

AN-NAJAH NATIONAL UNIVERSITY

CRITICAL THINKING AND RESEARCH SKILLS

REPORT

Childhood Cancer

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Abstract

Cancer is a most dangerous disease in our lives in view of its negative effects on people's lives in different ways. Because of the spread of this disease and to find out how you can get rid of the obstacles that prevent the body from healing , we did this research to aware people from this disease so that it can be detected early.

We focused on childhood cancer , we made a study about it in Palestine , We made a questionnaire to collect information about this disease and related issues to know how to deal with it and the patients and to know how it could be detected early.

So cancer is not just a disease, but also is a mechanism to survive , and If we did not change our perception about cancer, one life out of every two people under threat of danger.

Chapter 1

Introduction

The cell is a basic unit of body building, our bodies producing cells and this is done through specific genes, Split cells of the body is normal when the body needs it for growth or to replace dead cells, but when the cells divide without the need for the body, it leads to produce a mass of tissue called a tumor and the tumor can be benign or malignant, for benign it can be eradicated by surgery and it is not dangerous, it does not back again, but malignant tumors are called cancer which threatening the life of the patient and it is dangerous .

there are many types of cancer that could Infect people, there is the Spinal cord cancer , Lymphoma ,Ganglia cancer , Kidney Cancer , Muscle cancer and other types . Cancer in general could be due to several factors, including what is due to daily habits, such as smoking or non-healthy nutrition and it is possible to be a result of exposure to certain chemicals such as chemical fertilizers or pesticides , it could also be due to a particular virus infection such as Some chronic infections or HCV virus , but The possibility of the unexpected that it is possible to be hereditary and that which leads to childhood cancer, in our report we will focus on childhood cancer , we will also focus on the psychology of the child with cancer as the patient's psyche has a major role in treatment , cancer in children can be due to gene since its birth which turn into cell cancerous , or because of some meta changes . Symptoms of cancer vary in children from symptoms cancer in adults and this could lead to the inability of parents to reveal it early , despite the different symptoms of cancer in children than adults, but the methods of diagnosis and treatment were similar, such as the discs, which is an effective alternative to chemotherapy , and for the chemotherapy there are three ways ,The first way is directly injected intravenously to the bloodstream ,the second way is to introduce fluids into the body by using a hollow needle and syringe to penetrate the skin in order to reach an appropriate length of material to the body and be either injected into the muscle (intramuscular) or subcutaneous injection , and the third way Injected into the spinal cord fluid. Although the success of the treatment in children ratios were higher, but the late effects of the disease after treatment led to significant health problems and this did not make it better than previous methods of treatment so it is considered as one of the biggest causes of death in children .

Any disease whatsoever has implications for psychological of patient and cancer which is one of the most dangerous diseases that threaten the patient's life , it also has effects on the psyche of the patient beside the physical effects

and It is one of the reasons that lead the child who has cancer to suffer from psychological disorder and the child may feel inferior as a result of his disability and this makes him face difficulties in adapting to his family and the surrounding environment, which negatively affects his psychological and thus affects the treatment and because childhood is the stage in which the child grows and begins to identify and adapt to the family and the surrounding environment we focused on the psychological of the child who has cancer as a primary factor for treatment.

Parents who have a child with cancer are more affected and are suffering from their child's disease , but they should not make this impact on the psyche of their child, once the child feels that may be disturbed in the psychological and may suffer from frustration and despair, which leads to depression and affects the treatment and this is what they do not want the conditions of the disease and the tests they have for their child may make him feel not comfortable so Parents play a major role in influencing their child with cancer, So they have to be careful what they do to him and what they say to him, and improve his psychological in their own way, it is possible to give him everything he needs so as not to feel inferior and to create a place of happiness that makes him feels reassured and away from anxiety and fear.

so the positive effect on psychological patient positively effects the cure, It could help in early recovery and ease the pain that the patient child suffered .

Above all , child who has cancer must get the best treatment from people around him especially from his parent , the parents have the most effect on their children , they have the important role to reduce the psychological pain that their child suffers because this considered as the first way for cure, and that's what we'll talk about in our report

due to the spread of the disease is widely among children it is important to aware people and the parents to help them to know more about this kind of disease , and to be familiar with it ,so this report will be presented for the childhood cancer , as we mention we will focus on the psychological side for the patient and the effects or physical changes on patient body which lead to changes in the patient's psyche , and find possible solutions to minimize these effects. the report will also show what are the symptoms and signs of the cancer in children and how this disease could be detected early , also the proportion of patient who did not survive hope to find new ways for cancer treatment

Chapter 2

Literature review

Recently in 1975, it remained only half of children with cancer survive Where the doctors were using the same treatment for patients adults and children, then the researchers began preventing many of the negative effects of cancer treatment in childhood .

Between 2004 -2010 amounted to more than 80 It has been found that Medulloblastoma is the most common malignant brain tumor of childhood As it stated in Treatment of Children With Medulloblastomas article[1] as this study was conducted to determine the feasibility and efficacy for the treatment of children who suffer from spinal non-disseminated with reduced doses of cranial radiation therapy in addition to chemotherapy. Dr. Andrew Kung and his team of researchers In their project [2] Which dealt with sarcomas in children, where the risk of infection by a high in the last 20 years .This team has searched for a new way to evaluate the entire network signals within cancer cells to determine MRs. critical (malignant) in a number of adult cancers , this method has been successfully used since it is the children who suffer from high-risk sarcomas as well as identifying MRs. analysis of samples and then determine the appropriate medication. According to a new study by Abi Millar [3] that was designed to assess the side effects on children with cancer as well as providing the basis for interventions to prevent or remedy the adverse health outcomes, and to direct current treatments to minimize late effects . Improved biology and evolution led to the early detection of cancer and identify molecular events that could be targets for prevention and treatment ,This study [4] focused on early detection and improved prevention which reduces fear in patients , and according to [5] study it focused on psychological side of child who has cancer which our report focused on.

Our search introduced many sides related to childhood cancer including the ways of treatment , and the side effects after treatment but focused on the psychological side of patient life , this is the most important side that helps doctors to easily deal with the patient child as it considered the important factor for treatment completion

Chapter 3

Methodology

In addition to what we have said before, to obtain information from various aspects, we made a questionnaire that presents a set of questions about cancer that affects children which contains several aspects related to this disease, including treatment methods and the aim of it also the side effects that affect the child after treatment and we focused on the Psychological effects of the child who has cancer during and after the treatment and the role of the parents and the doctor in reducing these effects , we also asked a question about the possibility to have treatment that could be alternative to chemotherapy for children with cancer and according to these questions we get answers as described below :

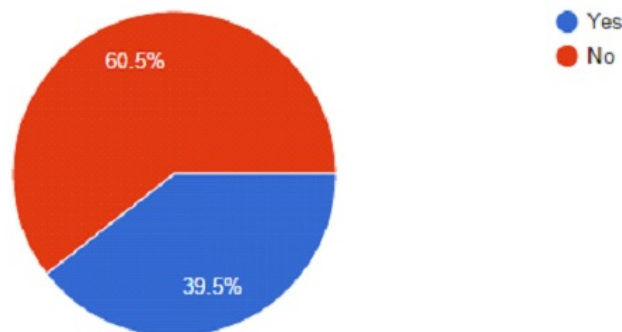


Figure 3.1: proportion of people who deal with child with cancer

from the figure shown above it shows that the percentage of people who dealt directly with children with cancer is 39.5% , which is a fairly good percentage, especially since we chose the category of children, which is considered a sensitive category compared with other categories, where it requires that the person is very careful to deal with Child because the child needs at this stage for people who care about him and deal with him gently away from the words that hurt his feelings.

Also, there is no need to have children with cancer in every home. Therefore, the possibility of dealing with children will be less. There may also be some people who do not have the courage to deal with this child for fear of hurt his feelings or indirectly harming him.⁷ Most of the people who worked with these children were either doctors or medical students who were trained at the university hospital, as this medical staff had the experience and style to deal with these children.

The other proportion, which makes up the proportion of people who did not deal directly with children, is a fairly large percentage, and this percentage will be greater if we can educate people more about this disease to be detected early and eliminated.

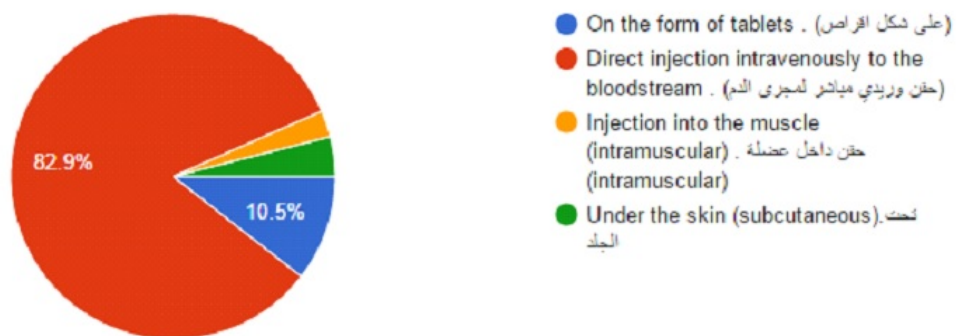


Figure 3.2: proportions of types of chemotherapy treatment

Cancer is a disease like any other disease, which has either a cure or a pain relief. The treatment is either radiation therapy, which is rarely used. The second type of treatment is chemotherapy.

Chemotherapy is a treatment using chemical drugs known as anti-cancer drugs, which destroy cancer cells. The main advantage of this treatment is its ability to treat the spread tumors, the decision to use this treatment is to balance the efficacy, side effects and future complications of the treatment and the risk of cancer, and of course its complications and effects are acceptable compared to the disease itself, in addition to the therapeutic return is very positive. The rate of chemotherapy is 82.9%, which is the highest percentage of all other types. Because the dose is given through the blood, this dose is guaranteed to reach all parts of the body and reach the cells. To destroy them and eliminate them gradually, About 10.5% of children are treated with pills Which is a small percentage compared to the proportion of the dose by blood, and this is expected since the child does not accept the treatment of Acamol or Turofen pills so how will accept this type of chemical!

Chemotherapy under the skin or in the muscle is the least common type, because it is difficult to treat the child in this case because chemotherapy, if not used properly, may cause burning or indirect injury to the child's skin.

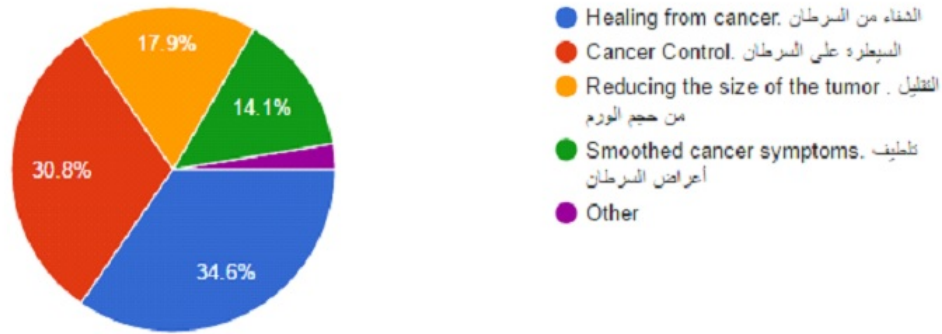


Figure 3.3: proportion of the goal of treatment

After diagnosing the child's condition by the doctor, the doctor arranges a special schedule for this child to get chemotherapy doses one by one. As this treatment is very important for the child, and has many goals, and to know these goals the third question from our questionnaire was " What is the purpose of this type of treatment ? " from answers we get the chart above , where we note from the drawing that 34.6% of their goal was to take chemotherapy chemotherapy is the cure of cancer as the primary goal of any child is the patient is cured from cancer and eliminated completely to complete his life Natural away from this serious disease .

This is the case that the tumor was benign and the probability of elimination of this tumor is large and thus can cure the disease, either in the case of non-benign tumors will be difficult to eliminate the disease finally, the role of chemotherapy here is to control the disease to avoid aggravation and increase significantly where The division of cells is very fast and very large, and from the graph we find that 30.8% of the total ratios of their goal of treatment is control of cancer , although cancer control is not considered a cancer treatment, it is an important determinant of the quality of life for cancer patients and plays an important role in deciding whether the patient is able to undergo other treatments

Some types of chemotherapy aim to reduce the size of cancer cells, where chemotherapy works to kill cancer cells that multiply quickly. This also harms the natural cells that divide rapidly such as exile cells, digestive system, and hair follicles. The proportion of chemotherapy used to reduce tumor size is low, accounting for 17.9% of the total , to avoid harming some other normal cells

Do not kill cancer and live with it.This is the case where 14.1% of the total number of children who take chemotherapy are treated with little or no cure.

They have one option: to soften the symptoms of cancer so that the child can Complete his life with this disease with minimal adverse effects on his body or on his psyche.

Our research focus on the cancer effects on the child especially Psychological effects whether during treatment or after , The psychological state of the child is the basis for the completion of treatment and relieve pain, most children feel pain, for the psychological pain it may be due to changes in features and hair loss and may be due to fear of death also the child spends long time in hospital If he is taking chemotherapy , frequent visits to the hospital and spend a long time has a significant negative impact on the psyche of the child with cancer , for these effects during treatment the Third question was “ How the child feels while receiving this treatment?” some of them said that they feel extreme pain , tired and nauseated , some said frustration , despair , Psychological and physical fatigue , sorrow and depression others said they feel scared and need someone beside them ,also they feel weakness and humor , different answers lead to a similar result , the pain whether it is physical or psychological , these answers differ from child to another some of children will accept it , others may be unaware if the child is newborn he will just cry.

One of the problems facing the child during the treatment period is the difficulty of accepting this treatment. The child refuse medicine in mild diseases, how will he accept chemotherapy! , Here is the role of doctor and parents to accept the treatment and improving the child's psychological state to reduce the feeling of pain .

As mentioned previously, most children with cancer feel pain, whether physical pain or psychological due to altered features and hair loss , they also suffer from physical symptoms . For the cancer effects after treatment , the fourth question was “ What are the side effects of this treatment?” the results were as shown below :

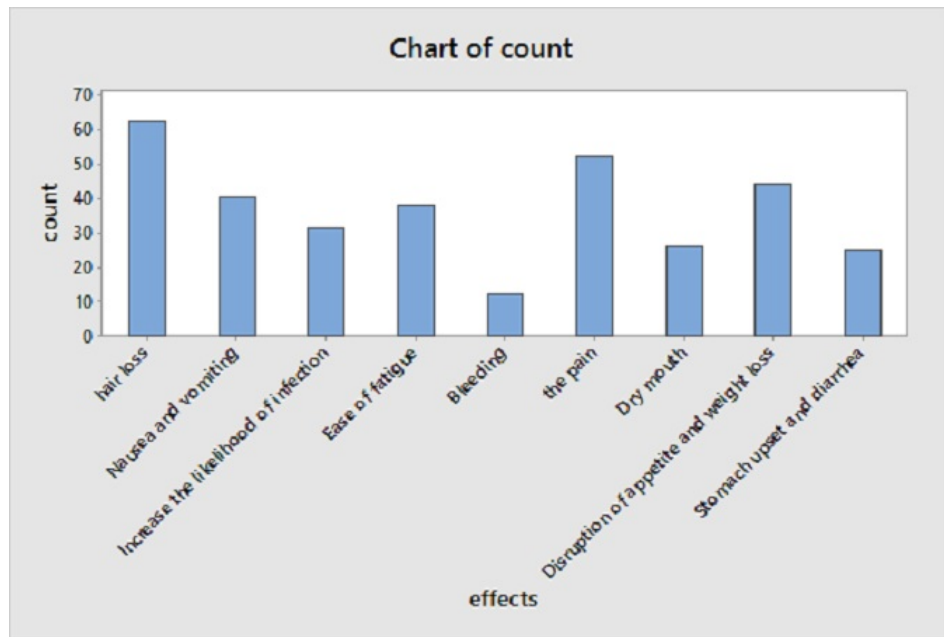


Figure 3.4: proportions of psychological side effects on child with cancer

From the graph above it shows that the hair loss effect has the largest proportion which is 82.7% since the visible side effect on all cancer patients after chemotherapy is hair loss , then the pain that the patient suffers after treatment with proportion 69.3% in addition to other symptoms which vary depending on the type of cancer such as Nausea and vomiting with proportion of 53.3% , Disruption of appetite and weight loss with 58.7% , Ease of fatigue with 50.7% as they feel tired of any effort , Increase the likelihood of infection with 41.3% due to Immunodeficiency Where it becomes easy to get infected with any other disease through infection , the effect of Dry mouth and pose oral ulceration and swelling inside the mouth has proportion with 34.7% , Stomach upset and diarrhea effect with 33.3% and Bleeding with just 16% ,as we said these effects depend on the type of cancer and the way of treatment .

our goal from the research as we said is to reduce the Psychological effects on cancer patient , also to find an alternative to chemotherapy so the last question was " Do you have information or a new method proposed for treatment ?" most answers where "NO" but it is possible to find new ways to reduce the feeling of the child suffering from cancer of pain which was "Psychotherapy" and that was our hypothesis so the psychological of the patient is the main factor for treatment from cancer .

Limitation

To make our research more accurate we interviewed some doctors in the Department of Oncology at An-Najah National University to obtain some information, but it was limited to maintain the privacy of patients, and we have submitted a request to conduct an experiment to study how the child is taking doses of chemical as well as The effect of this chemotherapy on the psyche of the child as well as on his body, by observing him for a full day before entering the chemotherapy room and while receiving this treatment and also after leaving this room to obtain accurate results and observation of these effects Unfortunately, no response has been received from the hospital administration, perhaps because this category is a little sensitive and requires attention and care to the fullest, and to avoid exposing children to any source that could injure their feelings or indirectly hurt them .

Also, one of the main obstacles we encountered during this research is our inability to meet some families with children who have cancer in order to avoid hurting the feelings of the parents or increasing their grief.

Chapter 4

Results and Discussion

Based on the questionnaire we published, the responses to the questionnaire were 147 response where the proportion of people who dealt with children with cancer 39.5%, and the proportion of people who did not deal directly with children 60.5% , In our research, we cared about the people who dealt with the children, since all the people who answered them were yes, they completed the questionnaire.

The responses to the types of chemotherapy the child takes are as follows :

- Direct injection intravenously to the bloodstream : 63 children (82.9%)
- On the form of tablets or pills : 8 children (10.5%)
- On the form of tablets or pills : 8 children (10.5%)
- Under the skin (subcutaneous) : 3 children (3.9%)

The responses for the purpose of this type of treatment was as follows :

- Healing from cancer : 27 children (34.6%)
- Healing from cancer : 27 children (34.6%)
- Reducing the size of the tumor: 14 children (17.9%)
- Smoothed cancer symptoms: 11 children (14.1%)
- Other : 2 children (2.6%)

The responses for the side effects of this treatment was as follows :

- Hair loss : 62 children (82.7%)
- Nausea and vomiting. 40 children (53.3%)
- Increase the likelihood of infection. 31 children (41.3%)
- Ease of fatigue 38 children (50.7%)
- Bleeding 12 children (16%)

- the pain 52 children (69.3%)
- Dry mouth and pose oral ulceration and swelling inside the mouth 26 children (34.7%).
- Disruption of appetite and weight loss. 44 children (58.7%)
- Stomach upset and diarrhea. 25 children (33.3%)

There were 53 responses to the child's feelings during the treatment. Most of the responses indicated that the children felt emotionally and physically tired and tired. It was a difficult time for the child to become very debilitated, sometimes sad and sometimes nervous, and narrow because of his presence in the hospital.

There were also 38 responses in which some ways were presented in which to find a new treatment for cancer or to alleviate the pain that result from it, and most of the answers focused on the importance of psychological aspect in the treatment as these answers supported our hypothesis based on the search for antiquities Psychological and physical side of the child

Chapter 5

Conclusion

This research provides some comprehensive information about cancer for children and how to treat it. This category was chosen because childhood is the most important stage in human life. It requires attention and care by parents and people to provide a suitable environment for a healthy life away from diseases. People are all about this serious disease to be discovered in early stages before it is too late. Our research is also focused on the psychological and physical side effects of the child as the psychological factor is the mainstay in completing treatment.

Where the child's psychology should be comfortable to receive treatment and benefit from it in the best picture, also physically the child must be able to bear the treatment he receives so the study of these two factors are very important in completing the treatment.

The aim of this research is to make people more aware and cautious in dealing with children to provide happiness and give them a more enjoyable life away from diseases as well as suggest some new ways to relieve the disease.

5.1 Recommendation

In this research we have done about children with cancer, the approach we used in this study is based on the results collected from the questionnaire we prepared and published in different sites and groups. In our research we also relied on some of the information we collected from some of the doctors in the Oncology Department And we were able to obtain some information about the disease through various sites on the Internet, also some observations from the students during the presentation of this research in the form of presentation, and the main pillar in our research is the psychological aspect and Of the child during chemotherapy

There are many suggestions that we can add to this research, for example: study other types of cancer treatment such as radiotherapy, also communicate with some companies that provide psychological support for the child and provide psychological comfort to him, as well as complete research on alternative treatments for cancer or even to alleviate of the resulting pain.

references

- [1] Roger J. Packer, Joel Goldwein, H. Stacy Nicholson, L. Gilbert Vezi-
na, Jeffrey C. Allen, M. Douglas Ris "Challenges of Treating Childhood
Medulloblastoma in a Country With Limited Resources ": 20 Years of
Experience at a Single Tertiary Center in Malaysia. *Journal of Global
Oncology* 0:0. Online publication date: 28-Oct-2016.
- [2] Dr. Andrew Kung "Integrative Analysis to Identify New Therapies for
Pediatric Sarcoma" Online publication date: 15-Aug-2016 .
- [3] Abi Millar "After the cure: addressing side effects in childhood cancer
patients" on 12-Jan-2017
- [4] C. M. Michener, A. M. Ardekani, E. F. Petricoin, L. A. Liotta, and E. C.
Kohn, "Genomics and proteomics: application of novel technology to early
detection and prevention of cancer," *Cancer detection and prevention*, vol.
26, no. 4, pp. 249-255, 2002.
- [5] C. Eiser, J. J. Hill, and Y. H. Vance, "Examining the psychological
consequences of surviving childhood cancer: systematic review as a re-
search method in pediatric psychology," *Journal of pediatric psychology*,
vol. 25, no. 6, pp. 449-460, 2000.

Chapter 6

Appendix

A survey

1. Do you deal with a child suffering from cancer? (هل تعاملت مع طفل مصاب بمرض السرطان) *

☐ Yes

☐ No

IF YOUR ANSWER IS YES :

Description (optional)

1. What is the type of chemotherapy that he/she takes ? (ما هو نوع العلاج الكيماوي الذي يعطى له ؟)

- ☐ On the form of tablets . (على شكل اقراص)
- ☐ Direct injection intravenously to the bloodstream . (حقن وريدي مباشر لمجرى الدم)
- ☐ Injection into the muscle (intramuscular) . (حقن داخل عضلة)
- ☐ Under the skin (subcutaneous). (تحت الجلد)

2. What is the purpose of this type of treatment? (ما الهدف من هذا النوع من العلاج؟)

- ☐ Healing from cancer. (الشفاء من السرطان)
- ☐ Cancer Control. (السيطرة على السرطان)
- ☐ Reducing the size of the tumor . (التقليل من حجم الورم)
- ☐ Smoothed cancer symptoms. (تخفيف أعراض السرطان)
- ☐ Other...

3. How the child feels while receiving this treatment? (كيف يشعر الطفل أثناء تلقي هذا العلاج؟)

Long answer text

4. What are the side effects of this treatment? (ما هي الأعراض الجانبية لهذا العلاج؟)

- ☐ Hair loss. تساقط الشعر.
- ☐ Nausea and vomiting. الغثيان والتقيؤ.
- ☐ Increase the likelihood of infection. زيادة احتمالية الإصابة بالالتهابات.
- ☐ Ease of fatigue. سهولة الشعور بالإرهاق.
- ☐ Bleeding. النزيف.
- ☐ the pain. الألم.
- ☐ Dry mouth and pose oral ulceration and swelling inside the mouth. جفاف الفم وتشكل تقرحات فموية وانتفاخات داخل الفم.
- ☐ Disruption of appetite and weight loss. اضطراب الشهية وفقدان الوزن.
- ☐ Stomach upset and diarrhea. اضطراب المعدة والإسهال.

5. Do you have information or a new method proposed for treatment . (هل لديك معلومة) (أو طريقة جديدة مقترحة للعلاج)

Long answer text