DOI:https://doi.org/10.54393/pbmj.v5i6.536

PAKISTAN BIOMEDICAL JOURNAL

https://www.pakistanbmj.com/journal/index.php/pbmj/index

Volume 5, Issue 6 (June 2022)

Original Article

Effect of Chemotherapy Induced Hair-loss on Distress Levels among Cancer Patients Visiting Public and Private Hospitals of Punjab

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ARTICLE INFO

Key Words:

Chemotherapy induced hair- loss, Distress levels, Public and Private Hospitals, Punjab.

How to Cite:

Muhammad Ali, Tahir, Q. ., Khizar, M. ., Munawar, M. ., & Saif, A. (2022). Effect of chemotherapy induced hair-loss on distress levels among cancer patients visiting public and private hospitals of Punjab: Effect of chemotherapy induced hair-loss on distress levels among cancer patients. Pakistan BioMedical Journal, 5(6).https://doi.org/10.54393/pbmj.v5i6.536

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Received Date: 28th May, 2022
Acceptance Date: 13th June, 2022
Published Date: 30th June, 2022

ABSTRACT

Chemotherapy is an essential part of a multimodal strategy in the treatment of many cancers. Chemotherapy-induced hair loss is believed to affect 65 percent of people. According to the study, chemotherapy-induced hair loss has been associated to anxiety, depression, a poor body image, low self-esteem, and a decreased sense of health. **Objectives:** To find out chemotherapy-induced alopecia distress levels among cancer patients' in Punjab's public and private hospitals. To find out the relationship between demographic variables and chemotherapy induced alopecia distress. **Methods:** A cross sectional study was conducted in public and private hospitals of Punjab, over the duration of 6 months, from October 2021 to March 2022. A sample of 323 respondents with the age range 19-54 was obtained. Data collection tool was adapted version of chemotherapy-induced alopecia distress scale (CASD). Frequencies and percentages of categorical variables were reported and Chi-square test was used to find out associations. **Results:** High distress level was 61% (n=196) while low distress level was 39% (n=127). Majority of the sample population consisted of participants belonging to age group 18-34 (n=146, 45.2%). Most of them were male 53% (n=173). Respondents diagnosed at stage2 had low distress level (54%) as compare to respondents who were diagnosed at stage3 and stage 4. Significant association (p-value ≤0.05) was found between Gender, family income, employment status, disease stage at diagnosis, number of chemotherapy cycles received and current active treatment. **Conclusion:** Chemotherapy-induced alopecia distress was associated with all of five domains i.e. physical, emotional, daily activities, relationships and treatment. To reduce the suffering caused by alopecia in cancer patients, appropriate therapies must be developed.

INTRODUCTION

Cancer is the second leading cause of mortality in the world [1]. Cancer incidence is anticipated to rise from 6.1 million to 10.7 million in Asia by 2030, with a corresponding rise in death from 4.1 million to 7.5 million [2]. Similarly, cancer is on the rise in Pakistan; in 2012, 1.4 million of the country's 173 million inhabitants were diagnosed with cancer, with an annual increase of 150,000 cases projected [3]. The number of cancer cases is increasing at an exponential rate. Chemotherapy is an essential part of the multimodal strategy in the treatment of many malignancies. Chemotherapeutic drugs cause hair loss, which is one of the most prevalent cutaneous side effects and one of the most painful aspects of cancer treatment [4]. Chemotherapy-induced hair loss affects about 65 percent of people. Anagen effluvium is the most prevalent kind of hair loss linked with cancer treatment. It generally appears 1–2 weeks after commencing treatment and worsens over the next 4–8 weeks [5]. Regardless of the fact that chemotherapy-induced hair loss is a common and serious side effect of cancer treatment, little is known about how it affects patients' mental health [6]. Chemotherapy-induced hair loss, on the other hand, has been associated in the literature to anxiety, sadness, a negative body image, low self-esteem, and a decreased sense of well-being [7]. Alopecia is a psychologically and socially distressing side effect of systemic cancer therapy that is typically (but not

DOI:https://doi.org/10.54393/pbmj.v5i6.536

always) reversible. Some individuals may experience such severe emotional trauma that they refuse or postpone treatment that may otherwise be useful [8]. Alopecia is a common adverse effect of chemotherapeutic antineoplastic drugs, with 62.1 percent of patients reporting it. Chemotherapy-induced alopecia can range from partial to complete hair loss, depending on the treatment strategy. Alopecia has a significant emotional impact on individuals, in addition to its physical repercussions [9]. The adverse effects of alopecia on body image is identical for male and female respondents, and patients in both groups who suffered partial or total hair loss had a more negative body image than those who did not [10]. Females' psychological well-being was shown to be more impaired than men' in the same study, because to the greater frequency of alopecia in females. This might possibly be because baldness in males is a culturally acceptable condition [11]. Furthermore, alopecia is linked to major psychological issues including sadness and anxiety. Previous research has looked at the overall relationship between alopecia and quality of life [8]. Given that patients' discomfort and body image might vary according on their emotional dimension and the effect of peers and social settings, it's important to assess particular alopecia distress and its psychological cost [12]. The alopecia that appeared 2–3 weeks after the initial therapeutic application might be a serious issue that affects the patient's physical appearance, self-confidence, familial and social environment, and cancer treatment [13]. Hair loss is one of the most commonly reported and psychologically distressing adverse effects of chemotherapy [14]. It negatively affects the compliance and coping strength of patients receiving chemotherapy [15]. This study will highlight the impact of alopecia on the distress level of patients, as the mental health of a cancer patient is one of the crucial factor for the successful outcome of the treatment.

METHODS

A cross sectional study was conducted over a period of six months in oncology Department of Public and Private Hospitals of Punjab. Data collection tool was an adapted version of chemotherapy- induced Alopecia Distress Scale (CADS) taken from previous study (I. Baati et al., 2020). It consisted of two section A and B. Section A consisted of Socio-Demographic variables (Age, Education, Profession....). Section B was consisted of Chemotherapy-induced Alopecia Distress Scale (CADS) consisting up of 25 items in five domains which are physical, emotional, daily activity, relationship, and treatment. Questionnaire was translated in Urdu, pilot study was conducted to validate the questionnaire, followed by commencement of actual study. Reliability was tested by calculating Cronbach's alpha by using SPSS 17.0. Cronbach'S alpha was 0.8. Statistical significance was set up to p≤ 0.05. Convenient sampling was used. Sample size was calculated through open epi software. At Margin of error 5%, 95% confidence interval and 30% prevalence (I. Baati et al., 2020) the sample size was 323. Data analysis was done through SPSS version 17.0. Descriptive analysis for categorical variables was done through frequencies and percentages. Inferential analysis was done through Chi-square test for independence and 95% level of confidence was used for establishment of statistical significance and to find the association between independent and dependent variables

RESULTS

Total sample of 323 respondents were included in the study. Regarding gender of respondents 53% were male and 47% were female. Most of participants were with the age of 18-34 (45%), 31% were with the age of 35-45, 6% were with the age of 55 and above. Regarding education of respondents; 27% were primary educated, 5% were matric, 37% were having high school education and 31% were professionals. Concerning respondent living area; 63% were from rural areas and 37% were from urban areas. Out of 330; 54% were married, 31% were unmarried and 15% respond others. 37% of the respondents were working, 31% was retired while 32% was housewife/unemployed regarding employment status. Concerning family income 14% with less than 50000, 54% were with 50000-100000, 32% were with more than 100000. Out of 330, 69% of respondents were currently active treatment while 31% were not getting treatment.

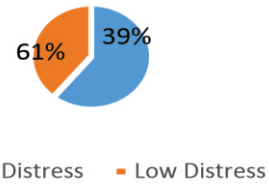

Figure 1: Effects of chemotherapy induced alopecia on distress levels

Association of various demographic factors to effects of chemotherapy induced hair loss on distress levels. A strong association was found out between gender and chemotherapy induced hair loss on distress levels, 53% of women had high distress level as compare to male x2 (df) 2.191(4), p = 0. 031.Cross tabs between family income and chemotherapy induced hair loss on distress levels were significant 56% of respondents having family income less than 50000 had high distress level as compare to high income x2 (df) 20.232(4), p 0.001. A strong association between employment status and chemotherapy induced hair loss on distress levels 36% of respondents who were

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unemployed had high level of distress as compare to others x2(df) 16.477(5), p= 0.041. Chi-square depicted significant association between disease stage of diagnosis and dependent variable 54% of respondents who diagnosed at stage2 had low distress level as compare to respondents who diagnosed at stage3 and stage 4 x2(df) 12.633(3), p = 0.037. There was strong association between number of chemo cycle received and dependent variable 51% of respondents who received 1-2 cycles had low distress level as compare to the respondents who received more chemo cycles x2(df)3.141(6), p = 0.011.

S.NO	Variables	High	Low	X	Df	p-value
1	Gender					
	Male	70(42.2%)	85(54.8%)	2.191	4	0.031*
	Female	100(53.2)	88(46.8%)			
2	Family income					
	≤ 50000	84(56.0%)	74(48.7%)	20.232	4	0.001
	50000-100000	78(51.3%)	66(44.0%)			
	≥ 100000	3(13.6%)	19(86.4%)			
3	Employment status					
	Working	69(62.7%)	41(37.3%)	16.477	5	0.041*
	Retired	59(45.7%)	70(54.3%)			
	Housewife/ unemployed	23(36.5%)	40(63.5%)			
4	Disease stage at diagnosis					
	Stage-2	78(54.2%)	66(45.8%)	12.633	3	0.037*
	Stage-3	30(49.2%)	31(50.8%)			
	Stage-4	15(41.7%)	21(58.3%)			
	Don't know	11(22.9%)	37(77.1%)			
5	Number of chemo cycles received					
	1-2 cycles	31(48.4%)	33(51.6%)	3.141	6	0.011*
	3-4 cycles	83(61.0%)	53(39.0%)			
	5-6 cycles	20(29.0%)	49(71.0%)			
	more than 6 cycles	20(48.8%)	21(51.2%)			
6	Current active treatment					
	Yes	70(42.2%)	85(54.8%)	2.191	1	0.033*
	No	100(53.2)	88(46.8%)			

Table 1: Association of demographic factors to effects of chemotherapy induced hair loss on distress levels

DISCUSSION

Alopecia is a significant body image concern. Hair is a sign of life and identity, and it is used to communicate social status, sex, occupation, and religious beliefs. Chemotherapy-induced alopecia is a condition that can negatively impact a cancer patient's psychological well-being and quality of life, causing anxiety, depression, a poor body image, and low self-esteem [16]. The goal of this study was to determine the level of distress in cancer patients with chemotherapy-induced alopecia. The level of distress and chemotherapy-induced alopecia were assessed using the chemotherapy-induced alopecia distress scale. This study found that the majority of the respondents (61%) had high distress level, which is in line with the study conducted in Turkey reported that 61.4 % [17]. On the other hand, this finding was higher than the study conducted in Europe 50.6% of respondents had high distress level [18]. Gender, financial source for therapy, diagnosis, kind of chemotherapeutic agent, and number of cycles administered were all important variables related with distress, according to the literature review [19]. This study revealed that 56% of respondents having family income less than 50000 had high distress level as compare to high income with p-value of 0.001, similarly 54% of respondents who diagnosed at stage2 had low distress level as compare to respondents who diagnosed at stage3 and stage 4 with p-value of 0.037. Patients who were more worried about their looks and hair were more likely to feel alopecia-related distress than those who were not, and patients with high CIA distress had a two-fold worse body image than those with low CIA distress [20]. Participants in our study had a body image that was around two times poorer than that reported in studies of breast cancer patients in the United States or Europe [21]. As Tiggeman hypothesized, this might be related to distinct cultural, peer, and social variables in Korea. Negative attitudes, stereotypes, and discriminatory behavior regarding cancer and persons afflicted by the disease were too prevalent in Korea, and Korean breast cancer patients may suffer with high CIA distress and a negative body image as a result [22]. In a qualitative research in Korea, cancer patients with CIA felt uneasy in public places and found it difficult to go grocery shopping or running because they were afraid that people would recognize them as cancer patients. In this research, 57% of respondents said they felt uneasy in public places [23].

CONCLUSION

Chemotherapy-induced alopecia distress was linked with all of five domains i.e. physical, emotional, daily activities, relationships and treatment. High distress level was 61% (n=196) while low distress level was 39% (n=127). To reduce the distress caused by alopecia in cancer patients, specific interventions must be developed. Psychosocial support and socially suitable education or initiatives for self-care approaches related to alopecia and lowered body image should also be provided by health professionals.

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