“A COMPARATIVE STUDY TO ASSESS THE STRESS, PREDICTORS OF STRESS AND COPING STRATEGIES AMONG CAREGIVERS OF PATIENTS WITH AUTOLOGOUS AND ALLOGENEIC BMT IN SELECTED ONCOLOGY HOSPITAL, KOLKATA.”

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"A COMPARATIVE STUDY TO ASSESS THE STRESS, PREDICTORS OF STRESS AND COPING STRATEGIES AMONG CAREGIVERS OF PATIENTS WITH AUTOLOGOUS AND ALLOGENEIC BMT IN SELECTED ONCOLOGY HOSPITAL, KOLKATA."

ABSTRACT

A descriptive comparative study was conducted to compare the level of stress, predictors of stress and coping strategies among caregivers of patient with autologous and allogeneic BMT in selected oncology hospital of Kolkata. Aim of the study was to find out and compare the stress, predictors of stress and coping strategies among caregivers. Forty-seven samples were selected from both the BMT groups i.e. Autologous BMT- 10 and Allogeneic BMT - 37 through non- probability- purposive sampling technique from Tata Medical Center, Kolkata. Data were collected by self-reported questionnaire and record analysis using socio-demographic proforma, demographic proforma, PSS-10, predictors of stress and Brief COPE.

Findings of the study showed that majority of the caregivers had moderate stress from both the groups. Also, this study revealed that t-test-0.75 which indicates that there was no significant difference in stress among the caregivers of autologous and allogeneic BMT patients. Further, worrying about financial demands was most frequent predictors of stress. Findings of the study showed that majority of the caregivers have used problem-focused coping strategies in boththe groups.

Results of chi-square test showed that in allogeneic BMT, there was association between coping strategies and socio-demographic variables whereas in autologous BMT, there was no significant association.

The study concludes that there was no significant difference in level of stress of caregivers of patients with autologous and allogeneic BMT. There are several predictors of stress that are found in both autologous and allogeneic BMT for which majority of caregivers have used problem-focused coping strategies.

Keywords: Caregivers of BMT patients, stress, predictors of stress and coping strategies

INTRODUCTION

Bone marrow is a specialised connective tissue found in the medullary canals of long bones and in the small cavities of cancellous bone.

The roots of bone marrow transplantation (BMT) can be traced back to 1949 when Leon Jacobson and his colleagues performed mouse experiments and discovered that mice could recover from lethal irradiation if their spleens were shielded (Appelbaum, 1996). Dr. E. Donnall Thomas was the first person to initiate the treatment for leukaemia by using high-dose of chemotherapy which was followed by syngeneic marrow transplant.[29] In early trials, transplantation using donors other than identical twins proved unsuccessful because of a lack of understanding of human leukocyte antigens (HLAS) and their importance to histocompatibility (Thomas, 1995). During the mid-1960s, there was a successful allogeneic BMT was conducted among dogs by matching the major histocompatibility.

There is an increase rate of using the HSCT in present days. First, it allows for the administration of dose-intensive systemic chemotherapy and radiation that would be lethal without transplantation. In addition, HSCT from an allogeneic donor has an additional antitumor.

HSCT is divided into three categories depend on the source of original cell. There are three different types which include autologous, allogeneic, and syngeneic.

Level of caregiver burden for families and support people of patients undergoing HSCT, family structure and function should be assessed early in the transplantation process. Many transplant centers require a competent adult caregiver to be identified prior to initiation of transplant, especially if most of the care is to occur in the ambulatory setting as in autologous or non-myeloablative transplants. Efforts should include educating families in both the physical and psychosocial elements of this process. Helping families to identify key support people and teaching them to delegate activities to maximize available resources is a key element in managing caregiver burden. Family members should be encouraged to express their fears and concerns regarding the possibility of death of the patient and their expectations and hope for a positive outcome. Patients and families need to be aware that transplant may not be curative. Nurses, social workers, and psychosocial staff should address these issues and acknowledge changing roles within the family and their impact on the HSCT process. Whenever possible, families and support people should be encouraged to participate in groups and use other available support networks.

NEED OF THE STUDY

. In the process of BMT, caregivers are a salient support system to patients with cancer. BMT patients require constant caregiving to be evaluated for BMT, considering the adverse effect that come because of BMT treatment.

The aim of the study is determine the stress, predictors of stress and the coping strategies among the caregivers of autologous and allogeneic BMT patients.

Caregivers are the bone of the patients during and after BMT procedure as they are the primary caretakers of the patients, but BMT causes a lot of anxiety and stress among the patients and their caregivers. Identifying the level of stress, their predictors and coping strategies will help to set up goals in future to reduce stress among caregivers of BMT patients to minimum level.

OBJECTIVES

The objectives of the study are to

1. Assess the level of stress among caregivers of BMT patients.
2. Assess the predictors of stress among caregivers of BMT patients.
3. Assess the coping strategies among caregivers of BMT patients.
4. Compare the level of stress in caregivers of Autologous BMT patients and Allogeneic BMT patients.
5. Find out the association between coping strategies and socio-demographic variables among caregivers of BMT patients.

DELIMITATION:

This study is delimited only to caregivers of Bone marrow transplant patients.

- Whose patient had gone through BMT within 12months
- Whose patient is above 17years

RESEARCH METHODOLOGY

This study is being conducted in view of accomplishing the objectives to assess the level of stress, predictors of stress and coping strategies among caregivers of autologous and allogeneic BMT patients in selected oncology hospital, Kolkata. A 'Quantitative research approach' was adopted for conducting the study. "Descriptive-comparative research design" is the research design used for the present study. The study was conducted in Bone Marrow Transplant Out-Patient Department (OPD) of Tata Medical Center, Kolkata. The target population selected for this study included all family caregivers of autologous and allogeneic BMT patients above 17years old. "Patient's primary caregivers of autologous and allogeneic BMT patients above 17years old" are the sample of the study. A non-probability purposive sampling technique is used. Each sample was judged critically against the inclusion criteria and those which had fulfilled the desired criteria are selected as a study sample.

- **CRITERIA FOR SAMPLE SELECTION**

Inclusion criteria

- Caregivers of patients undergone Autologous and Allogeneic BMT within 12months.
- Caregivers of BMT patients whose patients are above 17years old.
- Caregivers who are able to understand and follow command.
- Caregivers, who can read, write and speak - Hindi, English and Bengali.

Exclusion criteria

- Caregivers who are not willing to participate.
- Caregivers who are not patient's relative/primary caregivers.

SAMPLE SIZE

In the present study, sample size taken for the main study were 47 where 10 participants were caregivers of patients with autologous BMT and 37 participants were caregivers of allogeneic B MT, sample size for pilot study was 10 and reliability was 10.

SELECTION AND DEVELOPMENT OF TOOL

- Tool III (Perceived Stress Scale), Tool IV (Predictors of stress) and Tool V (Coping Orientation to Problems Experienced) were developed after extensive review of different literature on relevant topics of stress, predictors of stress and coping strategies of caregivers of BMT patients.
- One small survey was done to identify the different physical, psychological and psychosocial problems faced by caregivers of BMT patients.
- First draft of the tool was prepared and tried out in actual setting to check out the clarity of items and modification was done.
- Content validity was done by experts and modifications were made as per suggestions.
- Second draft was modified and prepared as per expert's opinion and suggestion
- Reliability of the tool was done.

DATA COLLECTION TOOL AND TECHNIQUE

Semi Structured questionnaire on socio-demographic characteristics of caregivers of autologous and allogeneic BMT patients (TOOL I).

The tool was constructed to collect the background information of the caregivers of BMT patients and the items were selected based on some of the important characteristics of the subjects.

Semi-structured questionnaire was used to collect the background information of the caregivers of BMT patients which included 9 items such as age, gender, Relation to patient, marital status, children, occupation, number of family members, educational-qualification, and monthly family income.

Semi Structured questionnaire on demographic characteristics of patients collected from medical records (TOOL II)

The tool was constructed to collect the background information of the BMT patients and the items were selected based on some of the important characteristics of the subjects.

Semi-structured questionnaire was used to collect the background information of the BMT patients which included 7 items such as disease, post BMT day, type of BMT done for patient, number of follow up visit, day of admission, any complication and duration of hospitalisation for transplant.

Perceived Stress Scale (TOOL III)

A standardized tool was used to assess the stress level of caregivers of autologous and allogeneic BMT patient.

The tool consists of 10questions with a lowest score of 0 and highest score of 40 on five-point likert scale ranging from never, almost never, sometimes, fairly often and very often.

There is 5-point scale which has range from never (0) to Always (4). The positive items or questions have been reverse scored and the marks are summed up. The results from the scale interpret that higher the score, more is the perceived scale.

PSS-10scores are obtained by reversing the scores on the four positive items: for example, 0=4, 1=3, 2=2, 3=1, 4=0 and then summing across all 10items. Item numbers like 4, 5, 7 and 8 are presented in a positive statement.

A Structured questionnaire to assess the predictors of stress among caregivers of BMT patients (TOOL IV)

A structured self-reported questionnaire was developed to assess the predictors of stress among the caregivers of autologous and allogeneic BMT patients.

The tool consists of 13 questions measured by 5 points likert scale with the lowest score of 0 and highest score of 4 in each item. The tool is divided into four domains- physical, personal, social-relation and emotional demands. This tool was used to elicit to the responses from the respondents ranging from Never (0), Rarely (1), Sometimes (2), Often (3) and Always (4).

Coping orientation to problems Experienced (TOOL V)

A standardized tool was used to assess the coping strategies among caregivers of autologous and allogeneic BMT patient.

The tool consist of 28questions with a lowest score of 28 and highest score of 112 on five point likert scale ranging from 1 represents 'I have not been doing this at all', 2 represents 'A little bit', 3 represents 'A medium amount' and 4 represents ' I have been doing this a lot'. The tool is divided into three components- Problem-Focused Coping, Emotion-Focused Coping and Avoidant Coping.

The three domains used in the scale; they are:

1. The 'Problem-Focused Coping' consist of Item number:- 2, 7, 10, 12, 14, 17, 23, 25

It is identified by the use of informational support, proper planning, positive reframing of problems and active coping. High scores are indicative of

psychological strength, grit, a practical approach to problem solving and are predictive of positive outcomes.

2. The 'Emotion-Focused Coping' consist of Item number :- 5, 9, 13, 15, 18, 20, 21, 22, 24, 26, 27, 28

It is described by the use of emotional support, acceptance, humor, self-blame, religion and venting. A person with high score represents a better emotional coping with the stressful situation. High or low scores do not interpret their psychological illness but it provides information regarding their way of dealing with the situations.

3. The 'Avoidant Coping' consist of Item number:- 1, 3, 4, 6, 8, 11, 16, 19

It is identified by any substance abuse, self-distraction, denial and behavioral disengagement. A high score represents the person's cognitive efforts to get disengage from the stressor. While low scores under this domain typically indicate of adaptive coping.

In addition to the three overarching subscales, scores can also be presented through 14 facets.

- Active coping, items 2 & 7 (Problem-Focused)
- Use of informational support, items 10 & 23 (Problem-Focussed)
- Positive reframing, items 12 & 17 (Problem-Focused)
- Planning, items 14 & 25 (Problem-Focused)
- Emotional support, items 5 & 15 (Emotion-Focused)
- Venting, items 9 & 21 (Emotion-Focused)
- Humor, items 18 & 28 (Emotion-Focused)

- Acceptance, items 20 & 24 (Emotion-Focused)
- Religion, items 22 & 27 (Emotion-Focused)
- Self-blame, items 13 & 26

VALIDITY OF TOOLS

The prepared tools were given to seven experts to ensure content validity of the tool. The experts were from the field of Psychiatric nursing, Medical fields of Psycho-oncology and Bone marrow transplant department. The experts were chosen on the basis of their experiences, clinical expertise and interest in the area. They are requested to give their opinions and suggestions regarding the appropriateness, accuracy and relevance of items.

Socio-Demographic characteristics of caregivers of autologous and allogeneic BMT patients (TOOL I) – had 86% agreement by the validators on item number 4. SCVI of the tool was 0.98.

Demographic characteristics of BMT patients (TOOL II)- had 100% agreement by the validators. SCVI of the tool was 1.

Structured questionnaire on predictors of stress among caregivers of autologous and allogeneic patients (Tool IV)- had 71% agreement on item number 3, 86% agreement on item number 4,5,6,8 and 12 and 57% on item number 7. SCVI of the tool was 0.88.

PRE-TESTING OF TOOLS:

Pre-testing of the tool was done to check the clarity of the items and feasibility and practicability of the tool. The tool was administered to 3 caregivers of

autologous and allogeneic BMT patients in BMT OPD of Tata Medical Center, Kolkata from 7th November to 9th November, 2023.

RELIABILITY

According to Polit and Beck (2017) Reliability refers to the accuracy and consistency of information obtained in a study.

Reliability of the tools were tested on caregivers of autologous and allogeneic BMT patients in BMT OPD of Tata Medical Center , Kolkata from 10th November to 16th November, 2023.

- Standardized questionnaires on Perceived Stress Scale (TOOL III) were calculated using Test-Retest method through Spearman correlation coefficient formula and the value was 0.86. The value indicates acceptable reliability of the tool.
- Structured questionnaires on Predictors of stress (TOOL IV) were calculated using Test-Retest method through Spearman correlation coefficient formula and the value was 0.88. The value indicates acceptable reliability of the tool.
- Standardized questionnaires on Coping Orientation to Problems Experienced (TOOL V) were calculated using Split-Half method through Spearman correlation coefficient formula and the value was 0.94. The value indicates acceptable reliability of the tool.

PILOT STUDY

- The pilot study was conducted from 20th November to 25th November, 2023 at Tata Medical Center, Kolkata after obtaining permission from the concerned departments.

- Ten samples were selected using non-proportionate- purposive sampling technique among caregivers of BMT patients who meet the inclusion criteria.
- Self-introduction was given to the caregivers and rapport was established while explaining the purpose of study to them. They were addressed the terms of confidentiality.
- Prior to the study informed written consent was taken, the samples were enquired regarding the necessary socio-demographic and demographic factors followed by Standardised and structured questionnaires on perceived stress scale, predictors of stress and coping strategies.
- The data collection was done within average time interval of 20-30minutes.
- Collected data were tabulated, analysed and statistically calculated. The tool was found to be effective and feasible to conduct the final study.

4. ETHICAL CONSIDERATION:

- The proposal was ethically approved by members of the board of studies of the West Bengal University of Health Sciences on date 31st July 2023.
- The proposal was ethically approved by the Institution Review board of Tata Medical Center , Kolkata on 15th May 2023.
- Departmental ethical approval has been taken from Head of the Department (BMT unit) on 21st March 2023.
- Informed written consent was obtained from each caregiver (participant) who meets the inclusion criteria.

Table 1: Distribution of Caregivers of Autologous and Allogeneic BMT patient according to their socio-demographic characteristic:

n (47) = n1 + n2 (10+37)

Socio-demographic Variables	Caregiver of Autologous BMT (n= 10)		Caregivers of Allogeneic BMT (n=37)	
	Frequency	Percentage	Frequency	Percentage
Age (in years)				
20-40	**6**	**60%**	**24**	**65%**
41-60	3	30%	10	27%
61-80	1	10%	3	8%
Gender				
Male	**7**	**70%**	18	49%
Female	3	30%	**19**	**51%**
Relation				
Parent	3	30%	12	32.43%
Partner	1	10%	6	16.22%
Other	**6**	**60%**	**19**	**51.35%**
Marital status				
Married	**5**	**50%**	**25**	**67.57%**
Unmarried	**5**	**50%**	12	32.43%
Children				
Yes	4	40%	**23**	**62.16%**
No	**6**	**60%**	14	37.84%
Socio-economic status (as per Kuppuswamy Scale)				
Upper Class	0	0%	0	0%
Upper Middle	**7**	**70%**	11	29.73%
Lower Middle	3	30%	9	24.32%
Upper Lower	0	0%	**17**	**45.95%**
Lower	0	0%	0	0%

Table 2: Distribution of Autologous and Allogeneic BMT patient according to their demographic characteristics

n (47) = n1 + n2 (10+37)

Demographic Variables	Autologous BMT patient (n= 10)		Allogeneic BMT patient(n=37)	
	Frequency	Percentage	Frequency	Percentage
Disease				
Malignant	**10**	**100%**	**29**	**78%**
Non-malignant	0	0%	8	22%
Type of BMT				
Allogeneic	0	0%	**37**	**100%**
Autologous	**10**	**100%**	0	0%
Post BMT day				
0-110	**8**	**80%**	**15**	**40.54%**
111-220	0	0%	7	18.92%
221-330	2	20%	**15**	**40.54%**
Number of follow up visit				
1-7	**8**	**80%**	**14**	**37.84%**
8-15	1	10%	11	29.73%
16-22	1	10%	12	32.43%
Any complication				
Yes	**8**	**80%**	**36**	**97.30%**
No	2	20%	1	2.70%
Duration of hospitalisation (BMT unit)				
0-10	1	10%	5	13.51%
11-20	**6**	**60%**	3	8.11%
21-30	3	30%	**18**	**48.65%**
31-40	0	0%	11	29.73%

n (47) = n1 + n2 (10+37)

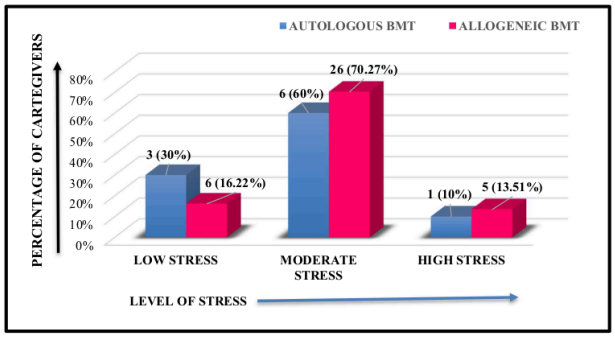

Fig 1: Bar graphical representation on distribution of Perceived Stress Scale among Caregivers of BMT patients

Table 3: Mean, Median and standard deviation of level of stress among Caregivers of Autologous and Allogeneic BMT patients

n (47) = n1 + n2 (10+37)

CAREGIVERS OF BMT PATIENTS	LEVEL OF STRESS → MEAN	MEDIAN	STANDARD DEVIATION
AUTOLOGOUS BMT	17.9	20.5	7.32
ALLOGENEIC BMT	19.78	20	5.714

n (47) = n1 + n2 (10+37)

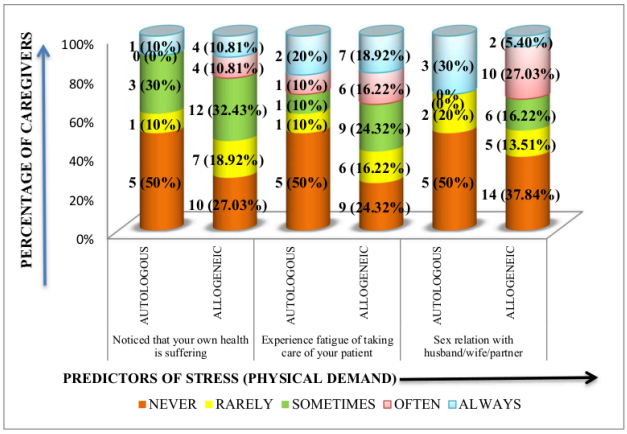

Fig 2: Cylindrical graphical representation on distribution of Predictors of stress (Physical demand) among Caregivers of BMT patients

n (47) = n1 + n2 (10+37)

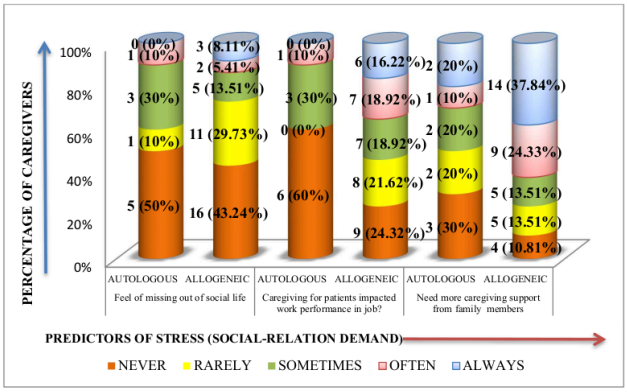

Fig 3: Cylindrical graphical representation on distribution of Predictors of stress (Social-relation demand) among Caregivers of BMT patients

n (47) = n1 + n2 (10+37)

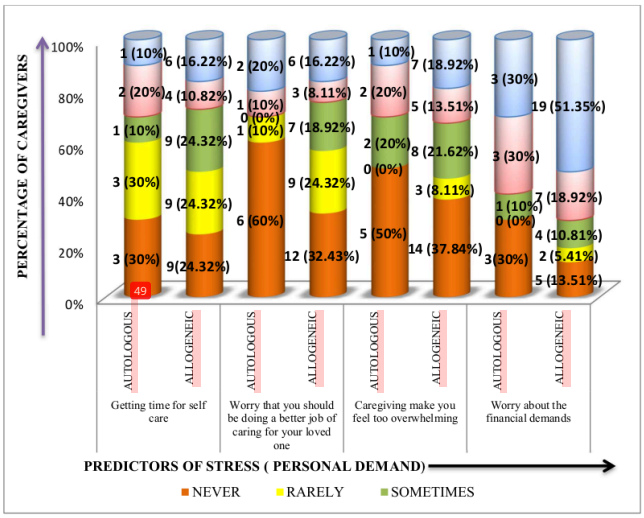

Fig 4: Cylindrical graphical representation on distribution of Predictors of stress (Personal demand) among Caregivers of BMT patients

n (47) = n1 + n2 (10+37)

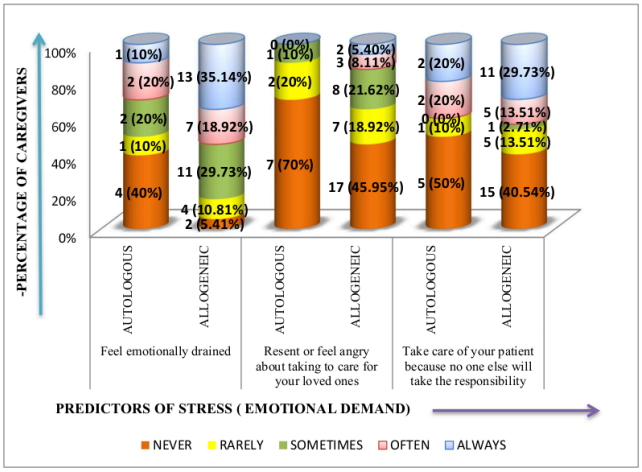

Fig 5: Cylindrical graphical representation on distribution of Predictors of stress (Emotional demand) among Caregivers of BMT patients

Table 4: Mean, Median and Standard deviation of Predictors of stress among Caregivers of Autologous and Allogeneic BMT patients

n (47) = n1 + n2 (10+37)

CAREGIVERS OF BMT PATIENTS ↓	TOOL IV- PREDICTORS OF STRESS → MEAN	MEDIAN	STANDARD DEVIATION
AUTOLOGOUS BMT	16.8	13.5	10.42
ALLOGENEIC BMT	23.86	24	9.16

Table 5: Frequency and percentage distribution of Coping strategies among Caregivers of Autologous and Allogeneic BMT patients

n (47) = n1 + n2 (10+37)

COPE (PROBLEM-FOCUSED COPING)	AUTOLOGOUS BMT (n1=10)				ALLOGENEIC BMT (n2=37)			
	FREQUENCY PERCENTAGE (I HAVE NOT BEEN DOING THIS AT ALL)	FREQUENCY PERCENTAGE (A LITTLE BIT)	FREQUENCY PERCENTAGE (A MEDIUM AMOUNT)	FREQUENCY PERCENTAGE (I HAVE BEEN DOING THIS A LOT)	FREQUENCY PERCENTAGE (I HAVE NOT BEEN DOING THIS AT ALL)	FREQUENCY PERCENTAGE (A LITTLE BIT)	FREQUENCY PERCENTAGE (A MEDIUM AMOUNT)	FREQUENCY PERCENTAGE (I HAVE BEEN DOING THIS A LOT)
I have been concentrating my efforts on doing something about the situation I am in.	2 (20%)	1 (10%)	2 (20%)	5 (50%)	3 (8.11%)	4 (10.81%)	7 (18.92%)	**23 (62.16%)**
I have been taking action to try to make the situation better.	0 (0%)	1 (10%)	2 (20%)	7 (70%)	1 (2.70%)	3 (8.11%)	9 (24.32%)	**24 (64.87%)**
I have been getting help and advice from other people.	1 (10%)	3 (30%)	1 (10%)	**5 (50%)**	5(13.51%)	6 (16.22%)	11 (29.73%)	**15 (40.54%)**
I have been trying to see it in a different light, to make it seem more positive.	2 (20%)	2 (20%)	2(20%)	**4 (40%)**	1 (2.71%)	5 (13.51%)	16 (43.24%)	15 (40.54%)
I have been trying to come up with a strategy about what to do.	1 (10%)	1(10%)	4 (40%)	**4 (40%)**	3 (8.10%)	6 (16.22%)	17 (45.95%)	11 (29.73%)
I have been looking for something good in what is happening.	0 (0%)	0 (0%)	5 (50%)	**5 (50%)**	1 (2.70%)	0 (0%)	22 (59.46%)	14 (37.84%)
I have been trying to get advice or help from other people about what to do	0 (0%)	3 (30%)	5 (50%)	2 (20%)	5(13.51%)	5 (13.51%)	14 (37.84%)	13 (35.14%)
I have been thinking hard about what steps to take	1 (10%)	1 (10%)	3 (30%)	**5 (50%)**	4(10.81%)	4 (10.81%)	14 (37.84%)	**15 (40.54%)**

Table 6: Frequency and percentage distribution of Coping strategies among Caregivers of Autologous and Allogeneic BMT patients

n (47) = n1 + n2 (10+37)

COPE (EMOTION- FOCUSED COPING)	AUTOLOGOUS BMT (n1 = 10)				ALLOGENEIC BMT (n2 = 37)			
	FREQUENCY PERCENTAGE (I HAVE NOT BEEN DOING THIS AT ALL)	FREQUENCY PERCENTAGE (A LITTLE BIT)	FREQUENCY PERCENTAGE (A MEDIUM AMOUNT)	FREQUENCY PERCENTAGE (I HAVE BEEN DOING THIS A LOT)	FREQUENCY PERCENTAGE (I HAVE NOT BEEN DOING THIS AT ALL)	FREQUENCY PERCENTAGE (A LITTLE BIT)	FREQUENCY PERCENTAGE (A MEDIUM AMOUNT)	FREQUENCY PERCENTAGE (I HAVE BEEN DOING THIS A LOT)
I have been getting emotional support from others	3 (30%)	3 (30%)	1 (10%)	**3 (30%)**	2 (5.41%)	8 (21.62%)	12 (32.43%)	**15 (40.54%)**
I have been saying things to let my unpleasant feelings escape.	7 (70%)	1 (10%)	1 (10%)	1 (10%)	15 (40.55%)	9 (24.32%)	9 (24.32%)	4 (10.81%)
I have been criticizing myself	7 (70%)	1 (10%)	1 (10%)	1 (10%)	21 (56.76%)	6 (16.22%)	5 (13.51%)	5 (13.51%)
I have been getting comfort and understanding from someone.	1 (10%)	3 (30%)	1 (10%)	**5 (50%)**	6 (16.22%)	5 (13.51%)	15 (40.54%)	11 (29.73%)
I have been making jokes about it.	9 (90%)	0 (0%)	0 (0%)	1 (10%)	33 (89.18%)	2 (5.41%)	2 (5.41%)	0 (0%)
I have been accepting the reality of the fact that it has happened.	0 (0%)	0 (0%)	3 (30%)	**7 (70%)**	3 (8.11%)	7 (18.92%)	9 (24.32%)	**18 (48.65%)**
I have been expressing my negative feelings.	8 (80%)	1 (10%)	0 (0%)	1 (10%)	15 (40.54%)	2 (5.41%)	13 (35.14%)	7 (18.91%)
I have been trying to find comfort in my religion or spiritual beliefs.	1 (10%)	1 (10%)	1 (10%)	**7 (70%)**	1 (2.70%)	7 (18.92%)	7 (18.92%)	**22 (59.46%)**
I have been learning to live with it.	2 (20%)	0 (0%)	4 (40%)	**4 (40%)**	1 (2.70%)	2 (5.41%)	22 (59.46%)	12 (32.43%)
I have been blaming myself for things that happened.	7 (70%)	2 (20%)	1 (10%)	0 (0%)	25 (67.57%)	3 (8.11%)	7 (18.92%)	2 (5.4%)
I have been praying or meditating.	1 (10%)	1 (10%)	2 (20%)	**6 (60%)**	1 (2.71%)	4 (10.81%)	12 (32.43%)	**20 (54.05%)**
I have been making fun of the situation.	8 (80%)	0 (0%)	1 (10%)	1 (10%)	34 (91.89%)	0 (0%)	3 (8.11%)	0 (0%)

Table 6: Frequency and percentage distribution of Coping strategies (Avoidant Coping) among caregivers of autologous and allogeneic BMT patients

n (47) = n1 + n2 (10+37)

	AUTOLOGOUS BMT (n1=10)				ALLOGENEIC BMT (n2 = 37)			
COPE (AVOIDANT COPING) CAREGIVERS OF AUTOLOGOUS BMT PATIENTS)	FREQUENCY PERCENTAGE (I HAVE NOT BEEN DOING THIS AT ALL)	FREQUENCY PERCENTAGE (A LITTLE BIT)	FREQUENCY PERCENTAGE (A MEDIUM AMOUNT)	FREQUENCY PERCENTAGE (I HAVE BEEN DOING THIS A LOT)	FREQUENCY PERCENTAGE (I HAVE NOT BEEN DOING THIS AT ALL)	FREQUENCY PERCENTAGE (A LITTLE BIT)	FREQUENCY PERCENTAGE (A MEDIUM AMOUNT)	FREQUENCY PERCENTAGE (I HAVE BEEN DOING THIS A LOT)
I have been turning to work or other activities to take my mind off things.	3 (30%)	4 (40%)	1 (10%)	2 (20%)	9 (24.32%)	15 (40.54%)	7 (18.92%)	6 (16.22%)
I have been saying to myself " This is not real"	9 (90%)	1 (10%)	0 (0%)	0 (0%)	13 (35.14%)	11 (29.73%)	10 (27.03%)	3 (8.10%)
I have been using alcohol or other addiction to make myself better	9 (90%)	0 (0%)	1 (10%)	0 (0%)	26 (70.27%)	2 (5.41%)	4 (10.81%)	5 (13.51%)
I have been giving up trying to deal with it.	7 (70%)	1 (10%)	0(0%)	2 (20%)	20 (54.05%)	6 (16.22%)	7 (18.92%)	4 (10.81%)
I have been refusing to believe that it has happened.	5 (50%)	3 (30%)	1 (10%)	1(10%)	19 (51.35%)	10 (27.03%)	5 (13.51%)	3 (8.11%)
I have been using alcohol or other drugs to help me get through it.	9 (90%)	0 (0%)	1 (10%)	0 (0%)	26 (70.27%)	4 (10.81%)	3 (8.11%)	4 (10.81%)
I have been giving up the attempt to cope	8 (80%)	0 (0%)	2 (20%)	0 (0%)	18 (48.65%)	6 (16.22%)	7 (18.91%)	6 (16.22%)
I have been doing something to think about it less. Such as going to movies, watching TV, reading, daydreaming, sleeping or shopping	4 (40%)	3 (30%)	1 (10%)	2 (20%)	20 (54.05%)	11 (29.73%)	5 (13.52%)	1 (2.70%)

Table 7: Mean, Median and Standard deviation of Coping Strategies among Caregivers of Autologous and Allogeneic BMT patients

n (47) = n1 + n2 (10+37)

↓ TOOL V- COPE	COPING STRATEGIES →		
	MEAN	MEDIAN	STANDARD DEVIATION
AUTOLOGOUS BMT	65.4	66.5	8.84
ALLOGENEIC BMT	69.40	71	9.31

Table 8: Mean, Standard Deviation, Standard Error and "T" Test on level of stress between Caregivers of Autologous and Allogeneic BMT Patients

n (47) = n1 + n2 (10+37)

	LEVEL OF STRESS			
TYPE OF BMT	**MEAN**	**STANDARD DEVIATION**	**STANDARD ERROR**	**UNPAIRED "t" test**
AUTOLOGOUS	17.9	7.72	2.220	0.848
ALLOGENEIC	19.78	5.79		

df(45)=2.02; 0<0.05

HYPOTHESIS

H_{01}: There will be no statistically significant association between socio-demographical variable with coping strategies of caregivers of autologous BMT patients at 0.05 level of significance.

H_{02}: There will be no statistically significant association between demographical variable with coping strategies of caregivers of autologous BMT patients at 0.05 level of significance.

H_{03}: There will be no statistically significant association between socio-demographical variable with coping strategies of caregivers of allogeneic BMT patients at 0.05 level of significance.

H_{04}: There will be no statistically significant association between socio-demographical variable with coping strategies of caregivers of allogeneic BMT patients at 0.05 level of significance.

Table 9: Association between Socio-Demographic Characteristics with Coping Strategies of Caregivers of Autologous Patient

n1 = 10

SOCIO-DEMOGRAPHIC VARIABLES	BELOW MEDIAN (66.5)	ABOVE MEDIAN (66.5)	CHI SQUARE	SIGNIFICANCE DF = 1 (3.84)
Age(in years)				
<41.3	3	3	0	Not Significant
>41.3	2	2		
Gender				
Male	4	3	0.48	Not Significant
Female	1	2		
Relation				
Partner	1	0	1.60	Not Significant
Other	4	5		
Marital status				
Married	2	3	0.40	Not Significant
Unmarried	3	2		
Children				
Yes	2	2	0	Not Significant
No	3	3		
Socio-economic status (as per Kuppuswamy Scale)				
Upper class	3	4	0.48	Not Significant
Lower class	2	1		

Chi square value (λ.2) at df(1) = 3.84 ; p<0.05

Table 10: Association between Socio-Demographic Characteristics with Coping Strategies of Caregivers of Allogeneous Patient

n2 = 37

SOCIO-DEMOGRAPHIC VARIABLES	BELOW MEDIAN (71)	ABOVE MEDIAN (71)	CHI SQUARE VALUE	SIGNIFICANCE DF = 1 (3.84)
Age(in years)				
<38	13	9	0.434	Not Significant
>38	7	8		
Gender				
Male	15	6	5.90	**Significant**
Female	5	11		
Relation				
Partner	4	2	0.46	Not Significant
Other	16	15		
Marital status				
Married	10	15	6.11	**Significant**
Unmarried	10	2		
Children				
Yes	8	15	9.08	**Significant**
No	12	2		
Socio-economic status (as per Kuppuswamy Scale)				
Upper class	8	3	8.09	**Significant**
Lower class	6	20		

Chi square value (λ2) at df(1) = 3.84 ; p<0.05

MAJOR FINDINGS OF THE STUDY:

SECTION I:

This section describes the findings related to quality of life among post Bone Marrow Transplantation patients socio-demographic characteristics according to age, gender, relation to patient, children, educational-qualification, marital status, occupation, number of family members, monthly family income. The record analysis includes disease, type of BMT done for patient, post BMT day, number of follow up visit, any complication, duration of hospitalisation for transplant. The findings are distributed in frequency and percentage.

Demographic Description:

- Majority 6(60%) of the caregivers of autologous BMT belonged to the age group between 20-40 years and 24(65%) of caregivers of allogeneic BMT belonged to the age group between 20-40 years.
- Majority 7(70%) of the caregivers were male from autologous BMT whereas 19(51%) of caregivers of allogeneic BMT were Female.
- Majority 6(60%) of the caregivers in autologous BMT and in allogeneic BMT, 19(51.35%) of the caregivers were siblings/children/others.
- In autologous BMT, majority 5(100%) of the caregivers were married and 5(50%) of the caregivers were unmarried whereas in allogeneic BMT 25(67.57%) of caregivers were married.
- Majority 6 (60%) of caregivers have children in autologous BMT and 23(62.16%) of caregivers have children in allogeneic BMT.

- As per Kuppuswamy scale, in case of autologous BMT, 7 (70%) of caregivers comes under Upper middle class status of socio-economic status whereas in allogeneic BMT, 17(45.95%) of caregivers comes under upper lower class.

From record analysis:

- In autologous BMT group, majority 10 (100%) of the patients have malignant disease and in allogeneic, 29(78%) of patients have malignant disease.
- There were 10(100%) of autologous patients and 37 (100%) of allogeneic patients.
- In autologous BMT, majority 8(80%) of the patient had post-BMT day between 0-110days and in allogeneic BMT, 15(40.54%) of patients had post-BMT day between 0-110 and 15 (40.54%) of patients have post-BMT day in between 221-330.
- In autologous BMT, majority 8(80%) of the patients had number of visit between 1-7times and in allogeneic BMT, 14(37.84%) of patients had number of visit between 1-7 times.
- In autologous BMT, majority 8(80%) of the patient had complication and in allogeneic BMT, 36 (97.30%) of patients had complications.
- In autologous BMT, majority 6(60%) of the patient had duration of hospitalisation in between 11-20days and in allogeneic BMT, 18 (48.65%) of patients had duration of hospitalisation in between 21-30days

SECTION II:

This section describes the findings related to level of stress among caregivers of BMT patients in terms of frequency and percentage. Level of stress was assessed through a standardized tool which consists of 10 items on five-point likert scale with a low stress of (1-13), medium stress (14-27) and high stresses (28-40). It was used to elicit the

responses from the respondents ranging from 'Never', 'Almost never', 'Sometimes', 'fairly often' and 'Very Often' in ascending order of 0,1,2,3,4.

The level of stress is more if the score is high.

Level of stress:

Majority 6 (60%) of the caregivers had moderate score in autologous BMT whereas majority 26 (70.27%) of the caregivers of allogeneic BMT had moderate score which indicates moderate level of stress among both the groups of BMT.

SECTION III:

This section describes the findings related to predictors of stress among caregivers of BMT patients in terms of frequency and percentage. Predictors of stress were assessed through a structured questionnaire which contains four domains-Physical demand, Social-relation demand, personal demand and emotional demand. The tool consists of 3 questions in Physical demand, social-relation demand and emotional demand whereas in personal demand there are 4 questions with 5-point likert scale which range from 'Never', 'Rarely', 'Sometimes', 'Often' and 'Always' in ascending order of 0,1,2,3,4.

Predictors of stress:

Majority 3 (30%) of caregivers of autologous BMT in the predictor of stress was "Worrying about financial demands" while the majority in the predictor of stress among caregivers of allogeneic BMT was "Worrying about financial demands" 19(51.35%), "Need more caregiving support from others" 14(37.84%) and "Feel more emotionally drained" 13(35.14%).

SECTION IV:

This section describes the statistical information about the Coping strategies of caregivers of autologous and allogeneic BMT patients. Coping strategies among caregivers of BMT patients was categorized into three sub-scale, they are- Problem-Focussed coping, Emotion-Focused coping and Avoidant Coping. The Coping assessment tool consist of 28 questions for under three sub-scale with 4-point likert scale which range from 'I have not been doing this at all', ' A little bit', 'A medium amount', ' I have been doing this a lot' in ascending order of 1,2,3,4. **The higher the score, the better the coping strategy.**

Coping strategies

Majority of the caregivers of autologous BMT patients used coping strategies were as follows - 'getting help and advice from other people'5 (50%), 'trying to see it in a different light, to make it seem more positive' 4 (40%), 'trying to come up with a strategy about what to do' 4 (40%), ' looking for something good in what is happening' 5 (50%), ' thinking hard about what steps to take' 5 (50%), while in case of allogeneic BMT patients, majority of the caregivers used concentrating efforts on doing something about the situation' 23 (62.16%), 'taking action to try to make the situation better'24 (64.87%), 'getting help and advice from other people'15 (40.54%), 'thinking hard about what steps to take' 15 (40.54%).

Majority of the caregivers of autologous BMT in emotion-focused coping strategies used 'getting emotional support from others' 3 (30%), 'getting comfort and understanding from someone' 5 (50%), accepting the reality of the fact that it has happened' 7 (70%), 'learning to live with it' 4 (40%), 'praying or meditating.'6 (60%). While in allogeneic BMT, majority of caregivers in emotion-focused coping strategies used 'getting

emotional support from others' 15 (40.54%), 'accepting the reality of the fact that it has happened' 18 (48.65%), 'trying to find comfort in my religion or spiritual beliefs' 22 (59.46%), 'been praying or meditating' 20 (54.05%).

SECTION V:

This section describes with the statistical information about comparison between the level of stress among caregivers of autologous and allogeneic BMT patients. Inferential statistics Unpaired 't-test' was used to test the significance of difference.

- There was no statistically significant difference in between stress level among caregivers of autologous and allogeneic BMT patients at 0.05 level of significance

SECTION VI

This section describes the findings related to association between selected socio-demographic variables with coping strategies among caregivers of autologous and allogeneic BMT patients.

There was a significant association between the coping strategies and socio-demographical like gender, marital status, children and socio-economic status of caregivers of allogeneic BMT patients at 0.05 level of significance.

DISCUSSION OF THE FINDINGS RELATED TO OTHER STUDY:

In this chapter, the data analysed in the previous chapter are discussed in relation to similar studies conducted by other researchers. The major findings of the study have

been discussed with reference to the objectives and hypothesis stated with findings of other studies.

The researcher has noted that more than half 6 (60%) of caregivers had moderate stress, 3(30%) caregivers had low stress and 1 (10%) had high stress among caregivers of autologous BMT patient. Similarly, in allogeneic BMT, 26 (70.27%) of caregivers had moderate stress, 6 (16.21%) had low stress and 5 (13.51%) had high stress.

The researcher has identified that the most frequent predictor of stress among caregivers of autologous BMT was "Worrying about financial demands" 3 (30%) of caregivers and in the allogeneic BMT, the most frequent predictor of stress was "Worrying about financial demands" 19(51.35%), "Need more caregiving support from others" 14(37.84%) and "Feel more emotionally drained" 13(35.14%).

This study has identified that the most frequent coping strategies used among caregivers of autologous BMT patients in the Problem-focused coping strategies was 'getting help and advice from other people'5 (50%), ' looking for something good in what is happening' 5 (50%), ' thinking hard about what steps to take' 5 (50%), while in case of allogeneic BMT patients, majority of the caregivers used 'concentrating efforts on doing something about the situation' 23 (62.16%), 'taking action to try to make the situation better'24 (64.86%). In the emotion-focused coping strategies, most of the caregivers of autologous BMT had used 'accepting the reality of the fact that it has happened' 7 (70%) and in allogeneic BMT, majority of caregivers had used 'trying to find comfort in my religion or spiritual beliefs' 22 (59.46%).

The present study aimed to compare the level of stress among caregivers of autologous and allogeneic BMT patients. The result of this study revealed that there is no significant difference in the level of stress among the caregivers of autologous and allogeneic BMT

patients as the calculated unpaired 't'-test value was found to be 0.75, which was lesser than the tabulated value that is 2.31, at p=0.05 level of significance.

The present study found that there was a significant association between coping strategies and socio-demographical variables such as gender, marital status , children and socio-economic status of caregivers of allogeneic BMT patients whereas there was no significant association between coping strategies and socio-demographical variables of caregivers of autologous BMT patients.

CONCLUSION

Based on the following findings the study was concluded:

- Caregivers of both -autologous and allogeneic BMT patients had moderate stress.
- The predictors of stress that causes stress among caregivers of autologous and allogeneic BMT patients were Worrying about financial demands, Need more caregiving support from others and Feel more emotionally drained.
- The coping strategies used by caregivers of both autologous and allogeneic BMT patients were problem-focused coping.
- There was no significant difference between the level of stress among caregivers of autologous and allogeneic BMT patients.
- Significant association was found between the coping strategies of caregivers and socio-demographical like gender, marital status, children and socio-economic status of caregivers of allogeneic BMT patients at 0.05 level of significance whereas there was no association in caregivers of autologous BMT patients.

LIMITATIONS

The following limitations were recognized in the study.

- The study was limited to a specific place of Kolkata, Tata Medical Center OPD BMT unit.
- The study was confined to a small number of populations (47) in a selected unit where all caregivers were not included. Study sample cannot be broadly generalised.
- Data collection was done by structured questionnaire hence data collection was not in depth.
- The data collection period was short.

RECOMMENDATIONS:

Considering the findings of the present study, the following recommendations were made:-

- A relatable study can be conducted in different setting.
- An in-depth qualitative study can be done.
- A correlational study can be conducted between caregivers of adult and paediatric BMT patients.

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