Review Article

Behavioural medicine: an integration of psychology and health

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The process of evolution in health sciences has followed a similar path from being analytical to synthesized or holistic. Multidisciplinary approach has taken over the specialized approach in the area of health care delivery that follows bio-psycho-social paradigm in the understanding and management of health problems in the general hospital setting. Emergene of Behavioural Medicine is the result of such evolutionary process. *Behavioural Medicine is the interdisciplinary field concerned with the development and integration of behavioural and biomedical sciences, knowledge, and techniques relevant to health and illness and the application of this knowledge and these techniques to prevention, diagnosis, treatment, and rehabilitation.* The present article reviews the historical aspects of the emergence of Behavioural Medicine on the background of biopsychosocial model and impact of life-style factors on health along with the clinical application and role of Behavioural Medicine in the primary prevention. Relevance of Behavioural Medicine in the context of Nepal, and the contribution of clinical psychologists in the health care system of the country along with the need for accepting them in the mainstream of health professionals are highlighted.

Keywords: Behavioural Medicine, biopsychosocial model, primary prevention, diagnosis, treatment, rehabilitation.

Introduction

It was around early 20th century when the relationship between psychology and medicine was appreciated and psychology was introduced at graduate level teaching in the United States of America immediately after Lightner Witmer establishing first psychological clinic in 1896. Since then psychology or rather clinical psychology has been enhancing its applications in the field of illness and health. The development of professional and scientific activities in clinical health psychology, reflected in the proliferation of practice, research, and training has been due to the reemergence of the biopsychosocial model in health care. This model holds that health and illness are best understood not only in terms of biological factors, but psychological and social factors as well (Gentrry, 1984; Miller, 1987; Rodin & Stone, 1987; Stone, 1987; White, 1988). Psychologists have played a major role in the reemergence of this biopsychosocial perspective of illness, collaborating in growing numbers with professionals from a number of other disciplines like, physicians, surgeons, epidemiologists, public health experts, nutritionists, health educators, biochemists, nurses, etc., in the rapidly expanding research, training, and practice opportunities that collectively represent the interdisciplinary field of behavioural medicine (Matarazzo, 1980; Schwartz & Weiss, 1978; White, 1988). Representing, as Gentry puts it, the *crack between the disciplines*, behavioural medicine is the outgrowth of that new spirit of collaboration.

Behavioural Medicine is the interdisciplinary field concerned with the development and integration of behavioural and biomedical science, knowledge, and techniques relevant to health and illness and the application of this knowledge and these techniques to prevention, diagnosis, treatment, and rehabilitation. Central to this clinical paradigm is the recognition that illness and health, disease and behaviour, are multi-determined by genetic, biological, psychological, sociocultural, and ecological determinants, and can only be fully understood by analyses that integrate all of these factors. Behavioural medicine provides a state-of-the-art analysis of the roles of social cohesion, personality, and coping style in illness; personal and psychosocial factors mediating stress-illness relationships; psychological and biological factors contributing to various physical disorders, including cardiovascular and gastrointestinal disorders; and the efficacy of behavioural interventions at the individual and community levels.

Emergence of behavioural medicine

A number of factors have contributed to the recent advancement of scientific and professional activities in behavioural medicine. However, two major historical development stand out as providing the primary impetus for the increasing application of behavioural medicine in the health care field: (a) the reemergence of biopsychosocial model, and (b) the recognition of the increasing role of life-style factors in disease morbidity/mortality.

Biopsychosocial model

The recognition of psychological components of health and illness, and influence of the mind on bodily processes can be found in the ancient Greek writings during the 5th century B.C. (Rodin & Stone, 1987). In the 19th and early 20th centuries, the work of Freud, Pavlov, and Cannon set the stage for productive empirical studies of mind-body relationship or interaction. Later on two different trends emerged clearly in this area: psychoanalytic and psychophysiological. Psychoanalytic approach studied the relationship between personality and disease, on the other hand, psychophysiologists examined the relationship between laboratory-induced stresses and psysiological responses. Until recently, mind-body dualism dominated the perspective of psychosomatic medicine in the system where diseases were classified as either psychosomatic or organic. In contrast, the more recent version of biopsychosocial model holds that psychosocial factors are involved in all diseases because the individuals in whom they occur not only have a biological make up but a psychological and social make up as well. Guze *et al* (1953) proposed, first time, that physical and psychological factors played a role in varying degrees of prominence in all physical and mental disease states.

Now, the concept of biopsychosocial model of disease represents a major revision in the health care paradigm because it emphasizes the central role of behavioural, social and ecological/interactional factors in illness causality. This perspective has been supported by numerous empirical demonstrations of the somatic effects of psychological factors like stress, social isolation, perceived control versus helplessness, hostility, type A behaviour, social support, availability of adaptive coping skills, and various personality characteristics (Miller, 1987). It has been estimated that 60% to 90% of health problems have a significant psychological component (Bakal, 1979) and that 50% of the population in the United States suffer from psychophysiologically-related symptoms such as recurrent headaches, hypertension, or gastrointestinal diseases (Schwab, Fennell, & Warheit, 1974). Furthermore, a number of clinical studies have shown that there is a high prevalence of psychological problems among individuals seeking medical care (Olbrisch, 1977).

Impact of Life-style factors

The second major factor contributing to the emergence of behavioural medicine is the change that has taken place in the prevalence of illness involving life-style factors. Most deaths and disabilities are caused by chronic diseases in which behaviour (life-style) patterns play a major role, including cardiovascular diseases, cancer, and strokes (Matarazzo, 1984b). It has been estimated that 50% mortalities from 10 leading causes of death in the United States can be traced to behavioural or life-style patterns. Recognizing this epidemiological trend, Matarazzo, (1984) coined the term *behavioural pathogens* to highlight the important role played by disease-producing behaviours and life-style patterns (eg, high-fat diet, smoking, stress, sedentary life-styles, and so forth).

Primary prevention of illness and behavioural medicine

During the past two decades, there has been dramatic growth in the scientific and professional activities related to primary prevention. Psychologists have played a key role in developing, implementing, and evaluating intervention programmes aimed at keeping healthy people healthy. Almost a decade ago, Matarazzo (1980), emphasized on the interdisciplinary endeavor of primary prevention by calling it *behavioural health*. According to him, *Behavioural Health is an interdisciplinary field dedicated to promoting a philosophy of health that stresses individual responsibility in the application of behavioural science, knowledge, and techniques to the maintenance of health and the prevention of illness and dysfunction by a variety of self-initiated individual or shared activities*. The role of this integral component of behavioural medicine is to promote those life-style practices or *behavioural immunogens* in healthy persons that will help them to maintain their health and prevent illness by sustaining health-engendering behaviours throughout their life span.

Smoking

Cigarette smoking is still the largest preventable cause of premature death and disability for human beings. During the past 25 years, there has been a steady increase in research on tobacco addiction and smoking cessation with a focus on the addicting aspects of nicotine, multicomponent intervention strategies using both pharmacological as well as behavioural strategies (Pomerleau & Pomerleau, 1988), the development of methods for validating abstinence, prevention of smoking onset in children and adolescents, and the study of treatment failures, relapse, and methods for maintaining abstinence (Carmody *et al*, 1988; Schwartz, 1987).

Prevention and treatment of smoking are the two major areas where behavioural medicine has shown its importance. It has been found that peer pressure and ambivalence toward authority figures are related with the onset of smoking at early ages (Green, 1977). Based on this, prototypical smoking prevention package was advocated by Evans *et al* (1981) involving videotaped presentations, peer modeling, group discussion, role playing, education, and reorientation. The efficacy of such programmes for preventing smoking related complications has well been confirmed (Telch *et al*, 1982; Arkin *et al*, 1981; Hurd *et al*, 1980; Carter *et al*, 1985). In the treatment of smoking, a wide variety of psychological methods for intervention have been evaluated, including self-care and educational approaches, group therapy, nicotine replacement procedures, hypnosis, counseling, risk factors

prevention trials, community intervention programmes, behaviour therapy (Schwartz, 1987). According to a recent review by Glasgow and Lichenstein (1987), behavioural approaches appear to be more effective and behavioural techniques like, social skills training (Carmody *et al*, 1988), aversive procedures (Glasgow and Lichenstein, 1987), and self control techniques (Ockene, 1986) are important ones for abstinence and relapse prevention.

Alcohol and other drug abuse

Alcohol and drug abuse are other lifestyle-related problems that give rise to various health related complications. Recent studies suggest that the onset of alcohol use occur before age 15 for over 50% of youths and that drinking problem appears to be quite prevalent among teenagers (Pandina, 1986). Reports by Galanter (1980) revealed that even social drinking among adolescents may produce a marked loss of cognitive functioning. The costs associated with chronic alcoholism across all age groups are very significant all over the world. Thus, the prevention and treatment of alcoholism and drug abuse are the demands of the time in comprehensive health care and behavioural medicine plays a very significant role at both levels.

Educational programmes have included mass media campaign, community-based programmes, parent education, school-based programmes, and college/campus intervention for the prevention of alcoholism and drug abuse (Botvin *et al*, 1984; Rootman, 1985; Moskowitz, 1986). Traditional alcohol education programme have been effective in increasing knowledge about alcohol but not in producing attitude or behaviour change. As a result, the application of behavioural techniques such as self-management, controlled drinking, and coping-skills training have been implemented to enhance the effects of alcohol and other drug abuse prevention programmes (Tuchfeld & Marcus, 1984), and found very useful. Various behavioural techniques have effectively been tried and being used for the treatment of alcoholism and drug abuse. Relaxation training, aversion procedures (covert sensitization, faradic aversion etc), neuropsychological retraining, self-control and other cognitive interventions are worth mentioning. Behavioural medicine professionals are not only studying the outcome of behavioural treatment, but they have also provided knowledge about the factors affecting maintenance of abstinence (Nathan, 1986), improvement in cognitive deficits (Parsons, 1986), and prevention of relapse (Abrams *et al*, 1986). Identification of people or groups whose drinking behaviour places them at risk for health problems, work-based alcohol interventions, and hospital consultation for developing liaison programmes are the areas where, at present, more attention is being given. In all of the above-mentioned approaches to alcohol and drug abuse treatment and prevention, psychologists have played a key role in developing them as important areas of behavioural health and medicine.

Obesity

Obesity represents an independent risk factor for cardiovascular disease and is associated with hypertension, hyperlipidemia, and non-insulin dependent diabetes mellitus. Obese individuals have a higher risk of developing complications related to surgery; a mortality rate 50% greater than that for normal-weight people, and a higher incidence of medical problems such as respiratory infections, skeletal-joint dysfunction, hernias, and gall bladder disease (Stuart, 1980; Von Itallie, 1985). Although a successful treatment approach is not yet a reality, much has been learned in the past 20 years about the etiology, treatment, and prevention of obesity which indicate the need for a multicomponent treatment and preventive approach. Childhood life-style habits, familial patterns, attitude toward overconsumption and sedentary living are some of the important behavioural pathogenes in obesity that warrant appropriate behavioural management.

The most pressing challenge in the behavioural treatment of obesity remains the development of methods to facilitate the maintenance of weight loss (Jeffery, 1987; Perri *et al*, 1988). Behavioural methods for modifying dietary habits have been combined with supervised physical exercise training, very low-calorie diets, pharmacological agents, and relapse prevention strategies to increase long-term treatment effectiveness (Rodin *et al*, 1988). Within the context of obesity management programme, psychologists are lending their expertise in the areas of assessment, research design, behaviour change technology, and other areas in developing more effective approaches to the assessment and treatment of obesity.

Coronary risk factors

The cardiovascular diseases (CVD) have been one of the leading causes of premature death since long (Jenkins, 1988). Among the various forms of CVD, coronary artery disease (CAD) has come to be recognized primarily as a behavioural disorder, because so many life-style factors contribute to its etiology. Psychologists possess a unique combination of skills and expertise for investigating these psychological risk factors as well as for designing and testing intervention programmes at the individual, group, and community levels and developing technologies for such prevention programmes that are both effective and economical.

A variety of psychosocial antecedents or correlates of CAD have been investigated. Stressful occupational settings characterized by high demands and low levels of control have been sown to be associated with increased coronary risk (Krantz *et al*, 1988). Other studies have investigated social stress, Type A behaviour, anger and hostility, anxiety and neuroticism, and physiological reactivity in relation to CAD (Krantz *et al*, 1988; Contrada & Krantz, 1988). In studies of Type A behaviour, the hostility dimension has been shown to be predictive of CAD more consistently

than any of the other psychological risk factors, including other dimensions of Type A behaviour (Chesney, 1988); Chesney & Rosenman, 1985). Diet-related risk factors such as hypertension, hypercholesterolemia, and obesity also contribute to CVD (Jeffrey, 1988). Behavioural medicine provides strategies for modifying coronary risk factors. Dietary modification, stress management, Type A behaviour modification are some of the important intervention strategies clinical psychologists have been using for this.

Strategies for modifying diet have primarily involved education, skills training, and problem solving techniques. Similarly relaxation, biofeedback training, cognitive restructuring, problem solving skills training, self-control techniques, and other behavioural methods have been effective in modifying other important risk factors.

Stress and coping

As a scientific construct, stress represents one of the cornerstones of research, clinical practice, and training in behavioural medicine and behavioural health. The relationships between stress and illness have been explored extensively in both perspectives – psysiological and psychological. One important physiological component of stress involves the immune system which has been associated with many health complications. The role of stress in the etiology of infectious diseases and in autoimmune diseases is significant (Ader & Cohen, 1984). Monjan (1981) in animal studies found compelling evidence that environmental factors are capable of modifying immune responses.

To understand the concept of stress from a psychological perspective, there has developed a *science of coping*, that is, the investigation of the relationship between coping strategies, stressful events, social support, cognitive appraisal, and health status (Gentry, 1984; Gentry & Kobasa, 1984). The study of how individuals manage stress has provided an additional opportunity for health scientists to examine the relationship between various coping responses and health. A clinical psychologist uses a number of approaches for stress management, including relaxation training, meditation, visual imagery techniques, biofeedback, anxiety management procedures, self-regulation, stress innoculation, and various other approaches (Anderson, 1988; Meichenbaum & Jaremco, 1983). Such interventions have been very effective in modifying emotional, behavioural, cognitive, and physiological components of stress.

Clinical applications of behavioural medicine

Recent advances in health psychology are characterized by the emerging contributions being made by psychologists collaborating with health professionals from other disciplines in the interdisciplinary field of behavioural medicine. Clinical applications of behavioural medicine are gaining importance day-by-day in the total management of health problems and the contributions of psychologists are spreading from psychiatry to all other disciplines of medical health care. Some important medical conditions where behavioural medicine has established its efficacy in the treatment are as follows:

Pain conditions

The assessment procedures and intervention programmes for pain conditions under behavioural medicine are based on the assumption that pain has multiple components: physiological, motivational, emotional, behavioural, and interpersonal (Turk & Rudy, 1987). The psychosocial components influence the sufferings of the individuals with pain. Psychological treatment methods have been proved effective in reducing pain and sufferings as well as in improving functional status of the patients. The important psychological methods are biofeedback, relaxation, hypnosis, operant conditioning, and cognitive-behavioural therapies (Dobson, 1988) that are designed to enhance control of physiological factors, decrease learned pain behaviour by modifying its consequences, and modify cognitive factors in pain (Weisenberg, 1987). Cognitive-behavioural therapies have particular potential for promoting maintenance of treatments gains by providing patients with a wider range of skills for dealing with stress and pain (Turk & Rudy, 1986).

Recurrent headache is a very common pain condition and various forms of biofeedback, relaxation training, stress management, and psychotherapy techniques have been used in the treatment of chronic recurrent headaches, both muscle contraction (tension) and vascular (migraine) types. Electromyographic (EMG) biofeedback and progressive muscles relaxation training are the effective methods of managing pain conditions (Schneider, 1987). In the treatment of recurrent migraine or vascular headaches, both thermal and EMG biofeedback are used to bring positive improvements (Blanchard & Andrasik, 1985; Gauthier, Ivers, and Carrier, 1996). In addition, cognitive-behavioural approaches, group therapy, multimethod treatment are also practised in the treatment of various pain conditions.

Cardiovascular disorders

The effects of cardiovascular diseases include substantial physical, social, psychological, and economic morbidity as well as mortality (Blumenthal & Emery, 1988). Behavioural interventions are employed in the treatment of variety of these cardiovascular disorders, including hypertension, cardiac arrhythmias, and postmyocardial infraction rehabilitation (Herd, 1984; Schneiderman & Hammer, 1985). The effective behavioural treatment of hypertension involves relaxation techniques (progressive muscles relaxation, meditation, yoga autogenic training) and biofeedback, with the two generally used in combination.

Cardiovascular arrhythmias represent another common form of cardiovascular disorder and biofeedback treatment procedures are utilized to produce promising results in the treatment of cardiac arrhythmia. For postmyocardial infraction (MI) patients, cardiac rehabilitation programmes provide formal treatment for the physical and psychological sequelae of heart attacks and include weight control, low fat and low salt diet, life-style modification, physical exercises, modification in Type 'A' behaviour patterns, relaxation training, cognitive restructuring and medications. Such cardiac rehabilitation programmes are providing increasing number of opportunities for the application of psychological expertise in managing complications of MI and improving the quality of life of the patients. Stress management and meditation are the further adding methods of treatment of cardiac patients which not only reduce psychological distress but also blood pressure, heart rate, and serum cholesterol levels (Krantz and Lundgren, 1998).

Cancer

The cost of human lives to cancer (defined as any malignant tumor by Rothenber, 1992), is overwhelming. In many countries cancer is the second leading cause of death, only outnumbered by heart diseases (andersen & Golden-Kreutz, 1998). Over the past two decades, the role of psychology has expanded significantly in the areas of prevention, treatment, palliative care, and other psychosocial aspects related to oncology (Blaney, 1985; Derogatis, 1986). These days psychologists are actively involved in addressing psychosocial issues related to cancer treatment, including interventions designed to reduce conditioned aversive responses (nausea and vomiting) to chemotherapy, pain, adjustment reaction to the initial diagnosis of cancer, and adaptation to disability, death, and loss.

Many patients receiving chemotherapy develop conditioned aversive responses to this treatment involving nausea and vomiting (Burish & Carey, 1986; Morrow & Dobkin, 1988). Desensitization, counter-conditioning, relaxation, cognitive distraction, and self-hypnotic imagery techniques are being used to successfully treat these conditions. The acute and chronic pain associated with cancer are treated with psychological techniques, such as hypnosis, guided imagery, relaxation, biofeedback, cognitive-behavioural methods, and operant approaches with considerable success. In addition, psychological techniques are also helpful in encouraging adaptation of cancer patients to their illness as well as improving adjustment of other members in the family of cancer patients.

Neurological Disorders

An increasing number of clinical psychologists are working in the field of neuropsychology and are making major contributions in the treatment and management of a variety of neurological disorders, including traumatic head injury, degenerative neurological disorders, and epilepsy (Bornstein, Costa, & Matarazo, 1986). There has been a growing trend toward the interdisciplinary management of persons with a variety of neurological and neuromuscular disorders involving cognitive, visuoperceptual, and other brain damage related deficits. Psychologists are contributing in it by providing neuropsychological assessment, retraining, and rehabilitation services and by managing emotional and behavioural problems associated with such conditions. Drudge *et al* (1986) have advocated the application of behavioural treatment programmes to the chronically brain-impaired individuals and the integration of these approaches with the neuropsychological analysis of cognitive deficits. There is increasing evidence that these programmes result in less emotional distress, increased self-esteem, and greater productivity for participants than is observed in those patients who do not undergo such treatment (Pringatano *et al*, 1994) as well as evidence that these programmes are cost-effective (Mehlbye & Larsen, 1994).

HIV and AIDS

Acquired immunodeficiency syndrome has produced a significant health, economic, social, political, and cultural turmoil worldwide. A steep increase in the number of AIDS cases is being observed throughout the world in the last two decades creating a great challenge particularly for the health professionals. Managing HIV disease involves addressing psychosocial as well as biomedical issues.

Anatony *et al*, 1990; Schneiderman, 1994 and clinical psychologists are involved both in the primary prevention programmes as well as in secondary prevention programmes. Under primary prevention programmes, the identification of risk behaviours, factors underlying risk behaviours, and modification of risk behaviours are the major areas of focus. Secondary prevention programmes basically aims at examining factors contributing to the mental and physical health course of HIV infected people in order to develop clinical interventions.

Because there is no cure for AIDS, the secondary prevention programmes are undertaken to slow HIV spectrum disease progression (Antony & Schniederman, 1998) along with the management of co-morbid psychiatric conditions. Two areas that have been focus of much behavioural medicine practice in HIV infection and AIDS explain how it is important to manage distress states and depressive symptoms as well as certain risk behaviours that contribute to the way people adjust to having HIV infection and the actual health course of the infection. Relaxation training, cognitive restructuring, coping skills training, problem solving, assertiveness training, anger management, social support are some of the important behavioral approaches used in the secondary prevention programmes. In

psychoneuroimmunological studies it has been clearly demonstrated that distress levels influence the immune system (Ironson *et al*, 1990) and clearly demonstrated that distress levels influence the immune system (Ironson *et al*, 1990) and behavioural interventions that decrease distress beneficially impact immune status and health status in HIV-infected people. Behavioural techniques reduce anxiety, depression, and social isolation and improve the quality of life of the infected persons by inducing increased sense of control, hightened self-efficacy and self-esteem, and increased adaptive-coping. Reduction in distress leads to increased parasympathetic activation and decreased sympathetic activation and causes significant reduction in peripheral catecholamines and/or cortisol and creates a state of immune optimization. In immune optimization phase there is increase in CD4 cell function, Herpes virus surveillance, and NK cytotoxicity, which are responsible for decreased rate of HIV disease progression.

Respiratory Disorders

Chronic obstructive pulmonary pulmonary disease (COPD) and asthma are two major respiratory disorders a health or clinical psychologist is likely to encounter (Creer & Levstek, 1998). Recent and more comprehensive knowledge about the pathology of asthma and COPD has led to conclusions that environmental and behavioural management are, in most cases, as important as medical treatment in the control of chronic respiratory disorders. Furthermore, risk prediction and prevention efforts, both involving behavioural change, are increasingly viewed as ways to lessen the impact of morbidity and mortality related to asthma and COPD.

Psychological aspects of asthma and COPD can be explained in terms of their influence on patients in a variety of cognitive, emotional, behavioural, and interactional areas. Psychological interventions for COPD and asthma are different being broader in the case of asthma, partly because of the wide array of problems presented by patients with asthma. Pulmonary Rehabilitation for COPD, which include psychological and behavioural intervention has been found effective in reversing the disease process and minimizing disability from the disease (Ries, 1995). Similarly, psychotherapy, behaviour therapy, self-management training have been successfully tried in the management of asthma. Behavioural medicine, though attempts to manage asthma, focuses more on resolving asthma-related psychological and behavioural problems.

Gynaecological Problems

Gynaecology can be broadly defined as the science of physiological functions and disorders specific to women (Moscussi, 1993). In practice, it has become to mean functions and disorders of the female reproductive system, rather than of women per se (Hunter and Walker, 1998). Gynaecological problems are associated with high levels of emotional distress, as measured by standard psychological instruments in surveys of women attending gynaecological clinics (Ballinger, 1977). It has been estimated that 40% to 50% of gynaecology clinic attenders are to be at risk for depression as measured by the General Health Questionnaire (Byrne, 1984). Gynaecological problems in themselves maybe a cause of distress. In addition, some problems such as premenstrual syndrome include a wide range of psychological as well as physical symptoms within the diagnosis. Hysterectomy, removal of the uterus, is one of the most common major surgical operations done in gynaecology. The psychological impact of hysterectomy has been extensively studied and high rates of psychiatric disorders have been reported after the operation (Barker, 1968). A number of studies supported the hypothesis that the loss of the uterus would make a woman feel less feminine and have a negative psychological effect.

The value of psychological interventions has been demonstrated in many areas of gynaecology, such as preparation for surgery, alleviation of pelvic pain, and is promising in the areas of PMS, menopause, and menstrual disorders. Psycho-education, counseling, behavioural approaches, cognitive therapy, couple and group therapy, stress management, and child management training are the important techniques with proved efficacy in gynaecological problems-related emotional, behavioural and stress-induced physical conditions.

Other physical disorders and disease

The role of Behavioural Medicine has been identified and Behavioural Interventions are being incorporated in all kinds of physical ailments. Diabetes Millitus, Functional Bowel Disorders, End-stage Renal Diseases, Genetic Disorders, Arthritis, Spinal Cord Injuries, Epilepsy, Sleep Disorders, Visible Disfigurement, and Dental Problems etc. are some of the important conditions where Behavioural Medicine has occupied significant space in the management as well as in the control of further disabilities related to these conditions (Bellack and Herson, 1998). Life-style modification, stress management, relaxation, biofeedback, cognitive restructuring, social skills training, assertiveness training, life-skills training, hypnosis, psycho-education, promotion of health behaviour, self-control techniques are the important weapons in the armamentarium of clinical psychologists to prove the efficacy of behavioural interventions in a variety of physical disease conditions. Working on the psychophysiological models of disease, clinical psychologists attempt to identify and control psychophysiological responses, explore the nature of psychosocial demands, identify resistance and vulnerability factors, and strengthen resistance factors in order to manage and to control further damages associated with various disease conditions.

Conclusion

The field of Behavioural Medicine has grown widely over the last two decades as a very effective approach in the comprehensive interdisciplinary management of various medical complications. It has provided a growing number of opportunities for clinical psychologists to work in collaboration with other professionals in the multidisciplinary clinical settings or general hospital setttings and to prove the efficacy of their expertise. Primary prevention, treatment, control of further complications, and proper rehabilitation are the important areas where Behavioural Medicine has shown its potential scope as an independent and competent discipline in the field of health control and management. Thus it has led further to integrate Psychology with Health.

As Gentry (1984) pointed out, the essential nature of Behavioural Medicine is the integration of empirical knowledge from interdisciplinary research. As such, it functions as a "crucible" providing a forum for many disciplines to collaborate in an emerging network of communication (Agras, 1982), which recognizes the reciprocal nature of relationship between biological, social, and psychological factors in health and illness. Multidisciplinary understanding and management of illnesses is as important in Nepal as in any other country of the world and recently the door of such ideal approach has been opened with the introduction of the only Post-graduate clinical psychologists training programme in the country by the Institute of Medicine, Kathmandu. The need now is to welcome clinical psychologists as health professionals and to include them in the existing health care system in the country by the other health professionals as well as by the Government officials and policy makers. The expertise and skills of clinical psychologists can be utilized at many levels including health research, community-based prevention programmes, inpatient and outpatient treatment programmes, prevention of relapse of certain diseases, rehabilitative programmes, health education programme and many more.

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