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RESULTS AND SURVEYS ON AWARENESS OF THE POPULATION ABOUT BRAIN TUMOR

Mirkhamidova Sevara Mirmakhmudovna[1]
Karimbayev Shakhrambay Dexkanbayevich[2]
Muyassarova Mukhabbat Mukhammadiyevna[3]
Abdurashitova Sharafat Abdumajidovna [4]
Velu Janani[5],
[1]Assitant of the Department of Public Health and Management, Tashkent Medical Academy, Uzbekistan
[2]Associate Professor (PhD) of the Department of Public Health and Management, Tashkent medical academy, Uzbekistan
[3,4]Senior teacher of the Department of Public Health and Management, Tashkent medical academy, Uzbekistan.
[5]Student of foreign faculty, Tashkent medical academy, Uzbekistan
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ABSTRACT

For study of brain tumor detection and segmentation the MRI Images have become very useful in recent years. Due to MRI Images we can detect the brain tumor. For detection of unusual growth of tissues and blocks of blood in the nervous system can be seen in an MRI Images. The first step of detection of brain tumors is to check the symmetric and asymmetric Shape of the brain which will define the abnormality. After this step the next step is segmentation which is based on two techniques: 1) F-Transform (Fuzzy Transform) 2) Morphological operation. These two techniques are used to design the image in MRI. Now by this help of design we can detect the boundaries of brain tumors and calculate the actual area of the tumor. In this the f-transform is used to give certain information like reconstruction of missing edges and extracting the silent edges. Accuracy and clarity in an MRI Image is dependent on each other.

INTRODUCTION

Primary intracranial tumors of the brain structures, including meninges, are rare with an overall five-year survival rate of 33.4%; they are collectively called primary brain tumors. Proven risk factors for these tumors include certain genetic syndromes and exposure to high-dose ionizing radiation.

The most common symptoms of these tumors are headache and seizures. Diagnosis of a suspected brain tumor is dependent on appropriate brain imaging and histopathology. The imaging modality of choice is gadolinium-enhanced magnetic resonance imaging. Malignant tumors are tumors of bad prognosis with mean survival of 12 months.

This article reviews the risk factors, clinical presentations, differential diagnosis, and the types of strokes frequently seen in patients with primary brain neoplasms. This includes a discussion of approaches with a review of the available literature and provides recommendations for primary and secondary prevention specific to this patient population.

In the present report 74 patient diagnosed of malignant glioma were studied with following aims:

1. Evaluate how many could receive combined radiotherapy(RT) chemotherapy (BCNU) treatment following surgery
2. Analyze whether the patient treated presented a survival similar to that described in the literature.

<u>Scan to confirm primary Brain tumor :</u>

1. Computed Tomography
2. Magnetic resonance imaging .

Biology and therapy of glial tumors :

Glial tumors remain challenging problems for the clinician researcher. Despite more aggressive therapy, the majority of these tumors recur locally . This review will provide an update on the new strategies being developed to treat gliomas.

Advances in our understanding of the biology of glial tumors will provide new targets at which to direct therapy [1]

Brain and other central nervous system tumors have a very high likelihood of producing long-term disabling effects owing to the tumor itself and the effects of treatment, including surgical complications, neurotoxic effects of radiation, and debility caused by chemotherapy. Even benign or low-grade brain tumors can cause significant disability. Brain tumors occur over the lifespan, showing progressively higher incidence with advancing age. The common types of primary brain tumor differ between pediatric and adult age groups. Evidence for effectiveness of rehabilitation is favorable. Brain tumor patients treated in acute rehabilitation settings improve comparably with individuals with stroke or traumatic brain injury. Although patients with primary brain tumors have been better studied than those with metastatic disease, significant gains with inpatient rehabilitation have been reported in the latter group also. Outpatient programs to address cognitive deficits in brain tumor survivors, including cognitive therapy and pharmacologic strategies, have found benefit.[2]

Glioblastoma (GBM) is the most common and aggressive malignant brain tumor in adults. Current treatment options at diagnosis are multimodal and include surgical resection, radiation, and chemotherapy. Significant advances in the understanding of the molecular pathology of GBM and associated cell signaling pathways have opened opportunities for new therapies for recurrent and newly diagnosed disease. Innovative treatments, such as tumor-treating fields (TTFields) and immunotherapy, give hope for enhanced survival.[3]

Primary malignant brain tumors account for 2 percent of all cancers in U.S. adults. The most common malignant brain tumor is glioblastoma multiforme, and patients with this type of tumor have a poor prognosis. Previous exposure to high-dose ionizing radiation is the only proven environmental risk factor for a brain tumor. Primary brain tumors are classified based on their cellular origin and histologic appearance. Typical symptoms include persistent headache, seizures, nausea, vomiting, neurocognitive symptoms, and personality changes. A

tumor can be identified using brain imaging, and the diagnosis is confirmed with histopathology. Any patient with chronic, persistent headache in association with protracted nausea, vomiting, seizures, change in headache pattern, neurologic symptoms, or positional worsening should be evaluated for a brain tumor. Magnetic resonance imaging is the preferred initial imaging study.[4]

The management of brain tumors developed in adolescents and young adults (AYAs) is challenging because of their histological heterogeneity and low incidence. The brain tumor and its treatment interventions can negatively affect neurological, neurocognitive, and endocrinological function, and dramatically affect the circumstances of AYA patients progressing to further education, employment, and marriage. Specific support is thus necessary to maintain the quality of life (QOL) of AYA brain tumor patients. AYA patients and survivors require active intervention and support for returning to school or work, progressing to further education, finding employment, and preserving fertility. Recent cancer genome profiling revealed that AYA gliomas include pediatric- and adult-type genetic alteration. Insights into the biology underlying the distribution of tumors in AYAs may influence the development of prospective trials. A more individualized view of brain tumors may influence stratification of patients' in future clinical studies as well as selection for molecular targeted therapy. Here I review strategies for achieving a better outcome to decrease late effects and improve QOL.[5,7]

The World Health Organization's (WHO) classification of the central nervous system tumors represented the primary source of diagnosis and grading criteria for the brain tumors. The revision of the WHO classification in 2016 represented a shift from the traditional principle of using neuropathological diagnoses primarily based on the microscopic features, to using molecularly oriented diagnoses. New entities, defined by both the histological and molecular features, such as isocitrate dehydrogenase mutations and 1p/19q co-deletion, were included. To achieve an accurate diagnosis, the selection of suitable genetic testing methods in addition to having a basic knowledge of neuro-oncology and neuropathology, is essential. This text primarily focuses on the differential diagnosis of diffuse small-cell glioma that aids in understanding a practical method for the diagnosis of diffuse gliomas in adults.[6,8]

Brain metastases are one of the most common neurologic complications of cancer. The incidence is 9%-17% based on various studies, although the exact incidence is thought to be higher. The incidence is increasing with the availability of improved imaging techniques which aid early diagnosis, and effective systemic treatment regimens which prolong life, thus allowing cancer to disseminate to the brain. Lung cancer, breast cancer, and melanoma are the most frequent to develop brain metastases, and account for 67%-80% of all cancers. Most patients with brain metastases have synchronous extracerebral metastases. Some patients present with no known primary cancer diagnosis. In children, brain metastases are rare; germ cell tumors, sarcomas, and neuroblastoma are the common offenders.[7]

MATERIAL AND METHODS

The Two countries was choosen INDIA AND UZBEKISTAN. In 2023, the population of the Republic of Uzbekistan was 34,750,378 as of Friday and the population of India was 1415977681, February 24, 2023, based on World meter Tashkent and India are economically developed "industrial center". Tashkent and India has large treatment and prevention,

specialized, diagnostic and private medical institutions. Survivorship and Quality of Life for People with Brain or Spinal Cord Tumors. I conducted survey on pub med website in that people from India and Uzbekistan are participated I choose India because it's a biodiversity country and have more populations .Because both CNS tumors and their treatments can be debilitating, researchers are looking for new ways to improve quality of life for people with these tumors. Based on these research I analyzed the results of these survey it's like 100 people attended that survey. In that most of the people are college student and mostly girls. . In accordance with the tasks, a research program was drawn up, which includes 5 stages. The choice of research objects was determined in accordance with the tasks and stages of work. The search for literary sources was carried out using the bibliographic databases Web of Science, Scopus, DBLP, Medline. When selecting sources, they paid attention to experimental articles, literary reviews, the number of their citations over the past year.

RESULTS

The surveys that I conducted through internet in online google form .Most of the people who attended my survey was young people nearly 87% WHO ARE COLLEGE STUDENT The pie chart below show the results of the survey.

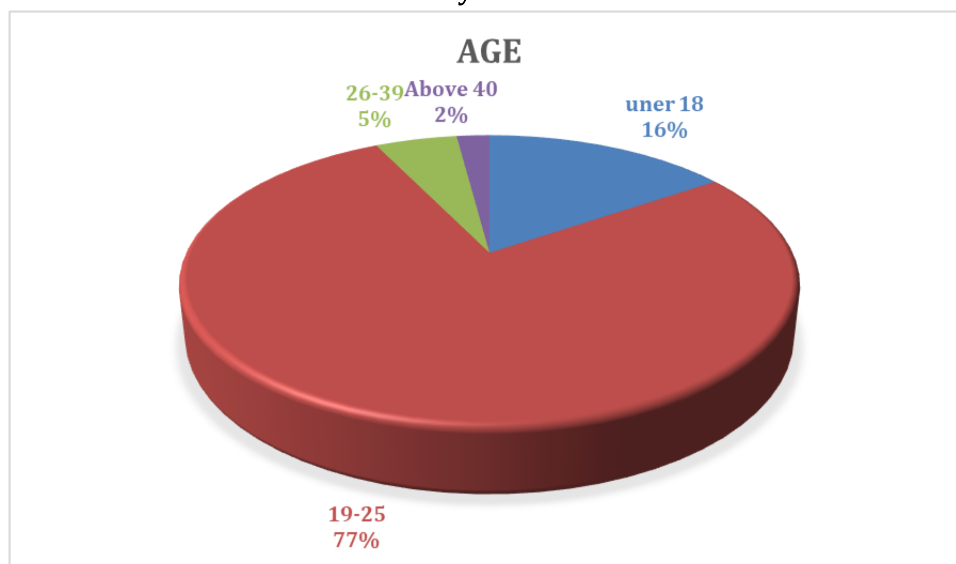

DIAGRAM NO : 1 WHAT IS THE AGE OF THE PARTICIPANTS?

Most of the people do not know about the brain tumor .89.7% are people under the age 19-25. 10.3% are under 18

Between 25-39 only 5 % people were attended.

Majority of the people who attended these survey is college student

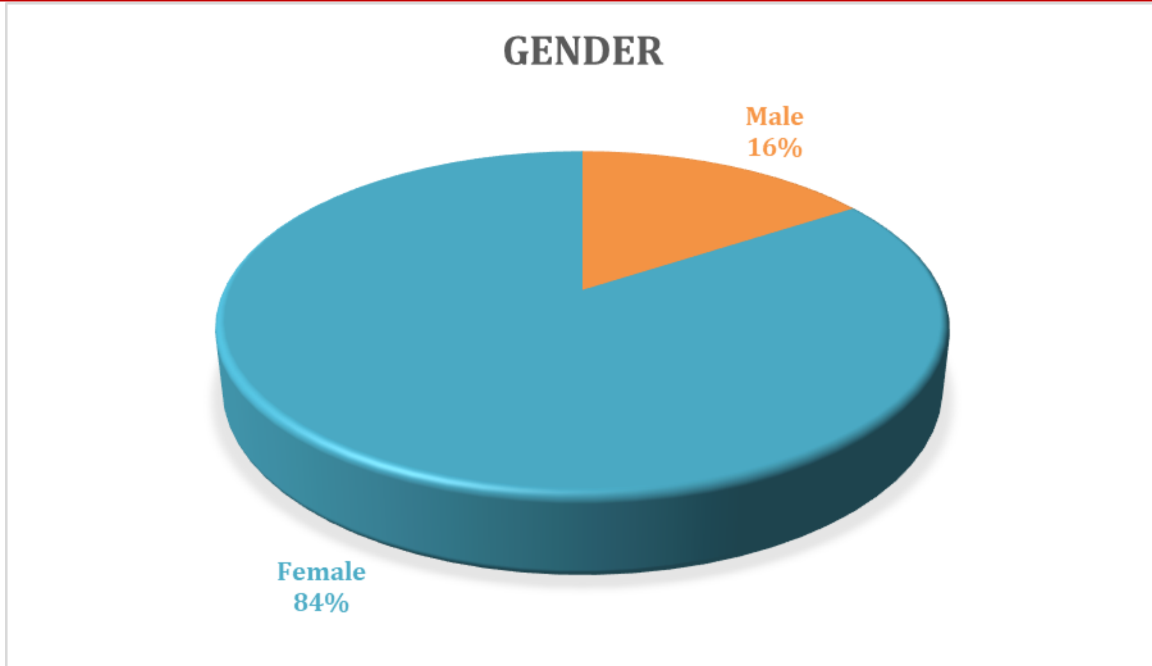

DIAGRAM NO: 2 WHAT IS YOUR GENDER?

61.5% of the people are male

38.5% of the people are female

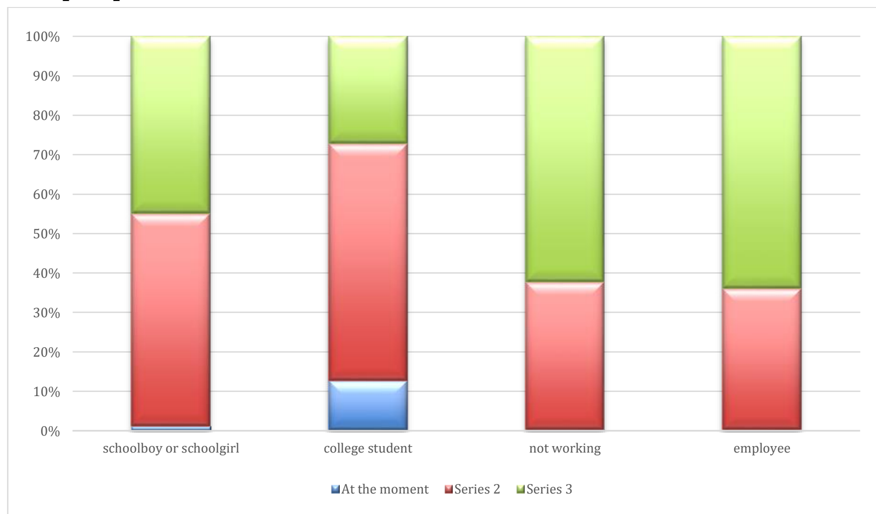

DIAGRAM NO:3 AT THE MOMENT YOU ARE

92.3% are college student

5. 2% people are schoolboy /school girl

2.5% were not working

1.3% people who attended my survey was employee

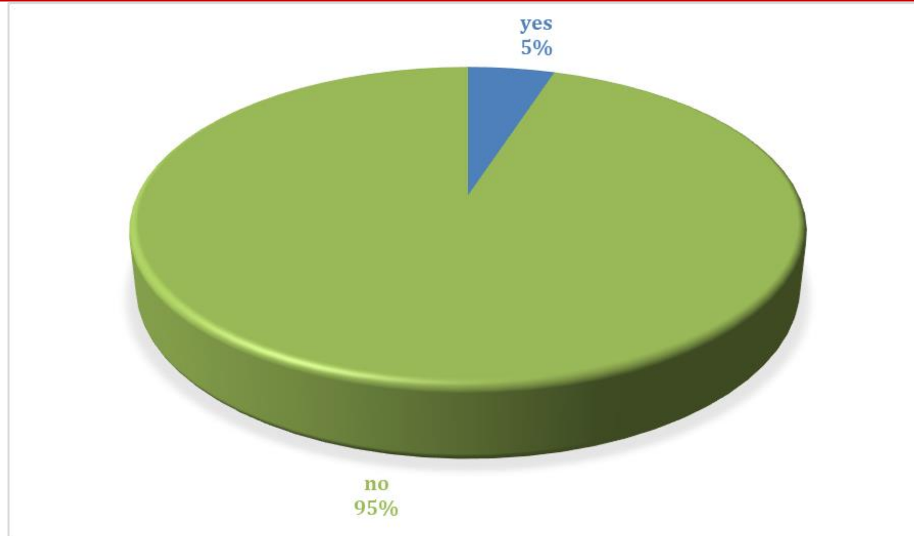

DIAGRAM NO :3 DO YOU HAVE BRAIN TUMOR ?

95% people were selected no ,but few people selected yes like they have brain tumor.

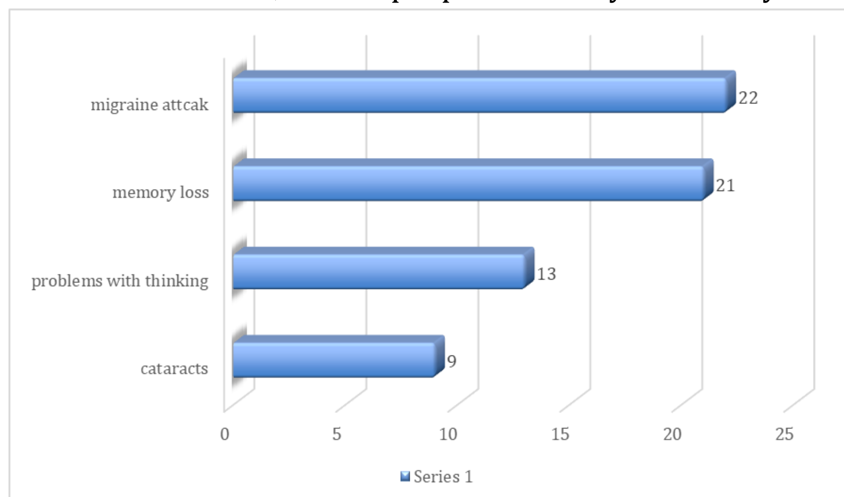

DIAGRAM NO :4 WHAT POSSIBLE SIDE EFFECTS SHOULD I LOOK AFTER THE TREATMENT?

The people who were selected cataracts 9.

13 people selected problems with thinking

21 people selected memory loss with epilepsy

Migraine attack were selected by 22 people.Some people thought that brain tumor will spread from person to person.

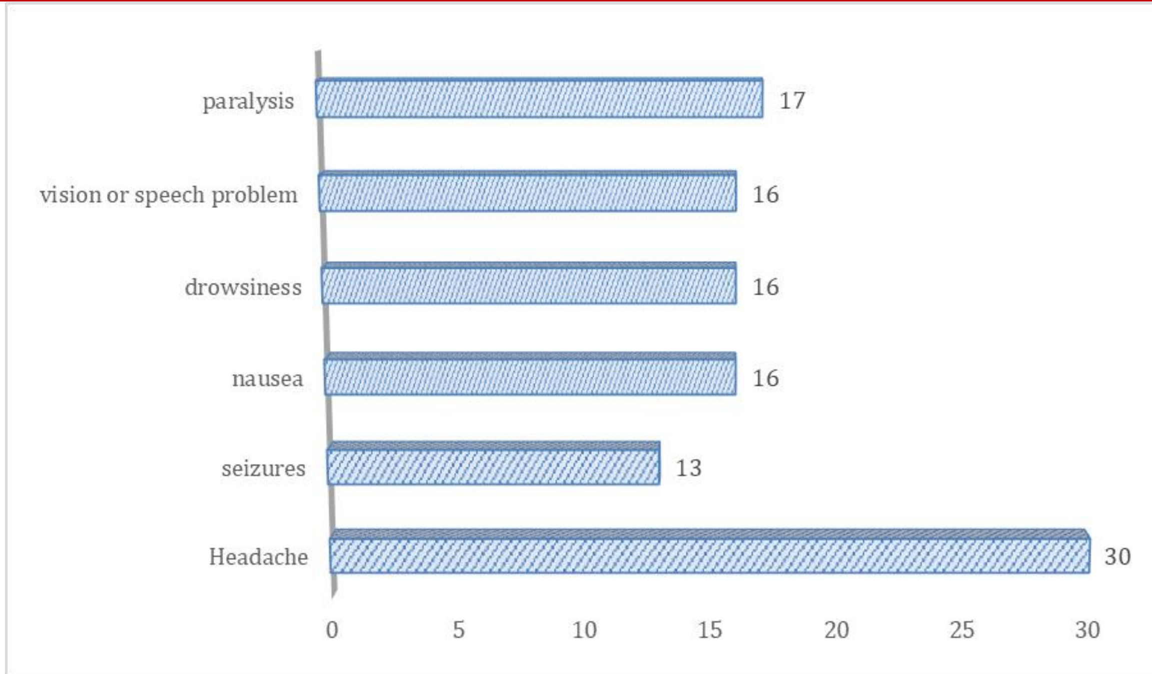

DIAGRAM NO :5 SYPTOMS OF THE BRAIN TUMOR?

30 PEOPLE SELECTED HEADACHE

13 people selected seizures

Nausea was selected by 16 people

16 people selected drowsiness and vision or speech problem .Most of the people selected Headache as the main symptoms of the brain tumor.

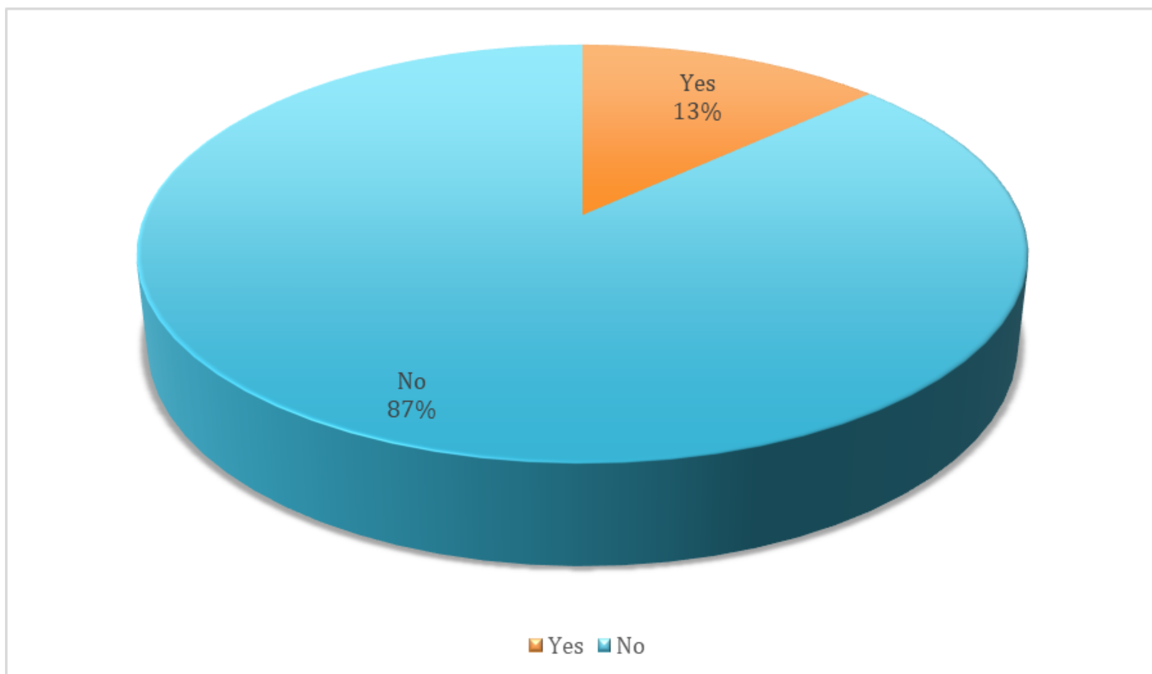

DIAGRAM NO :6 HAVE YOU PERFORMED TUMOR SURGERY BEFORE?

86.8% people selected no

13.2% people were selected yes. Most of the people did not performed the surgery before only few people selected yes.

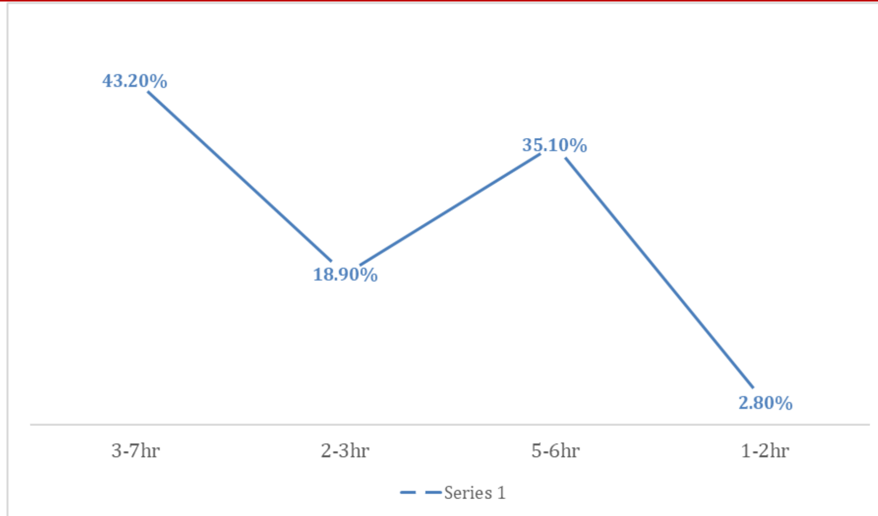

DIAGRAM NO :7 HOW LONG IS THE BRAIN SURGERY TREATMENT?

3-7 hr were selected by 43.2%

2-3hr were selected by 18.9%

35.1% people selected 5-6 hr

2.8% people selected 1-2hr

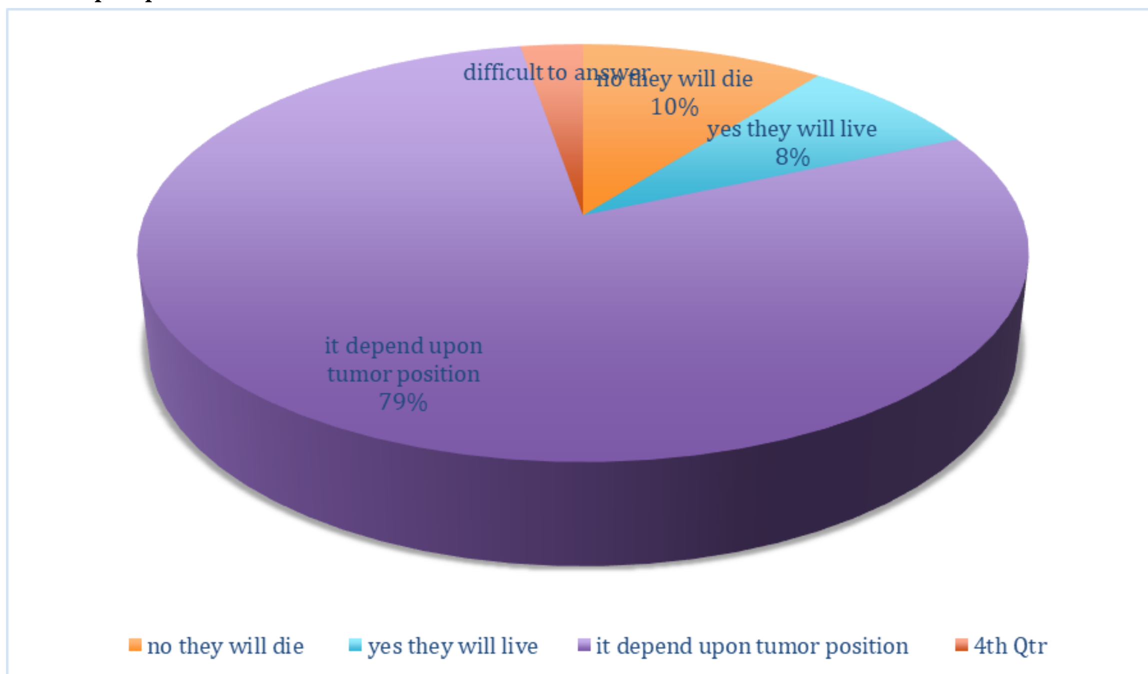

DIAGRAM NO:8 IS IT POSIBLE TO COMPLETELEY RECOVER FROM TREATMENT OF A BRAIN TUMOR?

10.5% people were selected no they will die.

7.9% people were selected yes they will die

78.9% people were selected it depends on the location of the tumor and where it is located

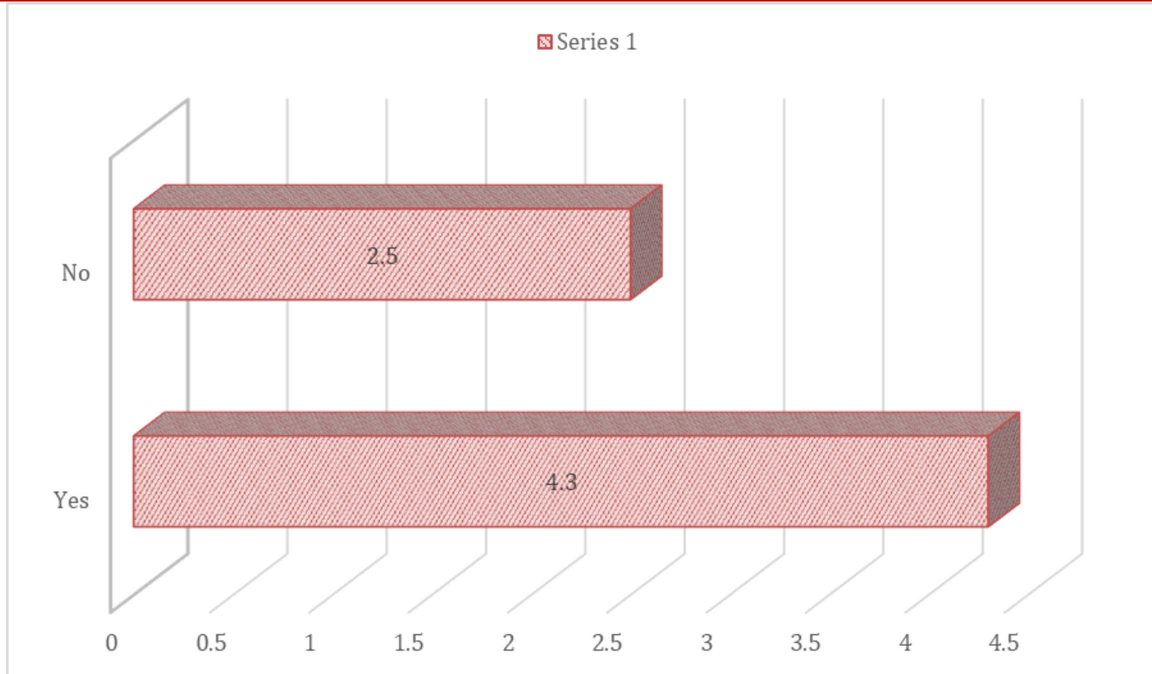

DIAGRAM NO; 9 CAN HUMAN FEMALE HORMONES CAUSE BRAIN TUMORS?
63.9% people selected yes
36.1 % people selected no

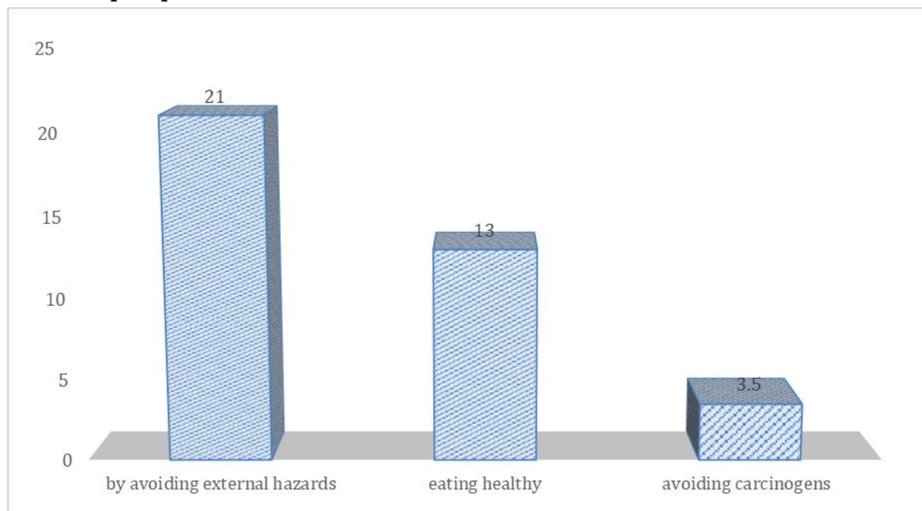

DIAGRAM NO :10 HOW THE PREVENT BRAIN TUMOR?
21 people were selected avoiding environmental hazards.
13 people were selected eating healthy and exercise daily
27 people selected avoiding carcinogens

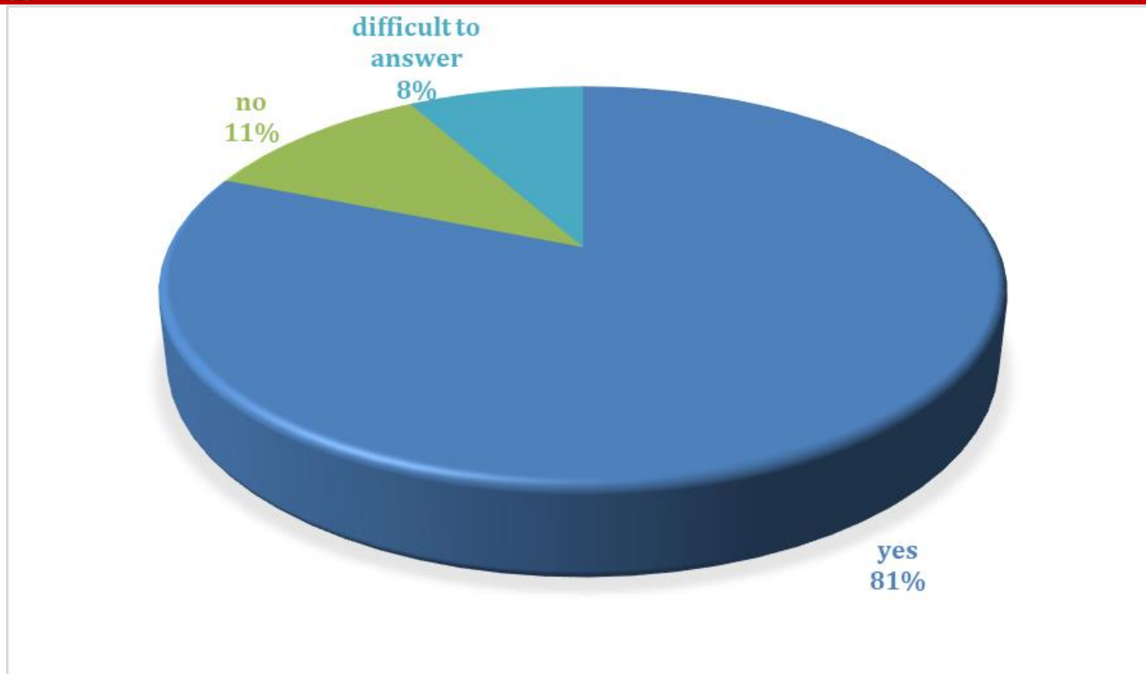

DIAGRAM NO : 11 CAN STRESS TRIGGER TUMOR FORMATION IN THE BRAIN?

81.1% people were selected yes

10.8% people were selected no

8.1 people were selected difficult to answer

DISCUSSION

When analyzing the efficiency of knowledge assimilation, the compared options, in contrast to the analysis of minimizing costs, are characterized by greater or lesser, but not equivalent, efficiency. In this regard, it is important to assess the degree of feasibility of the analysis, depending on the level of reliability of the data. The test results were expressed in points. Participants' results were calculated using Microsoft Excel software. The assessment of the effectiveness of the assimilation of knowledge was calculated based on the application of the proposed methodological recommendation in practice. Thus, each participant of the seminar, on average, increased his theoretical and practical level of knowledge in the field of brain tumor and its prevention by almost half. A further prospect of this study is to save money on the diagnosis and treatment for the brain tumor. Our proposals for further research are the study of the awareness of the contingent of preschool education.

CONCLUSION

Great strides have been made over the past several decades with regards to our understanding and treatments of tumors arising within the central nervous system in children. We now know what features of our treatments have a positive impact on prognosis. For most tumor types, newer protocols are having a positive impact on prognosis. Still problematic, however, are late side effects from the more aggressive treatment packages required in the treatment of the more malignant tumors. This has become a central question in the development of newer treatment protocols. Nowadays, youth are very young and powerful . The need for awareness-raising activities among the population, especially among young people who are most at risk of brain tumor , is beyond doubt. According to experts, one of the reasons for the high prevalence of brain tumors is the low level of awareness among

young people about the diseases as well as those who practice risky behavior. The health of children and youth is a high social and humanitarian value of our country. In the context of generalization of the disease , the first place is taken by the prevention of the brain tumor , especially among young, reproductive, working age. At the same time, adolescents and young people are the most vulnerable group of the population, which is quickly involved in the epidemic process: With regard to solving this problem, The basis of a preventive approach to solving the problem of combating epidemics of social diseases is to create awareness about the brain tumor disease to all the people who are in young age and adults mostly.

RECOMMENDATION

Thus, the improvement of the system of counteracting the spread of brain tumor should be carried out in the following areas:

- prevention, including among high-risk groups;
- improving early detection of brain tumor ;
- improving the provision of medical care for brain tumor ;
- improving the prevention of brain tumors from hazardous substances and carcinogens.

References:

1. Perkins, Allen, and Gerald Liu. “Primary Brain Tumors in Adults: Diagnosis and Treatment.” American family physician vol. 93,3 (2016): 211-7.https://pubmed.ncbi.nlm.nih.gov/26926614/
2. Vargo, Mary. “Brain tumor rehabilitation.” American journal of physical medicine & rehabilitation vol. 90,5 Suppl 1 (2011): S50-62. doi:10.1097/PHM.0b013e31820be31f.https://pubmed.ncbi.nlm.nih.gov/21765264/
3. Davis, Mary Elizabeth. “Glioblastoma: Overview of Disease and Treatment.” Clinical journal of oncology nursing vol. 20,5 Suppl (2016): S2-8. doi:10.1188/16.CJON.S1.2-8https://pubmed.ncbi.nlm.nih.gov/27668386/
4. Chandana, Sreenivasa R et al. “Primary brain tumors in adults.” American family physician vol. 77,10 (2008): 1423-30.
5. Мирхамидова С. М., Динмухаммадиев Н. А. Особенности распространенности онкологических заболеваний //Молодой ученый. – 2016. – №. 20. – С. 84-87.
6. Yamasaki, Fumiyuki. “Adolescent and young adult brain tumors: current topics and review.” International journal of clinical oncology vol. 27,3 (2022): 457-464. doi:10.1007/s10147-021-01423-3.
7. Komori, Takashi. Brain and nerve = Shinkei kenkyu no shinpo vol. 72,4 (2020): 399-405. doi:10.11477/mf.1416201538https://pubmed.ncbi.nlm.nih.gov/32284464/
8. Nayak L, Lee EQ, Wen PY. Epidemiology of brain metastases. Curr Oncol Rep. 2012 Feb;14(1):48-54. doi: 10.1007/s11912-011-0203-y. PMID: 22012633.