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Psychosomatic Aspects of Health: Their Relevance to Education

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A thorough insight into the causes of health problems is an important aspect of health education. At present, a multifactorial aetiology is generally taken as a starting point. In this aetiology ill-health results from a complex interaction of factors. Health-menacing factors are often referred to as risk factors. The presence of such a risk factor does not necessarily result in the occurrence of health problems. Often the health problem is dependent on the presence or absence of other factors.

Risk factors can be roughly divided into three groups. The *first group* consists of risk factors that originate in the material environment. Bacteria, viruses, chemical substances and radiation are the most important ones in this group. Infections and deficiency diseases are closely (but not exclusively) related to these factors. The *second group* is usually referred to as lifestyle. This concerns the individual's behaviour, and personal habits with regard to smoking, drinking, food and physical exercise. Risk factors in this group appear to be closely related to the most important causes of death in the industrialized countries, namely, cardiovascular diseases and cancer. The *third group* of risk factors is comprised of various psychosocial stressors. It is this group of risk factors especially which is referred to when psychosomatic diseases are discussed. These are diseases associated with abnormal physiological changes in organs that are innervated by the autonomous nervous system, and influenced by events in the environment that have a menacing psychological relevance.

The classical psychosomatic disorders such as peptic ulcers, migraine, asthma, eczema, low back pain, or psoriasis fall into this category. It is known, however, that in many other diseases such as influenza, cardiovascular diseases, multiple sclerosis and cancer, psychosomatic processes

- an environmental component: the stress source ("stressor");
- an interpretative component: the interpretation of the situation as threatening ("appraisal");
- a behavioural component: the individual reacts according to a personal style ("coping");
- a bodily component: the physiological stress-reaction ("strain").

In this interactional approach, environmental influences do not necessarily have to induce a stress reaction. The way in which the individual interprets the situation ("appraisal") and deals with it ("coping") is of crucial importance. The aspects "appraisal" and "coping" represent the extent to which psychological stress can be looked upon as a risk factor potentially controllable by the individual. The physiological aspects of the stress reaction ("strains") consist of changes in the autonomous functions in the organism that are induced via the autonomic nervous system and the hormone system. The target organs of these "stress hormones" are in particular the heart and blood-vessels, the central nervous system, the immune system, the digestive system and the musculature. In principle these physiological changes enable the organism to react rapidly and adequately to sudden changes. The positive effects of the stress reaction stop, however, when the balance between carrying-capacity and burden has been disturbed drastically and/or for a prolonged period of time, and if the situation is less often experienced by the individual as challenging and more often as threatening. In that case the adaptive value of the stress reaction diminishes severely and the health-threatening effects of the "strains" tend to dominate. Biologically speaking one could assume that the revolutionary cultural changes in the last twenty thousand years went much too fast to enable genetic adaptation of this originally life-saving mechanism.

These situations of chronic and severe acute stress are often connected with certain syndromes, the so-called psychosomatic diseases. In this an important problem is that of specificity. To answer the question why one person will get an ulcer when he is experiencing psychosocial stress, while another will develop a heart disease and a third one will remain perfectly healthy, various hypotheses have been developed. Psychosomatic aetiology has been thought to be related to specific personalities, to attitudes, to emotions, and a more recent approach is the "social learning" model.

In this model the line of argument goes as follows. Some situations in the environment are physically and psychologically threatening to such a degree that they are acting as severe stressors for almost anyone and are injurious to health. Examples of this are working at an extreme high pace, life-threatening war situations, and important incidents in the personal sphere, the so-called "life-events". Circumstances in daily life are usually less extreme. Psychological processes and learning processes in the past

play a crucial role in the reaction to the complex and often ambiguous stressors in everyday life.

Consequently, there are remarkable differences in physiological stress-reactions ("strains") in relation to the amount of threat that is perceived by the individual ("appraisal") and to the way in which he reacts ("coping"). Psychosocial stressors that can be found are role uncertainty, role conflicts, helplessness, chronic under- and over-stimulation, and the absence of social support.

The influence of psychosocial stressors is heavily dependent on the individual's perception of success in dealing with certain situations ("coping") and the degree of control he or she possesses, or thinks he or she possesses over the situation. Predictability of unpleasant situations and feedback regarding the effectiveness of the strategies for dealing with them are important factors. The degree to which one is aware of the physiological changes which are induced by the "stress hormones" in the body, is also strongly determining for the experienced stress. Another important factor in determining the individual's capacity to withstand psychosocial stress, is the social support that is perceived from the family, relatives, friends, and at work. In general, the widely divergent recommendations that are made in the literature in relation to stress-reduction and prevention link up closely with one or more of the aforementioned aspects of the stress reaction.

Stress and Education

From the above it will be clear that psychosocial stress is an integral and moreover necessary constituent of human existence. In education one can distinguish three groups of potential stressors.

First, there is the psychosocial stress that is related to a particular period in the lives of the pupils (early youth, puberty or adolescence). The discovery of their own bodies, sexuality and identity often causes insecurity and anxiety. Along with the growing awareness of their own bodies there is usually a rising tendency to experience dissatisfaction and tension as physical symptoms. It is plausible that if no adequate strategies are developed by the individual to deal with the experienced stressors ("coping"), this might lead to a lasting psychosomatic symptomatology. A developing insight into the personal physiological functioning and the extension of coping-abilities are therefore important items for health education in schools.

The *second group* of potential stressors is embodied in the educational system itself. With this, the problem is whether it would be better to change the system in such a way that harmful stressors will disappear, or whether attempts should be made to teach the individual how to deal with

situations in more adequate ways. This is dependent on personal opinions about society and education, the degree to which the potential stressor is actually active, and the assessment of the potential to change the situation.

Pressure of time, frequent changes in physical environment, changes in classmates and teachers, noise annoyance, feelings of impotence, anxiety over tests and exams, negative future perspectives (unemployment, etc) are mentioned as system-dependent stressors. The acknowledgement and development of the ability to discuss these potential stressors, as well as an exploration of the possibilities for "changing" and "dealing" strategies in the classroom situation are contributions of health education here.

A *third cluster* of psychosocial stressors is formed by the circumstances that make the profession of the teacher a stress-filled sphere of activity. A psychosomatic symptomatology specifically connected with teaching may be considered. In the past few years, quite a number of publications on the "burnout-syndrome" of teachers, "teacher-anxiety" and the "mid-life crisis" in education have been published. The large number of pupils per class, disciplinary problems, disturbed relations with colleagues, lack of professional knowledge, along with advancing age, a widening generation gap with the pupils, lack of career opportunities, lack of influence on the form and content of education, are mentioned as explanations of the high frequency of psychosomatic complaints among teachers. It should be clear that individual appraisal of the situation also plays a crucial role. In relation to these potential stressors, the problem of adaptation of either the individual or the environment presents itself. On a limited scale courses in stress management especially designed for teachers are being organized. Attention to stress prevention in initial teacher training courses and in continuation courses seems to be extremely important for both teachers and pupils.

Besides the motives for paying attention to stress prevention and management in education that have been listed above, another important reason to deal with the stress-mechanism in health education has to be mentioned. This consideration is of a didactic nature.

The stress model offers more than any other approach a conceptual framework for understanding the idea that psychological phenomena deeply influence the physical functioning of the body and eventually may cause functional changes in it. The stress model is attractive since it is biologically (adaptation to possible threats), and in particular neuro-endocrinologically (changes in the entire organism caused by the "stress-hormones") plausible. By explaining in simple terms how psychological processes affect the physiological functioning, the relation between body (soma) and mind (psyche) can be made the subject of discussion at a very basic level. In this sense theorizing about stress and psychosomatics contributes to the realization of a post-Cartesian image of human beings which seems to be of importance to health education.

Lessons on Stress

Starting from the premise that health education in schools is desirable, it is necessary to discuss in what way this may be achieved. Within the scope of this chapter it is impossible to enter into the content of actual lessons, because this will depend on the age of the pupils, the type of education and the time available. Therefore we will restrict ourselves to a discussion of the main principles.

Although it is obviously out of the question (and, hopefully, unnecessary as well) to perform professional therapy in the classroom, an important part of the lesson will be to offer perspectives on stress management and prevention, and of course some intervention by the teacher may be useful. It must be emphasized that besides explicit lessons on stress management and prevention, the ambience in the school must be conducive towards the development of a coping potential in pupils. This is by no means an attempt to open the flood gates of the anti-stress industry. It is quite unnecessary to entangle with bio-feedback, desensitization, reattribution, hypnosis, yoga, transcendental meditation or cry-therapy. Nor can a standard recipe to deal with stress be offered. Starting from the theoretical concept of "stress" inoculation, there are ideally three stages to be dealt with in lessons as discussed below.

Stress inoculation starts with the principle of the interactional model of stress defined above and aims foremost at the valuation ("appraisal") of and dealing ("coping") with a particular personal situation. Emphasis should be put on encouraging pupils to regard stress-filled situations as problems which can be solved. Changes with respect to behaviour, self-regulating activity and cognitive structures are aimed at. Non-adaptive behaviour is identified as such and replaced by behaviour which reduces the stress reaction. By using selfregulating activity the aim is especially geared towards reducing feelings of helplessness, fear, depression, self-denial and fatalism. Changes in cognitive structures concern mostly the usual implicit presumptions and assumptions about an individual's interaction with the environment. It will be clear that targets have to be set with moderation, that the elaboration will be different for each pupil, and that the results will have to be considered with modesty.

The first phase of the "stress course" which we have in mind is the *conceptual or cognitive phase*. In this phase the stress reaction will be explained and it will be pointed out how stress may become a problem. Emphasis will be put on the fact that in any person's life various specific stressors can be active, and on the importance of insight into these stressors. By way of exercises and interviews, the individual determinants of a stress reaction will be clarified as far as possible. The main targets are an enlargement of analytic abilities, an awareness of personal limits, and an awareness of circumstances in which the dealing strategies prove to be

insufficient. For practical reasons it is advisable to confine oneself to a limited number of stressors that occur frequently in any particular period in a pupil's life. Exercises in which an ordering of stress-filled situations is made might be useful.

The second stage is focused on an extension of the *strategies for dealing with stress* ("coping") in order to encourage flexible reactions. Instrumental skills such as communication techniques, learning skills, decision procedures or ways to avoid the stressor, will be dealt with. Also the so-called "palliative skills" such as the seeking of social support, relaxation, the expression of emotions, partial or complete denial, or concentration improvement are of importance. It is essential to emphasize that there are no standard good or bad solutions, but each strategy may prove to be valuable in certain situations for certain individuals. In classroom situations, the most feasible is the use of relaxation and concentration exercises. Exercises for muscle relaxation and an inventory of early individual physical symptoms seem to be feasible assignments for self-activity.

Application is the third and last phase of stress inoculation. The aim is to increase confidence in newly acquired coping skills. As has been mentioned before, perception of control over a difficult situation is crucial with respect to stress reaction. This session is one in which experiences with application will be shared and discussed. It will be evident that the approach that has been described above, will need further elaboration, especially regarding the various types of education, and the effects of an approach like this will have to be evaluated thoroughly. However, the (limited) research that has been done in this field justifies moderate optimism.

Conclusion

Psychosocial stress is a necessary factor in life and a risk factor for a large number of diseases. This makes the signaling of, and the coping with psychosocial stress important items with regard to health. In early youth, puberty and adolescence, experiments with all kinds of behaviour are made. Since these experiments also concern behaviour that is related to health, the basis for a future illness-carrier, as far as this is determined by behavioural factors, is made. The stages in life which have been mentioned are also important for learning how to cope with psychosocial stress and possibly evoked physiological phenomena ("strains").

Management and prevention of stress are important in health education in schools. The enlargement of "coping skills", a cognitive reorganization of the experiencing of stressors ("appraisal") and their application in situations where stress actually occurs ("transfer") are the main aspects of an effective approach. This certainly implies also that schools should not be overprotective towards their pupils.