

Psychosomatic Disorders and Family Factors

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Abstract: Psychological factors can affect medical conditions. The somatic symptoms of psychosomatic disorders are caused or intensified by psychological factors. Life events may cause stress to the individual, and the following state of arousal and depletion of resources cause physiological changes, which may develop into somatic symptoms. The risk and development of psychosomatic disorders are related with the life events an individual faces, the interpretation of the events, health behaviors, biological and genetic vulnerability, psychological resources, and host resistance. Both psychological and medical approaches are used for the treatment of psychosomatic disorders. The psychological approach mainly includes stress management and biofeedback training, the effectiveness of which can be influenced by the psychological conditions of the individual such as personality, decision making, as well as social interaction. Family factors have impacts on the aspects above by factors of hard environment and soft environment, parenting style, and inheritance. It is important consider the individual's family conditions when dealing with psychosomatic disorders.

1. Introduction

Psychosomatic disorders are characterized by clear and specific somatic symptoms or pathological alterations, the formation or exacerbation of which are contributed significantly by psychological factors caused by stress^[1]. In addition, the somatic changes are alike with the physiological alterations in the emotional states but are stronger and more constant.

Medical therapies can intervene the development of psychosomatic disorders, while psychological treatments are effective to part of the patients, depending on their personalities as well as other psychological factors.

The emotional factors contribute to a wide range of diseases, mainly involving disorders of the systems or organs innervated by automatic nerve system, including disorders of nervous system, integumentary system, musculoskeletal system, respiratory system, cardiovascular system, alimentary system, urogenital system and endocrine system. Influences of emotional factors often result in somatic symptoms, for example, coronary heart disease, essential hypertension, peptic ulcer, diabetes mellitus, headache and otorhinolaryngological diseases.

Research shows patients with psychosomatic disorders account for 1/3 of the first-visit patients in comprehensive hospital. According to an investigation in China, covering 5.5 thousands of samples, psychosomatic disorders account for 33% of the retired. Female sex, fewer years of education, lower socioeconomic status, unemployment; urban, developed area and climacteric populations as well as mental labourer are associated with higher prevalence rate^[2]. However, in a few specific diseases such as coronary heart disorders and peptic ulcer, male population has higher prevalence rates than female.

2. Family Factors on the Cause and Development of Psychosomatic Disorders

2.1. Physiological Characteristics of Psychosomatic Disorders

Although psychosomatic disorders are caused or intensified by psychological factors, they result physically as in somatic symptoms or pathological changes. Hence, the association with physiology

is also an important factor whilst considering the cause and development. In the case of psychosomatic disorder, the psychological stresses and emotional changes that patient faces affect their physiological functioning, thus and cause dysfunction or damage to organs through the activation of the glands of endocrine system and the autonomic nervous system.

The general adaptation syndrome is the physiological process triggered by psychological changes, as a result of long-continued exposure to stress. The concept was first proposed by Selye in 1946, who divided it into three stages base on the physiological response of body to stress^[3-4].

In the alarm phase, the fight-or-flight response is activated. After the stimulation is received by the body, the message is sent to amygdala which then releases corticotropin releasing hormone (CRH) to activate the sympathetic nervous system, thus the signal is transferred to the adrenal gland and lead to the release of hormones that restrain the parasympathetic nervous system. In addition, the amount and speed of the release of hormones varies under the stimulations of different stressors. Those hormones with the ion currents they cause result in deeper and more rapid respiration, pupil dilatation, increase in beating rate and contractility of the heart as well as the force of contraction of skeletal muscle, elevation of blood pressure. In particular, glucocorticoids affect immune system and the nervous systems, suppressing immune responses and promoting the energy production of glucose conversion, as well as causing more CRH release^[5]. This allows individual to be ready to fight or flight under perceived threats.

The resistance phase starts when the body reaches a balanced mood, after acquiring adaptation of the abnormal condition under the exposure to stress; however, the acquisition is gained at the cost of decrease of the resistance to other kinds of stress. During this phase, the hypothalamus-pituitary-adrenal system (HPA) is in a long-continued active state, the excessive release of glucocorticoids has negative effect on immune system and endocrine system, which can also lead to influences to the autonomic nervous system and the central nervous system. These physiological activities take up psychological and physical resources of patient, as a result, the body loses resistance to other kinds of stress, hence also likely to suffer from depression and psychiatric symptoms. In the resistance phase, most of the morphological and biochemical manifestations from the first phase disappear or are reversed.

The exhaustion phase is ultimately developed as the very prolonged exposure continues after reaching the former phases. Under long-continued stress, the body is able to acquire adaptation, however, it can not be maintained permanently due to the exhaustion of limited resources and the suppression of the store of new resources. The risk of physiological disorders increases in the exhaustion phase. In addition, as the glucocorticoids influence the activity of hippocampus, learning and memory may also be influenced negatively.

In the process above, the release of Glucocorticoids is activated, this inhibits the formation of leukocytes and even kills the existing leukocytes, thus patient's immune function is impaired, the organism becomes more vulnerable to infections and tumors^[5]. Hence, the influence of stress on the immune system is an important factor in psychosomatic disorders.

Family factors, including inheritance of genetic and biological vulnerability, also play an important part in the physiological aspect of psychosomatic disorders. Genetic inheritance influence the physiological state of patient, for instance, endocrine system, nervous system, immune systems, and gene sequences related to certain kinds of diseases. These conditions are essential to the formation, development, and severity of physical symptoms. Thus, the diagnostic evaluation of psychosomatic disorders, especially in cases of young children, should take into consideration the corroborative history from parents^[1].

2.2. Personality Traits and Social Factors

To different individuals, there are various personality profiles, however, several personality traits can be identified as partially coincident between individuals, thus can be used to describe the personality of individuals. Being the first environment each individual is exposed to, family environment plays an integral role in the shaping of personality.

The same causative factor of psychosomatic disorders may show different effects of the

development and treatment to different individuals base on the different personality traits and behavior patterns they have. Personality traits are associated with individual's decision making, health behaviors and coping styles, social interaction, as well as interpretation of life events or symptoms^[1].

Family size, economic income, educational level of parents, and values, among others, have the potential to influence children's personalities. According to previous studies, aspects of family environment can be categorized with several classification methods.

Factors of hard environment include age, economical, cultural and occupational conditions of parent and so forth; factors of soft environment are the ten subscales of the three dimensions (Relationship, Personal Growth, System Maintenance) of Family Environment Scale (FES) including Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, Organization, Control^[6]. For instance, individuals from families with higher level of cohesion and expression rates may have a stronger host resistance.

The Egnä Minnen av Barndomsuppförstran (EMBU) was proposed by Perris et al. in 1980, the inventory assesses parental rearing behavior base on the measurement of 15 subscales^[7]. The parenting styles are classified into two categories based on five dimensions derived from the five subscales of the EMBU: Positive (affectionate) and Negative (punitive, overinvolved, rejecting, overprotective). According to the study by Duan et al. in 2012, statistic results show that Positive Parenting Style has significant positive correlation with character strength and psychology harmony of individuals and can positively predict the latter two. In addition, individuals who score higher in character strength more often feel happy and satisfied in their lives. Individuals' self-confidence may also be improved. Negative Parenting Style, according to the statistics, has no significant correlation with character strength and psychology harmony, but only is negatively correlated with family environment, which may bring negative emotions and self-doubt, and develop into depressions as well as other psychological problems^[8].

When there are more life events an individual faces, there is more likelihood of developing psychosomatic disorders. Holmes et al. listed 42 of these life event which may have influence on individual's health condition, ranging from the events which have the most impact to the least, to name a few, death of spouse and family member, injury or illness, change of work^[9]. The organism needs to put in effort to adapt and regain the homeostasis to cope with the stress brought by the changes in life. The different degrees of imbalance of the body causes negative emotions and physiological alterations, which may lead to harms to mental and physical health. A stable family provides individual an environment with less life events, such kind of families, for example, often have higher scores in cohesion and organization level, as well as lower scores in conflict level.

Besides the events which happen directly on the individual, those happen on close family members should also be taken into consideration. Such factors cause direct or indirect mental stress through time or financial factors. According to the WHO World Mental Health (WMH) Surveys, 39.0-39.6% of the respondents with first-degree relatives having serious health problems reported burden, among these 23.3-27.1% reported psychological distress and 6.0-17.2% embarrassment, time and financial burden are reported by 22.9-31.1% and 10.6-18.8%, lower income contributes more to the number^[10]. Thus events on close relatives cause stress to individual, and can be intensified by factors of hard family environment such as low family income. Moreover, factors of hard environment are also related to the likelihood of occurrence of life event on both the individual and family members. Individuals from families with lower income are more likely to engage in manual occupations, which leads to higher rate of injury at work and working environment that is more likely to provides more mental and physical stress; cultural and religious factors may also influence the level of stress via the interpretation of life events. Stress from life events on first-degree relatives are more likely to cause greater levels of stress to individuals in families with lower levels of hard environment.

Hence, a stable family environment means less encounter of life events which may cause stress. Parenting style influence an individual on the level of compliance, host resistance, as well

personality traits associated with specific somatic symptoms. Thus, the risk of psychosomatic disorders is influenced by family factors above.

3. Management of Psychosomatic Disorders

3.1. Biofeedback Training

Biofeedback training focuses on establishing a link between the psychological and physiological processes, transferring the biological signals which can not be sensed by individual into visual or auditory informations, in order to teach the patient to voluntarily control the biological signals. The process contains mainly three steps: understanding and acquiring the association between the display device and the physiological condition, learning to control the physiological response by practices, and applying the response to everyday life. During the process, patient gains increased sensitivity to the psychological process and physiological responses which causes extensive influence upon behavior, and eventually learns to integrate this into lifestyle after repetition and practices^[2].

The acquisition is based on operant conditioning. In often game-like displays, the association is learnt by the organism accompanied by rewards, as a result individual learns to produce, inhibit, or modify biological signals^[11].

There are three basic principles upon which biofeedback is based. Firstly, the physiological and the mental-emotional changes accompanies each other, such bilateral relationship makes sure that changes in physiological state can be perceived psychologically, and the psychological changes can influence the physiological state. Secondly, the physiological signal should be specific, in other words, it can be detected and monitored, this allows the process to be translated into visual or audio messages to an individual, and makes the further step of acquiring voluntary control possible. And thirdly, a state of deep relaxation is introduced to the individual, in order to establish voluntary control of the physiological process, via the building of awareness of individual's subliminal sensations and imagery^[12].

Biofeedback training is commonly used in the treatment of hypertension, a research in 1974 shows that after biofeedback training most of the patients were able to control their blood pressure without medicine. It is also applied in treatments of other kinds of diseases, for example, migraines, gastrointestinal diseases, and asthma; previous studies have provided evidences for the effectiveness of its application in these fields^[2].

However, there are factors may negatively affect the effect. For example, the continued exposure to stress, influences of personality and other psychological factors.

3.2. Stress Management

Stress management focuses on appropriately coping with the stress in life, in order to reduce the impacts on immune system. In such process, the first step is to find out the stressor and its characteristics, as well as the individual's response to stressor. Various methods are used in stress management, and can be divided into two categories which deal with the stress in different approaches: to alter the stressor, as well as to alter the individual's emotional, behavioral, cognitive, physiological responses to the stressor.

Relaxation training is often introduced to the patient in order to reduce the physiological arousal of stress, and is often accompanied by biofeedback training. By acquiring a deep relaxation mood, the individual will be able to reduce the arousal when facing life events, moreover, the immune system is also influenced positively. However, in order to obtain better and longterm effects, a longterm and regularly repeated therapy is required.

Psychological methods of stress management include cognitive reconstruction and behavioral treatment. Cognitive reconstruction alters individual's cognition and provides with a more rational logic, as the interpretation towards life events changes, the emotion caused by the events changes as a result, thus the stress can be reduced. Individual experiences stress when facing a task or event without having the associated skills to deal with it, based on this principle, the behavioral treatment

reduce the stress by helping individual with the skills that cope with the event itself, for example, time management and assertion skills^[2].

Another effective method is to change the stressor itself, in other words, to change the environment. For instance, when the stress comes from frequent interruptions in working, it can be coped with by providing a better working environment. When family condition provides an individual with stress, besides the treatments which focus on the individual, changing the family environment is also important, for example, the relationship of family members and parenting style.

3.3. Family Factors in Treatments of Psychosomatic Disorders

Most of the methods above require a regularly repeated longterm treatment, appropriate lifestyle of the patient which will not counteract the effect of treatment, as well as the elimination of psychological factors which have negative impact to the disease. Hence, patients with better decision making, compliance, host resistance, as well as specific personality traits (the traits varies from different diseases), are more likely and easily to be treated effectively.

Family factors, mostly factors of soft environment, can influence the individual's psychological factors, including individual's personality and psychological resources, hence the likelihood of obtaining effective results of treatment. For example, families with higher coherence and organization scores are often associated with higher compliance level of individual, with which the individual is more likely to follow the advices from therapists, hence tend to be more effectively treated.

4. Conclusion

Psychosomatic disorders includes stress from life events, hence the psychological process is essential to the development and treatment of it. Individuals with better decisions making, compliance, host resistance, as well as specific personality traits are more likely and easily to be treated effectively.

It is important to take into consideration of family factors in both the diagnosis and treatment of psychosomatic disorders. Family factors can influence the risk of psychosomatic disorders, as well as the likelihood and difficulty of obtaining effective treatment.

Family factors in psychological aspect of psychosomatic disorders include the inheritance of genetic and biological vulnerability to somatic symptoms, which determine the characteristics of individual's physical, psychological, biochemical conditions, as well as factors of endocrine, nervous, immune systems, and disease related genes.

A more stable family environment, mostly determined by the factors of hard environment, is associated with less life events and less stress from the events. Parenting style is essential to the establishment of individual's compliance, host resistance, and specific personality traits. Other factors of soft environment may also influence the individual's psychological state, including personality and psychological resources.

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