Multimodal psychotherapy in the management of somatization disorder

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ABSTRACT

Background: Somatization is the presentation of physical symptoms without an objective and identifiable cause, and the condition is among the most common and challenging problems in primary medical care. Several modal of psychotherapy modal is being practiced but effective treatment in rarely delivered. Aim: The aim of this study is to evaluate the efficacy and durability of multimodal psychotherapy in the management of somatization disorder. Materials and Methods: This is a hospital-based study using the pre-post design with control group. Thirty outpatient department patients with somatization disorder were selected and divided into two groups, i.e., intervention group and control group using the purposive sampling method. Intervention group was given 12 sessions of management package, i.e., symptoms monitoring form, scheduling of daily activity, sleep hygiene, diaphragmatic breathing, psycho-social intervention, psychodynamic individual psychotherapy, and cognitive restructuring (approximately 3–4 months). Efficacy and durability were measured by the Bradford somatic inventory, general health questionnaire-28 (GHQ-28), defense mechanism inventory (DMI), and Sack’s sentence completion test (SSCT). Results: The results reveal that there are significant differences found among intervention group in comparisons to the control group in the context of somatic complaints (BSI), general health functioning (GHQ-28), life conflict (SSCT), and in defense mechanism (DMI). Significant improvement also found between postintervention and follow-up of the intervention group on different study variables. Conclusion: The present study findings indicate that multimodal psychotherapy program is effective in the Indian context in the management of somatization disorder.

Keywords: Defense mechanism, general health, life conflict, multimodal psychotherapy, somatization disorder

Patients with somatoform disorders have a tendency to interpret physical perceptions in a threatening way, which leads to health anxiety and subsequent illness behavior.[1,2] Behavioral signs and symptoms in somatization patients are related to affective disturbance and psychological distress. Somatization is cognitive-affective disturbance that affects the way in which individuals experience and express their emotions and it may be a factor contributing to somatic experience of psychological ill health.[3,4] In a study by Pilowsky and Spence,[5] patients with multiple somatic complaints and hypochondriasis have been found to demonstrate abnormal illness behavior. Mechanic[6] suggested that illness behavior is the way in which given symptoms may be differentially perceived, evaluated, and acted upon.

An Indian study Sarkar and Chandra[7] found that the presence of alexithymic characteristics has impact upon dimensions of illness behavior and is strongly related to inhibition of communication of affect, somatic illness causal beliefs, and denial of life stresses. Chaturvedi and Bhandari[8] found that there was complex inter-relationship between somatization and abnormal illness behavior.

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Somatization patients display anxious attachment behavior that derives from childhood experiences with caregivers. Early exposure to illness increases the likelihood that distress will be manifested somatically. Several studies reported that childhood deprivation and abuse independently acted as risk factors for anxiety, depression, and somatization. The management of patients with somatic symptom disorder and bodily distress works best when not only the patients but also their doctors achieve a refraining of the clinical problem: From cure to care and coping, from classical biomedical explanations to a broader view of biological and psychosocial aggravating and alleviating factors. There has also been a compelling line of evidence that demonstrates an association between adverse childhood experiences and unexplained physical symptoms. According to that taxonomy, hysterical defenses include conversion, repression, somatization, and dissociation. Freud himself classified defenses according to severity of psychopathology. Somatization means converting psychic derivatives into bodily symptoms and tending to react with somatic manifestations, rather than psychic manifestations. Repression is the unconscious process by which emotions are shunted into the body rather than reaching consciousness at all.

Somatization disorder is major public health issues for which effective treatment is rarely delivered. These disorders are considered by many clinicians to be among the most frustrating disorders to manage, and levels of patient dissatisfaction are reported to be high. The management of these disorders may be associated with costly, repetitive diagnostic procedures, and organ-oriented treatments with poor outcome.

Meta-analysis of the efficacy of multidisciplinary treatment programs for somatoform patients has proven that this kind of treatment is superior to single discipline treatment, such as medical therapy or physical therapy. There is an effective role of multimodal psychotherapy to reduce somatic complaints and comorbid psychological problems in the patient as well as improved psychological life of the patient. Multimodal psychotherapy program is effective in the improvement of psychological functioning.

Review studies suggest that there have been numerous of studies conducted in the field of somatization disorder, but very few numbers of studies available were based on multimodal management approach in the Indian context and North East India particularly in Assam. The current study is being undertaken to explore whether multimodal psychotherapy can be of clinical uses in reducing the above symptoms. Keeping these points in view, this study was conducted with the aim to assess the efficacy of multimodal psychotherapy program for the management of somatization patients on different psychological variables and to see the durability of the therapeutic gains.

**MATERIALS AND METHODS**

This study was a hospital-based study using the pre-post design with the control group. Thirty outpatient department (OPD) patients with somatization disorder from LGBRIMH, Tezpur, were selected by using the simple random sampling method and divided into two groups, i.e., intervention group and control group. The patients included who diagnosed as having mild-to-moderate level of somatization disorder as per tenth revision of the International Statistical Classification of Diseases and Related Health Problems–10 criteria, age range between 20 and 40 years, at least educated up to middle class, and those who were co-operative and gave informed consent to participate in the study and able to comprehend the instruction. Patients were with significant comorbid psychiatric, physical or neurological conditions, history of alcohol or any other substance abuse, psychopathology interfering in eliciting reliable information and implementing management plan, family history of mental illness. The present study was initiated after approval from the Institutional Ethics Committee, and informed consent was obtained from all the study participants.

The following tools were employed in the present study:

1. Sociodemographic and clinical data sheet is a semi-structured pro forma contains information about sociodemographic and clinical details
2. General Health Questionnaire-28 (GHQ-28), Goldberg, (1978) consists of 28 items was used to assess possible psychiatric problems and general health in the subjects, test retest reliability has been reported to be high (0.78–0.9)
3. The Bradford Somatic Inventory (BSI, Mumford et al., 1992) a 40-item self-report inventory was administered to assess severity of somatic symptoms, test-retest reliability of the BSI found overall reliability coefficient of 0.86
4. Sacks Sentence Completion Test (SSCT, Sacks and Levy, 1950) was administered to assess significant life conflict. Reliability and validity of the test are coefficient 0.48 and 0.57
5. Defense mechanism inventory (DMI, Mrinal and Mrinal, 1969) assesses five clusters of defense mechanisms: Turning against object (TAO), projection (PRO), principilization (PRN), turning against self (TAS), and Reversal (REV), test retest reliability for the five defenses (product moment correlation) range from 0.80 to 0.92.
**Description of multimodal psychotherapy is as follows**

**Symptoms monitoring form**

Somatization patients were taught to monitor the thoughts and emotions that were associated with changes in their physical symptoms. Symptom-monitoring forms were introduced to help patients focus their attention on thoughts and feelings between sessions. The monitoring form was used to detect the patterns in symptoms and in the relationships among symptoms, thoughts, and emotions.

**Scheduling of daily activity**

Scheduling of daily activities was introduced to promote daily physical, social, recreational, and occupational activities, scheduling pleasurable family activities, assigned need-based behavioral assignment.

**Sleep hygiene**

Somatization patients report significant sleep disturbance. Sleep hygiene was introduced to maintain sleep.

**Diaphragmatic breathing**

Diaphragmatic breathing was taught and explained that the long-term goal for the patient to breathe abdominally as much as possible. The aim of breathing exercise was to acquire a relaxed abdominal breathing pattern.

**Psychosocial intervention**

Aims of psycho social interventions were the discussion of social issues concerning family, work, etc., Patients were motivated to identify and discuss psychosocial problem, identify and discuss family perception and maladaptive responses.

**Psychodynamic individual psychotherapy**

The aim of psychodynamic individual psychotherapy was the verbalizations of emotional and interpersonal problems to understand the underlying intra-psychic and interpersonal conflicts and to enable the patient to utilize a broader spectrum of coping strategies.

**Cognitive restructuring**

Patient with somatization disorder tends to have dysfunctional belief about somatic sensations and often about their ability to perform effectively. The cognitive-emotional elicitation/regulation module aimed to help patients differentiate and understand their thoughts and feelings so that they can interact more effectively with their environment. This was the treatment to help patients examine their cognitive tendencies and dysfunctional thinking pattern. Cognitive errors that we had observed included perfectionist thoughts, catastrophic thoughts (about physical symptoms as well as other life events), overestimation, and dichotomous thinking. In cognitive restructuring techniques, the therapist selected one of the patient’s beliefs illustrating one of his cognitive tendencies. Next, the therapist and patients examine the thought from different perspective.

**Procedure**

Forty-three OPD patients diagnosed as having somatization disorder were interviewed and those who were found suitable according to the inclusion and exclusion criteria were consequently selected for intervention group (15) and control group (15) using the simple random sampling method. Information about sociodemographic variables and clinical details were collected and psychological variables were measured using selected psychological tests from the drawn sample. After that, first group, i.e., intervention group, underwent 12 sessions of multimodal psychotherapy package and the second group, i.e., control group, was under treatment as usual (OPD-based pharmacotherapy). Control group would be provided treatment after the completion of the study. Intervention group was receiving the pharmacological intervention along with therapeutic package. There were between 60–90 min of session provided twice in a week, but the time was varying depending on the severity of client's problem. A total number of sessions were 12 and was completed within 3–4 months. After a completion of 12 sessions of management package (approximately 3–4 months) both groups were reassessed using the same tools. Again, after a follow-up period of next 3 months, reassessment was done through same tools for intervention group.

**Statistical analysis**

The statistical analysis was performed with the help of Statistical Package for the Social Sciences (Released 2007. SPSS for Windows, Version 16.0. Chicago, SPSS Inc.). In order to see the changes over a period of time, assessments were done thrice during the period of the study, i.e., first at baseline, second postintervention at 3–4 months, and third after a follow-up period of 3 months. For baseline analysis of the study variables, Mann–Whitney U-test and Chi-square test were done. Wilcoxon signed-rank test and Mann–Whitney U-test were done to assess the changes at different time intervals within groups and between groups for all the study variables.

**RESULTS**

No significant differences were found in sociodemographic variables of sex ($\chi^2 = 0.13, P > 0.05$), education ($\chi^2 = 0.34, P > 0.05$), marital status ($\chi^2 = 2.2, P > 0.05$), domicile ($\chi^2 = 17, P > 0.05$), religion ($\chi^2 = 1.35, P > 0.05$), employment ($\chi^2 = 53, P > 0.05$), and type of family ($\chi^2 = 53, P > 0.05$) between both the groups. Difference on age ($Z = -395, P > 0.05$),
onset age ($Z = -229, P > 0.05$), and total duration of illness ($Z = -167, P > 0.05$) was found statistically nonsignificant.

To ensure that the intervention group and the control group were similar in baseline scores for psychological functioning, BSI, GHQ, DMI, and SSCT scores were compared using the Mann–Whitney U-test. Table 1 indicated that at baseline there was no difference between intervention group and control group on the level of BSI, GHQ, DMI domains TAO, PRO, PRN, TAS, REV and domains of SSCT total score, family area, sex area, interpersonal area, and self-concept area.

Table 2 reveals that after multimodal psychotherapy, there was significant, significant reduction in the symptoms of somatization on BSI, there was significant, improvement seen in GHQ among intervention group in comparisons to the control group.

### Table 1: Comparison of Bradford somatic inventory, general health questionnaire, defense mechanism inventory, and sack's sentence completion test findings between intervention and control group at baseline

| Areas of assessment | Means±SD | Mann-Whitney U-test |
|---------------------|----------|---------------------|
|                     | Intervention group | Control group | df | U | Z-score |
| Bradford somatic inventory | 48.20±15.11 | 49.26±10.40 | 28 | 107.50 | -0.208 |
| GHQ                 | 20.73±12.25 | 20.80±9.71 | 28 | 105.50 | -0.291 |
| Defense mechanism inventory | 47.73±6.69 | 48.60±9.24 | 28 | 112.00 | -0.021 |
| TAO                 | 49.40±17.33 | 49.86±10.03 | 28 | 111.00 | -0.062 |
| PRO                 | 36.06±8.11 | 36.46±1.01 | 28 | 110.00 | -0.105 |
| PRN                 | 48.40±5.75 | 48.26±6.72 | 28 | 112.50 | 0.000 |
| TAS                 | 51.46±8.64 | 51.80±8.57 | 28 | 107.50 | -0.208 |

Table 2: Comparison of Bradford somatic inventory, general health questionnaire, defense mechanism inventory, and sack's sentence completion test findings between intervention and control group at baseline

| Areas of assessment | Means±SD | Mann-Whitney U-test |
|---------------------|----------|---------------------|
|                     | Intervention group | Control group | df | U | Z-score |
| Bradford somatic inventory | 48.20±15.11 | 21.06±7.50 | 27.13±9.25 | 49.26±10.40 | 43.00±11.16 | 6.26±13.07 | 24.50 | -3.573*** |
| GHQ                 | 20.73±12.25 | 5.46±3.48 | 15.26±11.88 | 20.80±9.71 | 13.06±7.75 | 7.73±7.69 | 64.50 | -2.140* |
| Defense mechanism inventory | 47.73±6.69 | 37.46±9.17 | 10.26±8.22 | 48.60±9.24 | 47.20±7.73 | 1.40±3.94 | 21.00 | -3.803*** |
| TAO                 | 49.40±17.33 | 49.86±10.35 | 12.46±8.83 | 49.86±10.35 | 46.66±19.29 | 3.20±2.17 | 33.00 | -3.307** |
| PRO                 | 36.06±8.11 | 6.31±2.61 | 10.60±1.04 | 36.46±1.04 | 37.06±19.04 | -1.13±7.64 | 45.50 | -2.795** |
| PRN                 | 48.40±5.75 | 44.66±6.33 | 11.00±19.16 | 48.26±6.72 | 46.46±7.90 | 1.80±4.00 | 46.50 | -2.750** |
| TAS                 | 51.46±8.64 | 42.80±6.29 | 8.66±6.94 | 51.80±8.57 | 49.60±7.64 | 2.20±4.00 | 52.00 | -2.527* |

Table 2: Comparison of Bradford somatic inventory, general health questionnaire, defense mechanism inventory, and sack's sentence completion test findings between intervention and control group at baseline
On SSCT findings, significant reduction noticed in overall conflict score, interpersonal area, and on self-concept area. Furthermore, trend of reduction found in conflict areas such as family area and on sex area.

DMI results show that significant reduction in TAO, PRO, TAS, REV domains, and significant improvement found in PRN.

Table 3 shows that there were significant differences found on BSI and GHQ score between postintervention and follow-up of the intervention group. SSCT found postintervention scores and follow-up scores difference was statistically significant on total score, sex area, and on self-concept area, and there was no significant deterioration found on interpersonal area.

Statistically differences were significant and indicative that TAO, PRO, and TAS defense mechanism gradually deteriorating and PRN defense mechanism score is improving with time.

**DISCUSSION**

The findings of the present study reported that after multimodal psychotherapy, there was significant reduction in the symptoms of somatization on BSI among intervention group in comparisons to control group.

Table 3 shows that there were significant differences found on BSI and GHQ score between postintervention and follow-up of the intervention group. SSCT found postintervention scores and follow-up scores difference was statistically significant on total score, sex area, and on self-concept area, and there was no significant deterioration found on interpersonal area.

Statistically differences were significant and indicative that TAO, PRO, and TAS defense mechanism gradually deteriorating and PRN defense mechanism score is improving with time.

The findings of the present study are similar to a study conducted by Larisch et al.[27] on somatization patients. For psychosocial management, they used different psychological intervention such as role playing, psychoeducation, relaxation, symptoms monitoring diary, explored significant stressors in life, and explain resolution of conflicts and they fixed systematic protocol for psychosocial intervention. Found patients of the control group on the reduction of physical symptoms, reduction in depression score and reduction on anxiety score. Improvement is also maintained in follow-up sessions. Cognitive restructuring play significantly improvement in their psychosomatic complaints.[28,29] In another study, de Greeck et al.[30] reported that somatization patients showed a significant decrease in somatic by using multimodal

| Areas of assessment | Means±SD | Wilcoxon sign rank test |
|--------------------|---------|------------------------|
|                    | Post intervention group | On follow-up | Sign | Mean rank | Z score |
| Bradford somatic inventory | 21.06±7.50 | 17.86±5.57 | − | 7.82 | −2.846** |
| GHQ                | 5.46±3.48 | 5.13±2.87 | − | 5.12 | −2.203* |
| Defense mechanism inventory |              |            | + | 2.50 |        |
| TAO                | 37.46±9.17 | 31.53±11.17 | − | 9.59 | −2.590* |
| PRO                | 36.93±5.56 | 34.73±5.56 | − | 6.68 | −2.717** |
| PRN                | 44.66±6.33 | 46.93±4.38 | − | 4.47 | −1.833 |
| PRN                | 44.66±6.33 | 46.93±4.38 | − | 6.69 |        |
| TAO                | 37.40±5.94 | 33.80±7.22 | − | 6.65 | −2.161* |
| PRO                | 36.93±5.56 | 34.73±5.56 | − | 4.60 | −2.717** |
| PRN                | 44.66±6.33 | 46.93±4.38 | − | 5.75 |        |
| REE                | 42.80±6.29 | 39.46±7.17 | − | 5.00 | −2.670** |
| Family area        | 17.00±9.20 | 14.20±6.62 | − | 6.39 | −2.183* |
| Sex area           | 4.86±3.15 | 4.46±2.61 | − | 6.40 | −0.469 |
| Interpersonal area | 1.80±1.47 | 1.26±1.48 | − | 3.50 | −2.271* |
| Self-concept area  | 4.53±3.35 | 4.00±2.17 | − | 5.83 | −0.777 |

*Significant at 0.05 level, **Significant at 0.01 level. GHQ - General health questionnaire; TAO - Turning against object; PRO - Projection; PRN - Principilization; TAS - Turning against self; REV - Reversal; SD - Standard deviation
psychodynamic psychotherapy and other techniques such as medical therapy, music therapy, communicative movement therapy, art therapy, social therapy, and various relaxation methods.

The findings of the present study indicate that multimodal approach for the management of somatization disorder is found efficacious in enhancing general health.

The findings of the present study are consistent with the study done by Blanchard et al. They also reported multimodal approach for the management for somatization patients were found effective in the management of long-term improvements in the number of somatoform symptoms and subjective health status.

In a study on somatization disorder, patients were gone through cognitive behavior therapy, relaxation training, and supportive work were reported after 1-year follow-up that somatoform symptoms were reduced compared with controls. Similar findings reported in a study done by Larisch et al. reported that short-term psychotherapeutic interventions for somatizing patients are effective in improving somatoform symptoms, quality of life, and emotional distress of the patients.

On SSCT findings, significant reduction noticed in overall conflict score, interpersonal area, and on self-concept area. Furthermore, trend of reduction found in conflict areas.

The findings indicative of significant reduction were found after applying multimodal psychotherapy intervention in total conflict score, in interpersonal area score, and self-concept area score. There was trend of reduction also seen in family area and sex area of test.

In a recent study done by Pieh et al. and reported that quality of life significantly improved due to reduction of conflict in interpersonal area after multimodal therapy program. Single modalities of psychotherapy studies indicative that the level of conflict in reduce or somatization patients improve interpersonal relationship with close environment after intervention.

DMI results show that significant reduction in TAO, TAS, REV domains, and significant improvement found in PRN area.

The findings of the present study reported that the role of multimodal psychotherapy program in the changing defense mechanism is statistically significant.

Further, result findings indicative of TAO defense mechanism, PRO defense mechanism, TAS defense mechanism, REV domain which were found high in somatization patients before intervention reduced after intervention to the normal level of general adult mean. PRN domain was low in somatization patients before intervention, improved after intervention, to the normal level of general adult mean.

de Greck et al. as discussed that the efficacy of multimodal psychodynamic psychotherapy in the management of somatoform disorder reported defense mechanism significantly improved after multimodal psychodynamic psychotherapy.

Similar findings also reported in the study of Nickel et al. reported that manualized psychodynamic interactional group therapy for the treatment of somatoform pain disorders and found that immature defense mechanisms such as TAS or PRO reduced after intervention. However, treatment modalities were based on psychodynamic group therapy.

Durability of multimodal psychotherapy

The present study reported that there were significant differences found on BSI and GHQ, SSCT (total score, sex area, and on self-concept) score between postintervention and follow-up of the intervention group. The results show that therapeutic gain obtained after intervention was maintained and gradually conflict levels are deteriorating on follow-up.

Defense mechanism score is improving with time. It indicates that with follow-up defense mechanisms are becoming mature and also indicative that clinically therapeutic gain obtained after intervention was improving and maintained on follow-up.

The findings of the present study indicate that the improvement of psychological functioning was sustained, maintained and improving till follow-up sessions in context of somatic complaints, general health, in context of defense mechanism and in area of significant life conflict.

The findings of the present study are consistent of study done by Larisch et al. reported in their study that psychosocial interventions for somatizing patients are effective in reducing of somatic complaints and reductions of somatic symptoms were maintained in follow-up sessions.

The present findings suggestive qualities of life were maintained and improving in follow-up session. Similar findings reported by Fjorback et al. in their study and reported that therapy role was maintained in follow-up session.
The present study reported that life conflict and defense mechanism were improving in follow-up session and were supported by several studies done for the management of somatization disorder. However, assessment scales were different.

Limitations
Since it is time bound study, sample size was small which limits the generalizations of the findings. Due to small sample size, proper stratification could not be done on the basis of sociodemographic variables which also limit the understanding for impact of these variables. Since it is time bound study, longer duration of follow-up could not be taken which limits the broader understanding of impact of multimodal management program over a longer period of time.

CONCLUSION
The present study concluded that multimodal psychotherapy program combined with pharmacotherapy is effective in the improvement of psychological functioning and improvement is also sustained, maintained and improving till follow-up sessions in context of somatic complaints, general health, in context of defense mechanism and in area of significant life conflict.

This study would add further support to develop an understanding of problems of individuals having somatization disorder and to develop suitable intervention packages for them.

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Conflicts of interest
There are no conflicts of interest.

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