

## Recent Advances in the Psychological Management of Physical Illnesses

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### Abstract

Psychological aspects of physical illnesses are gaining importance in the integrated management of both severe and not so severe physical diseases. Depression and anxiety, are the commonest disorders. However, drug interactions, and drug related adverse effects also need to be understood. The psychological morbidity related to cancer, its treatment, and that associated with terminal phases of cancer, and cancer survivors are discussed here. Pharmacological management of psychological disorders like depression and anxiety in the medically ill has been reviewed. The role of hypnosis in physical illnesses has been emphasized in the last part of this review.

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### Key words -

**Physical illness,**

**Cancer,**

**Psychological Treatment,**

**Hypnosis**

Occurrence of psychological disturbance like depression, during the course of, or shortly after a physical illness is more frequent than usually thought of. It has been observed that 25% to 40% of subjects with certain neurological conditions like Parkinson's disease, multiple sclerosis, stroke or Alzheimer's disease will develop marked disorder at some time during the course of the illness. For other chronic physical illnesses without direct involvement of the CNS, rates of psychiatric morbidity are more variable, ranging from 8% in end-stage renal disease to more than 60% in Cushing's syndrome. Almost a third of epileptics are likely to develop depression. Similarly, one third of the patients attending a stroke clinic were found to be depressed. Depression appears to be common in patients with Parkinson's disease, occurring 60 to 90% [1]. Psychiatric problems are well known in hyperthyroidism and hypothyroid subjects. Neuropsychiatric manifestations are now being reported in upto 60% of patients with SLE. Depressive and medical disorders often occur concomitantly, causing amplification of somatic symptoms. Psychiatrists should think medically about their patients, because underlying medical disorders often present with prominent psychiatric signs and symptoms, especially depression. It has been estimated that anxiety, depression syndromes occur in about 30 to 60% of all medically ill patients. Since it would not be possible to discuss in detail psychological problems and their management for all

medical illnesses, let us examine the psychological problems associated with cancer.

Psychiatric problems have been frequently reported in cancer patients. The commonest problems encountered are depression, anxiety and adjustment reactions. The psychiatric morbidity in relation to cancer has been reviewed recently and can be classified as:

- I. Morbidity related to diagnosis of cancer in patients and their family members,
- II. Morbidity related to the treatment modalities.
- III. Morbidity associated with terminal phases of cancer.
- IV. Problems of cancer survivors.

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A.

### **Morbidity related to diagnosis**

The common emotional reactions in a patient diagnosed to have cancer are shock, denial disbelief, anxiety anger, guilt and depression. The emotional distress is due to fear of incurability, pain, disfigurement, recurrence of disease, and a sense of helplessness over its treatment. Cancer may affect the family in a similar way as it invades the body of the patient. Among the psychiatric morbidity observed in family members of cancer patients are enuresis, school phobia and depression in siblings; conversion reactions, psychosomatic and psychosexual problems in the parents, and anxiety and depression in the spouse.

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B.

### **Morbidity associated with treatment modalities**

Psychiatric morbidity associated with cancer therapies range from 18 to 40%. Surgical procedures like mastectomy, permanent colostomy, maxillofacial surgery and hysterectomy have been studied well and reported to produce immense psychological impact on patients, like depressive illness, psychosexual problems and social problems (isolation, loneliness, decreased social visits), drinking, and occasionally suicide. Radiotherapy has been reported to cause nausea, a peculiar denerving kind of fatigue, poor psychosocial adjustment, unrealistic expectation about the outcome and non-engagement with the physician. Chemotherapy has been found to cause fatigue, nausea and irritability along with adverse effects on the family and/or sexual life. Vinka alkaloids are especially known to cause depression.

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C.

### **Morbidity related to terminal phases of cancer**

Terminal phases of cancer are frequently complicated with psychiatric disturbances possibly because of physical symptoms and a fear of painful death. The disease process can cause organic brain syndromes through metastasis and paraneoplastic syndromes. Severe cancer pain and other distressing symptoms like nausea, cachexia, bowel changes etc. are additional problems during terminal stages.

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D.

### **Problems of cancer survivors**

The cancer survivors report adjustment problems, depression, anxiety, low self esteem, frequent work problems including fear, shame, discrimination and tendency to be secretive about their diagnosis. Many survivors also have persistent somatic or physical complaints like fatigue, pain and lassitude.

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### **Pharmacological treatment of psychological disorders in the medically ill**

Pharmacological treatment of the psychological problems in the medically ill patients is complicated mainly by factors like altered pharmacokinetics of the drug used, increased sensitivity to the side effects and interactions with various other drugs which are used concurrently.

A major problem posed by the physically ill patients to the psychiatric management is drug interactions. With newer drugs being added to the existing many, the task of preventing adverse drug interaction can rather be called herculean. Nevertheless, an attempt has been made to sketch the complexity of the situation with emphasis on newer drugs.

While the interactions with tricyclic antidepressants have been extensively studied, the newer drugs like specific serotonin reuptake inhibitors (SSRIs) have not been studied to the same extent. This has resulted in a notion that these newer drugs are absolutely safe with any kind of medication. A few studies involving this group of drugs have shown that this is not completely true. In a few reports, a combination of phenytoin and fluoxetine was found to have resulted in phenytoin toxicity [6], [7], [8]. Fluoxetine induced heart block when given to patient who was on propranolol and lorazepam [9]. Fluoxetine was also found to have increased warfarin level in the blood [10], [11], [12]. In another case, Bupropion was found to have produced agitation and delirium in patients taking amantadine [13]. Though in most of these cases, cause and effect relationship cannot be discerned, these challenge the belief regarding safety of these newer drugs.

Nevertheless, the specific serotonin reuptake inhibitors use is found to be better in patients with medical illnesses. This group of drugs has been found to be safe in patients taking digoxin for the treatment of cardiac failure [14], [15].

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### **Antipsychotics**

Antipsychotics are used for the treatment of psychotic symptoms seen in a wide variety of psychiatric conditions. One common neurological condition, where antipsychotics have to be used often is neuropsychiatric complications related to epilepsy. In addition to the effect of antipsychotics on seizure threshold, various interactions between the drugs can alter their serum levels leading to problems. While most antiepileptics decrease the serum levels of antipsychotics used concurrently, valproate increases it [16], [17]. A combination of haloperidol and carbamazepine, in addition to the neurotoxicity, there may also be a reduction in the level of haloperidol leading to aggravation of psychiatric condition [18]. Carbamazepine can also reduce the blood levels of clozapine [19]. Propranolol, a commonly used drug in patients with hypertension can reduce the renal clearance of

antipsychotic thiothixene leading to its increased plasma level [20]. While propranolol had the same effect on chlorpromazine metabolism but haloperidol was found to be free of this [21].

The antipsychotic, pimozide is a powerful cardiac depressant because of its calcium channel blocking action and hence should not be used with other calcium channel blocking drugs [22]. There is a case report of a combined use of Cimetidine and Clozapine producing severe dizziness in a patient [23].

The drug interactions of the commonly used mood stabilizer lithium is rather well elucidated. While diuretic thiazide and ACE inhibitor Enalapril [24] were found to have increased serum lithium, loop diuretic like Frusemide, Calcium channel blockers like Verapamil [25], [26] and amiloride [27] were found to be comparatively safe in some studies.

Propranolol was found to have decreased the renal clearance of lithium [28] but is generally found to be safe clinically. With antihypertensive methyl dopa lithium may produce severe neurotoxic reactions [29]. Report on the serum level alteration of lithium by the antibiotic tetracycline have yielded conflicting results but generally is not advisable to combine these two drugs. Bronchodilators like theophylline may increase the renal clearance, decreasing the serum lithium level.

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### **Treatment of depression in medically ill**

In general, studies have shown that depression in patients with medical illness is less likely to respond to the commonly used antidepressants [30], [31], [32]. Certain factors have been pointed out to explain the findings:

- 1) Since majority of the physically ill patients are in the geriatric group, age may be a confounding factor.
- 2) Due to the increased sensitivity to side effects, doses in general have been found to be inadequate. In [30].

Though this appears to be the general understanding, a few studies have proved the usefulness of antidepressants in the treatment of depression in the medically ill patients. Costa et al [33] found a group of cancer patients to have improved in terms of both reduction in depression and improved quality of life with antidepressant treatment. Another study showed very low doses of doxepine to be an effective antidepressant for a group of patients with mixed medical illness [34].

Another group of drugs which has been effective in the treatment of depression in the medically ill patient is psychostimulants [35], [36], [37]. There is a report that antidepressant Venlafaxine is safe in patients with cardiovascular problems [38]. A few double blind studies have shown the specific serotonin reuptake inhibitor, fluoxetine as equally effective as tricyclic antidepressant. With a better side effect profile this group of drugs seems to be ideal in patients with various medical illnesses.

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### **Treatment of anxiety in medically ill**

When the anxiety is acute, benzodiazepines like lorazepam, oxazepam and temazepam are preferable since these drugs are conjugated directly without having to undergo oxidative metabolism. When the anxiety is chronic, newer drugs like buspirone would be useful. This topic has been extensively reviewed in recent articles [41], [42].

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## **Use of lithium in the medically ill**

While most of the physical illnesses are not absolute contraindications for the use of lithium one should be cautious while using lithium in patients with physical illnesses. Before using lithium in patients with hypothyroidism, thyroid hormone should be supplemented and base line investigations using antithyroid antibody levels should be done [43]. Lithium has also been used successfully in patients with chronic renal failure with close serum level monitoring [44]. It has also been used safely in patients undergoing dialysis [45]. Another study suggested its usage in patients undergoing renal transplantation [46]. While in patients receiving kidney from live related donors lithium level could be increased to the normal therapeutic dose on the first post operative day itself, in patients receiving kidney from cadavers this could be done only later, after a few days. Besides, drugs commonly used in patients undergoing renal transplantation like methyl prednisolone and cyclosporine were found to have interactions with lithium. A few reports have shown that the psychotic symptoms and agitations occurring in Alzheimers disease patient can be treated by a safer and more effective way by lithium and anticonvulsants like Carbamazepine and Valproate [47], [48]. The antipsychotic molindon was found to be more effective and safer in HIV patients having delirium and psychotic symptoms [49]. Besides psychopharmacological treatment, there is a scope for behaviour therapy and hypnosis in the management of psychological problems of the medically ill.

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## **Behaviour therapy**

Gershman [50] has criticized physicians who cling to the conventional belief that successful diagnosis and treatment of physical symptoms can only be handled by medical interventions. Gershman further cautioned that a physician who lacks the psychological information that illuminates the environmental and personal contingencies that help to initiate, support and maintain a patient's symptoms - information such as that obtained by a behavioural analysis - risks deriving a deceptive image of the illness, extends treatment time, prolongs suffering, augments the risk of iatrogenic complications, and increases treatment costs [50]. The importance and benefit of behavioural intervention for the relief of cancer pain in described here.

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## **Behavioural intervention for cancer pain**

In cancer patients acute pain responses are typically associated with the treatment while chronic pain responses are associated with the state of the disease. Oncology treatments which evoke acute pain are invasive procedures commonly used in treatment such as bone marrow aspirations and lumbar punctures. The pain resulting from such procedures is not primarily due to psychological factors, but certain behaviours and anxiety can play an important role in the distress experienced by cancer patients undergoing such treatment. Hypnosis may be an effective intervention for acute pain arising secondary to aversive medical procedures. However, not all patients respond equally well to hypnotic

intervention . This is a function of both patient and therapist characteristics. More details about the use of hypnosis in the medically ill is discussed later in this review.

A number of investigators have examined the efficacy of nonhypnotic cognitive behavioural packages for children coping with procedure-related pain. These investigators use a multi component intervention package specifically for children undergoing bone marrow aspirations and lumbar punctures. In order to reduce children's distress, five components are employed: filmed modeling, breathing training, imagery/distraction, behavioural rehearsal, and positive reinforcement. Though diazepam can reduce distress prior to the procedure, it is not as effective as the cognitive-behavioural technique during the procedure itself.

Two types of intervention for chronic pain which develops secondary to disease are usually employed: pain perception regulation and pain behaviour regulation. Pain perception regulation is employed to provide self-control skills, e.g. relaxation and to help the cancer patient attenuate some of the pain experienced. Pain behaviour regulation, which focusses on those environmental events which contribute to the expression of pain behaviour and decrease opportunity for facilitating adaptive functioning is also a focus of intervention where appropriate. Cognitive-behavioural interventions for chronic pain employ a variety of skills to help them manage pain. The interventions can include cognitive restructuring, specific coping skills training, and the use of self-regulation techniques. Biofeedback is often employed in multi-component training programs to enhance relaxation. Biofeedback entails the use of sensitive electronic equipment to monitor and amplify physiologic activity, such as muscle activity or peripheral temperature in the form of a visual auditory signal. These signals are then used to provide feedback to the patient about his/her own physiology.

Behavioural therapy may also be useful for treatment related distress. through the interaction of many factors, patients may develop conditioned responses to chemotherapy which include protracted or severe nausea and vomiting following chemotherapy. In addition, a significant subset of patients who experience post-chemotherapy sickness develop symptoms of discomfort, nausea, vomiting, and anxiety prior to administration of chemotherapy drugs. The rationale and goals for using specific behavioural techniques in treating nausea and vomiting follow directly from the classical conditioning model of symptom development. In the approach described by Burish and colleagues [51] and Carey and Burish [52] patients are taught muscle relaxation to relieve themselves from the discomforts of treatment and in maintaining a low arousal state. When designing interventions for individual patients, behavioural clinicians can employ one of several relaxation techniques, i.e. imagery, progressive muscle relaxation, meditative breathing, etc. Eating difficulties among oncology patients have been found in both children and adults. Hypnosis is effective in increasing appetite and promoting weight gain. Operant techniques, such as behavioural reinforcement programs with rewards contingent on oral intake are also commonly used with children and often quite effective.

Relaxation exercises are usually found to be a practical, cost effective behavioural method for reducing anxiety in cancer patients, as well as controlling treatment related anxiety, nausea or vomiting. Relaxation exercises could be further enriched using imagery.

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## **Psychotherapy for cancer**

Despite the well-documented psychological distress associated with cancer, not many studies have

evaluated the use of psychotherapy for cancer patients, and those that have, show conflicting findings. Individual as well as group psychotherapeutic techniques have been tried for cancer patients. The group psychotherapeutic interventions have focused mainly on some aspect of social support and/or education. Social support groups are known to be effective in reducing emotional distress in cancer patients. Groups of cancer patients, those who have undergone surgery, chemotherapy or radiotherapy, or spouses, or family members can be very effective in alleviating distress among the participants. Obviously, groups are not the answer for every cancer patient that needs treatment. At the same time groups offer some advantages that make them worth further study. Social support can reduce psychological distress during times of stress. Groups that build on provision of education, encouragement of expression of feelings, sharing of experiences, and modeling of coping efficacy should have the potential for benefits to cancer patients. On the other hand, individual treatment helps develop a relationship of trust that patients could talk freely. Feelings of control over part of environment can be stressed. Meaningful activities should be encouraged for as long as possible. Listening to patients in what has been described as 'life review' helps to reinforce accomplishments, develop a sense of meaning to life, and provide the basis for increased self esteem and life satisfaction. Simply listening, understanding, and sometimes only sitting quietly with patients were elements of therapy [53]. A study by Linn et al [54] supported the hypothesis that quality of life was improved by individual counselling in terminally ill cancer patients. Results from studies of individual psychotherapy suggest that there is some benefit from treatment. There is little evidence at this time that results from one type of intervention differ much from another type in helping patients with cancer, but that some supportive therapy generally reduces distress. The assumption that all cancer patients need therapy and that any type of therapy is better than no therapy is unjustified. Some patients may actually do worse in treatment that they would have without psychotherapeutic intervention [53]. Crisis intervention is applicable for cancer patients when there is increased anxiety, emotional pain, and a breakdown of problem-solving skills. There should also be evidence that the patient is motivated to change in regard to coping behaviours. Brief dynamic psychotherapy has been successful with bereaved patients, a group with some of the same characteristics as those of cancer patients. Acute stress of cancer can produce changes in family relationships. Therapy requires working with the family as unit. Family dysfunction or symptoms are identified. The focus is on helping each individual change rather than on encouraging family members to try to change one another. The emphasis is on emotional attachments as it is reflected in emotional distance and conflicts between family members. Because cancer disrupts interpersonal relationships in families, family therapy may be appropriate to help clarify and resolve the feeling of the family members [53].

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### **Role of hypnosis in physical illnesses**

A consideration of hypnosis as a mode of treatment is both ancient and modern. Terms such as 'vision', 'trance', 'temple sleep', 'magic sleep', 'St. John's dance', and the like have been used to explain hypnosis in different cultures and at different times in history. Hence the view that "the modern garb of hypnotism is woven with the ancient threads of rituals and magic".

During the past two decades a lot of interest has been evinced in the neuropsychology of hypnosis. Accordingly hypnosis is considered to be a multistage phenomenon wherein there is

- (1) an increased involvement of the left hemisphere to start with: then
- (2) it is inhibited; followed by
- (3) a release of the right hemispheric functions [56].

However, many researchers in the field subscribe to Tart's view [57] that "hypnosis is an altered state of consciousness".

The usage of "altered states of psychobiologic functioning which could range from the light hypnoidal condition bordering on waking suggestibility to the plenary trance. EEG studies indicate several well defined patterns associated with drowsiness, very light sleep, moderate deep sleep, deep sleep, early morning sleep and arousal. So diverse are the views that in Dave Elman's [58] words, "None has seen the elephant hypnosis as it actually is ...".

One way of looking at what makes the individual not to perceive pain when he is suggested so during the trance is attributed to vivid imagination which is a prerequisite for hypnotic susceptibility. "During hypnosis, one woman pretended she was inside the Venus de Milo statue. Since she had no arms, she could feel no pain .." while her arm was immersed in freezing water [59]. Phenomena like this have been conceptualized in the light of neo-dissociation theory. Similar findings have been further replicated by Bowers [60], Miller, Barabasz and Barabasz [61]. It would also provide a window on the mind-body interaction in studying various diseases [62].

A consideration of what kinds of diseases respond to hypnosis is not easy to answer though it is "virtually impossible to conceive of a speciality in which hypnosis is not used as a part of treatment ranging from anaesthesiology to allergies, obstetrics, psychiatry, internal medicine, surgery, oncology, oral surgery, neurosurgery and emergency medicine" [63].

A better understanding of hypnosis stems from two sources:

- (1) findings based on laboratory research, and
- (2) observations made in the clinical setting.

Often the difference of opinion that erupts between researchers and clinicians is more due to the different orientations and objectives they hold. "While there are many unanswered questions about how hypnosis works and whom it will work for, enough evidence is in to support it fully as a therapeutic tool" [59].

It is a common observation that diseases with a purely physiological aetiology often have a psychological impact like depression, dependency, fear, anxiety, and pain. Side effects of chemotherapy could often cause a serious concern added to psychological reactions [63]. In such situations where a pronounced psychological factor is evident, hypnosis seems to be indicated. It facilitates patients towards a better quality of life by minimizing pain ...." [64].

A few research findings relating to cancer, coronary diseases, dermatologic disorders, and arthritis have been listed highlighting the therapeutic value of hypnosis.

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## Cancer

The Presidential address to the American Cancer Society in 1959 states that "here is a distinct possibility that within one's mind is a power capable of exerting forces which can either enhance or inhibit the progress of this disease ....". It is also the common observation that individuals with a "will



to live" often outlive others with similar degree of cancer involvement [65].

Recent studies have been showing interest in examining the relationship between the central nervous system and immunity functioning within the field of psychoneuroimmunology [66], [67].

Udolf considers hypnotherapy in cancer from the ethical view point which could be fitted in as an adjunct with palliative therapy. Burrows and Dennerstein [68] cite a study reporting 64% of the 22 patients cutting down 50% of the narcotic with the adjunct of hypnotherapy which demonstrates its value, though details of the patients represented is not known.

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### **Coronary disease**

Coronary disease is known to be accompanied by acute or chronic stress and emotional tension which would cause physiological changes in the form of elevated serum cholesterol upto 35mg in an hour. Studies have shown definite improvements on ECG after subjecting the patients to hypnotic relaxation. The improvement was mainly attributed to the reduction of pain, anxiety, and shock, though coincidental factors too might have been responsible. References are also made to the experiments where depression, anger, and fear could also be induced in individuals through hypnotic sensory-imagery conditioning. These induced emotional states showed an increase in the free fatty acids in the blood stream, suggesting that the ability to experience sensory distortion in hypnosis could be correlated with the biochemical changes at the physiological level.

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### **Dermatologic disorders**

The psychosomatic aetiology of dermatologic disorders is well-known. Expressions like-goose pimples, sweating, thick-skinned, and itching to do something - bring out the relationship between emotions and physiological states. Conditions like warts, psoriasis, eczema, urticaria and hyperhidrosis are reported to respond favourably to hypnotherapy. Clawson and Swade [69] in their study substantiated the hypothesis that psychological factors can influence the course of at least some viral produced disorders. Spanos et al, [70] reported that the subjects who received hypnotic suggestions treatment showed significant regression of warts when compared with either the acid test or placebo treatments.

Production of blisters, wheals, haemorrhage, sensory effects like anaesthesia and hyperaesthesia have also been demonstrated by direct hypnotic suggestions.

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### **Arthritis**

Domangue et al [71] examined the biochemical correlates of hypnoanalgesia in a group of 19 arthritic patients. They found clinically and statistically significant decrease in pain, anxiety, and depression. They also observed increase in betaendorphin like immunoreactive material.

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## Uses and limitations

Hypnosis is useful in selected cases either alone or in combination with chemical agents. It has great ease of administration and can be removed when desired. There is scope for post-hypnotic suggestions. It is also of use when chemical agents are contraindicated.

One of the major limitations to the use of hypnosis is that not all subjects are susceptible to it, and also some may not achieve the desired depth of trance. The induction procedure is time consuming compared to chemical anaesthesia. It is also not certain whether it can produce as profound a state of muscular relaxation as chemical agents [63].

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