A MODEL OF PEOPLE AT HIGH RISK TO DEVELOP CHRONIC STRESS RELATED SYMPTOMS

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PROFILES OF STRESS SUSCEPTABILITY

Sir William Osler is reported to have said that "sometimes it is more important to know what kind of patient has a disease than what kind of disease the patient has". One implication of this statement is that certain types of personality features can potentiate or attenuate either the symptoms or the etiology of a disease, or both. The first goal of this paper is to start to specify a promising set of personality features and also a set of situational events under which people who are either biologically prone to a disease or exposed to the relevant pathogens will become symptomatic. The second goal of this paper is to tentatively suggest some procedures to quantify these personality dimensions and these situational conditions. The third goal is to present evidence from my clinical practice and the research literature to support this model of the patient at high risk to develop chronic stress related illness. The present model (Wickramasekera, 1979, 1980a, 1980b) is based on clinical observations made, and case study data collected, over the last 15 years in an increasingly specialized clinical practice.

In modern industrialized society psycho-social stressors are probably the primary class of stressors that activate the fight or flight response (Cannon, 1932) and/or the general adaptation syndrome (Selye, 1956). As Mason (1971) has suggested, both physical and psychological stressors operate through a common psychological mechanism, the perception of "threat" to the well being of the animal. However, psycho-social stressors like a problem child, an unhappy marriage, the death of a spouse, an unpleasant job, an aging parent who resides with you, etc. have certain unique and different features from physical stressors. First, psycho-social stressors commonly elicit both avoidance and approach tendencies either sequentially or
simultaneously. For example, a divorce after many years of marriage can be both a relief and a regret. Second, the sources of psycho-social stress are often nebulous and difficult to recognize, and even harder to define, unlike the threat from a saber-toothed tiger.

Third, psycho-social stressors tend to be chronic and resistant to rapid resolution by primitive defenses like either “fight or flight”. For example the problems posed by an adolescent or an aging parent cannot be resolved by either physical attack or flight. In summary, then, ambivalence, ambiguity and chronicity are special problematic features of psycho-social stressors that interact with the following special features of people at high risk potentiating the probability of somatic disorders and disease. The following personality features (Wickramasekera, 1979a; 1979b) are particularly vulnerable to the above unique features of psycho-social stressors. These personality features are 1) either very high or very low hypnotic ability, 2) neuroticism (Eysenck, 1960) and autonomic response specificity (Lacey, 1967), 3) the cognitive tendency to "catastrophize" (Ellis, 1962) often based on pessimistic belief systems and 4) a deficit in adaptive support systems and coping skills. Finally, if there is either 5) a high frequency of major life changes (e.g., divorce, loss of employment, physical injury and/or a high frequency of minor hassles over a short period of time, the coping resources of the person may become symptomatic. The massed and chronic elicitation of ambivalent feelings by ambiguous and complex psycho-social stimuli in people who are either very high or very low on hypnotic ability, autonomically labile, (neurotic) and prone to cognitively catastrophize, places them at high risk for developing somatic disorders or disease.

Hypnotic Ability

Hypnotic ability is a normally distributed, stable individual difference variable (Hilgard, 1965; Barber, 1976) that is partly genetically based (Hilgard, 1977). Current research suggests that hypnotic ability is best considered a mode of information processing that can occur in a variety of situations (e.g., hypnotic induction, transferance) but particularly for this context under conditions of high or low arousal (Wickramasekera, 1971; 1972; 1973; 1976; 1977). It is most important to stop thinking of hypnosis as an event that occurs only during a hypnotic induction in the same way that we do not think of intelligence as an event that occurs only during an intelligence test. About 10% of the population are able to very readily and profoundly access the hypnotic mode of information processing and an equal percentage are almost never able to do so. There are 3 features of the high use of this mode of information processing and 3 features of the low use of this mode of information processing that place people at high risk for developing somatic symptoms. High use of this mode results in a relatively "unfiltered" perception of the world, a tendency to amplify even minimal sensory stimuli, and to react to those potentiated sensory events with inadvertent but, at least in part, voluntary activation of hypno-responsibility. Hypno-responsibility is the capacity for recollection of hypnotically suggested events by hypno-responsive patients (Wickramasekera, 1979a; 1979b). They are much more likely to be hypnotizable (Webb, 1962; Wilson et al, 1960) and are much more likely to remember hypnotically suggested events (Wickramasekera; 1979; Wilson and Spilka, 1979). 92% of their hypnotically suggested events have been extremely real or moderate hypnotists. The more hypnotically suggested events, the more evidence that hypnosis, in stage 1, can be a reality. They can also be read by any hypnotically suggested events (Shor, 1954) that have already been incorporated into the person's conceptual and/or cognitive framework (Shor, 1954) and thus, can be read by any hypnotic suggestion (Shor, 1954) that has been incorporated into the person's conceptual and/or cognitive framework (Shor, 1954).
part, voluntarily induced exaggerated autonomic reactions. For highly hypnotizable people, "beliefs irrespective of their validity are more likely to have biological consequences" (Wickramasekera, 1979). The capacity for relatively "unfiltered" or non-critical analytic mentality has several demonstrated consequences. First, these people are much more responsive to social-psychological influence procedures (Wickramasekera, 1976) in the form of operant verbal conditioning (Webb, 1962; Wickramasekera, 1970; King and McDonald; 1976, Weiss et al, 1960) respondent conditioning (Das, 1958a; 1958b), and various types of short term psychotherapy (Laren, 1966; Nace et al, 1982). They are also more responsive to psychological pollution and are very much more likely to report "parapsychological events" (Wickramasekera, 1979; Wilson and Barber, 1982). Wilson and Barber (1982) report that 92% of their high-hypnotic responders (N=27) and only 16% of their low or moderate hypnotic responders (N=25) report psychic experiences like telepathy, pre-cognition, out-of-the-body experiences, etc. At least some of these people are prone to psychological pollution because they can voluntarily reset their perceptual filters outside the constraints of logical-critical analytic brain functions. There is also some evidence that they can acquire and retain information, without waking up, in stage I alpha free sleep and stage REM sleep (Evans, 1977). They can also fall asleep easily in the sleep laboratory, wake up at a preselected time before their alarm goes off (Evans, 1977) and influence the content of their REM dreams (Stoyva, 1965). Essentially high hypnotic ability people seem to have superior voluntary control of altered states of consciousness (waking, sleeping, napping, dreaming, etc.) and this ability may be used to alter their own perceptual and cognitive filters in ways that could be physiologically adaptive or maladaptive.

People of high hypnotic ability can amplify or attenuate sensory signals. Factor analytic studies of hypnotic behavior indicate that the capacity to provide the mind with rich images and fantasies is a major factor in hypnotic ability accounting for close to 50% of the variance on standardized tests of hypnosis. In fact it has been found that people of high hypnotic ability are less tolerant of pain if their hypnotic ability is not used than people of low hypnotic ability (Shor, 1964). People of high hypnotic ability have an unusual capacity for attention to and absorption in fantasy, and sometimes this ability can be used to amplify their response to even minimal physical or visceral sensations. Since hypnotic ability is positively correlated with standardized tests of creativity it is possible that this creative ability is at times used to elaborate "meanings" or amplify even minimal sensations. Since these people can hallucinate voluntarily they probably would need little or no sensory basis on which to develop delusional pain or a false pregnancy. Studies of information processing in high and low hypnotic ability subjects have found that high ability subjects have superior sensory memory and a superior ability to transfer information from sensory to short term memory (Ingram et al, 1979; Saccuzzo et al, 1982). This ability may be used
to learn and retain both respondent and operant pain and anxiety more quickly than other people. Several studies (Frankel and Orne, 1976; Foenander et al., 1980; Perry et al., 1982; Gerschman et al., 1979) have found that an unexpectedly large percentage (48%-58%) of clinical phobics are highly hypnotizable. It seems that for these subjects, images and/or fantasies become so vivid and real as to be confused with the world outside. Another study (Pettinatti et al., 1982) found that 37% of all bulimics were high on hypnotic ability and 37% were low. A subject of anorexia who use purging as opposed to abstention from food, are also high on hypnotic ability. It is likely that these purging behaviors are enacted in a dissociative state.

Factor analytic studies have found that a second major factor in hypnotic ability is the ability to make the mind blank (amnesic) and that this factor is orthogonal to the fantasy factor. This ability may be used to deny or delay the recognition or organically based sensory stimuli in the acute phase of a disease, resulting in development of a chronic disease. It may also be used to alter states of consciousness, and may be used or abused to decouple the verbal-subjective response system (contents of verbally mediated consciousness) from the motor or physiological response system resulting in somatization or conversion symptoms.

Much less is known about people of low hypnotic ability beyond the fact that they are limited nearly always to a rational critical analytic mode of processing information and that they are unwilling or unable to use fantasy or imagination. They also appear to condition more poorly in both the operant and respondent modes (Weiss, Ullman and Krasner, 1960; Webb, 1962; Wickramasekera, 1970; King and McDonald, 1976; Das, 1958a; 1958b) and probably are deficient in forming anticipatory response. Within limits, fantasy and imagination may be useful to prepare the body for stress and to reset dysfunctional physiological systems. It is likely that their thinking is quite concrete and that they either do not have or do not use a rich vocabulary to label and discriminate their feelings and moods and consequently tend to attribute psychological changes to physical or biological events or to mislabel psychological changes as physical changes. One study (Frank el et al., 1977) found that 73% of low hypnotic ability people were rated as "alexithymic". Alexithymia is defined as "lacking words for mood" (Sifneos, 1972). Sifneos found that only 8% of superior hypnotic subjects were rated as alexithymic. There is a large literature linking alexithymia to psychophysiological disorders (Lesse, 1981).

Catastrophizing cognitions and pessimistic belief systems

Several large scale prospective longitudinal studies (Hinkel, 1961; Valliant, 1978; Stewart, 1962) have shown that pessimism, self doubt, passivity and dependence are good predictions of subsequent complaints of psychosomatic illness. Ellis (1962) has elucidated the role of catastrophizing cognitions in the acquisition and maintenance of psychopathology. Catastrophizing involves an exaggerated belief system that attributes harmful outcomes to major life stressors. It plays a role in attributing unhelpful consequences to stressful situations. Catastrophizing can also be a form of self-punishment for keeping the stressor (e.g., work stress) in the forefront of awareness or anticipating a negative consequence of a stressor. People with consequences beliefs were observed to be more likely to report Brown (1978) that catastrophizers are prone to having ideas and catastrophizing ideas of losing solvency and health problems and are prone to have stressful and painful events. Catastrophizers were observed to be more likely to score lower on self-efficacy, whereas only 23% of the hetero-copers and 38% of the homocopers. Coping styles, such as cognitive distress and catastrophic distress, are also associated with catastrophic self-statements and negative outcome expectations. Situations.

Neuroticism always correlates with lower scores on neuroticism.

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of psychopathology. It is likely that the cognitive tendency to catastrophize is at least partly based on pessimistic and nihilistic belief systems. It is likely that catastrophizing also plays a major role in attending to symptoms, altering sensory thresholds and escalating the levels of sympathetic arousal in stress-related disorders. Catastrophizing has at least two response components. First, that of keeping the attentional focus on the sensory or visceral events that are antecedents or consequences of symptoms; and second, remembering or anticipating a wide range of negative physical and psycho-social consequences and antecedents of the symptomatic event. Chaves and Brown (1978) found that dental patients could be divided into catastrophizers and copers during an injection or extraction. Catastrophizing ideation was reliably associated with higher levels of distress and pain in the dental situation. Brown (1979) replicated the above clinical finding with experimentally produced pain. Brown and Chaves (1980) found that the bulk of chronic pain patients (low back and headache) are catastrophizers. Catastrophizers have significantly higher pain ratings than copers. Eighty-six percent of catastrophizers were prescribed anti-anxiety or anti-depressant medication whereas only 12% of copers were on this type of medication. Spanos et al (1979) also found that catastrophizers had higher pain ratings than copers. Copers can be defined as people who use pleasant or positive cognitive distractions to attenuate their response to unpleasant sensory events. Spanos et al (1981) found that catastrophizing (exaggerating) self-statements increased pain reports in experimental pain situations.

Neuroticism

Neuroticism is a dimension of personality that is based on the degree of reactivity of the sympathetic division of the ANS (Eysenck, 1960). Clinically the most promising aspect of sympathetic reactivity is autonomic response specificity (ARS). ARS (Lacey, 1967; Sternbach, 1966) refers to the frequent observation of a stable profile of sympathetic response regardless of variations in the character of the stressor (e.g., mental arithmetic or cold pressor). There appears for many people to be a constant prioritized order of physiological response magnitudes across a variety of stressors. The analysis of autonomic response specificity appears to provide a useful approach to the predictions of somatic symptoms. The psychophysiological stress profile procedure (Wickramasekera, 1976) is a method of testing individual subjects sympathetic reactivity and I have supplemented this procedure with a paper and pencil test like the Eysenck Personality Inventory.

The Psychophysiological Stress Profile is a standardized procedure we have developed to directly measure the magnitude and duration of a patient's physiological response to a standardized cognitive stressor (mental arithmetic). An on-line computer collects, reduces and prints data (high-low, numbers of data points, mean and standard deviation) on heart rate, blood pressure, frontal EMG, skin
conduitance, respiration and peripheral skin temperature under three conditions. The first condition is a 15 minute habituation period, the second is the stress (mental arithmetic) period and finally, a recovery or return to baseline period. We also request the patient to give us a subjective rating of their level of anxiety, on a subjective unit of disturbance scale (SUD) ranging from 0 — 50 SUDs. Like hypnotizability, neuroticism also appears to have a clear genetic component (Shields, 1962) and is a stable individual difference variable.

Major Life Changes and/or Daily Hassles

A massing of major life event changes appears to be associated with a high probability of illness. A method of assessing the impact of situational stress on health is the measurement of major life changes (Holmes and Rahe, 1967). The major weakness of this method is the empirical finding that the relationship between life event change scores and health outcomes is too weak for individual prediction. Major life changes are also infrequent. I have supplemented the major life change procedure with the Hassle Scale. The Hassle Scale assesses the ongoing daily stresses and strains of everyday life. For example, getting caught in rush hour traffic, running out of gas, noise, work overload, unexpected company, etc. The research of Kanner et al (1981) and DeLongis et al (1982) demonstrates that massing of daily hassles is strongly related to somatic health outcomes and that this effect remained even after the effects of major life events was statistically removed (DeLongis et al, 1982).

Deficient Support Systems and Coping Skills

The impact of a massing of major life event changes or minor hassles or both, will depend not only on the degree of psychological "threat" (Mason, 1971) provoked by a wide variety of physical and other changes but also on the effective use of support systems and coping skills by the patient. Support systems are essentially psychological resources (wife, siblings, psychotherapist, church, friends) on which the patient can lean and with whom he can abreast to cushion the impact of stressors. Coping skills (religion, escape through fantasy or reading, physical distractions, recreation, relaxation, meditation, etc.) can also be used to distract the patient, change the meaning of events, and reduce preoccupation during both the acute and chronic phases of stressor impact.

From a review of hypnotic ability and neuroticism scores of a consecutive series of all patients I have seen in the last 3 years (N=103) the following preliminary observations may be made. It is important to repeat that this report will be limited to the incidence of only two of the 5 risk factors (hypnotic ability and neuroticism): (1) 8% of the patients show neither sign (7 of 84); (2) 48% (40 of 84) showed both signs; (3) 83% showed the hypnosis sign; (4) 65% showed the neuroticism sign.

CHRONIC STRESS RELATIONSHIP

CONCLUSION

The impact of chronic stress will depend not only on the autonomic responses evoked by the chronic stress itself, but also on the personality features, and who the patient is. The person at greatest risk is the introverted, mood stable, anxious, and social phobic. The findings one may expect are increased incidence of all types of psychopathology. To these factors one may add the many psychosomatic illnesses which can be found in a chronic stress situation. Stress factors are causal in both the psychophysiological and the psychological sense. Clinical observations, in addition to the above comments, suggest that these 5 constructs are necessary and sufficient. The factors have been found to be difficult to control, and they are most importantly predictive of outcome. These factors have been the focus of primary research in the area of adolescent.

REFERENCES

CONCLUSION

The impact of multiple life changes or multiple hassles will depend not only on personality features (high or low hypnotic ability, autonomic response specificity and neuroticism, catastrophizing ideational tendencies), but also on the patient access to and effective use of social support systems and personal coping skills. The patient at greatest risk is the one who is positive for all the personality features, and who is deficient in support systems and coping skills. The person at lowest risk is the patient who has none of these personality features and who has effective use of multiple support systems and coping skills. In the absence of physical findings but in the presence of 2 or more of the above psychophysiological findings one may reasonably make a diagnosis of psychophysiological disorder. To the extent that most or all of the above risk factors can be found in a given case, the probability that psychophysiological factors are causing the disorder is high, or alternatively that psychophysiological factors are aggravating is a minimal physical cause. Clinical observations over the last 15 years have directed our attention to the above high risk factors. We have continued to focus on these 5 constructs over the years and attempted to quantify them with procedures of increasing validity and realiability. These five risk factors have been clinically important in that they have clarified difficult diagnoses, enhanced the prediction of clinical outcome and most importantly have provided broad targets for clinical intervention. These five risk factors after further validation may be the focus of primary prevention efforts starting in childhood or adolescence.

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**ABSTRACT**

It has been shown that stress can be produced in a quiet environment. Stress and individuals with neurological conditions showed that chronically stressed and prior experiences can reduce the pattern of effect together with other variables (Orne, 1962).

**INTRODUCTION**

There is a growing concern about the use of relaxation techniques. Silver and published studies reviewed in this section indicate that immediate (short term) training of relaxation techniques, brief (six sessions) lack of pre-training.

A number of studies have also been recommended review article.