AN EXPERIMENTAL IMPACT ANALYSIS OF BHAGAVAD GITA IN MENTAL STATE OF CANCER PATIENTS

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Abstract. Morbidity with cancer is stressful and cancer patients frequently present with depression, anxiety and stress related disorders. Psychotherapy is reported to decrease emotional distress, improve immunity and to reduce the chemotherapy doses. The Gita, a Hindu epic depicts one of the earliest documented sessions of Cognitive behavior therapy. Objectives of this study were: a. to assess the stress and 'psychiatric caseness', b. to explore the effect of the Gita based psychotherapy on the mental state (GHQ) and c. to assess the effect of Bhajan/ Kirtan (religious music therapy) on the mental state (GHQ) among cancer patients. It was a cancer-hospital-based study using convenient and purposive sampling among cancer patients (study period- six months). We had three subject groups: Medicine as usual, Medicine plus Bhajan/Kirtan and Medicine plus Gita based therapy. With informed written consent, they were enrolled to apply the instruments: Perceived Stress Scale (Sheldon Cohen) to assess stress and General Health Questionnaire (GHQ-12) (David Goldberg) to assess 'psychiatric caseness'. Majority of cancer patients (90%) had severe level of stress. Pre-intervention GHQ-12 Scores indicated that cancer patients with moderately depressed mood were 50% in medicine, 47% in Bhajan and 56% in Gita group. There was improvement in mental state as relief from depressed mood in 1 week of intervention in: 1% in Medicine, 14% in Bhajan and 41% in Gita group. The Gita based psychological intervention significantly improved depressed mood in Cancer patients.
Keywords: *cancer, depression, Gita based psychotherapy, mental state, music therapy, stress*

Introduction

Cancer, also called malignancy, is an abnormal growth of cells which can arise from any cell types and organs with multi-factorial etiology (Peppas and Blanchette, 2003). When diagnosed with cancer, about 30% of patients can suffer from psychological distress or other important mental health conditions (Singer et al., 2010). Depression is a common co-morbidity in cancer cases, affecting more than 10% of patients (Smith, 2015). Psychotherapy can help these cancer patients with coping (Wortman and Dunkel-Schetter, 1979). With several similarities between the process of Cognitive behavior therapy (CBT) and the Gita discourse, the examples from this scripture have been reported to promote the insight into one's own distorted thinking and motivate behavioural change (Mascaro, 1962). Antonov (2008) describes the Bhagavad Gita as a great philosophical work that played the same role in the history of India, as the New

Testament did in the history of the countries of the European culture. Govindaswamy (1959) stressed on the therapeutic effect of the Gita. Bhatia et al. (2013) described the Gita as a source of therapy. Nasr (2007) compares the notion of free will and determinism in Abrahamic religions with the concept of 'correct action' in the Bhagavad Gita. He argues that the Gita provides an interesting concept of human agency, a balance between the role of individuality and God.

The Gita depicts what may probably be one of the earliest documented sessions in CBT. Bhagavad Gita teaches not to let fear hold one back, to quieten one's mind with mental focus and resolve, especially in difficult situations. The crisis has shown us that we need to change tactics for the next battle ahead for addressing both acute and chronic illnesses, or we will again miss our mark (Kalra et al., 2020). The Gita also gives us a living philosophy for happiness of mind and peace (Hegde, 2018). Bhagavad Gita is part of the great epic Mahabharatha dating back to about 4000-5000 B.C. containing 18 chapters, with about 701 short poems. Bhagavad Gita offers a valuable case study for lessons in psychotherapy, i.e. resolution of conflict and successful resumption of action from a state of acute anxiety and guilt laden depression that precipitated inaction. The Gita is almost in its entirety the dialogue between two individuals, Lord Krishna (considered as incarnation of Bhagawan Vishnu, Narayana) and Arjuna (the Pandava prince, Nara) in the battle field (war between the Pandavas and the Kauravas, the cousins, for control of the kingdom of Hasthinapura) of Kurukshetra. The Gita is also a work of theology, spirituality, human psychology and ethics (Panduran et al., 2014) Above all, the Bhagavad Gita is a unique text that can be approached and read from different perspectives. The Perennial philosophers, either the traditionalists or the non-traditionalists, have contributed an interesting perspective to the reading of the Gita (Widigdo, 2020). Music therapy in various forms, including religious hymns (Bhajan, Kirtan, Gyanmala, Salah or prayers as per different cultural and religious backgrounds) partly is effective because active music-making within the therapeutic frame offers the patient opportunities for new aesthetic, physical and relational experiences (Maratos et al., 2011).

This study was conducted among the patients coming in Cancer hospital for the treatment of various cancers to assess the stress and 'psychiatric caseness', to explore the effect of the Gita based psychotherapy and Bhajan/ Kirtan (Hindu religion- based music therapy) on the mental state (the GHQ-12 score) of these cancer patients.

Materials and Methods

Convenient and purposive sampling technique was applied among the cancer patients visiting the B. P. Koirala Memorial Cancer Hospital (BPKMCH) in Bharatpur, Chitwan, Nepal which was the place of data collection of current study. A total of 300 clients were selected who were under medical treatments including radiotherapy. Initially, 100 patients were enrolled for medical treatments group only (*Table 1*). Next 100 patients were enrolled who were interested in Bhajan/ Kirtan activities. Another 100 patients were enrolled who were interested in listening, reading and in the interaction about illness, coping mechanisms and hopeful about the improvement through the help of almighty God as described in the Gita. It was a quasi-experimental type and basically quantitative type of study. The study period was six months (2014/03/15 to 2014/09/16). Written informed consent was taken from the out-patients/ in-patients during the period.

Table 1. Distribution of cancer patients by cancer types and intervention groups (No.).

Cancer types	Medicine	Medicine + Bhajan	Medicine + Gita
Ovary	18	12	29
Breast	14	18	11
Throat	13	14	11
Throat	12	10	3
Oral	13	12	10
Gastro-intestinal	10	10	12
Lungs	6	4	4
Brain	3	4	4
Eye	5	1	2
Thigh & other muscles	1	13	4
Bone	2	3	0
Scrotum	1	1	7
Kidney	0	2	0
Ear	0	0	2
Skin	0	0	1
Anus	0	1	0
Tongue	12	10	3

There was a gap between Pre and Post data collection of 1 week. Bhajan/ Kirtan was continued for six days every day for a varying period of 30 to 45 minutes among the patients of one group (*Table 2*). In the same way, the Gita based therapy was conducted for the third group for six days every day for 30 to 45 minutes. On the seventh day, same procedure was used to see the changes in the General Health Questionnaire (GHQ-12). Considering the situation of patients, it was continued for six days. The data analysis was done by using a descriptive statistical method in order to determine the relationship between independent and dependent variables. Paired t-test was calculated to observe the significance of post-test results. Cancer patients, who were unable to hear, speak and see, were excluded.

Table 2. Distribution of cancer patients by cancer stage (No.).

Cancer stages	Medicine	Medicine + Bhajan	Medicine + Gita
Stage I	14	0	0
Stage II	58	73	12
Stage III	23	25	68
Stage IV	5	2	20

Tools

The researchers used Semi-structured proforma for socio-demographic and clinical profile data, Perceived Stress Scale (Sheldon Cohen) to assess stress (Cohen et al., 1983) and the General Health Questionnaire (GHQ-12) to assess the 'psychiatric caseness' (Goldberg and Williams, 1988) (*Table 3*). The Perceived Stress Scale (Cohen et al., 1983) measures the degree to which the situations in one's life are appraised as stressful. The General Health Questionnaire (Goldberg and Williams, 1988) can be used with efficacy to assess people's overall psychological well-being and to detect non-psychotic psychiatric problems.

Table 3. Distribution of patients by the perceived stress score (No.).

Perceived stress score	Medicine	Medicine + Bhajan	Medicine + Gita
Mild (1-13)	0	0	1
Moderate (14-25)	1	10	12
Severe (26-38)	98	89	87
Profound (39-52)	1	1	0

Results and Discussion

In this study, the average age of the respondents was 50 years. Gender distribution showed 58% female vs. 42% male. Majority (88%) were from Hindu religion. About 50% were Brahmin and Chhetri. Literate were 61%. About 50% were housewives and 28% were involved in agriculture. Ninety seven percent were married. About 80% were poor. Nearly three fourths of the patients were from plain land and 66% were from rural areas. The most common cancer was ovarian cancer (20%); followed by breast (14%), throat (12%), gastro-intestinal (10%) and lung cancer (10%). About 47% patients were at stage II and 38% at stage III while they were enrolled in the study conducted in the cancer hospital. Two fifths of the patients came with the duration of 6 months and 36% with duration of 1 year. Almost all patients were on chemotherapy and 93% on radiotherapy. Majority of the patients (91%) had perceived severe stress. In Pre intervention test, the scores indicated moderately depressed mood in 50% in medicine group, 47% in Bhajan group and 56% in Gita group (*Table 4*). Post intervention test results indicated that there was improvement in mental state as relief from depressed mood in Medicine group 1%, Bhajan group 14% and in the Gita group 41%. All three groups had significant results with paired *t*-test (*Table 5*).

Table 4. Distribution of cancer patients by the GHQ-12 score (Pre-before therapies) (No.).

GHQ score (Pre)	Medicine	Medicine + Bhajan	Medicine + Gita
Normal (0-4)	33	46	27
Mild (5-7)	17	7	17
Moderate (8-12)	50	47	56

Table 5. Distribution of cancer patients by the GHQ-12 score (Post-after therapies) (No.).

GHQ score (Post)	Medicine	Medicine + Bhajan	Medicine + Gita
Normal (0-4)	40	50	45
Mild (5-7)	11	17	40
Moderate (8-12)	49	33	15

This study was carried out in B. P. Koirala Memorial Cancer Hospital (BPKMCH) in Bharatpur, Chitwan, Nepal which is a national cancer referral center established with the collaboration of the Government of the People's Republic of China. Two thirds of the cancer patients (66%) were from rural background in our study. This is similar to Nepalese national index. Gyenwali et al. (2013) carried a cross-sectional descriptive study in central region of Nepal which reported 77% rural inhabitants among cervical cancer patients. The most common cancer was Ovarian cancer (20%) followed by breast (14%), throat (12%), gastro-intestinal (11%) and lung cancers (10%) in this study. Minagawa et al. (1996) reported common cancer types among terminally ill cancer patients as: Stomach 20 (22%), Lung 13 (14%), Pancreas 10 (11%), Colon 10 (11%),

Breast 6 (6%) and others 31 (33%). Hjerl et al. (2003), in a study about prognostic factor related with breast cancer, had 37% with breast, 33% gynecological disorders and 10% gastro-intestinal cancer. We had more female cancer patients and this observation is in the line of Bajracharya et al. (2006) who reported 56.4% cancer patients being female, with cancer of breast (17.3%) and lungs (17.0%) as the major cancers.

In current study, majority of cancer patients were in the Grade II (47%) and Grade III (41%). This shows that in our country, cancer patients are usually aware of the treatment and have better prognosis. This result is similar to the findings of Thapa et al. (2013) and Kandel et al. (2013) from Nepal. Thapa et al. (2013) reported about 60% of grade II or III among female cancer patients admitted at Tribhuvan University Teaching Hospital, Kathmandu, Nepal. Kandel et al. (2013) reported in a retrospective research among patients who had under gone gastro-intestinal surgery, the majority were in the stage III and stage IV. More than 90% of our cancer patients were receiving chemotherapy plus radiotherapy. Minagawa et al. (1996) reported in a study that patients were receiving Chemotherapy 45 (48%) and Radiotherapy 19 (20%). Williams and Dale (2006) found that 78 cancer patients of stage II were receiving radiation treatment.

The PSS scores in this study showed that 90% cancer patients were with severe level of stress. About 33.7% of nearly 186 million U.S. adults perceived that stress affected their health a lot or to some extent (Keller et al., 2012). In this study, pre-intervention test with the GHQ-12 score indicated that cancer patients with moderately depressed mood were 50% in Medicine group, 47% in Bhajan group and 56% in the Gita group. Derogatis et al. (1983) reported that 47% of the cancer patients met the DSM-III criteria for a psychiatric disorder, with adjustment disorder being the most common. A longitudinal study of 93 patients undergoing chemotherapy revealed that a symptom cluster consisting of pain, fatigue and sleep disturbance adversely and synergistically affected patients' functional status (Given et al., 2001) (*Table 6*).

Table 6. *Paired t-test (statistical significant of pre-and-post stages).*

Intervention group	Variables	Mean score pre-test	Mean score post-test	Mean changes	p-value	Result
Bhagvad Gita	GHQ score	5.98	4.18	1.8 (30.1%)	<0.005	Significant
Music Therapy	GHQ score	5.12	4.25	0.87 (16.88%)	<0.005	Significant
Medicine only	GHQ score	6.19	5.69	0.5 (8.1%)	<0.005	Significant

We observed that there was improvement in mental state as relief from depressed mood in: 1% in Medicine, 14% in Bhajan and >30% in Gita group. Renz et al. (2005) investigated the feasibility of psychotherapeutic and music therapeutic assistance among advanced cancer patients. Of 251 treated patients, 135 had such experiences. Williams and Dale (2006) conducted in a study on 78 stage-II depressed cancer patients receiving radiation treatment. Cognitive behavior treatment (8 week) was done by a social worker. Group sessions lasted 1 h per week and had six to nine participants. Subjects who received Cognitive behavioral intervention had significantly lower scores than controls at 8 weeks (Williams and Dale, 2006).

Kordovan et al. (2016) found music therapy helpful in terminally ill cancer patients undergoing treatment in a specialized palliative care in-patient ward. The intervention consisted of at least two sessions. Preissler et al. (2016) did a study among forty-one patients receiving specialized in-patient palliative care with music therapy intervention consisting of at least two sessions (total number of sessions: 166; per patient average:

4). Patients expressed an average of 4.9 psychosocial needs (range, 1-8). Results showed that patients with complex psychosocial situations addressed an average number of five subjects and needs, respectively for better results.

Gordon et al. (1980) reported in a random sampling study on 308 cancer patients that patients receiving the psychological intervention overall coped better with their disease. Dabas et al. (2018) conducted a Quantitative Pre-test - Post-test Quasi Experimental Design using the following variables: Hope, Resilience and Optimism among 630 students dividing in three groups as Group 1 regular course of study, Group 2 was given an intervention based on Bhagavad Gita and Group 3 based on western Positive psychology. Intervention based on Bhagavad Gita was reported more effective for increasing the positive constructs of Hope, Optimism and Resilience among the Indian semi-urban school students. Many of the emotions, such as anger, fear and despair are commonly dealt with it in clinical or therapy settings. Other religions too have their ways of coping with stress. Buddhist ideas about the genesis and cessation of suffering can be used as an overarching model to organize a diversity of therapeutic techniques, bridge different therapy models, and select particular techniques at particular times in the treatment of emotional disorders (Allen, 2017). This is interesting to study the effect of Bhagavad Gita in cancer patients in the country of birthplace of Lord Buddha. Buddhist teaching too has its own way of looking into and addressing the sorrow and stress (Shakya, 2014). Some of our subjects were the followers of Buddhist religion; there could have a space to explore into this through comparative approach. Since it's beyond the scope of current study and due to time constraints, we could not look into this. This could be an area of further investigation.

Conclusion

About two thirds of the cancer patients were from rural and poor background. Ovarian cancer was the most common (20%) followed by breast (14%) and throat cancer (12%). Majority of cancer patients were of grade II and III and receiving radiotherapy plus chemotherapy. About 90% cancer patients were with severe level of stress. Pre-intervention test GHQ-12 score indicated that cancer patients with moderately depressed mood were 50% in Medicine, 47% in Bhajan kirtan and 56% in the Gita group. Post-intervention test results indicated that there was improvement of mental state as relief from depressed mood in Medicine group 1%, Bhajan group 14% and > 30% after receiving psychotherapy based on Gita in the third group.

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Conflict of interest

The authors confirm there are no conflict of interest involving any parties in this research study.

REFERENCES

Deo et al.: An experimental impact analysis of
Bhagavad Gita in mental state of cancer patients.

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[1]   Allen, A. (2017): Working with anxiety and depression from a Buddhism framework. – European Psychiatry 41(S1): S716-S717.

[2]   Antonov, V. (2008): Bhagavad Gita with commentaries. – CreateSpace Independent Publishing Platform 118p.

[3]   Bajracharya, N., Karki. P., Sapkota, S., Bastakoti, S., Yagol, N., Khan, G.M, Rao, B.S. (2006): Prevalence pattern of cancer and handling of cytotoxic drugs. – Kathmandu University Journal of Science, Engineering and Technology 2(1): 7p.

[4]   Bhatia, S.C., Madabushi, J., Kolli, V., Madaan, V. (2013): The Bhagavad Gita and contemporary psychotherapies. – Indian J Psychiatry 55 (Suppl 2): 315-21.

[5]   Cohen, S., Kamarck, T., Mermelstein, R. (1983): A global measure of perceived stress. – Journal of Health and Social Behavior 24: 385-396.

[6]   Dabas, P., Singh, A., Quian, M. (2018): Bhagavad Gita teachings and positive psychology: Efficacy for Semi-urban Indian students of NCR. – Cogent Psychology 5(1): 13p.

[7]   Derogatis, L.R., Morrow, G.R., Fetting, J., Penman, D., Piasetsky, S., Schmale, A.M. (1983): The prevalence of psychiatric disorders among cancer patients. – JAMA 249(6): 751-757.

[8]   Given, B., Given, C., Azzouz, F., Stommel, M. (2001): Physical functioning of elderly cancer patients prior to diagnosis and following initial treatment. – Nurs Res 50(4): 222-232.

[9]   Goldberg, D., Williams, P. (1988): A user's guide to the General Health Questionnaire. – Windsor, UK: NFER-Nelson 129p.

[10]   Gordon, W.A., Greidenbergs, I., Diller, L., Hibbard, M., Wolf, C., Levine, l., Lucido, D. (1980): Efficacy of psychosocial intervention with cancer patients. – Journal of Counseling and Clinical psychology 48(6): 743-59.

[11]   Govindaswamy, M.V. (1959): Surrender-not to self-surrender. – Trans-Regional and -National Studies of Southeast Asia 2: 1-10.

[12]   Gyenwali, D., Pariyar, J., Onta, S.R. (2013): Factors associated with late diagnosis of cervical cancer in Nepal. – Asian Pacific Journal of Cancer Prevention 14(7): 4373-4377.

[13]   Hegde, B.M. (2018): Psychology lessons from Bhagavad Gita. – The New Indian Express Official Portal. Available on:
https://www.newindianexpress.com/opinions/2018/jan/25/psychology-lessons-from-bhagavad-gita-1763041.html

[14]   Hjerl, K., Andersen, E.W., Keiding, N. (2003): Depression as a prognostic factor for breast cancer mortality. – Psychosomatics 44(1): 24-30.

[15]   Kalra, A., Erin Michos, E.D., Chinnaiyan, K.M. (2020): COVID-19 and the healthcare workers Lessons from the Bhagavad Gita (the 'Lord's Song'), from India during these difficult times. – European Heart Journal 2p.

[16]   Kandel, B.P., Singh, Y., Singh, K.P., Khakurel, M. (2013): Gastric cancer perforation: experience from a tertiary care hospital. – Journal of Nepal Medical Association 52(191): 489-493.

[17]   Keller, A., Litzelman, K., Wisk, L.E., Maddox, T., Cheng,. ER., Creswell, P.D., Witt, W.P. (2012): Does the perception that stress affects health matter? The association with health and mortality. – Health Psychology 31(5): 677-684.

[18]   Kordovan, S., Preissler, P., Kamphausen, A., Bokemeyer, C., Oechsle, K. (2016): Prospective study on Music Therapy in terminally Ill Cancer patients during Specialized Inpatient Palliative Care. – Journal of Palliative Medicine 19(4): 394-399.

[19]   Maratos, A., Crawford, M.J., Procter, S. (2011): Music therapy for depression: it seems to work, but how? – The British Journal of Psychiatry199 (2): 92-93.

[20]   Mascaro, J. (1962): The Bhagavad Gita. – Penguin Books 122p.

[21]   Minagawa, H., Uchitomi, Y., Yamawaki, S., Ishitani, K. (1996): Psychiatric morbidity in terminally III cancer patients: A prospective study. – Cancer: Interdisciplinary International Journal of the American Cancer Society 78(5): 1131-1137.

[22]   Nasr, S.H. (2007): Scientia Sacra. – In: The Underlying Religion: An Introduction to the Perennial Philosophy. Bloomington: World Wisdom 114-140p.

[23]   Panduran, A.K., Shenoy, S., Keshavan, M.S. (2014): Psychotherapy in the Bhagavad Gita the Hindu Scriptural text. – American Journal of Psychiatry 171(8): 826-828.

[24]   Peppas, L.B., Blanchette, J.O. (2003): Nano particle and targeted systems for cancer therapy. – Advanced Drug Delivery Reviews 56(11): 1649-1659.

[25]   Preissler, P., Kordovan, S., Ullrich, A., Bokemeyer, C., Oechsle, K. (2016): Favored subjects and psychosocial needs in music therapy in terminally ill cancer patients: a content Analysis. – BMC Palliative Care 15(1):1-9.

[26]   Renz, M., Mao, M. S., Cerny, T. (2005): Spirituality, psychotherapy and music in palliative cancer care: research projects in psycho-oncology at an oncology center in Switzerland. – Support Care in Cancer 13(12): 961-966.

[27]   Shakya, D.R. (2014): Psychological aspect of Buddhist education. – Journal of Psychiatrists' Association of Nepal 3: 29-33.

[28]   Singer, S., Das-Munshi, J., Brähler, E. (2010): Prevalence of mental health conditions in cancer Patients in acute care-a meta-analysis. – Annals of Oncology 21(5): 925-930.

[29]   Smith, H.R. (2015): Depression in cancer patients: Pathogenesis, implications and treatment. – Oncology letters 9(4): 1509-1514.

[30]   Thapa, B., Singh, Y., Sayami, P. (2013): Breast cancer in young women from a low risk population in Nepal. – Asian Pacific Journal of Cancer Prevention 14(9): 5095-5099.

[31]   Widigdo, M.S.A. (2020): The Traces of the Bhagavad Gita in the Perennial Philosophy-A Critical Study of the Gita's Reception among the Perennialists. – Religions 11(5): 10p.

[32]   Williams, S., Dale, J. (2006): The effectiveness of treatment for depression/depressive symptoms in adults with cancer: A systematic review. – British Journal of Cancer 94(3): 372-390.

[33]   Wortman, C.B., Dunkel-Schetter, C. (1979): Interpersonal relationships and Cancer: A theoretical analysis. – Journal of Social Science Issues 35(1): 120-155.