality of life level regarding pre and post home health care program implementation (n=110).

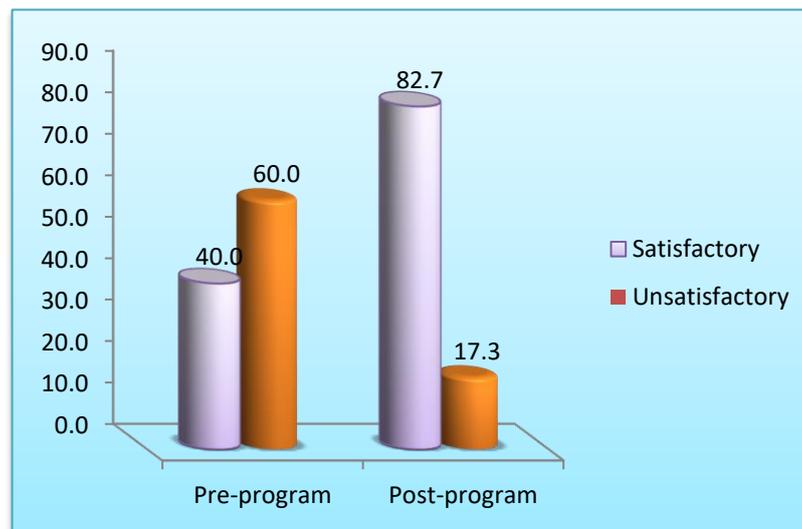


Figure (3): Percentage distribution of the studied caregivers total home health care practices level regarding pre and post home health care program (n=110).

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Table 3: Correlation between the studied caregiver's total knowledge, home health care practices caregivers and total quality of life of the studied patients with brain tumor pre and post home health care program implementation (n=110).

| Items | Pre - program | | | Post - program | | |
|----------------------------------|-----------------|-----------------------|----------------------------------|-----------------|-----------------------|----------------------------------|
| | Total knowledge | Total quality of life | Total home health care practices | Total knowledge | Total quality of life | Total home health care practices |
| Total knowledge | r | 1 | .475 | .393 | 1 | .638 |
| | p-value | | .000** | .000** | | .143 |
| Total quality of life | r | .475 | 1 | .812 | .141 | 1 |
| | p-value | .000** | | .000** | .143 | |
| | n | 110 | 110 | 110 | 110 | 110 |
| Total home health care practices | r | .393 | .812 | 1 | .638 | .411 |
| | p-value | .000** | .000** | | .045* | .000** |

Discussion:

Maintaining patient quality of life and minimizing patient distress are significant therapeutic goals in brain tumor patients and can be achieved through home- health care program done by community health nurse. Home health care is helping patients’ and family members to build up healthy behavioral habits and lifestyles is important for meeting needs for community healthcare services.

Through application of home health care, nurses help active involvement of patients and family members, nurse also assist in performance of well-targeted assessment, provision of emotional support, psychological counseling and health education helping caregivers in understanding and meeting patients’ needs through various practices including healthy nutrition, adequate exercise program, follow-up and medical care and maintenance of patients’ rest and sleep.

Quality Of Life is a multidimensional concept consisting of physical, psychological

and social phenomena. Needs various practices including healthy nutrition, adequate exercise program, follow-up and medical care and maintenance of patients’ rest and sleep. Quality of Life is a multidimensional concept consisting of physical, psychological and social phenomena (Sacher et al., 2018 & Yu et al., 2019).

The results of the current study illustrated that more than half of the studied caregivers aged ≥ 40 years with Mean \pm SD= (42.51 \pm 5.62) and the majority of them were female. The study was supported by Mallya et al., (2020) who studied “A qualitative analysis of the benefits and barriers of support groups for patients with brain tumors and their caregivers” conducted at Princess Margaret Cancer Centre at Canada and revealed that, the mean age of studied participants was 45.4 \pm 3.82 ranging from (35–57) and the majority of them were females. This might be interpreted that, the female commit by caring responsibility due to most males are responsible for working

and earn money to meet financial needs so that the caregivers were daughter, sister or wife.

The result of the current study illustrated that; less than two thirds of studied caregivers did not working (**Table, 1**). The study was supported by **Decadt et al., (2021)** who studied “Caregiver distress and quality of life in primary caregivers of oncology patients in active treatment and follow-up” conducted at the University Hospitals Leuven, Belgium and showed that more than two thirds (74%) of participants didn't have work and were living with the patients in the same house. This might be due to the difficulty to accommodate between work and their caring responsibility for patients in addition, the majority of them were living with the patients in the same house and this might be related to patients' health condition and need for continuous caring, medical observation, frequent follow-up and helping in meeting patients' activities of daily living.

The current study also found that more than half of caregivers didn't have enough income, more than one quarter of caregivers were daughters. The study finding disagreed with **Dionne-Odom et al., (2021)** who studied “Implementing a clinic-based telehealth support service (Family Strong) for family caregivers of individuals with grade IV brain tumors” conducted at University of Alabama at Birmingham, USA and revealed that nearly three quarters of participants were spouse and more than half of them had enough income. This might be due to the lack of working condition due to patients' health needs and also due to the high cost of treatment, medications and follow-up care whenever, this might be due to the old age of patients, death or disease of spouse or partner.

Concerning the demographic characteristics of studied patients, the results of the current study presented that nearly two thirds of the studied patients aged ≥ 40 years with Mean \pm SD= (45.71 \pm 8.12), moreover, more than half of them were female, nearly three quarters of them were married and more than one third of them were house wife due to their low educational level or poor health condition due to cancer, radiotherapy and chemotherapy. These study findings were supported by **Pan et al., (2019)** who studied “Resilience and Coping Strategies Influencing the Quality of Life in Patients with Brain Tumor” conducted at Cardinal Tien Hospital, New Taipei City, Taiwan and indicated that more than two thirds of their participants aged greater than 40 years old with Mean \pm SD (49.71 \pm 4.82) and nearly two thirds of them were female also more than half of patients were married and unemployed.

Conversely these study findings were in disharmony with **Sharma et al., (2021)** who studied “How much time do we have? Longitudinal perception of prognosis in newly-diagnosed high grade glioma patients and caregivers compared to clinicians” conducted at the Mayo Clinic Arizona (United States) and illustrated that patients age ranged from (33–71) with mean \pm SD age 60 \pm 13 years old, nearly two thirds of their patients were female and three quarters of them were married. This might be due to the high prevalence of brain tumors among female.

Regarding studied caregivers' total knowledge level about brain tumor pre and post home health care program implementation, the result of the current study illustrates that the minority of the studied caregivers' had good total knowledge level at preprogram which increased to two

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thirds post home health care program implementation, while more than half of them had poor total knowledge level at preprogram and then this percentage decreased to only the minority of them had poor total knowledge post home health care program implementation. These study findings were consistent with **Mallya et al., (2020)** who studied “A qualitative analysis of the benefits and barriers of support groups for patients with brain tumors and their caregivers” conducted at Princess Margaret Cancer Centre at Canada and revealed that there was significant improvement in caregivers’ awareness regarding brain tumor post program application.

Regarding patients' total quality of life level pre and post home health care program implementation, the results of the current study illustrated that nearly one fifth of the studied patients had high level of total quality of life at preprogram while increased to nearly two thirds of them post home health care program implementation. These study findings were consistent with **Ownsworth et al., (2021)** illustrated that there was significant improvement in patients and caregivers’ total QOL including all domains (physical, social, spiritual, financial and psychological) post program application quality of life. These study findings were also consistent with **Nicklin et al., (2019)** revealed that there was significant improvement in patients and caregivers’ QOL post delivering supportive care and home-based instructions.

Regarding studied caregivers’ total home health care practices level regarding pre and post home health care program, the results of the current study illustrated that; there were only two fifths of the studied caregivers had satisfactory home health care practices regarding care of their patients with brain

tumors pre home health care program, while this percentage increased to majority of them post home health care program implementation.

The study was supported by **Deatrick et al., (2022)** who studied “Development of Training in Problem Solving for Caregivers of Brain Tumor Survivors” conducted at Philadelphia and revealed that there was significant modification in caregiver practices regarding their patients with brain tumor post program.

Concerning the correlation between total knowledge and home health care practices caregivers' and total quality of life of the studied patients` regarding brain tumor pre and post home health care program implementation, there were highly statistically significant correlation between caregiver's total knowledge and home health care practices regarding brain tumor and total quality of life of the studied patients' pre and post home health care program implementation. These study findings were **Nicklin et al., (2019)** who studied “Long-term issues and supportive care needs of adolescent and young adult childhood brain tumor survivors and their caregivers conducted at United Kingdom and illustrated that there was significant relation between caregiver's knowledge and practices, and both correlated to patient's quality of life. This could be interpreted by the fact that caregivers’ knowledge about brain tumor and home-based care was positively reflected on their practice and improved in their practical skills eventually and patients’ quality of life.

Conclusion:

Less than one fifth of the studied caregivers had good total knowledge level at pre home health care program which increased to nearly three fifths post home health care program implementation, two

fifths of the studied caregivers had satisfactory home health care practices regarding their patients with brain tumors pre home health care preprogram, which increased to most post home health care program implementation. Less than one fifth of the studied patients had high level of total quality of life at pre home health care program while increased to more than three fifths post home health care program implementation. There was highly statistically significant correlation between total knowledge and home health care practices regarding brain tumor caregivers and total quality of life of the studied patients pre and post home health care program implementation ($p < 0.001$).

Recommendations:

- Continuous health care program to the brain tumor patients and family caregivers to improve knowledge and practices before hospital discharge.
- Emphasize the importance of providing support and appropriate follow-up care in outpatients' clinics by specialized team in order to prevent complication of brain tumor.
- Further research is proposed to explore the effect of intervention on the prevention of brain tumors among high risk group.
- Further research is needed to explore the feasibility and utility of burden screening for caregivers.

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تأثير الرعاية الصحية المنزلية لمقدمي الرعاية علي جودة الحياة لمرضى أورام المخ

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أورام المخ هي السبب الرئيسي للاعتلال والوفيات في جميع أنحاء العالم وتؤدي إلى زيادة كبيرة في العبء الاقتصادي والاجتماعي. لذا هدفت هذه الدراسة إلى تقييم تأثير الرعاية الصحية المنزلية لمقدمي الرعاية على نوعية حياة المرضى المصابين بأورام المخ. حيث تم استخدام تصميم شبه تجريبي في هذه الدراسة. وقد أجريت هذه الدراسة في المنزل لمرضى أورام المخ والقائمين على رعايتهم الذين التقوا في العيادة الخارجية لجراحة المخ والأعصاب في مستشفى معهد ناصر للبحوث والعلاج على عينة عشوائية بسيطة في هذه الدراسة لاختيار 110 مرضى ومقدمي الرعاية لهم. و أظهرت نتائج الدراسة أن 54.5% من مقدمي الرعاية الذين تمت دراستهم والذين تتراوح أعمارهم بين 40 سنة و 80% إناث و 44.5% أنهما تعليمهم الثانوي. 15.5% من مقدمي الرعاية الذين تمت دراستهم مستوى معرفة إجمالي جيد في البرنامج التمهيدي والذي زاد إلى 59.1% بعد تنفيذ برنامج الرعاية الصحية المنزلية. 18.2% من المرضى الخاضعين للدراسة لديهم مستوى مرتفع من الجودة الكلية للحياة في مرحلة ما قبل البرنامج بينما ارتفع إلى 61.8% بعد تنفيذ البرنامج 40% من مقدمي الرعاية الذين شملتهم الدراسة لديهم ممارسات رعاية صحية منزلية مرضية فيما يتعلق بمرضاهم المصابين بأورام المخ قبل برنامج الرعاية الصحية المنزلية ، بينما ارتفعت هذه النسبة إلى 82.7% بعد تنفيذ برنامج الرعاية الصحية المنزلية. وخلصت الدراسة بأن الرعاية الصحية المنزلية لمقدمي الرعاية نجحت في تحسين معرفة وممارسات مقدمي الرعاية والتي تنعكس على تحسين نوعية حياة المرضى المصابين بورم المخ. كما اوصت الدراسة بتنفيذ برامج الرعاية الصحية المنزلية المستمرة لمقدمي الرعاية لتحسين معارفهم وممارساتهم حول مرضى أورام المخ.