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The Therapeutic Power of Contact: Physician–Nurse–Patient. Innovative Education of Medical Staff in the Perspective of Health Psychology

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Abstract

Introduction. The role of physician and nurse in the therapeutic team depends on the prevailing medical model of health: biomedical or holistic and functional.

Purpose. The theoretical basis of the therapeutic role of doctor–nurse–patient contact from a psychological perspective is the Functional Model of Health created by Helena Wrona-Polanska.

Material and methods. 141 people after bone marrow transplantation were examined at the Hematology Clinic of Jagiellonian University. To examination were used the questionnaires of stress, coping strategies, personal resources, and grading scales of health and anxiety.

Results. Analysis of the results revealed predictors of subjective health and difference between subjective and objective health.

Conclusions. Author's Functional Model of Health used in the analysis of nurses work shows the complexity of the physician–nurse–patient contact: instrumental function, cognitive function, emotional function as a basis of innovative educational program for physicians and nurses.

Key words: **health, therapeutic contact, patient, education**

Słowa kluczowe: **zdrowie, kontakt terapeutyczny, pacjent, edukacja**

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Introduction

In the issue of health, from the therapeutic and health-promoting point of view, the relationship that plays a crucial role is the contact between a patient and his physician, nurse, psychologist, and generally with a therapeutic team which significantly and actively determines the convalescence process. Marek Motyka [1] presents the problem of therapeutic communication, emphasising in detail its multifaceted advantages in a relationship nurse-patient. In his opinion, the core of a therapeutic contact is a conversation with a patient. However, a contact with a human being, also with a sick person, is not only limited to verbal aspects. Sometimes non-verbal communication based on empathy and common understanding is more significant. The base of such a contact is the trust in a physician, a nurse or a psychologist, which builds the sense of security and reveals positive emotions that mobilize to take up action for their own health. Such a contact has a therapeutic nature, gives hope for regaining health, and thus, has a sanative power. It is an extremely important problem, which is going to be discussed in detail from the author's point of view of the Functional Model of Health.

Professor Julian Aleksandrowicz was an example of a therapeutic contact between a physician and a patient. He was a prominent physician-humanist, internist and haematologist, a director of 3rd Clinic of Internal Medi-

cine, and later a director of the Haematology Clinic of Jagiellonian University of Collegium Medicum. He was also an initiator of research on health and a 'hope-giver' for incurably sick children suffering from leukaemia.

In 1972 he organized a conference in Cracow whose main objective was: "to saturate awareness of young and adults with the knowledge of factors which aid health of individuals and a society" [3]. The conference became a beginning of a scientific-humanistic revolution whose aim was to increase the health awareness of the whole international community [4] and was named around the world as the 3rd health revolution. Beside the entrance to the Haematology Clinic of Jagiellonian University of Collegium Medicum there was also an inscription: "the Clinic does not only cure but it also teaches how to live to maintain health".

To analyse the therapeutic power of contact in detail, it is necessary to refer to health which is its main objective, because a type of the contact largely determines the understanding of health, which was changing significantly throughout centuries.

The issue of health dominated the 2nd half of last century, although the first source of information about health comes from Hippocrates (4th c. BC) who is considered the Father of Medicine and who equated health with well-being and pointed to indissoluble relationship between a human and his vicinity and individual lifestyle as important factors that influence health [5]. Systematic concern for health is connected with development of social movement in favour of health promotion and formation of health psychology [6, 7].

The changes in the way of thinking about health and its conditioning are connected with changes at the turn of 19th and 20th century. Treatment of infectious diseases and the use of vaccinations appeared to be insufficient while non-medical influence on the environment turned out to be necessary to increase the level of hygiene of peoples' lives [8].

The development of industry contributed to the spread of lifestyle diseases and a significant increase in mortality caused by cardiovascular diseases, cancer and accidents at work [9]. The research aimed at identifying causes of the diseases in work environment and lifestyle were started, which required an interdisciplinary approach to scientific research and treatment. Behavioural medicine emerged also at that time, which treated a human being as a biopsychosocial individual [10, 11]. The approach resulted in epidemiological research aimed at identifying risk factors of the diseases in work environment, lifestyle and behaviours dangerous for health. It also showed the possibility to influence an individual's own health through the increase in social and individual awareness within the scope of health care and health promotion.

The non-medical influence directed at physical and social conditions, lifestyle and awareness of an individual and society helped to create holistic and functional model of health, its conditioning and promotion.

The objective of the article is an attempt to answer the question: What does therapeutic power of a contact physician-nurse-patient rely on from the perspective of health psychology and the Functional Model of Health of Helena Wrona-Polańska [12], which defines health is a function of creative coping with stress.

The answer to this question will be a theoretical base for presentation of a new prospect in education of medical staff from the perspective of author's Functional Model of Health, health psychology and novelisation of educational program which will involve meeting needs and expectations of patients and their families.

1. Models of health

There are two models of health: biomedical and holistic and functional, also called biopsychosocial or ecological model [13]. Both models come from different visions of the world, human and his relationships with social environment, which results in different understanding of health and its conditioning.

In health psychology we may also find socio-ecological model [14], which only elaborates the sources of social conditioning.

1.1. Biomedical model

Biomedical model is based on Cartesian dualism and the mechanistic vision of the world and man. It contributed to the development of narrowly specialised medicine [15]. In this model, health is an objective category of a negative nature, diseases are caused by genetic factors which are results of objective factors – bacterium, viruses and fungi. In a relation physician-patient, a dominant role is played by physicians with a specialized knowledge and practical competences, while patients are subjects of their treatment.

A strict assessment of medicine which does not take into consideration needs of a patient [16] and the research, which showed that emotions may decrease resistance of an organism and cause psychosomatic diseases, contributed to extending the model of health on the biosocial one [17–19].

1.2. Holistic and functional model, biopsychosocial

The specificity of the approach to health in this model is taking into consideration the wide context of its conditioning while a systemic theory, which relies on the hierarchism of systems and the autonomous nature of each of them, is the basis of the model.

The systemic vision of the world with a human being in the central position of the ecosystem is best conveyed by the Mandala of Health – a Model of the Human Ecosystem [20]. The most distant systems that influence a human are: biosphere and psychosocial environment, that is culture, while the closest is family which intercedes between a man and biosphere and culture. Health is determined by Lalonde's 4 fields of life: biology of a human, physical environment, psycho-socio-economic environment and behaviour of a man. There are multiple relationships and common interfusions between these systems.

The Mandala of Health indicates the complexity and multidimensionality of relations between a man and the world which result in the need to consider health in a holistic way from the functional perspective and take up interdisciplinary research on health issues which define practical activities aimed at increasing or restoring health potentials and forming pro-health beliefs [12, 21].

1.3. Salutogenesis model

This model is closest to health psychology because it refers to assumptions of psychological theory of stress of Richard Lazarus and Susan Folkman [22]. In salutogenesis approach, the core of health is the activity of the subject which heads to keeping a dynamic balance between requirements of the vicinity and the potential of a man and his confidence about his own competences and sources of support.

In the processes of balancing, an important role is played by 4 stressors (their type and nature) which come from biological and psychological structure of a subject and their relationship with the vicinity, generalised resources of resilience (biological-genetic, psychological and social), and the sense of coherence which is crucial for health [23]. Strong sense of coherence, i.e. inclusiveness of cognitive and emotional factors, determines the cognitive assessment of stressors and activation of adequate resources to overcome them and reganing and maintaining good health.

The salutogenesis model became an inspiration for several research connected with health which also concerned its verification as a whole or some of its variables, especially the sense of coherency. The works of Polish authors such as: Barbara Mroziak and Adam Frączek [24], Helena Sęk [25], Helena Wrona-Polańska [12, 26] and Władysław Łosiak [27] deserve exceptional credit.

2. Conceptions of health

In biomedical model, health is defined as a state in which none disease entity included in International Classification of Diseases comes forward [28].

However, it is difficult to agree with the definition as lack of symptoms is not always the indication of health, especially in somatic diseases of inauspicious prognosis, cancer, whose beginnings are often unseen not only for a sick person but also for a physician, and the diagnosis involves technical examinations, e.g. in blood cancer.

The first definition of health of the positive and holistic nature was formulated by World Health Organisation in 1948. It equated health with plenitude of physical, psychological and social well-being, and not only with lack of sickness or disability [29].

It was the first holistic approach to health which involved both subjective and objective factors and its wide social context. However, the weak point of such a definition of health was its static nature, difficulties in operationalization of the plenitude of health, i.e. welfare and idealistic approach.

Development of social sciences contributed to consideration of health in the categories of resources (disposition and health potential) and the process heading to keep the health balance.

The health in the categories of resources was defined as "the man's ability to achieve the top of one's own physical, psychological and social potential and react to challenges of environment, which subjects to changes" [20, p.38].

According to Julian Aleksandrowicz, health is "a state in which a person is able to confront stimuli from the environment in such a way, that the adaptive process does not disturb homeostasis between soma, psyche and environment, and consequently does not harm the organism" [30, p. 80].

The definition emphasises the dynamic and processual nature of health, although it defines it as a 'state'.

For Julian Blicharski [as cited in 4, p. 80], "health is a self-steering process of keeping balance between anabolic (formation) and catabolic (decomposition) processes on somatic ground, integration and disintegration on psychological ground, syntony and dystony on the social ground and the balance between these three grounds in the boundaries assumed as normal".

It was the first approach to health as a process which resulted from consideration of a man as an indivisible and functional entirety, with his wealth of experiences and personality, embedded in a social context [12].

The research on health is continued by students of professor Julian Aleksandrowicz: Aleksander B. Skotnicki – from the medical aspect [31], Jan Dobrowolski – from the ecological aspect [32], and Helena Wrona-Polańska – from the psychological aspect [12, 21, 26, 33, 34].

In salutogenesis model, health is a process of searching and keeping a dynamic balance between a man's potential and requirements from the vicinity. It is based on a relationship between mutually influencing "resources available for a man, his behaviours and requirements of everyday life" [35, p. 51].

The resources are: vital energy, biological immunity of an organism, subjective resources – positive self-esteem, sense of coherency, sense of control, vital optimism and external resources – natural and social, and also pro-health and pro-ecological values included in systems of individual and social beliefs [3, 12].

The research of the author carried out among 299 healthy people [12] showed that for the emphatic majority, health is a synonym of happiness, positive attitude to life, but also helps to deal with difficulties in a better way. In uninhibited dicta, the respondents defined health as a resource, disposition, and process lasting in time, and healthy people as active and easily dealing with life and job difficulties.

From presented research of the author it may be concluded that colloquial awareness of health is a basis of assessment of subjective health, which is considered as the sense of internal harmony, comfort related to positive attitude to life and life responsibilities.

The holistic and functional model of health as a process includes not only the assessment of working of one's

own organism, i.e. the balance on the somatic level, but also the psychological balance (referring to mental regulation systems), social balance (concerning relations with other people) and balance in the deepest psychical layer (concerning Sacrum). As the research of the author showed [26], the latter plays a significant role for majority of the sick.

Summarizing, presented models and conceptions of health showed how understanding and approach to health have been changing throughout years. In biomedical model, health was defined as lack of diseases, while the aim of physicians' and nurses' activities was remission of the symptoms.

In holistic and functional model the influence of medical team are headed to regain health in all its aspects and dimensions and good quality of life, which requires the interdisciplinary cooperation and systemic influence of a patient.

The research literature and clinical practice show that a role of a physician and a nurse in a therapeutic team depends on the model of health that prevail in medicine – biomedical or holistic and functional, and consequently the assumed conceptions of health.

3. Functional model of health

The source of the author's research on health comes from clinical experience at work with patients suffering from leukaemia and results of own research in the Haematology Clinic of Jagiellonian University of Collegium Medicum managed by professor Julian Aleksandrowicz. They showed a significant role of psychological defensive mechanisms in coping with anxiety, and especially the positive role of repressive defensive mechanisms and regulative function of self-concept of patients in coping with leukaemia. Those patients who denial the illness and were repressive the anxiety had an unrealistic but positive self-concept of themselves which assured the stability of the self-concept and keeping own identity. It triggered positive emotions and fostered the acceptance of oneself as a sick person and active cooperation with medical team in favour of one's own health [36–39].

The results of the author's own research, the willingness to continue Cracovian research on health and aspiration to promote health among teachers and educators, who together with parents are the first animators of children's health, became an inspiration to research on health.

The aim of the research was to analyse health, its conditionings and mechanisms, and not negative consequences of stress which was taken into consideration in a completely different semantic context. Stress in the salutogenesis model plays a regulative role (through the mobilisation of resources) in contrast to its threat role in a patogenetic model .

The Functional Model of Health was based on assumptions of holistic and functional model of health, systemic theory and results of own research.

As the theoretical basis of the model of health a few theories were accepted: the theory of stress of Richard Lazarus and Susan Folkman [22], the theory of stress in a model of resources by Stevan Hobfoll [40], the theory of salutogenesis by Aaron Antonovsky [23] and Creative Problem Solving (CPS) (pol. TroP... from Twórcze Rozwiązywanie Problemów) of Edward Nęcka [41].

The Functional Model of Health is presented in **Figure 1**.

The level of health in the author's model depends on the assessment of stress, ways of coping with it and subjective resources. Creative coping with stress, according to TroP (Creative Problem Solving) means nonstereotypical dealing with a problem, which is always adjusted to a situation, with the use of both rational and irrational (i.e. defensive) strategies. The choice of strategies is determined by the cognitive assessment of the situation which depends on own resources, i.e. attributes and potential which in a stressful interaction play a positive defensive role and thus buffer negative influence of stress [40, 42].

In Functional Model of Health [12, p.100] resources were divided into subjective and situational. Subjective resources are divided into: biological, cognitive and behavioural. Situational resources are divided into: material and social. On the basis of literature and own results, an assumption was accepted, i.e. in creative coping with stress, an important role will be played by cognitive subjective resources: sense of coherence understood as the inclusiveness of cognitive and emotional factors in coping with stress, the sense of control and self-control as a dispositional factor which determines the struggle and positive self-esteem as individualistic disposition which motivates and mobilizes to take up actions in aid of health and behavioural resources, i.e. behaviours which promote health.

The verification of Functional Model of Health based on research on 299 people, who represented various jobs, showed that health is a function of creative coping with stress, which every time is adjusted to the assessment of the situation and from the perspective of one's own potential [12, p. 210].

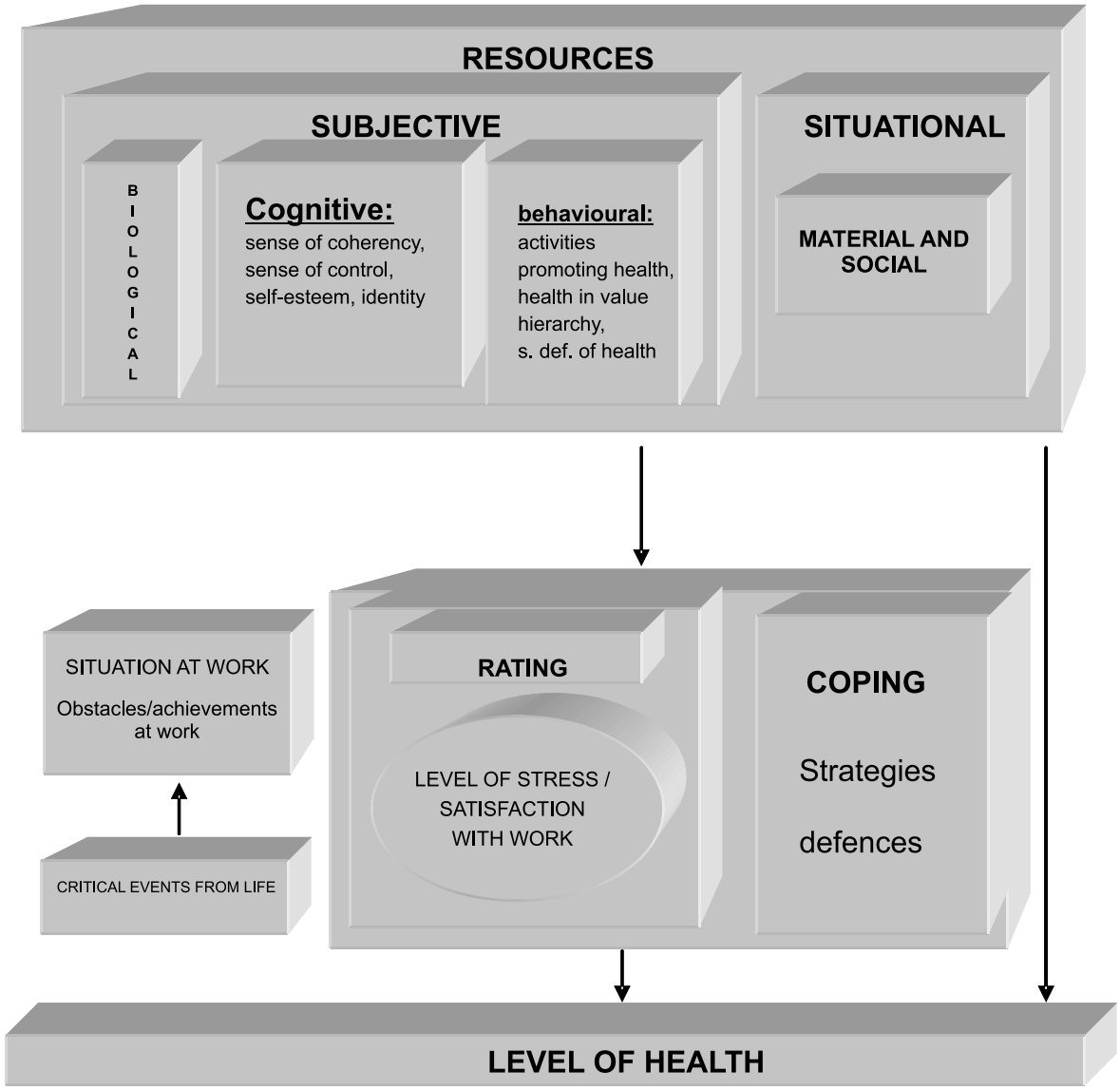
The Empirical Functional Model of Health is presented in **Figure 2**.

Cognitive subjective resources are important psychological mechanisms of health. These are: sense of coherence, sense of subjective control and positive self-esteem. They create pro-health personality which directly and indirectly influences on health. The resources influence the assessment of situation and choice of effective strategies – solving the problem, positive redefinition, search for support and concentration on other thing than emotions and defensive mechanisms of coping with stress (humour, altruism).

According to TroP [41], the process of creative coping with stress requires continuous informational and emotional reinforcement which has source in subjective resources.

The sense of coherence, especially the component of understanding serves as informational reinforcement, which is confirmed by own author's research [12], which showed its proportional character to age of a patient and

Figure 1. *Functional Model of Health*



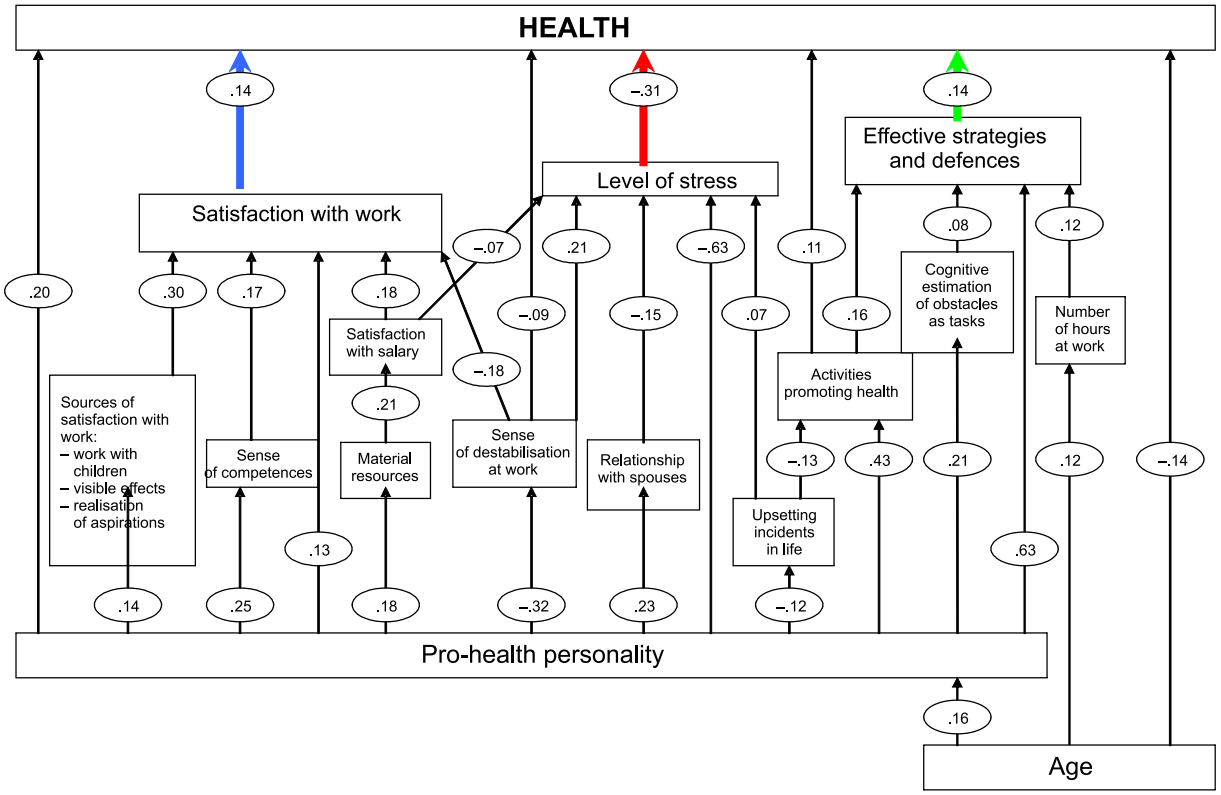
Source: H. Wrona-Polańska, Zdrowie jako funkcja twórczego radzenia sobie ze stresem, Wydawnictwo Naukowe Akademii Pedagogicznej, Kraków 2003: 100 [12].

knowledge and experience he gathered. On the other hand, the function of emotional support is served by the sense of meaningfulness of emotional-motivational nature [23] and positive self-esteem as the evaluative aspect of *self concept*, which triggers emotions that motivate and mobilise to take up actions in favour of health. It is also confirmed by own research of the author [36–39].

As a result of complex analyses of stepwise regression and the analysis of paths, three paths were isolated which determine the way subjective resources, creating pro-health personality, influence health. These are: competence, emotional and the tension – (stressful) pathways

As the graphical presentation of a model of health conditioning presents (Figure 2), pro-health personality has the strongest influence on kompetence path, i.e. coping with stress and with the same strength it influences counteract stress – stressful path, which is visible in the same values of path indicators (.63, –.63). It means that creative coping with stress, adjusted to own assessment of the situation based on awareness of owned resources, results not only in solution of the problem but also reduction of experienced stress. There is no direct connection between stress and strategies of coping with it because stress is always assessed from one's own perspective which triggers effective strategies and defences to deal with it. The Functional Model of Health proves the theory of Richard Lazarus and Susan Folkman, according to which, the cognitive assessment of a situation is only triggered by the process of coping.

Figure 2. *Empirical Functional Model of Health of examined persons*



Source: H. Wrona-Polańska, Zdrowie jako funkcja twórczego radzenia sobie ze stresem, Wydawnictwo Naukowe Akademii Pedagogicznej, Kraków 2003: 210 [12].

Behavioural subjective rules, i.e. behaviours that promote health, especially positive psychical attitude concerning health and conscious taking up activities on its favour strengthen the process of coping with stress.

Biological resources: age and related work experience influence health in such a way, that the older the people were, the worse somatic health was examined and better health of functional nature. The latter is based on experience resulting from work experience which is seen in the increase comprehensibility as a component of sense of coherence, visible in author's research [12].

Emotional path is mostly influenced by situational, material and social resources, which are the source of positive emotions resulting from good professional and social functioning, and consequently in good quality of life. A very important variable, from the perspective of health, is the sense of destabilisation at work as a an indicator of the surveyed, socio-economic changes, reform of education and baby bust. The sense of destabilization at work is directly and indirectly dangerous for health, decreasing the quality of life and being an additional source of stress.

After seven months, the comparative research showed the tendency of respondents to increase their self-esteem in the situational context of decreased social resources and proved that self-esteem functions as buffer to keep balance in resources, and consequently stay healthy [12]. The research showed the regulative role of self-esteem in the process of staying healthy, proving the results of author's research concerning the regulative role of one's own image and self-esteem in effective coping with leukaemia [43–45].

Summarizing, the empirical verification of Functional Model of Health showed the complexity and dynamic nature of psychological mechanisms of health and its conditioning represented with path indicators from the analysis, which allow for identifying mutual influence of examined variables in the process of creation of illness/health. The Functional Model of Health has a dynamic nature in which the level of stress is an indicator of illness/health, i.e. the balance or its lack in the system human-world, and the level of health is determined by pro-health personality, i.e. subjective resources.

4. Functional Model of Health and Illness

The author's Functional Model of Health was used as a theoretical base in research on patients suffering from leukaemia and cured with Bone Morrow Transplantation.

Leukaemia, is one of the most dangerous forms of blood cancer's involving the whole organism, were an enormous problem for patients, physicians and also medicine which had ineffective methods of treatment until recently. It caused particularly strong stress in patients

[22, 36] which resulted from a risk to health and life, social roles that the patients played and loss of a value. The stress was escalated by negative and anxious attitude related to the type of cancer which was tantamount to death [46].

Contemporary methods of treatment for leukaemia, such as: Bone Marrow Transplantation (BMT) or Stem Cells Transplantation (SCT), which allow for successful treatment, contributed to a change of psychological image of leukaemia, from life-threatening to a illness which may be successfully cured [26]. However, low number of marrow donators, the age of patients and their state of health limits the chances to 50% of survivors [47, 48].

Literature of the subject and clinical practice show that leukaemia as a group of cancers need intensive and differentiated treatment [49, 50], including biomedical and psycho-social factors in a diagnosis and therapy [51–55]. Bone morrow transplantation and stem cells transplantation are only the beginning of a patient's way to recovery. The efforts of the whole medical team – a physician, a nurse, a psychologists, activity and cooperation from a patient and his/her family [56, 57] are also necessary in the process of regaining health.

On the basis of the author's Functional Model of Health [12], considered a the theoretical base, a hypothesis was accepted: patients' health is a function of stress, strategies of coping with it and owned resources.

4.1. Method, research techniques and characteristics of patients

The research considered three variables: health, resources, stress and coping with it. In the research, the method of medical interview and observation.

Health was defined in the operational way, with distinction of two indicators: sense of health and sense of calmness which are evaluated in 10-point rating scale, where 1 denoted sick, 10 – healthy and 1 denoted anxious and 10 – calm. The average calculated from results of sense of health and sense of calm was the indicator of subjective health. Whereas objective health was evaluated on 10-point scale by a haematologist.

The level off stress/anxiety was evaluated on the basis of Spielberger's STAI test [58]. It consists of 2 scales including 20 statements each. The first one X-1 allows for measuring the anxiety-state, and the second one, X-2, measures anxiety-quality, used in the research as an indicator of anxious personality.

The techniques of coping were measured with CHIP (Coping and Health Injuries and Problems), in adaptation of Kazimierz Wrześniewski [59]. It consists of 32 statements divided into 4 strategies: Distraction from the disease, e.g. *I dream about nice things*, limitation of stimulation, e.g. *I stay in bed. I sleep a lot*, instrumental coping, e.g. *I do what the physician recommends me to do*, concentration on negative emotions, e.g. *I get angry because it happened to me*.

CISS questionnaire (The Coping and Inventory for Stressful Situations) in adaptation of Kazimierz Wrześniewski [59] consists of 48 statements. It served to analyse 2 styles of coping with stress: a style concentrated on a task – *I concentrate on the problem and I try to solve it*, a style concentrated on emotions: *I worry that I will not deal with it* and a style concentrated on avoiding which may take a form of devoting to substitutive activities – *I traipse around shops* or seeking for social contacts – *I try to hung out with other people.*

The sense of coherency was researched with Antonovsky's Life Orientation Questionnaire SOC-29 [23]. It consists of 29 questions which create 3 subscales: the sense of understanding – *When you talk to other people, do you feel they understand you?*; the sense of self-help – *Were you disappointed by people who you counted on?*; the sense of reasonability – *For you daily activities are a source of: 1 – great satisfaction and contentment, 7 – annoyance and boredom?*

The level of self-esteem was measured with Rosenberg's scale of self-esteem in which 5 statements consider the positive self-esteem – *I feel I am a valuable person,* while 5 consider negative self-esteem – *I sometimes feel that I am useless*. The statements are evaluated in 10-point scale.

The research was conducted from 2001 to 2010 in the Haematology Clinic of Jagiellonian University of Collegium Medicum. 160 patients after bone marrow transplantation were surveyed during control examinations. In the analysis 141 patients were taken into account – 61 females and 80 males, usually 20–40 years old. The majority of patients represented secondary education, and the average time from the transplantation was 2.5 year (SD = 2.8).

The results were analysed with STATISTICA programme, using such tools as: variance analysis, Student's t-test, Pearson's correlation analysis, multiple regression analysis and path analysis [60]. As a criterion which determined the detection of regularity, significance of .05 was accepted in the analysis.

4.2. Level of health of patients

The comparison of subjective and objective estimation of health showed that the average level of the former is M = 6.69 with SD = 2.52, while of the latter M = 7.77 with SD = 2.09. The difference between these variables is M = –1.01 with SD = 2.60, and significance of the difference between the averages calculated with Student's t-test for depending groups was: $t = -4.5900$, $df = 139$, $p \leq .001$.

The higher level of objective health, which results from the knowledge of a physician, in comparison with respondents' own estimation of their health was statistically significant on $p \leq .001$ and may testify that transplantation is an effective method of treatment in case of leukaemia. However, the multistage treatment with polchemotherapy, which significantly encumber patients, may cause the conviction about impossibility of the fully successful treatment and the necessity to perpetually stay under medical care and treatment. It may be testified by a statement of one of the patients: *When I go to my regular visit to Cracow I pack my whole suitcase as I am sure that I don't feel fully healthy yet and I will have to stay in*

the clinic for further treatment. After the regular examinations, the physician informs me that everything is fine and I can come back home and it is the third time when I come back home with my suitcase full.

The lower level of subjective health in contrast to the objective health may negatively influence patients' functioning as the subjective sense of health, as the literature and clinic observations showed, has more regulative influence on patients' behaviour than objective health [34, 61].

4.3. Coping with stress and resources of patients

Techniques of coping with stress and resources of patients are presented in **Table I**.

The level of stress has the strongest influence on the style concentrated on emotions and the strategy of concentration on negative emotions which is strongly intensified by anxious personality. The style concentrated of on the problem and related strategies of instrumental coping and distraction from the disease and the style concentrated on avoidance, especially the substyle of seeking for social contacts, which significantly intensifies the strategies, counteract the stress.

Meaningfulness, as emotional-motivating component of sense of coherence, significantly counteract stress and the strategy of concentration on negative emotions and intensifies positive strategies: distraction and instrumental coping.

These results testify that creative coping with stress is connected with activity for health and regulation of emotions through distraction from the disease, limiting stimulation and seeking for contact with other people, art and music.

Creative coping which uses rational (instrumental coping) and irrational strategies (which help to regulate negative emotions), strongly intensifies the conviction that life has sense and it is worth to take up activities to regain health, which confirms the CPS theory and generally the hypothesis which results from the Functional Model of Health.

4.4. Predictors of patients' health

The stepwise regression analysis was conducted to analyse the predictors of health (**Table II**).

The multiple regression analysis showed that subjective health of respondents strongly depends on objective health and meaningfulness, which is a component of emotional-motivating sense of coherence which stimulates and motivates to take up activities good for health and aimed at regaining it. Stressfull and ineffective coping with it through concentration and accumulation of negative emotions threaten health and life of patients.

The research on patients after bone marrow transplantation confirmed the Functional Model of Health by showing that health may have both: objective nature, which may be measured with medical indicators and subjective nature, which depends on psychological mechanisms of a man, as a creator of his own health. However, it is subjective health that determines daily functioning of respondents.

5. Functional Model of Health/Disease as a base for therapeutic contact

The Functional Model of Health shows psychological mechanisms of a man – pro-health personality, i.e. cognitive subjective resources which influence health through 3 paths.

A competence path which is based on creative and effective coping and requires informative reinforcement: knowledge about a illness, projected treatment, applied diagnostic and therapeutic treatments, foregoing effects of treatment based on regular examinations. The knowledge is necessary to solve problems connected with health. According to Antonovsky, a problem has always a dual nature – it requires cognition to choose adequate

Table I. *Correlation coefficients between the level of stress, strategies and styles of coping with illness and resources/deficits*

Variables	Level of stress	Distraction from disease	Reducing stimulation	Instrumental coping	Concentration on negative emotions
Coping styles					
Task-oriented	–.29***	.39***	.15	.32***	–.02
Emotion-oriented	.51***	–.14	.22**	.14	.63***
Avoidance-oriented	.05	.39***	.10	.24**	.15
Distraction	.13	.22**	.17*	.14	.12
Seeking social contacts	–.21*	.50***	–.01	.25**	–.07
Resources/deficits					
Meaningfulness	–.48***	.38***	–.08	.27**	–.31***
Anxious personality	.76***	–.28***	.21*	.02	.56***

Significance: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Source: Own work.

Table II. *Models explaining subjective health of respondents*

Explained variable R i R^2	Effect	Regression equation parameter		Regression coefficient significance test		Beta coefficient
		Value	Standard error	T	p	
Subjective health R = .712 R^2 = 50.7% corr. R^2 = 48.1%	Absolute term	3.77986	1.93671			
	Level of stress	–.05860	.02126	–2.757	.007	–.285
	Objective health	.43479	.08617	5.046	.000	.413
	Meaningfulness	.07245	.02809	2.579	.012	.244
	Concentration on negative emotions	–.06764	.03301	–2.049	.044	–.193

Source: Own work.

strategies of solving it and regulating emotions, as too strong negative emotions may preclude effective functioning.

A enormous role is played here by physicians and nurses. A physician should gradually inform a patient about diagnostic and therapeutic treatments that he/she is going to go through, their course and effects, while a nurse who prepares a patient to the treatments should inform the patient about the particular treatment in details to decrease the anxiety connected with a new situation. The anxiety results from cognitive dissonance by lack of knowledge in this field. The redundancy of information may intensify already high anxiety about the patient's own health and life, however a deficit of information may be a source of sensory deprivation, and consequently cause increase in stress and anxiety [62].

It is extremely important to inform a patient but not about the diagnosis itself (even if the patient asks: *Do I have leukaemia?*), as the patient does not know its patomechanisms. It is important to partly inform about 'here and now', so that the patient may understand what is happening to him right now, make conscious decisions and consciously take part in the treatment. The type and quality of the information depends on a health situation of a patient. If the situation requires decision about surgical operation, the patient should be informed in detail about all benefits and risks, so that he can make a decision concerning the treatment. It is a role of a physician but also a nurse who prepares and accompanies the patient helping to alleviate the pain and suffering, and decrease stress. Never can the situation be constrained to informing the patient about the necessity to sign the agreement for a treatment only. It is a mistake in art to delegate a nurse to do the task, which (as clinical practice shows) often happens and consequently increases the anxiety that inhibits the treatment.

During informing process, a psychologist plays a role of an advisor who suggests information that may be given to a patient depending on his perception ability in a given situation, e.g. according to Kubler-Ross theory of adaptation [63], giving an information in the phase of denying the disease is a mistake in art. The way and quality of informing a patient depends on the phase of a disease, a style and strategies of coping [64]. It is a very important task for the whole medical team – a physician, a nurse and a psychologist – which should be treated as a priority in clinical practise.

From the psychological point of view, such proceedings may be described as informational support which results in reduction of fear connected with a disease and staying in hospital. The author's clinical experience showed that if a patient asks about a diagnosis of a disease of inauspicious prognosis, e.g. leukaemia, on the one hand, he expects negation of his worst concerns, but on the other hand, he communicates to us that he cannot emotionally cope with the increasing anxiety which results from the situation. It is a message 'care about me', 'help me'. In such a situation, it is necessary to open the problem by asking 'what happened that you ask me about it?' to help a patient reveal negative emotions of fear and anxiety which result from uncertainty.

The problem of informing concerns a physician but with cooperation with a psychologist, who may suggest what the patient's expectations are, what information he should be given at the moment, so that he may accept and assimilate it. The problem of informing patients about a illness is extremely difficult, has multifaceted conditioning and is also important in the nurse-patient contact. It is only possible for a nurse to effectively serve the informational role, if she is adequately prepared for it, i.e. she is aware of her role in this field, has satisfactory substantive preparation and an adequate level of empathy. Otherwise, she may be a source of additional anxiety.

The Functional Model of Health also indicates emotional path as the one, which is extremely important for health of a man (cf. fig. 2) The path is a source of a patient's activity for his health, acceptance of the illness and himself as a sick person and it is a crucial condition for taking up cooperation with the therapeutic team to regain health.

The physician-nurse-patient contact may have a therapeutic power, i.e. it is a source of positive emotions, if the medical team feel satisfied with their work. Attending to a patient, alleviation of pain and suffering, accompanying a patient and ability to hear him out should be the source of satisfaction for a nurse. In the case of contact

physician-patient, the satisfaction should result from diagnostic and therapeutic, and informational proceedings which are realised by a physician. The progressive commercialization of health care and its consequences, formalizing and limitation of the contact with a patient to basic questions: 'full?', 'rested?', is a source of danger for a patient and his health. What is more, the spread of technology in medicine, which accelerates diagnostic process, may, on the other hand, become another danger for a patient and cause additional anxiety and suffering.

In the therapeutic contact nurse-patient, the awareness of served role is important. It is connected to the consciousness of one's own professional competencies which result from substantive and occupational preparation, clinical experience, and also awareness of boundaries of the competencies that cannot be exceeded. A conviction that could have been observed recently is that a nurse may play a role of a psychologist because psychology is in the curriculum of the faculty. Psychology is a science concerning mechanisms of a man's functioning. The role of a psychologist is to diagnose the mechanisms to use them in psychotherapy, prophylaxis or health promotion. Thus, basic knowledge about psychical phenomena and processes is not enough. It results in another important competency – strong professional identity i.e. identifying with the role of a nurse, a physician or a psychologist and good cooperation between all of them in a therapeutic team out of concern for weal and health of a patient.

An important factor that decreases nurses' quality of life is the problem of low earnings in the sector of health care which are a source of dissatisfaction, and consequently cause decrease in their quality of life, create additional source of stress, which is shown by emotional path of Functional Model of Health. To solve the problem, it is necessary to appeal to macrostructures that are responsible for health care sector and ability to manage human resources in the context of nurses' job.

In Functional Model of Health (cf. fig. 2), the axis of health is a path of stress – the level of stress, which is highly buffered by pro-health personality. It also intensifies support from family and spouses which is so important in social professions (– .15). An important source of stress is the sense of destabilisation at work which is connected with reform of health care sector, its formalizing and commercialization. It is directly harmful for health and indirectly decreases satisfaction from work, being an additional source of stress. It requires applying to macrostructures which are responsible for the reform.

6. The use of the Functional Model of Health and Illness as a theoretical base for innovation in education of medical employees

The author's Functional Model of Health shows directions for innovation in education of medical employees which are based on health psychology. Introduction of such a subject as Health Psychology should be the base of the reform in medical education. The knowledge about mechanisms of health and illness will allow for better understanding of patients, their needs and expectations, and consequently adjusting the influence on patients through continuous cooperation with a psychologist.

The Functional Model of Health and Illness (FMHI), should be a theoretical base for education in medical sector as it presents psychological mechanisms that determine regaining health, its promotion and health in general. To regain health, it is important that patients accept themselves in the role of a sick person and actively cooperate with a medical team for their health. It depends of the acceptance of the illness and treatment which is based on the knowledge about contemporary methods of treatments that give a hope for full recovery.

The Functional Model of Health and Illness shows that health is a function of creative coping with stress which always depends on estimation of the situation based on subjective resources that the patient has and that triggers rational and irrational defence strategies of dealing with the illness. The model points not only to a complex nature of therapeutic contact, which requires theoretical preparation, but also to psychological mechanisms which are the base for such a contact.

The author's Functional Model of Health and Illness presents three functions of physician-nurse-patient contact: instrumental, cognitive and emotional. They are realized by a medical team in cooperation with a psychologist. Therapeutic function of a nurse has a complex nature. It consists of: instrumental-behavioural function which concerns alleviation of pain and suffering, the cognitive function – informing the patient about diagnostic and therapeutic treatments and how he should prepare for them and the emotional function which is aimed at reduction of stress and release of positive emotions which are necessary for convalescence.

Functional Model of Health and Illness also suggests that the therapeutic role of a nurse or a physician should be realised by building up patients' subjective resources and especially positive self-esteem which mobilizes and motivates to take up actions in favour of one's health. The presented research on patients after BMT showed the complexity of issues of health which involves objective and subjective health. As the research showed, subjective health is profoundly influenced by objective health and psychological mechanisms, these are: meaningfulness, stress and strategies of coping with it. Objective health, however, is influenced not only by the medical treatment, but also by its time and the patient's own activity for his health and cooperation with therapeutic team.

The author's Functional Model of Health and Illness helps to analyse subjective health of a patient which, as the literature and own research show, plays more important role in regulation of behaviour (it determines behaviour) than objective health, which is a result of treatment and activities of a therapeutic team. Thus, regaining and further maintaining of health require activity of both a patient and the whole medical team. The latter is aimed at regaining health in somatic, psychical, social and spiritual dimensions, which ensures good quality of life. To achieve this aim, it is necessary to implement a relevant innovation of curriculum in medical faculties concerning

widely understood health, its conditioning and psychological mechanisms. Such a change would help to prepare physicians and nurses for realisation of completely new assignments which require knowledge and social competencies. On the other hand, it is also necessary to apply to macrostructures, so that physicians and nurses could concentrate on patients, their needs and regaining their health through active cooperation with them, instead of focusing on medical documentation.

Summary and conclusions

The objective of this article was to show healing power of therapeutic contact from holistic and functional point of view on the basis of the author's Functional Model of Health and Illness of Helena Wrona-Polańska [12, 26], which is a base for an innovation in medical education.

The models and conceptions of health described in literature and presented in the introduction of the article helped to show that the function of a nurse or a physician in a therapeutic team depends on the model of health which prevails in medicine (i.e. biomedical or holistic and functional model) and accepted conceptions of health, which is seen in clinical practice. Thus, it was necessary to present the issues as widely as possible, especially because the addressees of the article are not health psychologists.

In biomedical model, in which health is equivalent to the lack of symptoms, the therapeutic role of a nurse and a physician in a relationship with a patient, was limited to instrumental function of alleviation of pain and suffering only.

Contemporary conception of health is based on the holistic and functional model and systemic theory, which show multidimensional nature of health and its conditionings included in Mandala of Health. It poses new challenges to medical employees and disposes them to broaden their knowledge and gaining new social competences.

Clinical experience acquired during work with patients with leukaemia and results of the research conducted under professor Julian Aleksandrowicz and professor Maria Susułowska, encouraged the author to take up research on health. On the basis of accepted theories: theory of stress [22,40], salutogenesis [23] and TroP (Creative Problem Solving) [41], a theoretical model of health was constructed and empirically verified on the basis of results from research on healthy people who represented social professions.

As a results from the analysis of paths [60] and stepwise regression, the author's Functional Model of Health (FMH) [12] was obtained, which showed psychological mechanisms and conditionings of health. Then, FMH was subjected to verification in the research on patients suffering from leukaemia after bone marrow transplantation and extended to FMHI [26], presenting psychological mechanisms which determine convalescence. FMH was verified in research on patients with psoriasis [65], adults [66] and youth [67].

Thus, the use of FMHI to show complexity of therapeutic relationship between a medical team and a patient seems to be justifiable, as the model involves both sick people and healthy people, who represent social professions, like: physicians, nurses and medical rescuers.

The innovative nature of the Functional Model of Health comes from its dynamism. Its graphical depiction with numerical indicators from the analysis of paths (cf. fig. 2) shows the dynamic conditioning of health, which let us analyse the interplay of psychological variables in the process of health/illness creation.

The essence of Functional Model of Health is not only to show that the level of health depends on the owned resources/deficits and creative, i.e. always adjusted to the situation, rather than stereotypical coping with stress. Due to stepwise regression analysis and path analysis, it also reveals in detail correlations between described psychological variables represented by the value of indicators of path analysis. FMH is a base for a dynamic concept of health and consideration of man as its subject – a creator of his own health.

The dynamic and procession presentation of Functional Model of Health and its conditionings allows for its implementation in the clinical and educational practice, both in diagnostic process and in promotion of health, showing if a patient is a creator of his health or an illness. Subjective resources play a significant role in the model as they directly and indirectly – through competence, emotional and stressful paths – influence health.

The three paths in Functional Model of Health, that were defined through stepwise regression and path analysis, show 3 functions of therapeutic physician–nurse–patient contact, i.e. cognitive, instrumental and emotional. The cognitive function of the contact is connected with the path of stress and represents verbal contact, i.e. communication with a patient, informing about health/illness, projected treatment and methods of curation. Quality of the information and the way in which a patient is informed may decrease or increase a patient's anxiety, which is often intensified by members of medical team. The competence path determines instrumental function of the contact which, according to FMH, is connected with creative coping with stress, which as a process requires information and emotional contribution and results from subjective resources, i.e. pro-health personality. Informational contribution comes from the sense of coherence, especially the component comprehensibility, whose level increases with age and professional experience [12]. On the other hand, the source of emotional contribution is meaningfulness, which gives meaning to work with patients and positive self-esteem motivates and activates to take care them. On the other hand, emotional path of FMH determines emotional function of the therapeutic contact, which is based on empathy and alleviation of pain and suffering through applied treatments, showing emotional support and counteracting the sense of isolation .

The contact between the medical team and a patient which is realised in these 3 paths brings visible results, giving satisfaction with fulfilled professional role, and consequently increases the quality of life of a patient and

a medical team. However, as FMH shows, the source of positive emotions of medical staff is satisfaction with professional role which results from its effects, realized aspirations, consciousness of own professional competences, which requires continuous further education (cf. fig. 2, emotional path).

The Functional Model of Health also presents factors that may decrease medical employees' quality of life and be harmful for their health. They come from the emotional path and a path of stress (cf. fig. 2). These are: low earnings as the equivalent to hard and responsible job, the sense of destabilisation at work, which is caused by the reform in health care system and its consequences – domination of medical bureaucracy over factual contact with a patient, which causes dissatisfaction with medical staff among patients and their families. It results in dissatisfaction with work among medical employees and additional source of stress.

As FMH shows, to effectively fulfil the therapeutic role, medical employees need to strengthen their subjective resources, especially the sense of coherence, i.e. inclusiveness of emotional and cognitive factors. It lets a physician change from emotional attitude to cognitive one in greatly stressful situations. As a result, a physician may take up activities in favour of health of a patient and solve the problem and consequently reduce the stress, which is proven by the same values of path indicators (.63; –.63, cf. fig. 2). The emotional path in FMH is mainly contributed with material and social resources/deficits that are the source of positive emotions which result from proper functioning at work. However, the deficit may decrease the quality of life and become an additional source of stress. It requires continuous development of professional and social competences, ability to work in a medical team, but also an adequate compensation for hard and responsible work in money, i.e. adequate salary which is still a very sensitive point of social professions.

Author's Functional Model of Health of Helena Wrona-Polańska, based of holistic and functional approach to a man, as a creator of own health, shows multifaceted nature of the physician-nurse-patient contact and its psychological mechanisms. Its graphical representation with path indicators shows the way one's own health and the health of patients should be created.

The path of competences in FMH, i.e. the path of creative coping with stress, through the use of strategies of problem solving, positive redefinition, seeking for support, distraction from emotions or denying the disease, results in solving the problem and stress reduction. It confirms the universal nature if the path of competences and the path of stress in FMH. The path of emotions, which shows sources of good professional and social functioning, has specific nature as it defines the area of FMH used for social professions.

Summing up, the author's Functional Model of Health does not only indicate the necessity to include health psychology in education of the medical staff, but also precisely shows how it should be used in it. FMH should be a theoretical base for a innovation in education of medical staff aimed at increasing their knowledge, as well as social and psychological competences in such a way, they may meet needs and expectations of patients according to standards of 21st century and at the same time feel satisfaction with work, fulfilled obligation, and consequently the sense of good quality of life.

Conclusions

1. The author's Functional Model of Health, verified in the research on healthy people, who represented social professions, and sick people shows the functions of therapeutic contact: instrumental, cognitive and emotional which correspond to three paths of FMH – path of competence, stress and emotions, and thus is a base for an innovation in medical education aimed at health promotion and preparation to meet needs and expectations of patients at work.
2. The Functional Model of Health has a dynamic nature, points to specific psychological mechanisms of health and correlations between them represented by values of indicators in path analysis – subjective resources and the need to increase them to maintain health and good quality of life of medical staff and their patients.
3. The author's project shows a prospect of modern education of medical staff aimed at shaping social competences and effective strategies of coping with stress, including health promotion through pro-health education whose theoretical base is FMHI of Helena Wrona-Polańska.

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