

## PSYCHOLOGICAL INTERVENTIONS AND HEALTH: CRITICAL CONNECTIONS<sup>1</sup>

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**ABSTRACT:** The objective of the study was to discuss critical connections between psychological interventions and health can at various levels: the individual/family, the community/worksites, the health care system, and the general population itself. Psychologists have developed interventions that have positively impacted health in the areas of prevention and health promotion, recovery from illness, management of physical symptoms, stressful medical procedures, adherence and health care systems design. Sites of interventions can range from health care clinics and hospitals to school systems, worksites, communities and public health agencies.

As the influence of psychological factors in health becomes more widely appreciated, there will be increasing needs for clinical health psychologists who are appropriately trained to provide these services. The Arden House Conference delegates (1983) outlined education and training for clinical health psychologists that has been accepted to date in the United States. In addition to a broad education in the discipline of psychology, clinical health psychologist need knowledge and skills in a broad core areas.

*Key words:* Psychological intervention in health, Health psychology, Training in health psychology.

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## INTERVENÇÃO PSICOLÓGICA E SAÚDE: CONEXÕES CRÍTICAS

**RESUMO:** O objectivo do presente estudo é discutir as relações fundamentais entre as intervenções psicológicas e a saúde a vários níveis: o indivíduo, a família e a população em geral. Os psicólogos desenvolveram intervenções que tiveram um impacto positivo em áreas de prevenção e de promoção da saúde, tratamento de doenças, gestão de sintomas físicos, procedimentos médicos stressantes, e promoção da adesão aos tratamentos. Os contextos de intervenção variam desde os cuidados de saúde e hospitais até ao sistema educacional, locais de trabalho, e contextos comunitários e de saúde pública.

Com o desenvolvimento da aceitação da influência dos factores psicológicos na saúde, haverá um aumento das necessidades de psicólogos clínicos da saúde com treino apropriado para o fornecimento desses serviços. Os delegados à Conferência de Arden House (1983) desenharam programas de formação para os psicólogos clínicos da saúde que foi aceite nos Estados Unidos da América. Este programa torna mais ampla a formação destes psicólogos.

*Palavras chave:* Intervenção psicológica em saúde, Psicologia da saúde, Treino em psicologia da saúde.

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For many years, the provision of mental health services has been the major focus for the professional practice of psychology. Yet over the last several decades psychology has been increasingly recognized as a health-care profession, with applications much broader than those related to mental health alone. This is in large part the result of the growth of health psychology, including clinical health psychology research and practice. Although an exhaustive review is

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beyond the scope of this presentation, the following is an overview of the specialty of clinical health psychology, and the roles of its practitioners in the health care system. It is recognized that data on specific problems are based on statistics obtained from populations in the United States of America, but as health psychology continues to grow within Portugal we shall learn more about the generalizability of these findings worldwide.

A clinical health psychologist applies, in professional practice, the specific educational, scientific, and professional contributions of the discipline of psychology to the promotion and maintenance of health; the prevention and treatment of illness/injury/disability; the identification of etiologic and diagnostic correlates of health, illness and related dysfunction; and the analysis and improvement of the health care system and health policy formation. (Adapted from Matarazzo, 1982)

Clinical health psychologists focus on physical health problems, not just mental health problems. The biopsychosocial model is fundamental to the specialty, as is knowledge of the relationships between health and behavior and skills in working in multidisciplinary health care settings. Supported by a large body of knowledge, the underlying premise of clinical health psychology is that behavior and health are inextricably intertwined. Thus it is critical that connections occur between those health care providers with expertise in behavior and those with expertise in medicine if we are to maximize the health of our peoples.

Clinical health psychologists provide assessment, treatment and consultation services related to the following kinds of problems<sup>2</sup>:

- a) Psychological conditions secondary to illness (e.g., post myocardial infarction, post-traumatic stress disorders after burn injuries);
- b) Somatic presentations of psychological dysfunction (e.g., chest pain in panic attack, somatization disorders);
- c) Psychophysiological disorders (e.g., tension headache, irritable bowel syndrome);
- d) Physical symptoms responsive to behavioral interventions (e.g., fecal incontinence, anticipatory nausea);
- e) Somatic complications associated with behavioral factors (e.g., mismanagement of insulin injections, failure to adhere to antihypertensive medication regime);
- f) Psychological presentations of organic problems (e.g., hypothyroidism presenting as depression, steroid induced psychosis);
- g) Prevention of physical and psychological complications from stressful medical procedures (e.g., surgery, organ transplantation, dialysis);
- h) Behavioral risk factors for disease/injury/disability (e.g., smoking, weight, risk-taking);
- i) Problems of health care providers and health care systems (e.g., physician-patient relationships, staff burnout, design of health care delivery systems).

For purposes of organization, this paper will focus on the critical role of psychological interventions in prevention, recovery from illness, management of physical symptoms and stressful medical procedures, adherence, and health care systems issues.

#### *Prevention and health promotion*

According to the U.S. Bureau of the Census (1990), the leading causes of death include heart disease, cancer, stroke, accidents, and chronic obstructive pulmonary disease. Analyses reported by McGinnis (1994) demonstrate the considerable costs incurred by these conditions (e.g., \$150 billion for injuries, \$75 billion for heart disease), and the treatment costs for certain preventable conditions (e.g., \$30,000 for coronary bypass surgery, \$29,000 for treatment for lung cancer, \$570,000 for treatment and rehabilitation of quadriplegia).

<sup>2</sup> See Belar and Deardorff (1995) for a fuller description of practice in clinical health psychology.

Research has already identified a number of behavioral risk factors for these major health problems (see Table 1), many of which can be modified through systematic behavioral interventions such as those targeted toward smoking, dietary management, exercise and stress management.

Table 1

*Examples of behavioral risk factors*

smoking	exercise
weight	diet
social class	social support
life dissatisfaction	depression
hostility	cynicism
stress	neuroticism
pessimism	job strain
daily hassles	

*Note.* Adapted from Kaplan (1994).

A particularly good example is that of motor vehicle accidents, which in the United States injure 5 million persons per year, account for 4 million emergency room visits and cost more than \$14 billion in health care costs (Martinez, 1995). The most effective intervention for accidents is prevention, with the behavior of wearing seatbelts being a significant component. It is also well-accepted that at the present time, the most effective method of controlling the spread of acquired immunodeficiency disease (AIDS) is behavioral, that is, safe sex.

#### *Recovery from illness*

Recovery from illness can be affected by a number of psychological variables, including depression, anxiety, social support and compliance. For example, Frasure-Smith et al. (1995) have demonstrated that depression increases the risk of mortality after myocardial infarction (MI) independent of cardiac disease severity. In fact they found the impact of depression on outcome to be as great as history of previous MI and impairment in left ventricular ejection fraction. Other psychological variables associated with increased risk are anxiety and anger directed inward. For example, Moser and Dracup (1996) have shown that patients with high anxiety in the 48 hours post MI had a nearly five fold increase in risk for developing complications independent of other clinical indicators.

Social support has been linked to health status in a number of studies. For example, it has been related to post MI survival by Berkman (1995), and to hemodialysis survival by Christensen et al. (1994). Other work has demonstrated its relationship to medical care utilization, especially in the elderly (Pilisuk et al., 1987). A widely cited six year follow-up of cancer patients by Fawzy et al. (1993) found fewer recurrences and deaths in those patients treated in a 6 week support group than those in a control condition.

#### *Management of physical symptoms, disease and stressful medical procedures*

Psychological interventions are important tools in the management of physical symptoms and disease, such as asthma, pain (acute and chronic), fecal incontinence, cramping and diarrhea, anticipatory nausea with chemotherapy, vasospasm in Raynaud's Disease, dyspnea in chronic obstructive pulmonary disease, and headache among others. It is important to

underscore that these are not mental health problems, but they do respond to systematic psychological interventions. To illustrate, a few examples of the impact of psychological interventions on health status and/or health care costs follow.

- a) The economic impact of asthma in the U.S. was estimated to be over 6 billion dollars in 1990 (Weiss et al. (1992) and account for over 7 million office visits. Self-management programs teaching a set of behavioral techniques have been associated with reductions in wheezing, school absences and hospitalizations (Clark, 1989). In addition, psychological interventions such as family therapy have been associated with increased pulmonary function and decreased functional impairment on long term follow up by Gustafsson et al. (1986).
- b) With respect to arthritis, Lorig et al (1993) followed participants in an arthritis self-management group, a 12 hour class with a significant relaxation training component. After four years she found a 43% decrease in visits to physicians, a 20% decrease in pain, and a significant increase in patients' sense of self-efficacy. These improvements were found despite an actual increase in physical disability over time, as the disease progressed. Nevertheless, at a cost of \$54 per person for the group, the adjusted four year savings were \$648 for persons with rheumatoid arthritis and \$189 per person for those with osteoarthritis.
- c) The management of dyspnea, and concomitant anxiety, was a significant component of the program developed at Wilford Hall Air Force Base by Lyonson and Talcott et al. (1995). Compared to a control group, patients who participated in this treatment experienced significantly fewer inpatient days and outpatient visits for problems related to their pulmonary condition.
- d) There is a substantial literature documenting the effectiveness of cognitive behavioral treatments in chronic pain. In terms of cost effectiveness there is also encouraging evidence. Caudill (1991) studied 109 patients over two years and found a 36% decrease in clinic visits for patients participating in a 10 week group program. Tulkin (1995) also describes benefits after an intensive 5 week program in a health maintenance organization setting.
- e) A less discussed symptom is that of urinary incontinence. Affecting over 10 million Americans, it is a significant problem in terms of quality of life. Behavioral techniques such as bladder training, habit training and prompted voiding, pelvic muscle exercises and biofeedback have been found to result in an average of 64.6% reduction in frequency (Tovian et al., 1994).
- f) Fecal incontinence is the second most common reason for institutionalizing the elderly. Whitehead and Drossman (1996) concluded a research review by asserting that biofeedback is the treatment of choice in the majority of adult patients, with 72% of patients obtaining at least 90% reduction.
- g) Group programs have also been utilized in patients with psychophysiological symptoms. Hellman et al. (1990) found that six months after group treatment, patients who had previously been identified as high utilizers of primary care services reported decreases in psychological distress and discomfort from physical symptoms as well as fewer physician visits. They estimated a net savings of \$3900 in the first six months alone.
- h) Reviews of treatments for Raynaud's Disease conclude that temperature biofeedback is associated with a 67-92% symptom frequency reduction which is maintained at 2-3 year follow-up (Freedman, 1993).

Psychological interventions are also important in preparation for surgery and other stressful medical procedures. Johnston and Voegel (1993) articulate the specific kinds of interventions related to outcome in their comprehensive meta-analysis. In addition, Devine (1992) reviewed 191 studies concluding that with psychological preparation for major and minor surgery, the length of hospital stay decreased by an average of 1.5 days.

### *Adherence*

Adherence to medical regimens is a major problem in health care that is behaviorally mediated. It has been estimated that one out of 6 hospitalizations in the elderly is related to noncompliance (U.S. Government Accounting Office, 1995), and that noncompliance accounts for 10% of all hospital admissions (U.S. Department of Health and Human Services, 1980). In addition it has been estimated that over 50% of the 1.6 billion prescriptions written annually are taken incorrectly (Levy, 1989). Psychological interventions targeted toward improved adherence include individual patient and family approaches as well as physician training (communication skills), and health care systems design (cues and prompts for immunizations and mammography).

### *Health care systems*

Psychological interventions targeting the health care system itself are also critical to improved health status. For example, there is already a substantial literature on physician-patient communication. Many complaints by patients are related to communication problems and research has shown that patient satisfaction and compliance can be influenced by the nature of physician-patient communication. Studies have also demonstrated the usefulness of physician training in communication skills. For example, Boggs et al. (1994) demonstrated that on clinic follow-up, patients were more satisfied with interactions with residents who had participated in systematic communication skills training as compared to residents who had remained in a control group.

Other behaviors relevant to the quality of care within a health care system are related to infection control procedures. For example, Lohr et al. (1991) found that health care workers failed to handwash more than 50% of the time between patients in an ambulatory care setting. Other behaviors of interest to health care systems include those that are associated with the prevention of needle sticks.

Examples of health care system programs emphasizing psychological/behavioral components to improve cost-effectiveness of health care include those in the area of fever and child-birth. With respect to the latter, Kennell et al. (1991) have documented the relationship between continuous emotional support and decreased duration of labor as well as lower C-section rates. With respect to fever, one of the most common reasons for acute pediatric visits, Robinson et al. (1989) developed a program in which 500 families presenting with a feverish child were assigned to one of two treatments: (1) pamphlet information and physician visit or (2) pamphlet information, physician visit and a 10 minutes slide presentation focusing on information and parental fears regarding childhood fevers. At seven months, the group with the intervention targeting parental anxiety had 35% fewer visits for fever than the group receiving information and physician visit alone.

### *Summary and issues for the future*

In summary, critical connections between psychological interventions and health can occur at various levels: the individual/ family, the community/worksites, the health care system, and the general population itself. Psychologists have developed interventions that have positively impacted health in the areas of prevention and health promotion, recovery from illness, management of physical symptoms, stressful medical procedures, adherence and health care systems design. Sites of interventions can range from health care clinics and hospitals to school systems, worksites, communities and public health agencies.

As the influence of psychological factors in health becomes more widely appreciated, there will be increasing needs for clinical health psychologists who are appropriately trained to provide these services. In 1983 the Arden House Conference delegates outlined education and training for clinical health psychologists that has been accepted to date in the United States

(Stone, 1983). In addition to a broad education in the discipline of psychology, clinical health psychologists need knowledge and skills in the following core areas:

- a) biological bases of health and disease (e.g., human physiology and pathophysiology);
- b) cognitive-affective bases of health and disease (e.g., health beliefs);
- c) social bases of health and disease (e.g., impact of culture on health, physician-patient communication);
- d) psychological bases of health and disease (e.g., coping, psychopathology);
- e) statistics and health research design;
- f) psychological and health measurement;
- g) clinical health psychology assessment, intervention and consultation;
- h) interdisciplinary collaboration;
- i) ethics and professional issues;
- j) supervised experience in health care settings.

Health psychology has already been recognized as a specialty in the professional practice of psychology (Belar & Jeffrey, 1995). In the United States, psychologists with appropriate training and experience who demonstrate competence through examination can obtain a diplomate, or board certification, from the American Board of Professional Psychology through its affiliated American Board of Health Psychology.

However, fostering the growth of clinical health psychology research and practice will not be sufficient without concomitant attention to ethical issues encountered along the way. For example, there are often complex issues associated with patient confidentiality when operating as part of a health care team. And psychologists who participate in organ transplant teams bear more responsibility for life and death decisions than is usually encountered in traditional clinical practice. Moreover, as the role of psychological factors in health becomes more widely accepted, there may be unrealistic hopes, and a "backlash effect" in which patients experience undue guilt or sense of inadequacy because they cannot "control" their disease process. Developments in the identification of genetic markers for disease will bring even newer problems for health psychologists to consider.

Papers at this conference represent a broad range of research and practice in clinical health psychology, demonstrating in more detail many of the previously mentioned "critical connections" between psychological factors and health. I trust that the Portuguese, with their outstanding history of exploration and their excellent leadership in health psychology, will develop the field much further.

## REFERENCES

- Belar, C.D., & Deardorff, W.W. (1995) *Clinical Health Psychology in Medical Settings: A Practitioner's Guidebook*, Second Edition. Washington, D.C.: American Psychological Association.
- Belar, C.D., & Jeffrey, T.B. (1995). Board certification in Health Psychology. *Journal of Clinical Psychology in Medical Settings*, 2, 129-132.
- Berkman, L.F. (1995). The role of social relations in health promotion. *Psychosomatic Medicine*, 57, 245-254.
- Boggs, S.R., Rodrigue, J.R., Geisser, M., Belar, C.D., Cohen, M., Perry, N.W., Behen, J., & Shapiro, D. (1994). Development and evaluation of a communication skills training program for resident physicians. (Abstract) *Proceedings of the 28th Annual Association for the Advancement of Behavior Therapy*, 287.
- Caudill, M., Schnable, R., Zuttermeister, P., Benson, H., & Friedman, R. (1991). Decreased clinic utilization by chronic pain patients after behavioral medicine intervention. *Pain*, 45, 334-335.
- Christensen, A.J., Wiebe, J.S., Smith, T.W., & Turner, C.W. (1994). Predictors of survival among hemodialysis patients: Effect of perceived family support. *Health Psychology*, 13, 521-525.

- Clark, N.S. (1989). Asthma self-management education: Research and implications for clinical practice. *Chest*, 95, 1110-1113.
- Devine, E.C. (1992). Effects of psychoeducational care for adult surgical patients: A meta-analysis of 191 studies. *Patient Education and Counseling*, 19, 129-142.
- Fawzy, F.I., Fawzy, N.W., Hyun, C.S., Elashoff, R., Gurthrie, D., Fahey, J.L., & Morton, D.L. (1993). Malignant melanoma: Effects of an early structured psychiatric intervention, coping and affective state on recurrence and survival 6 years later. *Archives of General Psychiatry*, 50, 681-689.
- Frasure-Smith, N., Lesperance, F., & Talajic, M. (1995). The impact of negative emotions on prognosis following myocardial infarction: Is it more than depression? *Health Psychology*, 14, 388-398.
- Freedman, R.R. (1993). Raynaud's Disease and phenomenon. In R.J. Gatchel & E.B. Blanchard (Eds.), *Psychophysiological Disorders: Research and Clinical Applications* (pp. 245-267). Washington, DC: American Psychological Association.
- Gustafsson, P.A., Kjellman, N.I.M., & Cederblad, M. (1986). Family therapy in the treatment of severe childhood asthma. *Journal of Psychosomatic Research*, 30, 369-374.
- Hellman, C.J.C., Budd, M., Borysenko, J., McClelland, D.C., & Benson, H. (1990). A study of the effectiveness of two group behavioral medicine interventions for patients with psychosomatic complaints. *Behavioral Medicine*, 16, 165-173.
- Johnston, M., & Voegelé, C. (1993). Benefits of psychological preparation for surgery: A meta-analysis. *Annals of Behavioral Medicine*, 15, 245-256.
- Kaplan, G. A. (1994). Reflections on present and future research on bio-behavioral risk factors. In S.J. Blumenthal, K. Matthews, & S.M. Weiss (Eds.), *New Research Frontiers in Behavioral Medicine*. Washington, DC: U.S. Government Printing Office.
- Kennell, J., Klaus, M. McGrath, S., Robertson, S., & Hinkley, C. (1991) Continuous emotional support during labor in a U.S. Hospital: A randomized controlled trial. *Journal of the American Medical Association*, 265, 2197-2237.
- Levy, R.A. (1989). Improving compliance with prescription medications: An important strategy for containing health care costs. *Med. Interface*, March, 34-41.
- Lohr, J.A., Ingram, D.L., Dudley, S.M., Lawton, E.L., & Donowitz, L. (1991). Handwashing in pediatric ambulatory care settings. An inconsistent practice. *American Journal of Diseases of Children*, 145(10), 1198-1199.
- Lorig, K., Mazonson, P.D., & Holman, H.R. (1993). Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. *Arthritis & Rheumatism*, 36, 439-446.
- Lyonfields, J., Talcott, W., Westerman, J., Sullivan, M., & Gates, B. (1995, March). *The effect of a COPD rehabilitation program on utilization of hospital services*. Paper presented at the annual meeting of the Society of Behavioral Medicine. Washington, D.C.
- Martinez, R. (1995). Preventing motor vehicle injuries. *HMO*, 36, 27-32.
- Matarazzo, J.D. (1982). Behavioral health's challenge to academic, scientific, and professional psychology. *American Psychologist*, 37, 1-14.
- McGinnis, J.M. (1994). The role of behavioral research in national health policy. In S.J. Blumenthal, K. Matthews, & S.M. Weiss (Eds.), *New Research Frontiers in Behavioral Medicine*. Washington, DC: U.S. Government Printing Office.
- Moser, D.K., & Dracup, K. (1996). Is anxiety early after myocardial infarction associated with subsequent ischemic and arrhythmic events? *Psychosomatic Medicine*, 58, 395-401.
- Pilisuk, M., Boylan, R., & Acredolo, C. (1987). Social support, life stress and subsequent medical care utilization. *Health Psychology*, 6, 273-288.
- Robinson, J.S., Schwartz, M.M., Magwene, K.S., Kregel, S.A., & Tamburello, D. (1989). The impact of fever health education on clinic utilization. *American Journal of Diseases of Children*, 143, 698-704.
- Stone, G.C. (Ed.). (1983). National Working Conference on Education and Training in Health Psychology. *Health Psychology*, 2(Suppl. 5), 1-153.
- Tovian, S.M., Rozensky, R.H., Sloan, T.B., & Slotnick, G.M. (1994). Adult urinary incontinence: Assessment, intervention and the role of clinical health psychology in program development. *Journal of Clinical Psychology In Medical Settings*, 1, 339-362.
- Tulkin, S.R. (1995). Pain Management Program. *HMO Practice*, 9, 57-58.
- Weiss, K.B., Gergen, P.J., & Hodgson, T.A. (1992). An economic evaluation of asthma in the United States. *New England Journal of Medicine*, 326, 862-866.
- Whitehead, W.E., & Drossman, D.A. (1996). Biofeedback for disorders of elimination: Fecal incontinence and pelvic floor dyssnergia. *Professional Psychology: Research and Practice*, 27, 234-240.