

## REVIEW ARTICLE

# ROLE OF YOGA IN THE TREATMENT OF NEUROTIC DISORDERS: CURRENT STATUS AND FUTURE DIRECTIONS

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*A large number of studies have consistently demonstrated the potential of yoga, not only in the treatment of psychiatric and psychosomatic disorder but also in promoting positive physical and mental health. This paper reviews various studies on the treatment of neurosis with techniques derived from yoga. A few lacunae have been identified and possible directions for future research are outlined. It is hoped that research along these lines will develop a standardized method of yoga therapy which can be utilized and integrated within the existing methods of treatment of neurotic disorders.*

*Key words: yoga, asanas, kriya, pranayama, uncontrolled clinical trials, double blind study.*

## INTRODUCTION

An increasing number of scientific studies on the effects of yoga have led to a greater awareness of its therapeutic potential and attempts have been made to apply it in diverse fields such as education, sports, psychiatry, psychosomatic and physical medicine. Three major groups of studies have highlighted the therapeutic potential of yoga in the field of clinical psychology. Though many of these have neither been well controlled nor replicated, these have consistently reported the beneficial effects of yoga.

The first group of studies on normal healthy volunteers practicing yoga show that it helps to reduce neuroticism, anxiety and hostility (Kocher, 1972; Kocher & Pratap, 1971 & 1972; Udupa et al, 1973; Singh & Madhu, 1987). There is an increase in expressiveness or catharsis, indicating decreased emotional complexes (Kocher & Pratap, 1971; Sahu & Bhole, 1983). Others have reported that yoga exercises help to release muscle tension (Karambelkar et al, 1969) and improve muscular efficiency as seen in enhanced strength, tone, flexibility and work output (Gharote, 1973; Gharote et al, 1976-77; Moorthy, 1982-83; Salgar et al, 1975). Due to improved functions of the entire muscular system, build up of chronic muscle tension is avoided, thus helping to promote a state of mental relaxation. Improved perceptual motor coordination has been reported by Pratap (1968), Kocher (1972) and Kocher and Pratap (1971-72). Cognitive functions showing significant improvement after yoga include immediate memory (Palsane & Kocher, 1973) and mental fatigue (Kocher, 1976; Udupa et al, 1973).

The second group of studies have been on physiological and biochemical changes after yoga practice. These have reported a reduced activity of the sympathetic nervous system (Selvamurthy et al, 1983; Gharote, 1971), a reduced physiological reactivity to stress (Pratap, 1969) and a faster regaining of homeostasis after stress as a result of yoga training (Selvamurthy et al, 1983 & 1988). Reduced body metabolism during resting conditions as well as during submaximal exercises have been reported by Sahay et al (1982), Santhanam (1976) and Raju et al (1986). Economical energy expenditure is indicative of improved physical fitness and it means that less energy is expended by the body for more work.

This is also indicated by an improvement in other body functions such as respiratory functions (Bhole et al, 1971-72; Nayar, 1975; Gore & Gharote, 1981; Gopal et al, 1975), cardiovascular efficiency (Ganguly & Gharote, 1974; Gharote, 1982; Selvamurthy, 1983), kidney functions (Kesari et al, 1979) and thermoregulation (Bhatnagar et al, 1978). Neurochemical changes indicate increased level of corticosteroid (Udupa et al, 1975; Selvamurthy et al, 1983). It has been postulated that improved adrenocortical functions contribute to the enhanced stress tolerance which is observed after the practice of certain yogic exercises. In comparison with physical exercise, which seems to primarily influence skeletal muscles, yogic practices affect the endocrine and vital organ functions (Udupa, 1975; Udupa & Singh, 1978). Also, the specific rehabilitative effects of yogic practices on different vital organs may be due to improved microcirculation in these areas.

Theoretical systems have been put forward to explain the mechanism of action of yogic practices (Kuvalyanand & Vinekar, 1968; Bhole, 1973 & 1977-78). These studies have given substantive weight to subjective reports of enhanced physical and mental functioning after regular practice of yoga (Sehgal, 1992, unpublished; Walia et al, 1992).

A third group of studies have examined the therapeutic applications of the techniques derived from yoga. Beneficial effects have been reported for essential hypertension (Datey et al, 1969; Patel, 1973; Udapa 1975 & 1979; Shettiwar et al, 1983-84; Chaudhary et al, 1988; Poddar et al, 1985; Brownstein et al, 1989); ischemic heart disease (Tupale et al, 1973 & 1980; Lakshmi Kanthan, 1979); diabetes (Sahay, 1986); irritable-bowel syndrome (Madhu et al, 1988); nasobronchial allergy (Goyeche et al, 1979; Sims, 1981; Kaushal et al, 1988; Neti & Srinivasan, 1989; Vincent, 1986; Singh, 1987); psychogenic headache (Prabhakar et al, 1991; Lalitha & Kaliappan, 1987; Sethi et al, 1981); back pain (Nespor, 1989); burnt-out professional syndrome (Walia et al, 1992) and in cases of stuttering (Sahasi & Pandit, 1985). Uma et al (1989) reported an improvement in social adaptation in mentally retarded children after practice of yoga. Calajoe (1986) and Grover et al (1990) have discussed theoretical aspects of yoga as a therapeutic component in the treatment of drug dependence. However, no empirical evidence has been provided.

Thus, each of the three groups of studies give sufficient empirical grounds to further examine and evaluate the role of yoga in applied psychology. The effect of yoga on psychological and physiological functioning in normal healthy volunteers as well as in psychosomatic and stress related conditions indicate its utility in the prevention of disease and promotion of positive physical and mental health. Few studies are reported on the therapeutic effect of yoga in neurotic illness, which have been discussed below in detail. Some of the lacunae in these studies have been identified and indications which emerge for future research have also been highlighted.

## REVIEW OF LITERATURE

Studies by Vahia et al (1966, 1969, 1972 & 1973) and Naug (1976) were uncontrolled clinical trials and both reported a significant improvement in patients treated with yoga techniques. The studies by Vahia et al were part of pilot project which was established at the Psychiatry Department, K.E.M. Hospital, Bombay, to assess the value of yoga

therapy. In all these studies, an integrated "psychophysiological yoga treatment" comprising of postural patterns, breathing, meditation and supportive psychotherapy based on yoga was taught to the patients. Treatment was conducted six days a week, each session lasting 40-60 minutes, over a period of 4-6 weeks. The results of the various studies are briefly given below.

Table 1

Diagnosis	n	Significantly improved 75%	Moderately improved 50%	Not improved < 50%
Anxiety reaction	14	10	1	3
Anxiety with depression	5	5	0	0
Conversion reaction	5	3	2	0
Total	24	18 (75%)	3 (12.5%)	3 (12.5%)

In 1966, Vahia et al reported their findings on 24 subjects (Table 1). The mean duration of illness was 2.68 years (range 2 months to 10 years). Thus, 75% of patients showed significant improvement and 12.5% showed moderate improvement. The relationship between outcome and clinical variables was not specified. The criteria for evaluating improvement were also not specified, though it was stated that the assessment of improvement was made at weekly conferences.

In 1969, Vahia reported the outcome of two month supervised yoga treatment in 92 neurotic patients who were refractory to usual treatment methods (Table 2). Evaluation was based on combined ratings of patients, relatives and the medical team as well as changes in target symptoms. Improvement rates differed significantly according to diagnosis, with anxiety cases showing maximum improvement. There was no correlation between improvement and duration of illness.

Table 2

Diagnosis	n	Improved	Not improved	% improved
Anxiety Reaction	40	33	7	82.5
Anxiety with depression	32	13	19	40.6
Hysteria	20	10	10	50.0
Total	92	56	36	60.9

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**Table 3**

Diagnosis	n	good	Improvement moderate	slight	nil	Good and moderate %
Anxiety reaction	35	16	11	8	0	77.1
Anxiety depression	24	10	10	4	0	83.3
Obsessive compulsive neurosis	1	0	1	0	0	100
<b>Total</b>	<b>60</b>	<b>26</b>	<b>22</b>	<b>12</b>	<b>0</b>	<b>80%</b>

In 1972, Vahia et al reported the outcome of yoga treatment on 60 patients suffering from various neurotic disorders (Table 3). No medication was given during this time. There was significant improvement in 80% of patients as shown above. Duration of illness and severity of external stress did not influence the outcome.

In 1973, Vahia et al reported a study of 200 patients comprising of anxiety neurotics (n=79), neurotic depression (n=48), conversion reaction (n=38), mixed neurosis (n=1) and psychosomatic disorder (n=34). The minimum duration of treatment was 2 months, but for some patients the treatment was continued for longer. In this study, the outcome was not reported separately for different diagnostic groups and overall significant improvement was present in 66.4% cases. Although, a significant relationship was reported between improvement and number of sittings, duration of illness and disease, no further elaboration of this result was given.

Naug (1975) reported a significant improvement in 75% of 20 chronic refractory neurotic patients treated with 4 weeks of yoga therapy. The treatment comprised of physical postures (asanas) and breathing exercises (Pranayama). The improvement was maintained at follow up, which ranged from one month to two years.

Each of the above mentioned studies had various limitations. There were no controls for the non-specific healing effects arising due to patient-therapist interaction. Neither was any attempt made to control for bias by adopting a blind procedure. Although these studies reported significant improvement, the criteria for defining improvement was not clearly specified. From the information available in published articles, it appears that a direct assessment of improvement by the clinician was

conducted in the study by Naug (1975). However, this is one of the most unreliable methods of evaluating changes as it depends on the clinician's memory of the mental status of the patient before treatment and a comparison with the present clinical status to quantify improvement. It is interesting to note that a high improvement rate has been reported in both the above mentioned studies even though the techniques of yoga therapy were quite different. Two well controlled studies have been conducted by Vahia et al (1973 & 1975) and Sethi et al (1982).

Vahia et al (1973 & 1975) reported a double blind study on chronic refractory neurotic patients who had shown no response to drug treatment. They were randomly assigned to three treatments: (i) Pseudo-treatment resembling yoga (n=12), (ii) Comprehensive yoga therapy including postural patterns (asanas), breathing exercises (Pranayama), meditation, individual counselling and group lectures based on the yogic principles (n=46), and (iii) Partial yoga therapy, comprising of postures (asanas) and breathing exercises (Pranayama) only (n=49). The duration of treatment was for one hour daily over four weeks. Improvement was rated using a list of target complaints and improved work efficiency as reported by the patient and relatives. Taylor's Manifest Anxiety Scale was also administered.

Comprehensive yoga therapy resulted in a significant improvement (i.e. reduction in the target symptoms by 50% or more) in 73.9% patients. However, "partial" therapy caused a significant improvement in 42.9% patients only. Improvement was also seen on lowered scores of the Taylor's Manifest Anxiety Scale. There was no improvement in the pseudo-treatment group.

Sethi et al (1982) supported the findings of Vahia et al (1973) with patients sufferings from anxiety state. This study however did not use blind controls.

The subjects were randomly assigned to two groups: (i) Yoga therapy comprising of postural patterns or asanas ( $n=16$ ), and (ii) Placebo treatment resembling yoga ( $n=14$ ). The treatment was conducted over six weeks. Assessment was done using multiple outcome criteria: (a) Rating on the target symptoms by the clinician, (b) Psychological tests such as P.G.I. Health Questionnaire N-2; Taylor's Manifest Anxiety Scale; Psychosomatic Experience Blank part I and II, and (c) Rating on the severity of stress in interpersonal, heterosexual relations, domestic, occupational, social and personal life. There was significantly greater improvement in the yoga therapy group as compared with the placebo group. The severity of stress, though reduced, was not statistically significant. The maximum reduction of perceived stress was in the personal life.

Both the above studies show that the improvement observed in yoga treatment is not due to only the patient-therapist interaction or the milieu effect. The placebo group in both studies showed no improvement even though the duration of the patient-therapist interaction was the same as in the yoga group. However, it is not possible to compare improvement rates in the two studies because different outcome criteria were used. Moreover, diagnostic groups within neurosis have not been specified by Vahia et al (1973).

It is also not clear how diverse and independent outcome criteria based on target complaints, psychological test scores and work efficiency as reported by patients and relatives were combined to give an overall index of improvement. Again, it is worth noting that the content as well as duration of yoga therapy was different in the two studies. Nonetheless, it is clear that even "partial" therapy used by Sethi et al (1982) resulted in significant improvement in the anxiety neurotic patient.

Three studies reported a comparison of yoga therapy with pharmacotherapy which is given routinely to out-patients in general hospitals. Balakrishna et al (1977) made a comparison of drug therapy ( $n=41$ ) with comprehensive psychophysiological yoga therapy ( $n=34$ ) in the treatment of 75 neurotic patients. The duration of therapy was about 2 months. The therapy was given six times a week, each session lasting for 45-60 minutes. Evaluation was done by two independent methods: (i) Clinicians' rating of improvement, and (ii) Psychological tests i.e. Taylor's Manifest Anxiety Scale, Hamilton's Depressive Inventory and Bell's Social Adjustment Scale.

The outcome using two independent outcome criteria was not same. Clinician's ratings showed drug therapy to be more effective than yoga therapy. However, psychological tests showed a significantly greater improvement in anxiety and social adjustment in the yoga group than in the drug group. The change in depression was comparable in both groups. According to psychological tests, drug therapy caused a significant reduction in depression only, but not in anxiety or social adjustment. In contrast to this, yoga therapy resulted in significant improvement in anxiety, depression and social adjustment.

Grover (1986, unpublished) compared yoga therapy with drug therapy. The patients were assigned to three independent groups: (i) Yoga therapy comprising of cleaning processes (Kriyas), postures (asanas) and breathing exercises (Pranayama) ( $n=20$ ), (ii) Yogic relaxation based on shavasana ( $n=20$ ), and (iii) Drug therapy ( $n=20$ ). Patients were given 10-15 treatment sessions, each lasting about 40-45 minutes spread over 4-6 weeks. At the end of this period, they were re-evaluated and asked to continue the practice at home. Follow-up assessment was made at the end of four months. Three independent criteria were used to assess the outcome: (i) Clinician's ratings on various neurotic symptoms were summed to give 'Total Clinical Ratings', (ii) Psychological tests i.e., P.G.I. Health Questionnaire N-2; the Amritsar Depressive Inventory, Middlesex Hospital Questionnaire and Psychiatric Disability Scale, and (iii) Patient's own subjective self reports of improvement. Some of the findings, which were consistently reflected on each one of the independent outcome criteria were as follows:

At the end of 4 to 6 weeks i.e. at post-treatment evaluation, the improvement in the three groups was comparable. However, subsequently at the end of the follow-up period, the improvement in the yoga therapy group was significantly greater than in the drug group on all the outcome criteria. Also, in each of the three treatment groups, maximum improvement had occurred by the end of the first 4-6 weeks. Thereafter, at follow up the yogic relaxation and drug group, showed no further change. The yoga therapy group continued to show a significant improvement at follow up and there was no plateau effect even by the end of the study period. This implies that the full effects of yoga therapy take longer to emerge and stabilize. However, as in the study by Balakrishna et al (1977) there were some

contradictory findings; in the drug group, the total Clinician's Rating showed the improvement to be statically significant. This was not fully confirmed by psychological test reports. Out of the four psychological tests, only one i.e. P.G.I. Health Questionnaire N-2 showed a significant change. It is worth mentioning that the assessment in both above mentioned studies was not blind.

Sahasi et al (1989) assigned anxiety neurotic patients to the following treatment modalities (i) Yoga therapy comprising of physical-postures (asanas) (ii) Drug therapy. Yoga therapy was given over 3 months, 5 days, per week, the duration of each session was about 40 minutes. Evaluation was conducted by means of the following (i) Knox Cube limitation test (ii) Locus of Control Test (iii) Symptom Sign Inventory (iv) IPAT Anxiety Scale. Some difference were noted in outcome of two treatments. In the yoga group, there was a significant improvement in anxiety and neurotic symptoms. There as a significant change in the locus of control from outer to inner control. In comparison, drug group did not show a significant reduction in anxiety or neurotic symptoms. There was a change however, in the locus of control. The number of subjects showing significant improvement (i.e. 50% or more) was 11.2% in the drug, group and 50% in the yoga group.

Thus, although all the three studies do suggest that yoga therapy is more effective than the drug therapy, both Balakrishna et al (1977) and Grover (1986, unpublished) reported an inconsistency in psychiatrist's rating of improvement and psychological tests results. This raises questions regarding the most reliable and valid methods of evaluating changes in outcome research which have been examined later. As the evaluation was not blind, it is not possible to rule out sources of bias during evaluation.

Udupa (1975 & 1979) used a combination of yoga therapy and drugs in a study of 50 patients with anxiety neurosis. In chronic cases, medicine and yoga therapy comprising of postural pattern (asanas) were given together. With time, drugs were gradually reduced. However, when the diseases was not chronic, yoga therapy was given alone. The treatment was given over three months and post treatment evaluation was conducted at the end of this period. It was based on clinical impression and reduced drug requirement. It was reported that 42.2% of subjects were partially or completely relieved with yoga alone; 26.6% were substantially

relieved with yoga together with reduced dosage of medicine and 18.8% dropped out. No follow up has been reported.

In summary, the above studies showed a significant improvement in 42.2% to 80.0% patients undergoing yoga therapy. In the two well controlled studies, yoga resulted in a significantly greater improvement than placebo treatments resembling yoga (Vahia et al, 1973 & 1975; Sethi et al, 1982). Comparison of drug therapy with yoga therapy showed the latter to be more effective on some of the outcome criteria (Balakrishna et al, 1977; Grover et al, 1986 (unpublished); Sahasi et al, 1989). Despite this fairly consistent picture, the above studies have some serious limitations. Moreover, many important questions remain unanswered. These have been discussed below.

### LACUNAE AND LIMITATIONS

#### Study design and evaluation of outcome

An important question which needs to be answered while evaluating effectiveness of any treatment modality is that concerning the relative contribution of specific and common factors in determining the treatment outcome (Garfield & Bergin, 1986). Common factors such as the quality of patient-therapist relationship and the attitude and expectation of both the patient and therapist may contribute to improvement. The relative contribution of these factors needs to be determined for yoga therapy as the latter requires frequent interaction between the patient and the therapist. In the various studies cited above, each treatment session was of 40-60 minutes duration and the number of sessions ranged from 10 to 15, spread over 4-5 weeks to daily over a three month period.

Generally, research attempts to control this variable by having a placebo control group. Only two studies included a placebo control group in which pseudo-treatments resembling yoga were given (Vahia et al, 1973; Sethi et al, 1982). This form of control is however, not always possible. The ethical dilemma of keeping a patient without treatment may deter the researcher from using such forms of pseudo-treatment control. Instead, it may be more feasible to compare yoga therapy with relaxation training, biofeedback or psychotherapy so that it becomes possible to hold constant the duration of patient-therapist interaction. Such a research design may help in identifying effects arising due to the specific treatment modality. Another method by which contribution of factors other than specific

treatment may be assessed is by long term follow up. Underlying this is the assumption that a temporary improvement which may occur due to various non-specific situational factors would be lost over time after the patient-therapist interaction ceases to take place.

Another important source of bias which can affect the validity of results is the process of evaluation itself. The evaluator's attitude and expectation may cause conscious or unconscious distortions while evaluating improvement. In order to overcome this, the standard procedure is to have blind evaluation. Only one of the studies had this control (Vahia et al, 1973). The necessity for this form of control is also highlighted by two studies (Balakrishna et al, 1977; Grover, 1986) in which drug therapy was compared with yoga therapy. Both reported that clinicians' ratings showed significant improvement in the drug group which was not reflected by self reports of patients on psychological tests. Without any form of control, it becomes difficult to determine the cause of such differences between clinician's rating and other independent measures of outcome.

Discrepancy in clinical rating and psychological tests can also arise as an artifact of the nature of measurement. It is well known that independent measures of outcome using different sources of information and measurement techniques are often inconsistent with each other (Ellesworth et al, 1968). Thus, while assessing outcome, it is necessary to use different methods of evaluation in order to minimize the possibility of erroneous conclusions arising due to artifacts of measurement. Not only this, while interpreting outcome, for every change being examined, if the same outcome is consistently reflected on all the different measures, it indicates that the change is definitely present. However, when there is lack of agreement, then at best, it implies a relatively small change which has become obscured due to the various sources of error operating at the time of assessment (Endicott & Spitzer, 1980).

When interpreting findings, relatively more weightage needs to be given to psychological test reports for it has been stated that in evaluating subjective distress in patients who are not severely disturbed (i.e. non-psychotic), self report measures are more sensitive than evaluations made by professionals on clinical interview (Raskin, 1971). In the studies cited above, clinician's rated globally the overall severity of neurotic illness. However, evaluation using psychological tests was confined to specific neurotic symptoms such as anxiety, depres-

sion, social disability etc. In order to obtain a reliable and valid picture of nature of changes induced by a particular treatment modality, it is necessary to evaluate the same symptom e.g. anxiety, depression etc. by independent methods and then pool the data obtained before making interpretations regarding the efficacy of treatment. Such detailed evaluation will help in making a comprehensive comparison of yoga therapy with other treatment modalities.

### **Delineating the area of treatment efficacy**

Although all studies reported a significant improvement in neurotic patients as a result of yoga therapy, the exact specification of outcome in terms of the diagnostic subgroups has been given in four studies only. The remaining studies reported the outcome for the broad heterogeneous group of neurotic patients as a whole. It is well known that the different subgroups within neurosis i.e., anxiety, depression, obsessive compulsive neuroses, hysteria, phobia, etc. differ not only in the manifest symptomatology, but also in terms of prognosis. Yoga therapy may have different effects on each of these diagnostic subgroups. For instance, Vahia (1972) reported 77% improvement in patients with anxiety neurosis and 83% in those with neurotic depression. Hence, a greater number of studies, using well defined diagnostic groups seems to be essential at this stage in order to identify those for whom yoga therapy a likely to be most beneficial.

In addition to stating outcome in general terms, i.e. as percentage improvement, there is a need to evaluate change in the specific neurotic symptoms such as anxiety, depression, hysterical, obsessional symptoms, etc. This will help point out those aspects of neurotic symptomatology which are influenced by treatment as opposed to those that remain unchanged. For instance, one study (Grover, 1986) reported obsessive symptoms to be most resistant, whereas anxiety reduction was dramatic. However, obsessive symptoms showed a significant improvement in relaxation treatment group. More data are needed to confirm such findings.

### **Prognostic indicators**

Variables which may help to predict response to treatment need to be identified. In the studies given above, a group of patients ranging from 20% to 58% did not show clinically significant changes. An understanding of the clinical characteristics, duration, diagnostic subgroups, severity of illness etc. of patients who respond and those who do not is necessary to identify those best suited for yoga therapy.

As most studies do not specify the relevant clinical characteristics such as severity of symptoms and duration of illness, it is impossible to understand the contribution of these important variables to the treatment outcome.

### **Feasibility of using yoga therapy**

It is well known that neurotic outpatients show a high drop out rate (Srinivasa Murthy et al, 1974 & 1977; Wig et al, 1979; Millicans, 1993 (unpublished)). This is so despite the fact that chemotherapy which is routinely given in outpatient settings places little demand on patients in terms of time spent in reorganizing life habits. On the other hand, yoga therapy requires a much greater time and effort on the part of the patient. It needs to be exactly assessed how many patients accept and complete such a treatment. A study of characteristics of those who accept yoga treatment and those who drop out can help in creating conditions more favorable to treatment acceptance, thereby making yoga therapy more feasible.

A study of reasons for dropout is also important, especially when a new treatment modality is being examined. Dropouts pose various problems in the interpretation of data. For instance, if dropouts constitute treatment failure and these who complete the treatment form a biased sample of positive responders, then the generalization of conclusions obtained to a larger sample will be erroneous unless the reasons for dropout can be established.

### **Standardization of yoga therapy**

It is interesting to note that in the studies cited above techniques of yoga therapy used were quite different. Some used only physical postures (Sahasi et al, 1989; Udupa, 1975 & 1979), while others combined these with breathing exercises (Naug, 1975) and still others used a third additional step i.e. cleaning processes (Grover, 1986). Vahia et al (1973, 1975 & 1976) and Balakrishna et al (1977) developed an integrated psychophysiological therapy which included counselling and group lectures as well. Not only content, but the duration of treatment and the number of sessions was not the same in these different studies.

A closer look showed that apparently even the same technique i.e. physical postures (asanas) in fact included a variety of exercises. Even when the exercise itself was the same, the manner in which it was taught was different. Hence, it is obvious that the word "yoga therapy" is a blanket term which hides from readers an important fact that there is no such

thing as an uniform standardized yoga therapy. It is apparent that the different research workers collaborated with different experts and organizations. A survey of some yoga centers by the authors did bring to light the fact that even for the same disease entity, the treatment approach may be altogether different. In an absence of a clear rationale, it becomes difficult to understand this tremendous variation in treatment approaches in terms of common underlying principles.

Thus, a challenge which faces current research is: Which is the most suitable treatment approach and why? For instance, the different studies by Udupa (1975), Sahasi et al (1989) and Vahia et al (1972) reported a significant improvement in 68%, 50% and 77% respectively of patients with anxiety neurosis after yoga therapy. Do these improvement rates reflect a differential effectiveness of the treatment modalities employed or is the outcome related to some clinical variables such as duration or severity of illness at intake? However, these important clinical characteristics have not been specified in many studies. Only Vahia et al (1972) reported that outcome was not related to duration of illness. Vahia et al (1973) also reported 'partial therapy' based on two yoga techniques to be definitely less effective than the comprehensive integrated 'psychophysiological therapy' based on yoga. However, other researchers such as Naug (1975), Udupa (1975) and Grover (1986) have reported that even this 'partial' therapy was equally effective.

If research studies clearly indicate the yoga centers which collaborated in the formulation of yoga therapy, it may be possible for other workers to independently replicate the treatment method and re-evaluate or ascertain the validity of the findings. An evaluation of these different treatment approaches needs to be made and a standardized therapy developed based on the various considerations such as efficacy and feasibility.

## **CONCLUSION**

Although a large number of studies have consistently reported the beneficial effects of yoga practices, it has not been integrated with the present day psychological services. This may be due to several lacunae and limitations in research. Research along these lines can help in developing yoga therapy as a scientific discipline, which can be utilized and integrated within the existing methods of treatment of neurotic disorders.

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