

Prevalence of psychological pain in comparison with physiological pain due to anxiety level in oncology children

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ABSTRACT

As it is stated before in several studies that, health is a whole thing adding mental and physical health, such as the physical treatment of cancer is incomplete without treating the psychological causes. Oncology children are not mature enough to deal with it and gets anxiety and depression as the common psychological problems while having the treatment, where the anxiety is expected to increase the pain of psychological aspect rather than physical and makes the treatment & management of oncology difficult for the doctors. To understand this relationship of anxiety with psychological & physiological pain, this study was aimed to be conducted on a sample of 80 Oncology children, age ranging from teens to adolescent where half were girls & half boys. "Screen for child anxiety related disorders (SCARED)", "McGill pain questionnaire" & "Pain catastrophizing scale (PCS)" were used on the subjects. A correlation method was used in the present study. Result of the study showed that the anxiety correlates with both the type of pain and the proposed null-hypothesis was rejected.

1. Introduction

In primitive terms the oncology survivors were provided with the basic medical treatments such as Chemotherapy, Radiation Oncology, Surgery etc. but gradually popularizing psychology made it through time & psycho-oncology a new popularized field was emerged which kept in focus basically the behavioral treatments along with the medical hustles. Even the WHO adds the Mental & Social well-being to the definition of health so there is no point where one can alter the medical treatments leaving the psychology behind because if this is done for any purpose, the treatment will be deficient somehow.

Relatively new discovered medical field Psycho-oncology was introduced in Western countries in 1970s. It was developed to assess the two major aspects overlooked by medical health practitioners- Psychological impact of cancer on the survivors & their family/caregivers and psychosocial factors & behavioral impact on cancer mortality and morbidity.

The increased & advanced medical facilities have changed the people's perspective toward the cancer by increasing the chances of getting treated and managing the disease which was previously equivalent to a Death Sentence. Still the medical practitioners are deficient in psychological knowledge and uses the basics for the psychological management of their patients, therefore the psycho-oncology was needed as a discrete field. Children are more likely to get depression & anxiety when the disease are chronic & having severe discomfort in treatment because they are less likely to understand & manage their emotions according to the inconstant situations. Same as this sometimes the family members & parents of such patients comes in the influence of several social factors causing them psychosocial distress. As a result, the treatment becomes less effective or the disease becomes more prone to reoccur because either the patient will lack the insight about getting treated because the psychological distress occupies larger area in their little minds or this distress will cause their parents to be unable to provide

sufficient support for them. And there could be somatization effect also, that the patient will start feeling the symptoms without any biological cause even after getting treated because it is all in the mind.

"Psycho-oncology is an area of multi-disciplinary interest and has shared boundaries with the major speciality in oncology including medical oncology, hematology and radiation oncology : the clinical disciplines (surgery, medicine, pediatrics, and radiotherapy), epidemiology, immunology, endocrinology, biology, pathology, bioethics, palliative care, rehabilitation medicine, clinical trials research and decision making, as well as psychiatry and psychology(Adapted from Holland JC)."

The U.S. based National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology (Holland & Anderson et al. 2007) define "Distress" as:

"A multifactorial unpleasant emotional experience of a psychological (cognitive, behavioral, emotional), social and/or spiritual nature that may interfere with the ability to cope effectively with cancer, its physical symptoms and its treatment. Distress extends along a continuum, ranging from common normal feelings of vulnerability, sadness, and fears, to problems that can become disabling, such as depression, anxiety, panic, social isolation, and existential and spiritual crises." (Holland & Anderson et al, 2007, pg DIS-2)

Managing the distress: The distress caused is easily manageable if considered essential to have focus on. The positive and healthy lifestyle of the patients & the family members/caregivers adds on the crucial factors to develop the strength to build a wall against the psychosocial distress.

- Providing the social support network.
- Active coping strategies with increased focus & freedom for expressing emotions.
- Surrounding oneself with the patients who are actually improving rather than the one who are not doing well.

- Keeping away the social stressors & having the patient close to the motivational things which will penetrate the thought “will to live” in the cancer survivors.
- Unhealthy emotions should be managed on time through counseling or psychotherapies, this is going to reduce the chances of having chronic disorders in patients and will make them flexible to the emotional disturbances.

Hauken, May, Aasebø, Senneseth, Mette, Dyregrov, Atle, Dyregrov, Kari (2018), conducted a research to study how children’s HRQOL is influenced by anxiety and whether age and gender act as moderators for this relationship. A survey with a cross-sectional design used in this study, including 35 children between 8 and 18 years old (mean 13.3 years old) living with parental cancer. Questionnaire of HRQOL (Kinder Lebensqualität) and anxiety (Revised Child Manifest Anxiety Scale) were used. Higher anxiety and lower HRQOL was reported by the children than the controls. The children’s physiological ($P = .03$), emotional ($P = .04$) and school ($P = .00$) functions were significantly impaired, whereas they scored in line with the controls on, self-esteem, friends, family and overall HRQOL. Between anxiety and HRQOL a negative correlation ($r = -0.707$, $P < .01$) was found. Neither age nor gender acted as a moderator between anxiety and HRQOL. To capture these children’s multidimensional challenges a one dimensional focus on anxiety may not be effective. In contrast a focus on HRQOL may give important knowledge to these children’s challenges, as well as areas where they function well.

Glynnis McDonnell, Charles Baily, Tammy Schuler, Helen Verdelli (2017), stated in an article assessing psychosocial adjustment in adolescent survivors of pediatric cancer were reviewed for information regarding anxiety symptoms. Findings were, to the authors’ knowledge, there is no literature that focuses specifically on anxiety in this population. However, many of the articles reported results that indicated the possibility of increased anxiety in this group. It is critical to further investigate anxiety in this group and to develop appropriate interventions if necessary. By doing this, it will aid the process of enhancing psychosocial care for adolescent cancer survivors.

In fact, the period following cancer treatment may leave adolescents particularly vulnerable to developing anxiety and other psychosocial difficulties. A study by **Von Essen and colleagues (2000)**, found that survivors of pediatric cancer reported higher levels of anxiety and depression and lower levels of self-esteem than both healthy peers and children currently undergoing cancer treatment. Although these results became statistically insignificant after further analysis, the study’s power may have been limited by a small sample size ($n = 18$). Therefore, further research with a larger sample size is necessary to determine if adolescent cancer survivors’ rates of psychopathology are truly higher than those of adolescents undergoing cancer treatment and healthy peers. If these findings were replicated, it would indicate that transition into survivorship may be a crucial time to intervene with

adolescents who are experiencing psychosocial difficulties, including anxiety.

In a large study of pediatric cancer survivors aged 5.8 to 36 years **Koocher and colleagues (1980)**, found that the majority of participants experienced residual psychosocial sequelae, especially depression, anxiety, and low self-esteem. Participants who were able to articulate sources of their anxiety mentioned uncertainty about the future, the possibility of recurrence, and troubling memories of stressful aspects of treatment. Interestingly, death anxiety scores for participants were lower than those for a comparable control group of medically healthy peers, which may imply that the disease itself is more difficult to manage than the possibility of death. This study also found that post-treatment psychosocial difficulties became less prevalent as patients got further from the time of diagnosis if they remained relapse-free. Given the broad age range for participants in this study, it is necessary to conduct further, more age-specific research with adolescents in order to determine which of these findings, if any, may be particularly salient for this age group.

2. Objectives

- To study the level of anxiety in oncology children.
- To study the level of physical pain in oncology children.
- To study the level of somatization in oncology children.
- To study the effect of anxiety on physical and psychological pain in oncology children.

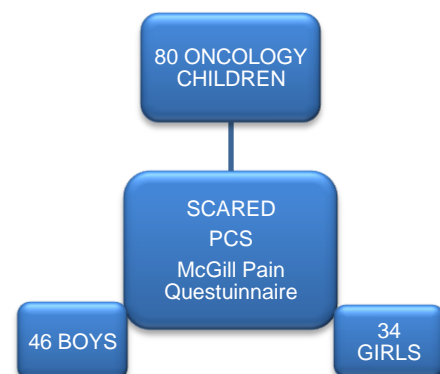
3. Hypothesis

- There is no significant correlation between anxiety and physical pain.
- There is no significant correlation between anxiety and psychological pain.

4. Variables

- Dependent Variable: Physical Pain and Psychological Pain
- Independent Variable: Anxiety

5. Research Plan



6. Sample

The study was intended to be done on 40 boys and 40 girls from Oncology Children but according to the availability basis, the study is comprised of 46 boys and 34 girls, age ranging from teens to adolescents. The samples were taken from the SawaiMansingh Hospital, BhagwanMahaveer Cancer Center & J K Lone Hospital of Jaipur (Rajasthan). Screen for child anxiety related disorders (SCARED), McGill Pain Questionnaire, Pain Catastrophizing Scale (PCS) were used to evaluate the Anxiety level, Physical pain and Psychological pain respectively.

7. Result Tables & Graphs

Table 1:Table no.1 showing the level of anxiety in male and female oncology children assessed by SCARED.

	N	Mean	SD	t-Value
Male	46	36.43	8.77	0.473*
Female	34	34.97	9.05	

Graph 1: Graph no.1 showing the level of anxiety in male and female oncology children assessed through the SCARED.

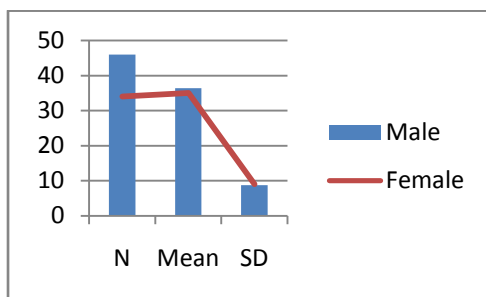


Table 2: Table no.2 showing the level of Physical-pain in male and female oncology children assessed through McGill Pain Questionnaire.

	N	Mean	SD	t-Value
Male	46	34.02	8.81	0.261*
Female	34	31.65	9.60	

Graph 2: Graph no.2 showing the level of Physical-pain in male and female oncology children assessed through McGill Pain Questionnaire.

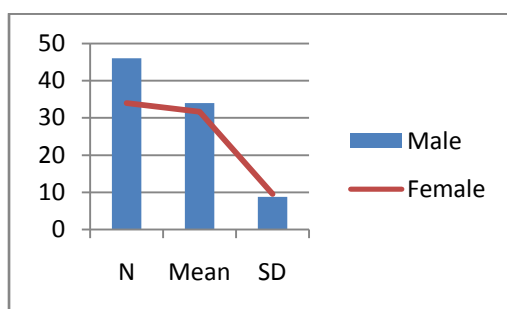


Table 3: Table no.3 showing the level of Psychological-pain in male and female oncology children assessed by the PCS.

	N	Mean	SD	t-Value
Male	46	9.65	5.13	0.342*
Female	34	10.74	4.92	

Graph 3: Table no.3 showing the level of Psychological-pain in male and female oncology children assessed by the PCS.

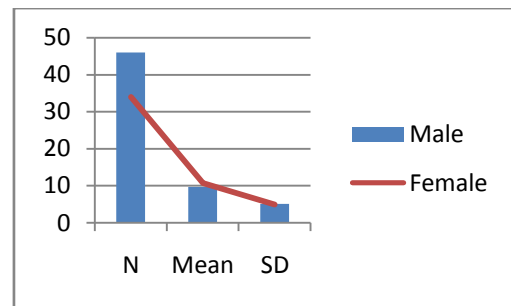


Table 4: Table no.4 showing the correlation between anxiety and Physical pain in oncology children.

Variable	r-Value	Level of significant
Anxiety	0.281	Significant
Physical pain		

Table 5:Table no.5 showing the correlation between anxiety and Psychological-pain in oncology children.

Variable	r- Value	Level of significant
Anxiety	0.218	Significant
Psychological pain		

8. Discussion

Cancer treatment’s induced pain is directly proportional to the psychological distress and causes problems such as anxiety & depression. There are chances that this Psychological distress can contribute to the increase of physiological pain in the oncology patients or increase in pain-catastrophizing/somatization.

The research hypothesis is against the fact that this kind of anxiety correlates with Psychological/Physiological Pain and the increase in anxiety will cause increase in any of these pain. To examine the present hypothesis, this research was conducted on a sample of 80 Oncology children, 46male & 34female. The tools used for the present study are McGill Pain Questionnaire, Pain Catastrophizing Scale (PCS) and Screen for Child Anxiety Related. Disorders (SCARED). Mean (Average) and Standard Deviation (SD) were calculated to assess the anxiety level in both male & female and the t-scores & r-scores were calculated to check correlation. The average of both type of pain was calculated and procured result is mentioned below-

Table-1 shows that the average of level of anxiety is found to be 36.43% in male patients whereas it is 34.97% in female patients. This could be because that we had the male sample slightly larger than the female.

It was intended to be equal for male and female but on availability basis I found more male cancer patient rather than female. Same as the other things, this diagnosis is not equal for male & female.

“IARC estimates that every year 163,000 children between age 0 and 14 are diagnosed with cancer worldwide. Among these 94,000 are boys and 68,000 are girls. Which leads to a global ratio of 1.37- so four boys are diagnosed with cancer for every three girls.”

This discrimination is found more in the low-income regions whereas it is nearly one-to-one in the high income regions.

“The pattern that autoimmune disorders are more common in females, but cancer and infections in males, suggests that the known differences in immunity may be responsible for this dichotomy. Besides immune surveillance, genome surveillance mechanisms also differ in efficiency between male & females. Hormonal ones and the number of X chromosomes are other differences. Some of the differences may even originate development (YavzAnacak, 2016).”

In Table-2 Physiological Pain was assessed which is obtained as an average of 34.02% in male and 31.65% in female. This is clear by the reason that females does have a high tolerance for pain as compared to the males which has been stated in several studies before.

While dealing with any type of pain, there are mainly two factors in consideration which is the pain threshold and the pain tolerance. One reason behind this is the flexibility of female behavior which allows them to distract their minds easily from pain which is not quite easy for males. And it is also widely accepted that females are better at tolerating pain as compared to the males because of the winger of childbirth.

Table-3 represents the average score of Psychological Pain which is found to be 9.65% in males & 10.74% in females. Females does have more of it because they have 10 times more chances of having somatization disorders than males. The intense & sensitive trait of females also contributes for them to have more psychological pain than the males.

“Another factor could be psychological. Biopsies, for instance, are done to determine if suspicious growth are cancerous, or life threatening, says SandnerKeisting, so the anxiety of worrying about the cancer may be playing a role in how the relatively minor procedure are perceived by women.”

Table-4 & Table-5 states that the anxiety correlates with Physiological Pain as well as with Psychological Pain which rejects my hypothesis and proved that any increase in anxiety can increase any type of pain whether Psychological or Physiological because either it will increase the pain

generating symptoms for patient which will increase the physical pain or it can increase the somatization in patient to cause them pain catastrophizing that leads to more psychological pain. High anxiety can cause more somatization which can lead the patients to report more pain than the actual pain with organic causes. And the increased physical pain could be the main reason for an increase in anxiety.

“Being treated for cancer is a major source of stress of any age and, perhaps, particularly for children and adolescents. Children and adolescents with cancer are confronted with the stress of understanding their disease and facing the possibility of dying at a young age. Furthermore these patients undergo extended treatment plans that are often invasive, painful and cause significant physical side-effects. These treatments are typically very disruptive to patient’s lives, leaving children and adolescents with cancer to adjust to shifts in routine and changing relationships with family and peers (Decker, 2007).”

It’s difficult for anyone to diagnose the psychological problems such as anxiety and depression because they shows the similar signs of worries & stress that are way more common as the side-effects of cancer treatments. There should be involvement of mental health professionals in the treatment of cancer children so that they can help them to manage these symptoms if prolonged or the symptoms will fade away itself with the treatment if they are simply side-effects of the cancer treatment.

PTSD is most common in the survivors, as it enables flashbacks of those traumatic experiences such as, the ruined physique of patient, time of diagnosis, pain etc. These all are equivalent to the physical reactions such as, rapid heartbeat, tension induced headache, shaking, chills etc. This might lead to social withdrawal and social avoidance or uncontrolled outbursts.

This untreated anxiety could be the reason for further panic attacks, so self-care is required by the patient, during treatment as well as after the treatment. Seeing psychologist or self-help groups are some effective measures which helps to alter the fear, depression, anxiety and improve the adaptive skills by different techniques such as relaxation, sleeping techniques, counselling, therapies etc. Comfort provided by family and peers also adds up to the better psychological management for cancer patients.

Anxiety persists in different forms so it’s difficult to determine the exact limit of its impact on life just by counting factors. Having an internalized nature makes it difficult to diagnose, hence in majority they remain untreated.

There were 9 specific anxiety disorders listed in the revised version of DSM-4.

Other reasons contributing to this could be the substances used throughout the treatment. In young generation it is not easy to diagnose because there are many other organic disease shares the same symptoms such as, respiratory diseases, hematologic, neurologic, cardiac, endocrine etc.

Avoidance makes the anxiety worse. Simply one should not try to avoid this and accept the symptoms to seek help from the mental health professionals. With the advanced knowledge of psycho-oncology, different therapies, counselling and pharmacological treatments are available to treat such conditions, so there is always a hope.

Providing mental health assistance with the tailored treatment of cancer will promote the overall well-being of these children by decreasing the chances of re-experiencing the symptoms through PTSD, somatization etc. which will make the treatment more successful. The decrease in anxiety and other behavioral problems will promote an early adaption in children where chances are to reduce the time taken in completion of the cancer treatment.

Low anxiety will make the children to report less pain as per the evident studies provided before, the anxiety of worrying about cancer could play a role in how they perceive the pain of cancer treatment, the frustration caused by anxiety make them feel more intense pain where is the chances are, the mentally healthy patients will report only the physical pain having organic causes.

9. Conclusion

The study concludes that the male patients reported to have an average of 36.43% of anxiety & the female patients have an average of 34.97% of anxiety. In physical pain the males does have an average of 34.02% whereas females have an average of only 31.65% and the Psychological pain is reported to be an average of 9.65% in male patients & 10.74% in female patients. Females being more intense, represents more psychological pain whereas males reported more physical pain because they have low tolerance in comparison with the females. Both the type of pain correlates with anxiety, here my hypothesis is rejected because there is a positive correlation in pains with anxiety which states that, any increase in anxiety will cause pain to increase. More anxiety makes the patients, report more pain, as the psychological distress makes them feel the intensity of pain increasing whereas the physical pain remains same and psychological pain adds to it.

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10. Limitations

The researcher identified the following limitations of the study propounded above:

- The study was limited to the Indian patients only & that is also of only one city Jaipur.
- Sample size could be increased.
- A lot of patients were not in condition of responding the questions properly because of age & health factor which is added to the research.
- The research is comprised of few variable only.

11. Implications

- The data acquired through the present report holds the same value of importance in adult's life as well as in children's life that is why the study could be broadened to the adult patient's population further.
- More variables of psycho-oncology should be added to the study to evaluate the whole cancer management in mental health perspective.
- The statistical data of this research is helpful in medical terms to provide better altered treatments to the chemo patients for male & female specifically.
- Such studies presents the need of psychological management in a valid & scientific form for cancer patients in front of the medical care givers to make it essential for the patients.

Therefore the further researches in this field of study could be started from where it is ending. Through this heuristic study the data acquired is applicable in many sectors of Medical care for the Cancer Patients.

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