Prevention and Psychological Intervention in Depression and Stress-Related Conditions

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Abstract This chapter focuses on depression and stress-related conditions to discuss possible strategies for the prevention or early management of such conditions. Health education constitutes the first important strategy, and we outline a school-based educational activity using a case-method approach. We next illustrate the impact of stressful events on psychological health with the results of a survey among Chinese individuals conducted after an unexpected epidemic of severe acute respiratory syndrome in 2003. Communication plays an important role in the assessment and management services provided by medical practitioners to sick individuals, with very diverse backgrounds and levels of medical knowledge, who consult health care providers with concerns about their health. In this context, we introduce a recent advance in patient–doctor communication. Finally, we address the cognitive and behavioral features of those who suffer from depression and psychosocial stress. Based on our recent activities and on evidence pertaining to health promotion and education, we emphasize the importance of health education and communication in the prevention of stress-related diseases and the promotion of physical and psychological health.

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1 Introduction

Depression constitutes one of the leading causes of disability in the world and is commonly encountered in primary care settings, in the workplace and school, and in the community. Upon identification, depressed patients need appropriate management, including pharmacological treatment, sufficient rest, and social support. Enlisting the cooperation of psychological professionals, such as registered psychologists, constitutes an important approach to providing psychological support for depressed patients. Commonly used guidelines and educational programs are also effective in preventing depression and suicide-related health problems.

Depression clearly plays an important role in the epidemiology of suicide [1]; more than 60% of the individuals who commit suicide are depressed, and identifying individuals at high risk for depression might reduce the number of suicide attempts. The incidence of depression has increased rapidly in Western countries, and the number of Japanese individuals diagnosed with this condition has also increased, from 100 000 (83.1 per 100 000) to 430 000 (340.0 per 100 000), between 1984 and 1998. These data may reflect increased use of a standardized method for diagnosing depression, such as the *Diagnostic and Statistical Manual of Mental Disorders*, or they may relate to decreased resistance among those suffering from mind/body distress to visiting a psychiatrist. Although depression is generally more common in women than in men, the most dramatic increase in the rate of depression in Japan occurred among middle-aged men (40–60 years old); a similar trend was observed among those who committed suicide. An analysis of the relationship between six categories of occupational status and suicide revealed that suicide rates were the highest among the "unemployed" and "employee" groups. Therefore, it is important to target middle-aged employees and unemployed people to identify potentially depressed individuals in Japan.

If all Japanese people over 12 years of age completed a questionnaire asking whether they experienced stress in their daily lives, more than 50% would respond "yes, I experience stress!" [2]. This is the current situation in Japan. Illness can result when stressors are too intense and persistent or when specific individuals are vulnerable to particular stressors due to temperamental and/or adaptive problems. Psychosocial stress is closely related to mind/body symptoms, and our own study has shown that the report of somatic symptoms is a good predictor of depression and such depression-related symptoms as suicidal ideation among both the disabled and working populations.

It is vital to remember that the mind and body are inter-related. Modern medicine tends to focus on somatic conditions, but such conditions represent only a part of the whole. Medicine should not be limited to the treatment of disease; it is also important to prevent disease, whether at the tertiary or secondary level. The practice of medicine in a hospital requires a trusting relationship between patient and doctor, and both must be aware of the power of the mind–body connection. Communication is a key factor in developing this relationship. Although medical practitioners are busy and often do not nurture trusting relationships, such relationships are nonetheless a

key component of mind/body medicine. Effective communication helps promote patient satisfaction and makes a good physician better; however, a sound education, one that includes attendance at lectures and participation in simulations or hands-on training, is critical for the development of excellent physicians.

This chapter focuses on depression and stress-related conditions with a view to developing a preventive strategy in association with health education. We have been developing a case-method teaching approach for Japanese medical schools, and these recent activities are described in detail. We also present data from a Chinese study assessing the impact of stressful events on psychological health. These data underscore the important role played by communication in the assessment and management services provided by medical practitioners to sick individuals, with very diverse backgrounds and levels of medical knowledge, who consult health-care providers with concerns about their health. In this context, we introduce a recent advance in patient–doctor communication. Finally, we address the cognitive and behavioral features of those who suffer from depression and psychosocial stress.

## 2 Using an Active Learning Method to Prevent a Suicide Epidemic in Japan

2.1 Education About Depression in Schools

An effective suicide prevention strategy should target potentially depressed students, because most individuals who commit suicide suffer from depression [3]. Education about depression and related matters during school may be an effective method for preventing suicide among students in Japan. Existing teaching styles, however, are ill-suited to address issues related to suicidal depression, due to the complex nature of this condition. Extant teaching styles tend to rely on general content and to omit vivid descriptions. We introduce and discuss the applicability of a case-method teaching approach to issues related to suicide and depression in Japan, and propose that this method replace traditional pedagogical approaches to these topics. We also refer to the case-method style used at Harvard University.

2.2 Case-Method Teaching Simulation Exercise

Case-method teaching is a practical approach to training in the field of social medicine [4]. This approach involves discussions about a particular case; participating doctors are taught how to deal with situations in which they must reach decisions about public health. The disease-oriented system (DOS) has formed the basis of traditional educational systems, adhering to traditional medical teaching methods. Although the DOS seems to be an effective and reasonable method for obtaining

results; it is neither perfect nor optimal in terms of practicality. The problem-based learning (PBL) method was developed to overcome these limitations in the DOS method. Medical treatment is incomplete when the individual is considered in isolation. Indeed, we must consider various ambient and interactive environmental factors in order to adequately understand the etiology of, and recovery from, a disease. In other words, although we emphasize treating the patients and not the diseases, we do not provide our medical students with the practical training required to achieve this goal. Figure 1 visually represents the case-method concept, illustrating a more systematic and holistic approach to medicine, in which the scope of learning– which proceeds through discussion–is wider than that of DOS or PBL. Through such quasi experience-based studies, medical students can not only acquire knowledge and develop the desired professional attitudes and behaviors but can also come to learn about the psychological and social problems actually experienced by patients. Thus, in a way that mimics medical practice, they will be trained to solve problems embedded in actual situations. In addition, the shift from passive to active learning should enhance other abilities, such as communication skills and the practice of continually updating knowledge about state-of-the-art medical technologies. The case-method approach also offers the advantage of using actual cases to learn about the multidimensional issues involved in various aspects of medical practice, such as drawing on knowledge as the basis of actions, understanding the backgrounds of patients, and maintaining awareness of personal motivations and ethical concerns. However, the case method also has its share of problems. Table 1 summarizes the advantages and disadvantages of the case-method approach. We now discuss strategies for dealing with these disadvantages.
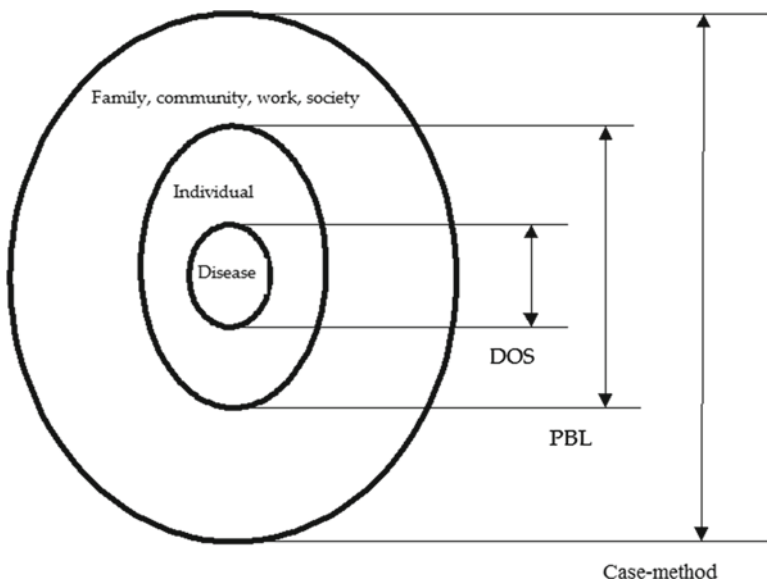
Fig. 1 The reach of the disease-oriented system (DOS), problem-based learning (PBL), and case methods

Table 1 Advantages and disadvantages of case-method teaching

Advantages	Disadvantages
• Recognition of uniqueness and complexities	• Dispersing knowledge within groups
• Decision making and leadership	• Varying levels of knowledge
• Ethical considerations	• Training teachers in:
• Motivation	Discussion-based lessons
• Other stakeholders (e.g., patients' feelings)	Presentation skills
• General understanding of patients' backgrounds	• Establishing a balance between research and teaching
• Gaining applied skills	• Clear evaluation process (student and teacher)

2.3 Problem-Solving Paradigm for Public Health

More broadly, we need to adopt procedures that enable the identification and measurement of problems, the analysis of key determinants, the development of intervention strategies, the selection of an optimal intervention strategy, and the evaluation of outcomes to solve public health problems involving depression or other mental illnesses. Based on the need for these procedures, the proposed problem-solving paradigm includes the following phases: (1) defining the problem, (2) measuring its magnitude, (3) understanding key determinants, (4) developing prevention/intervention strategies, (5) setting policy/priorities, (6) identifying the best solution, and (7) implementing and evaluating the solution.

2.3.1 Defining the Problem

Definitions of public health problems must include the characteristics of the target populations and the nature and extent of exposures. One must also be able to understand the issue from a historical perspective and to consider hypothetical situations, the magnitude of the problem, the limitations that constrain potential approaches, and the definitions of technical terms. The definitional process aims at sharpening the skills used to identify potential problems in society. The core issues in this phase involve who defines the problem and how the problem is contextualized in society. Using a multidimensional framework, students sometimes define the problem by playing the role of each stakeholder.

2.3.2 Measuring the Magnitude

After the problem has been defined, it is imperative to measure its parameters. This requires access to biostatistics, vital statistics, and demographic data as well as the skills to store, process, manipulate, and report on such information. The magnitude of the problem must be measured in terms of questions such as "why it is a problem?" and "why and how should it be solved?" Details about the problem – its prevalence, incidence, economic impact, and effect on human beings – should also be evaluated and measured. Further, the measurements need to be performed with reference to an index identified in the definition of the problem.

2.3.3 Understanding Key Determinants

Once the problem has been defined and quantified, decisions about addressing it must be made. At this point, it becomes important to understand the key determinants of the problem, such as those related to its biological etiology (host, agent, and vector), its environmental impact, and the sociocultural/behavioral practices of the at-risk population. This step involves understanding the natural history of the disease process and identifying risk factors and at-risk populations.

2.3.4 Developing Prevention/Intervention Strategies

In the context of a clear understanding of the determinants of the public health problem, a number of alternative interventions can be proposed at the cellular/microbial, individual, familial, communal, and/or population levels.

2.3.5 Setting Policies/Priorities

Once a wide range of alternatives is identified and the relative merits of each are considered, policies pertaining to a variety of communication, leadership, management, ethical, and financial issues must be developed.

2.3.6 Identifying the Best Solution

After prioritizing the possible solutions, it is necessary to identify the most appropriate one, on the basis of evidence and sound reasoning. These processes involve not only selecting but also directing and establishing possible policies for actual situations. When planners consider all strategies and focus on numerous possible results, decision making can be expedited by relying on such information.

2.3.7 Implementation and Evaluation

After development, the policy must be implemented and evaluated using most of the same quantitative and analytic skills used in the problem-definition and measurement phases.

2.4 Conclusions from Case-Method Teaching

Case-method teaching has been practiced at several universities for many years in a subset of courses, generally in the management area. Many other courses have used short cases as vignettes or examples of a principle or concept that an

instructor wishes to illustrate; however, few nonmanagement courses have used cases as a vehicle for learning through discussion and problem solving. As described by a "founding father" of the Harvard Business School method of using cases, "a good case is the vehicle by which a chunk of reality is brought into the classroom to be worked over by the class and the instructor." Such cases generally do not have solutions but achieve their learning objectives by helping students develop their analytical skills through diagnosing problems and designing alternative solutions as well as by cultivating their decision-making and leadership abilities by allowing them to choose among alternatives and plan implementation strategies. Three levels of teaching objectives are relevant to students who are also professionals:

- Level One is the transmission of knowledge through information, concepts, frameworks, tools, and techniques
- Level Two is the development of skills for analyzing, thinking critically, making judgments and decisions, and executing decisions
- Level Three is the development of a professional identity and leadership capabilities accompanied by a set of values, self-awareness, and a capacity for ongoing learning

Based on these different levels, we discuss the possibility of applying case-method teaching to education about depression and suicide that is designed to reduce the prevalence of suicide among the school-aged population.

3   Analysis of the Public's Psychological Status During Stressful Events

This section focuses on a study evaluating psychological responses to an actual stressful event. Due to an unexpected epidemic of severe acute respiratory syndrome (SARS) in China in 2003 [5], the Chinese government and people became aware of the huge impact and destructive power of a public health crisis. In particular, this situation led to intense psychological responses and panic among the Chinese people.

We studied the psychological status of the population of China during the SARS epidemic and analyzed the factors contributing to their responses to inform our efforts in health education and promotion. Both quantitative and qualitative methods were adopted. The survey used stratified random sampling based on the severity of the epidemic to select Beijing, Taiyuan of Shanxi province, and Harbin of Heilongjiang province as the sites for distributing the questionnaires developed by the authors. We also conducted in-person interviews with relevant department leaders.

A total of 1931 completed questionnaires were received. Analysis indicated that 69.8% of the sample expressed some sort of abnormal psychological response. The area least affected by the epidemic, Harbin, showed the lowest rate (61.4%) of
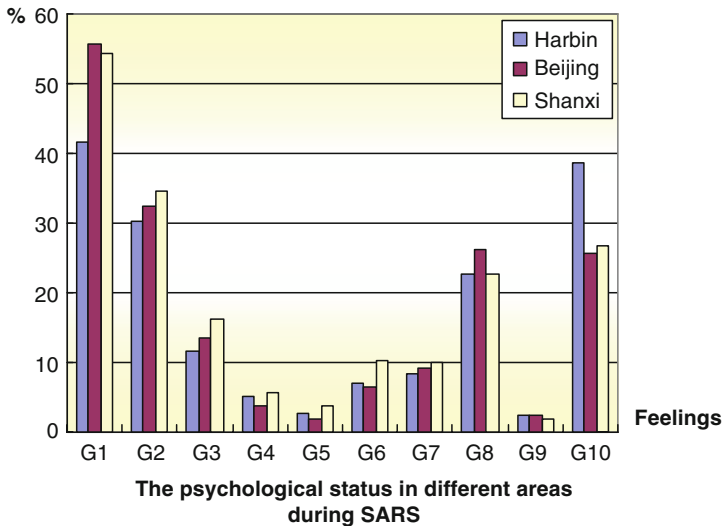
Fig. 2 Prevalence of abnormal psychological feelings in Harbin ($n = 624$), Beijing ($n = 652$), and Taiyuan ($n = 655$). The ten questions for psychological status are as follows: *G1* the virus of severe acute respiratory syndrome (SARS) is new and unknown; *G2* the virus of SARS is highly contagious; *G3* the virus of SARS is soon fatal; *G4* there is no effective treatment; *G5* inappropriate media report; *G6* it is hard to distinguish SARS and normal cold at the beginning of the epidemic; *G7* the epidemic situation is not easy to control; *G8* the intense and nervous atmosphere surrounding people and the various rumors; *G9* people's mobility was limited to some extent; *G10* people are afraid of infecting others when they get SARS

abnormal responses; this was followed by Taiyuan city in Shanxi province (73.2%). Beijing was characterized by the highest prevalence of abnormal responses (74.2%). Abnormally intense psychological responses were associated with the severity of the epidemic and were evidenced by experiences of nervousness, panic, lack of safety, upset, and anxiety (Fig. 2). The major reasons behind these feelings included the SARS epidemic itself, its mortality rate and unknown nature, the intense and anxious atmosphere created by responses to the epidemic, and the various rumors about the situation. Among the most important contributors to these psychological abnormalities were delays in, and interference with, the operation of normal communications channels during the early days of the crisis, as well as the contradictory information emanating from various channels.

The tasks involved in education about public health emergencies should not rest on the shoulders of public health education departments alone; instead, such work becomes the responsibility of society as a whole, and the government, mass media, and professional public health departments should play important roles in this process. The SARS crisis had a widespread impact on the psychological well-being of the public. Timely comprehension of the psychological state of the public and efficient intervention are absolutely necessary when public health emergencies arise.

4 Patient–Physician Communication: Toward Satisfying Distressed People

4.1 Overview

Understanding how patients experience illness provides the basis for a therapeutic relationship between patient and physician. This is especially true in cases of patients with mind/body distress. It has long been acknowledged that patients and physicians tend to have different and sometimes conflicting views on health problems and on reasonable expectations for managing such problems. The perception of being understood by a physician provides emotional support for patients, especially at a time of great stress and vulnerability. Communication is a major component of medical encounters and a fundamental means for the physician and patient to share perspectives. A growing body of evidence has linked effective communication not only to patient satisfaction and treatment adherence but also to health outcomes, including symptom resolution, functional status, physiological measures, and pain control.

Recent trends in Japanese medicine have drawn increasing attention to the physician's ability to communicate with patients. Communication skill is increasingly considered to be a core medical competency that can be taught and assessed in medical education rather than merely a personal trait associated with the physician.

4.2 The RIAS

Patient–physician communication has been studied intensively in Western countries, and various instruments have been developed to objectively assess levels of communication in medical encounters. The Roter Interaction Analysis System (RIAS) is one of the most widely used systems for assessing medical interactions. Developed by Debra Roter, a professor at Johns Hopkins University, it has contributed to our understanding of the structure of communication in medical encounters and the link between communication and quality of care.

The RIAS has several methodological strengths, and it has been used in many studies in many countries [6]. The coding approach is tailored to the specific dyadic exchanges that occur in medical encounters. Coding categories directly reflect the content and context of the routine dialogue between patients and physicians, including both task-focused and socio-emotional domains. Identification and classification of verbal events are coded directly from videotapes or audiotapes, not from transcripts. Coding software to help coders work directly from the audio/video data is also available. Elimination of the resource-intensive effort necessary for an accurate and full transcription represents a practical advantage offered by the RIAS. In addition, because coding proceeds directly from video or audiotapes, it is possible to assess the tonal qualities of the interaction. Furthermore, the validity and reliability of the RIAS have been assessed in previous studies, and both have been rated favorably in a comparison study. The list of RIAS-related studies is available from the RIAS website (http://riasworks.com).

Communication units are defined as "utterances," the smallest distinguishable speech segment to which a classification may be assigned. Codes are assigned to each of these utterances. Approximately 40 mutually exclusive coding categories are used (Table 2).

Table 2 RIAS categories

Socio-Emotional Exchange		Personal remarks, social conversation
		Laughs, tells jokes
		Shows approval – direct
		Gives compliments – general
		Shows agreement or understanding
		Back-channel responses
		Remediation
		Shows disapproval – direct
		Shows criticism – general
		Empathic statements
		Legitimizing statements
		Self-disclosing statements
		Shows concern or worry
		Reassures, encourages or shows optimism
		Asks for reassurance
Task-Focused Exchange	Information giving	Gives information – medical condition
		Gives information – therapeutic regimen
		Gives information – lifestyle
		Gives information – psychosocial
		Gives information – other
	Counseling/direction	Counsels – medical condition/therapeutic regimen
		Counsels – lifestyle/psychosocial
	Question asking	Asks open-ended questions – medical condition
		Asks open-ended questions – therapeutic regimen
		Asks open-ended questions – lifestyle
		Asks open-ended questions – psychosocial
		Asks open-ended questions – other
		Asks closed-ended questions – medical condition
		Asks closed-ended questions – therapeutic regimen
		Asks closed-ended questions – lifestyle
		Asks closed-ended questions – psychosocial
		Asks closed-ended questions – other
	Process	Partnership statements
		Asks for opinion
		Asks for permission
		Paraphrases/checks for understanding
		Asks for repetition
		Asks for understanding
		Gives orientation, instructions
		Requests for services
		Transition words

The following represents an example of the coding:

D: What brings you in today?/(ask opinion)
P: Well... I get short of breath./(information giving: medical)
D: Ah-huh./(agree)
…How long have you had this?/(closed-ended question: medical)
P: I'd say… 8, 10 years./(information giving: medical)
D: 10 years./(check)
/: utterance (): RIAS category

4.3   A Study Using the RIAS

Table 3 shows the results of an analysis of patient–physician communication occurring during cancer consultations in Japan. The details of this study have been previously published [7–9]. This analysis using the RIAS shows that a major part of the interactions involved information giving by both physician and patient. On the other hand, striking differences between physicians and patients emerged with respect to several categories. Physicians asked nearly twice the number of questions, whereas patients produced twice as many positive utterances. The consultation was largely focused on biomedical topics, and the proportion of psychosocial exchanges was minimal.

The regression analyses of patient satisfaction with respect to physician and patient communication behaviors, controlling for the identity of the physician and the characteristics of the patient and consultation [7–9], showed that a greater proportion of open-ended questions and a lower proportion of direction were associated with higher patient satisfaction. These communication styles have often been recommended to physicians for use in patient-centered consultations. On the other

Table 3 Total utterances by physicians and patients per consultation (N=140)

	Physician		Patient	
	Frequency	%	Frequency	%
Open-ended question	2.4	2.9	1.1	1.4
Closed question	9.7	11.6	6.0	6.3
Information giving	32.1	35.2	29.8	34.3
Direction	5.5	5.9	–	–
Emotional responsiveness/expressiveness	2.4	3.0	4.1	4.5
Facilitation	6.3	7.0	4.4	4.9
Positive talk	16.9	19.8	32.0	39.8
Negative talk	0.2	0.2	0.3	0.4
Orientation	2.7	3.8	–	–
Requests for service	–	–	0.4	0.4
Social talk	2.7	3.8	2.5	3.6
Other	5.8	6.8	4.3	4.5
		100.0		100.0
Total	86.8	(50.9)	84.9	(49.1)

hand, the perceived emotional responsiveness of physicians was negatively associated with patient satisfaction. In this study, most of the utterances classified as physician emotional responsiveness were statements intended to reassure and encourage patients, such as "there is no need to worry" or "you will be all right." These data suggest that reassurance and encouragement might differ in essential ways from empathy and acceptance. That is, encouraging statements, especially when offered early in the presentation of patient complaints, may function as interruptions, preventing patients from fully describing their concerns. It is also possible that patients felt that they were expected to respond to reassurance from physicians by concluding their remarks even if they still had something to say.

Among the patient communication behaviors, question asking was associated with lower levels of satisfaction, possibly because the information needs of patients increase when the information provided by physicians is not sufficient or comprehensible. This may lead to greater question asking and lower satisfaction with the consultation. Thus, patient question asking might express patient dissatisfaction.

## 4.4 Conclusions from Medical Communication Research

Although the previous section described the use of the RIAS in research settings, the RIAS has also been used as an educational tool. Indeed, this measure can be used for individual feedback in that it offers an objective assessment of communications. It also helps in understanding the structure of the entire communication as well as the function of each communication in medical encounters. Further, it provides specific examples of each communication category, offering many ways to facilitate talking by patients, demonstrating empathy, and so on.

In relation to medical education, further research is needed to explore when and how the key communication skills identified in communication research should be taught as well as to assess whether these skills can be learned. The ways in which patient-centered attitudes and communication skills can be developed and sustained by practitioners all along the continuum of health-care professionals should also be considered.

Although research in Japan remains limited, previous studies have provided evidence that communication in medical encounters can have a significant impact on patient behaviors and outcomes. Further research into patient–physician communication is needed to implement patient-centered care in the social and cultural context of Japan.

5 Cognitive Behavior Therapies for Depression and Stress-Related Conditions

Depressed individuals think negative, painful, and discouraging thoughts, such as "I am worthless," "I have no hope," and "I will fail again." They tend to think in irrational black-and-white, all-or-nothing terms such as, "if I make a mistake on this
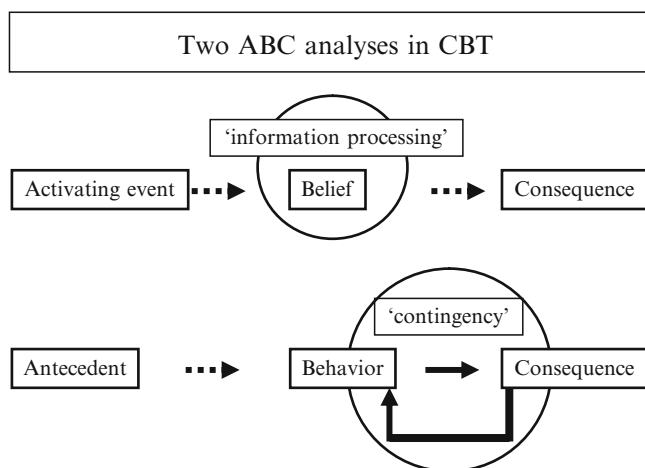
Fig. 3 Model of the two ABC analyses in cognitive behavior therapy (CBT)

project, my career will end." Cognitive therapy, developed by Beck and colleagues, capitalizes on this facet of depressive syndromes to alleviate symptoms. Numerous randomized controlled trials attest to the efficacy of cognitive therapy, which is often combined with behavioral techniques to constitute cognitive behavior therapy (CBT).

CBT is a widely used psychological treatment for depression, and we have performed CBT with a variety of patients for more than 20 years [10, 11]. CBT often proceeds on the basis of two kinds of assessment procedures, both of which are referred to as "ABC analysis" (Fig. 3). ABC represents an Activating event, a Belief, and a Consequence (including mood and behavior) according to the analysis depicted in the upper section, whereas it represents an Antecedent, a Behavior, and a Consequence according to the analysis depicted in the lower section. The first ABC analysis assumes that a distortion in information processing plays an important role in generating problematic emotions and behaviors. On the other hand, the second ABC analysis assumes that the contingency connecting one's own behaviors to the responses of others or the self produces the problematic behaviors.

Our experiences with CBT have identified problems with using this approach to treat depression in Japan and have underscored issues that require further consideration to improve the effectiveness of treatment offered in actual clinical settings. One of the major problems with using CBT to treat depression in Japan is that attending psychiatrists and physicians do not have sufficient time to implement the treatment. Therefore, collaboration with clinical psychologists will be necessary. However, most hospitals and clinics do not employ clinical psychologists with adequate training in using CBT to treat depression and/or in depression itself.

Thus, we must first establish a functional collaboration among psychiatrists, physicians, and clinical psychologists. Thereafter, the following issues should be considered with respect to delivering the actual treatment: (1) how to implement CBT in the process of the overall treatment, (2) how to educate and motivate patients with respect to psychological concerns, (3) how to use various worksheets

or monitoring sheets, (4) how to handle the variability in depressive moods, and (5) how to terminate treatment and prevent relapse.

Although the cognitive restructuring component of CBT is easy to understand and is effective, it is not the only active ingredient in this treatment of depression. Indeed, any workable treatment program should also include, at the very least, attempts at behavioral activation. Various worksheets or monitoring sheets can be used to conduct CBT in Japanese clinical settings with limited staff and time resources.

6 Summary and Future Directions

The present chapter addressed the importance of prevention, especially with regard to communication and education, by focusing on recent epidemics of depression and stress-related conditions. The patient–doctor relationship is fundamental to the process of medical diagnosis, and effective communication among residents and specialists engaging in health promotion is also central to the maintenance of healthy lifestyles. Knowledge of psychological techniques such as CBT is useful when communicating with depressed patients and with any individual experiencing negative mental states. Medical education is also essential in providing adequate numbers of well-trained health care professionals who can assess and manage mental health conditions.

The Ottawa Charter for Health Promotion, introduced by the World Health Organization in 1986, declared that health promotion goes beyond health care. Although further consideration is needed to end the debate pitting medical care against population-level preventive activities, it is clear that health must appear on the agendas of policy makers at every level of government to facilitate awareness of the health consequences of a wide range of decisions [12]. The responsibility for health promotion should be shared among individuals, community groups, and health professionals, as well as health service institutions and appropriate governmental agencies. We will continue our clinical and research activities in the service of promoting mental health in Japan, China, Asia, and throughout the world.

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