HEALTH PARADIGMS, SOCIAL REPRESENTATIONS OF HEALTH AND ILLNESS AND THEIR CENTRAL NUCLEUS

CLELIA MARIA NASCIMENTO-SCHULZE
YGOR FONTES GARCIA
DAISY COSTA ARRUDA

Universidade Federal de Santa Catarina, Florianópolis, Brazil

The theory of social representations has proved to be useful in the attainment of psychosocial diagnoses with respect to important questions in the health area. It enables us to obtain a socially-shared knowledge about relevant objects, and in this way helps the implementation of health programmes. It also makes it possible to investigate and foresee "ways-of-thinking" a particular subject, as is the case of this present study on representations of health and illness. Thus, the theory favours the implementation of a psychosocial theory of knowledge.

One of the characteristics of the end of this century is that population health is endangered by several agents. Whether this is caused by an inability of the institutions responsible to master the health problems, or by a lack of a world-wide strategic and global planning, the truth is that very often we are haunted by the idea that the health of the inhabitants of this planet is menaced by a variety of toxic products which are present in the air, water or food. This pollution is associated to the technology used to control our environment or nature.

In developing countries, illnesses consequent to poor nutrition and infectious diseases are the causes of a large number of deaths. In developed countries, marked by advanced industrialisation and technological dominion, the keynotes are the chronic and degenerative diseases which are viewed as the illnesses of modern civilisation. Furthermore, illnesses that are markedly psychological such as depressions or schizophrenia are also present, which are often associated to an imbalance of the social environment.

* We thank for the participation of Priscila Schneider in the data collection.

The practice of medicine has been, through history, the answer to the health problems perceived as relevant. Consequently, it is apparently of interest to investigate doctors' attitudes and representations towards health, illness, and the human body.

Capra (1982) argues that the western societies have always equated medical practice with the knowledge of biology. Thus, it is not surprising that doctors have attitudes very much embedded in the mechanist conception of life, which is reflected in their theory and practice. As a result, the medical way of thinking provides us with a bio-medical model which views the body as a machine and the disease as a damage to it, the doctors' function being to repair the injuries caused.

This version of man, of health and illness, is shared within the academic circles and it is not uncommon that the curricula of medicine and psychology bring a bias respectively towards the biological and the psychological dimensions, not considering man as a whole. Thus, the two professions seem to be treating different aspects of the same person: medical doctors dealing with the physical body and psychologists dealing with the mind.

Considering this reality as a background for our investigation, it is important to note that there is a tradition of work in the past, concerned with the representational questions of health and illness (Herzlich, 1973; D'Houtaud, 1974; Boltanski, 1979; Berlinguer, 1988). Herzlich (op. cit.), for example, states that when an individual talks about health and illness, he is in fact talking about the nature of his bonds with the physical and social environment, and with aspects of the social organisation.

Paradigms of health and illness

The physicist F. Capra argues that physics itself is in the middle of a crisis, but, in fact, our societies of the occident also face a crisis. Consequently, our solutions to problems in the health area suffer from this crisis which he diagnoses as a crisis of perception. In order to overcome a crisis which affects our views of science, knowledge, theories of health and politics, we need a new mentality, a new set of attitudes or social representations to approach our central problems.

Descartes' ideas - which privilege the mind and set up an antagonism between mind and body - had a great impact on our occidental way of thinking and also on the psychology that we actually make. His ideas also had great impact on the practice of medicine, and on concepts such as health and illness. Descartes regarded the material universe as a machine and man as an animal-machine. This mechanist frame inspired the dominant health-paradigm and was understood as a conception of matter and living organisms.

Capra argues that the notion of cure makes evident the narrow conception of health and illness which prevails in the current obsolete paradigm. When we discuss cure, we have to refer to a broader view or paradigm that involves an interaction among the physical, psychological, social and environmental aspects of our reality.

The term „paradigm“ used here can be equated with Kuhn's notion of paradigm: a structure of thought („model“ in Greek), or a scheme for the understanding and explanation of certain aspects of reality.

Ferguson (1980) also discusses the crisis that science in general and some particular disciplines face, and she also argues in terms of changes of paradigm. In relation to

health, she states that occidental medicine is going through a period a re-vitalisation and that patients as much as professionals are beginning to look beyond the symptoms and are giving importance to the context of illnesses, taking into consideration society itself, family, emotions, tensions, eating habits, etc. as a set of indissociable variables. For her, a new paradigm of health adds a human component to the technological discoveries and is concerned with the interaction of the factors mind, body and environment.

To summarise, we present some presuppositions of the old and the new paradigms of health and illness in Table 1 which were inspired in Ferguson's model and adapted to the present research.

Presuppositions of the old and the new paradigms

TABLE 1

Old Paradigm	New Paradigm
* mind/body	* mind body
* body - machine; an extension of technology; to be dominated.	* body in harmony with environment; a context; a field of energy.
* Illness is seen as an entity.	* Illness as process.
* psycho-somatic problems are equated with mental problems (disciplinarity).	* psycho-somatic diseases must be approached by all professionals (multi-disciplinarity).
* mind is seen as a secondary factor.	* mind is another primary factor.
Treatment	
* of symptoms	* there is a search for patterns and causes plus symptoms.
* turned to specialities	* turned to the patient as a whole.
* intervention through medicines and surgery.	* minimum intervention - non-aggressive techniques.
* emphasis on symptoms	* emphasis on life-quality.

THE CENTRAL NUCLEUS OF SOCIAL REPRESENTATIONS

Moscovici (1981) considers the process of objectification as central to the understanding of the origin of social representation. To objectify means to combine a concept with an image, and, as a large amount of words circulates around a specific object, we tend to associate the object with a concrete meaning. However, as only a small combination of words is organised, this set of words incorporates the figurative nucleus which is a structure/image that reproduces a conceptual framework.

Each representation is organised around a *central nucleus* which determines both its meaning and its organisation. This nucleus has a generative function and an organising function (Abric, 1988).

Morin (1991), in his fourth volume on "The Method", puts forward the basis for a science of the ideas or Noologie. He discusses the way in which ideas are organised into systems, which can be more or less coherent. Any system of ideas such as sciences, political ideologies or philosophical theories tends to develop from, and to be organised on, a central nucleus or paradigm.

The present exploratory study aims at finding out the *figurative nucleus* of social representations of health and illness, as shared by specific social groups. Furthermore, the notion of health paradigms will be underlying the analysis of the groups' representations.

METHODOLOGICAL CONSIDERATIONS

First, a set of semi-direct interviews were made with university lecturers, students, medical doctors, psychologists and university civil servants. The questions were basically focused on definitions, causal attributions and action descriptions respective to health and illness. The interviews were taped and the dialogues were faithfully transcribed. A list of 230 statements - referring to health and illness - was extracted from the transcribed texts.

Second, the list of statements was examined by a group of researchers and the sentences which were judged as redundant were crossed out. The remaining stimuli-material consisted of 52 phrases relating to health and 67 concerned with illness.

Finally, the contents of the 119 sentences were analysed with the objective of finding out the main underlying propositional dimensions. A content analysis revealed that one group of phrases was related to the appearance of the subject (either ill or healthy). Another group of sentences described the behaviour/actions of the subject, and a third set of propositions was related to the causes attributed to health and illness.

DATA COLLECTION

100 subjects were submitted to the stimulus material. The group of subjects was made up of 20 medical doctors, 20 students of medicine, 20 psychologists, 20 students of psychology and 20 low-ranking university workers who were all submitted to the same stimulus material and procedure. The subjects were approached individually and the interviews lasted 40 minutes on average.

Initially, each subject was asked to read the first set of statements (either on health or illness, depending on the condition he was assigned to). After reading, S (the subject) was invited to mention the number of statements that were relevant to him (her) and that best represented his (her) ideas on the issue. S was informed that he (she) could choose as many items as he (she) considered necessary.

Afterwards, S was presented with the same chosen set of statements, but this time the sentences were written on cards which could be manipulated by S. Subsequent to that, S was asked to *classify* the set of sentences in terms of importance attributed to them. S was invited to order the cards from the first most important one to the last least important one. The second task involved clustering the sentences around a common dimension chosen by S. He (she) was encouraged to gather the cards which had something in common. Finally, S was asked to name each of the clusters. All given answers were registered by the researcher. The same procedure was repeated with the second set of sentences.

ANALYSIS OF DATA

Three types of analysis were performed: 1) A cluster analysis, in which Ward's Minimum Variance procedure was used; 2) a qualitative analysis of the individual clusters proposed and named by each subject; 3) an analysis of the classificatory data, which

considered the frequency and ranking of the items chosen. The two last analyses served as a background to the first one.

Ten matrices were built as a basis for performing the cluster analysis. They represented the 5 groups' data on health and illness, and they were obtained from the frequency of the co-occurrence of items within each individual S's clustering.

The results of Ward's cluster analysis provided us with data which illustrated the group's major divisions or dimensions representing health and illness.

A closer examination of the individual clusters (which were obtained through the record of S's answers) provided us with qualitative data which reflected the individual ways of thinking about health and illness, and which also helped us to understand the clusters obtained through Ward's procedure.

The classificatory data supplied us with items which helped us to delineate the central nucleus of the representations.

HEALTH RESULTS

Professional Psychologists: The Cluster Analysis shows a marked division between two major clusters, one involving the psycho-social-emotional variables and a second cluster involving sentences concerned with environmental-preventive and physiological indexes of health. When crossing the classificatory data with the cluster results, it becomes evident that the group of professional psychologists emphasised mainly the importance of material and environmental conditions and secondary psychological variables such as self-contentment and a good physical state. The major cluster division suggests a way of thinking closer to the old paradigm of health in which mind and body are viewed as separate entities.

Psychology students: The cluster analysis results for psychology students are less clearly cut than for professional psychologists. The cluster analysis solution displays two major divisions. The first one comprehends items which are definitely concerned with the influence of emotional questions on health. A second division involves a miscellany of items which - after being crossed with the frequency analysis - reveal two important sub-clusters concerned with prevention measures and body knowledge. Thus, the central nucleus of their representation of health seems to be concerned with emotional balance and self-satisfaction and also with self-care and self-knowledge.

Medical Doctors: The medical doctors' results presented the clearest clusters when compared with the results of other groups. Also the sub-categories seem to be less ambiguous.

Preventive care was considered as the most important item, followed closely by emotional balance, self-appreciation and basic sanitation (all with the same attributed importance). The dichotomy between emotional/mental versus physical dimensions is also marked in this set of data (Figure 1).

Students of medicine: This set of data shows a very different grouping of the cluster categories. For example, the dichotomy - always present in the previous data - between emotional/mental and physical dimensions, is not detected here. The central nucleus of representation involves many elements with the same attributed importance. Thus, self contentment is closely followed by emotional balance, preventive care, hygiene, food-intake and basic sanitation, all of them forming the basic nucleus of health

representation. This group of medical students seems to share a more systemic view of health and to have a representation of health which is closer to the new paradigm (Fig. 2).

Non-qualified university workers: There are no consistent dimensions underlying the results of the clusters of this group, since most Ss did not use any clear cognitive strategies to gather the cards. This fact was partially detected because most Ss presented difficulties in naming their cards' clusters. However, when clusters were named, there was a preference for concrete answers. Great emphasis was given to "work" as an indicator of health. The frequency and classificatory analysis revealed as

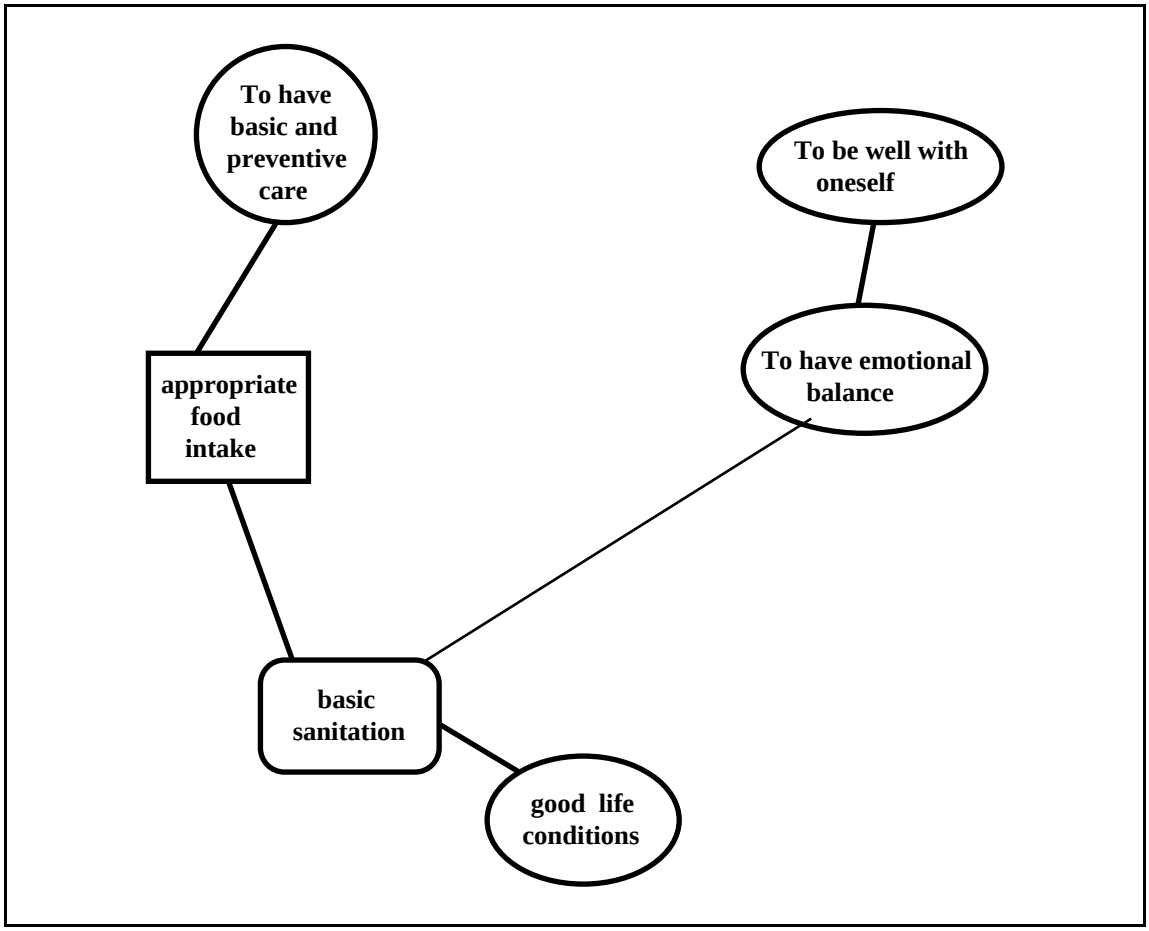

Figure 1
Central nucleus of representations of health by medical doctors.

more important items: "Not smoking", " The person is happy" and " to be hygienic".

ILLNESS RESULTS

Professional psychologists: Crossing the frequency data with the cluster analysis, a major independent cluster emerged, involving items which stressed the importance of *organic dis-equilibrium* upon illness. Two separate clusters stressed the role played by *unfavourable social conditions* and by *psychological factors* leading to organic problems.

Students of psychology: Their results are rather similar to those of professional psychologists, although they seemed to punctuate the clusters in a different way. One main cluster gave salience to the negative effects upon health of socially and environmentally unfavourable conditions. Two other clusters stressed the effects of psychological imbalance on organic functioning.

Their implicit argument seems to be that social reality and environment have an impact upon the individual's health in such a way that psychological imbalance can lead to

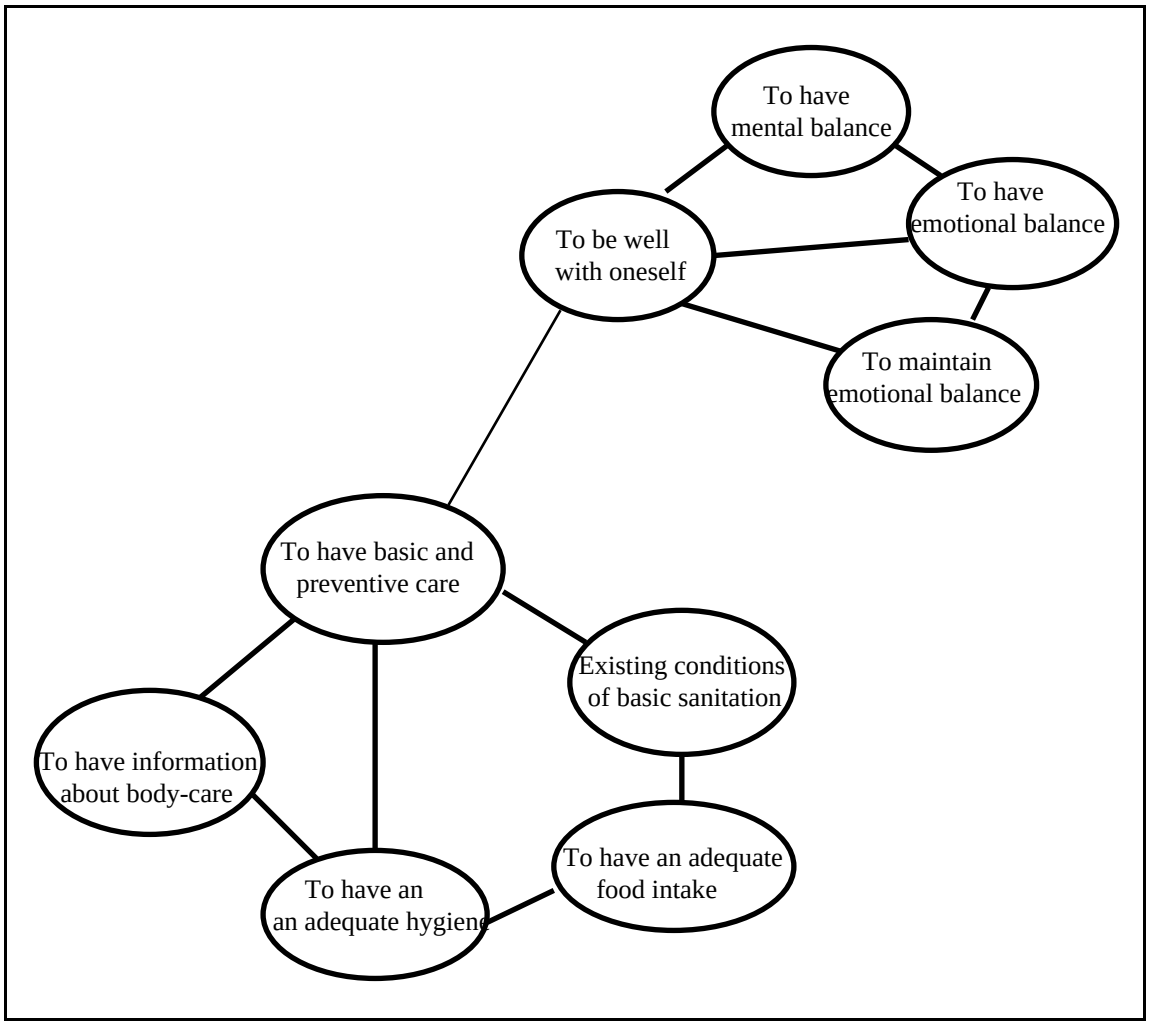

Figure 2
Central nucleus of representation of health by medical students.

somatization.

Medical doctors: The cluster analysis data shows a preference - of the group of doctors - to organise their thinking around the idea of dis-equilibrium. Emphasis is given to sentences that involved "organic dis-equilibrium", "an imbalance between the emotional and physical states" and "psychological dis-equilibrium".

The individual clusters show their preference for arguments which favour the hereditary and organic factors as being responsible for illness. The same implicit argument is present in the classificatory data.

The main core of the representational nucleus gives emphasis to organic displayed by some types of lesion and caused either by germs or by hereditary factors. Two other subordinate clusters underline unfavourable social/environmental variables and psychological imbalance as causes of illness.

Students of medicine: Both cluster analysis and frequency analysis suggest that students of medicine regarded hereditary factors and external agents as the causes of organic problems.

Ss also mark the impact of psychological factors upon organic dysfunctions.

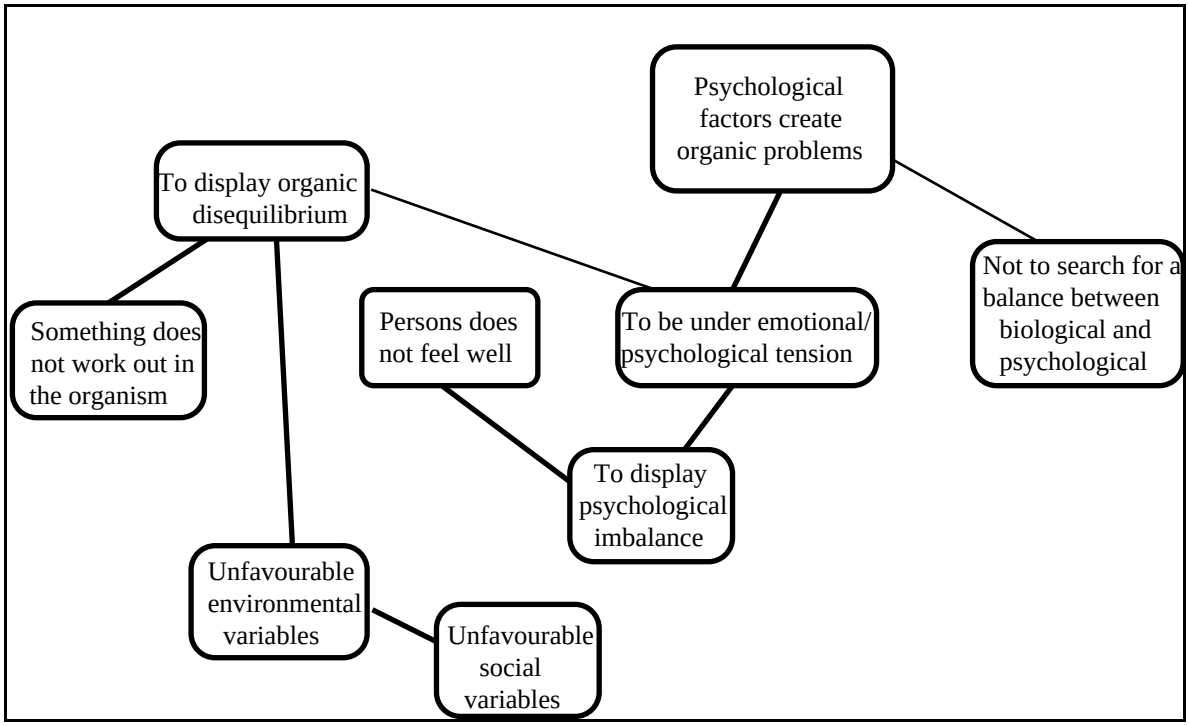

Figure 3
Central nucleus of representations of illness by medical students.

The individual clusters reveal that Ss of this group perceived a clear articulation among organic, psychological and environmental variables.

Furthermore, this group consistently chose sentences in which the locus-of-control was internal. Such sentences described the ill person as someone who ignores basic self-care and also as someone who does not search for a balance between the psychological and biological conditions (Figure 3).

Non-qualified university workers: Again the clusters could not be interpreted similar to the other groups‘ results.

Frequency and classificatory analysis shows as significant items: "Excessive work leads to stress"; "To have pain"; and "The person has negative thoughts".

Summarising the overall results, there seems to be a tendency for all groups to use "psychological well-being" as an indicator of health and also the organism as the locus of illnesses. Ss associated - in an apparently significant way - health with "being well with oneself" and illness with "organic dis-equilibrium".

When selecting the sentences concerned with health, professional psychologists, unexpectedly, marked the importance of material conditions much more than any other group. Students of psychology attributed more importance to the emotional aspects, although they also considered preventive measures as important to the reaching of a healthy state.

Both medical doctors and medical students considered preventive care (diet, hygiene, environmental measures) and emotional balance as being central to staying healthy. This professional group seems to be closer to the new paradigm of health, since they considered a multi-factorial representation of elements. However, only the medical students' cluster results did not display a clear-cut division between the emotional/mental and the bodily/physical dimensions.

On the other hand, the general data on illness seems to express the argument that unfavourable social conditions and psychological emotional stress lead to organic dis-equilibrium. Thus, although illness is most frequently associated with physiological and somatic manifestations, the role played by the environment, the society and the self was not ignored. In fact, the group of medical students was the only group which underlined the importance of self-care.

CONCLUSIONS

In general terms, health was mainly viewed as a subjective experience or a feeling of "being well with oneself" when the organism functions in a certain way. Health was associated with the idea of harmony among several dimensions. On the other hand, illness was pictured as a dis-equilibrium associated with a dysfunction in the body.

The representation of health obtained from the 5 groups was compatible with the description of the new paradigm where health is considered as a state of well-being, or as a matrix which reflects psychological and somatic harmony. (Ferguson, 1980).

The data reveals that the two professional groups, namely psychologists and medical doctors, were less biased towards their disciplinary tendencies than was expected. Psychologists attributed great importance to environmental variables and preventive measures in their responsibility for a healthy state, while students of psychology were more open to a multi-causal approach. Both doctors and medical students selected items which suggest an interdependence among physical, biological, psychological and social phenomena, for the definition of health.

It is interesting to note that although contemporary medicine promotes a mechanist view of the healthy individual, both groups of this professional category displayed a more systemic view. The group of medical students stressed particularly the importance of self-knowledge and self-monitoring in the promotion of a healthy state, an idea which is compatible with the systemic view of a self-organising organism, in the new paradigm. The two groups of medical science professionals considered health on three levels: individual, social and ecological.

We suggest for further studies the inclusion, in the stimulus material, of items referring to the doctor-patient relationship as viewed by the old and new paradigms. We conceive the new relationship as adding compassion to the existing medical efficiency and also as expanding the dyadic medical-patient relationship to a broader relation between the patient and the interdisciplinary team. In this way, a parity among doctors and other health professionals is promoted.

Further research could also try to access the action of psychologists and medical doctors within their working context, in an attempt to unveil the relation between the socio-cognitive dimension of the representation (as captured in this study) and the actual professional practice.

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APPENDIX

Order of health phrases - medical students

To be healthy is to be well with oneself. (13)
One has emotional balance. (10)
The person maintains emotional balance. (10)
The person is mentally well-balanced.(10)
One displays emotional positivity
The person is spiritually well.
The person is mentally fit.
One has a strong physical appearance.
To have enough money.
To take baths at appropriate times.
To have a life project.
Health is mainly inherited.
The person has an ordered life.
The person is very active.
To eat things at the right time.
To finish her (his) work without being tired.
The person has a good physical appearance.
To avoid being exposed to the wind.
To have good medical advice.
One has good psychological advice.
To have sufficient physical energy.
The person can perform her tasks easily.
The person is not irritable.
To be able to cope with everyday problems.
One feels physically well.
To have no problems on the physiological level. (6)
The person shows vitality.
The person is well adapted to the environment.
To have some kind of spiritual practice.
The individual has good relations with other persons.
To feel well when relating to other people.
The person is in "high spirits".
The person is happy.
The person has plenty of life.
To have disposition to work.
To have an active sexual life.
To have good conditions of life. (7)
There are conditions of basic sanitation. (10)
The promotion of health is responsibility of the government.
To sleep regularly and well.
To have adequate rest.
The person has knowledge of his own body.
To have access to information regarding body care. (7)
Everyone is responsible for his health.
The person has an adequate diet. (10)
To have a balanced diet, choosing fresh foods.
The person keeps himself (herself) sufficiently clean.(10)
To take basic and preventive care. (12)
To do physical exercises or take walks.
The person lives in a non-polluted environment.
The person does not smoke.
To avoid which is rotten food.

Order of health phrases - medical doctors

To be healthy is to be well with oneself. (12)
One has emotional balance. (12)
The person is happy.
The individual has good relations with other persons.
The person shows vitality.
One displays emotional positivity
The person is in "high spirits".
To feel well when relating to other people.
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The person is mentally well-balanced.
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The person has plenty of life.
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To have no problems on the physiological level.(6)
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To have adequate rest.
To avoid which is rotten food.
To sleep regularly and well.
To do physical exercises or take walks.(6)
The person does not smoke.
To have a balanced diet, choosing fresh foods.

Order of illness phrases - medical students

Person gives up his (her) spiritual life.
There is a lack of spiritual practice.
He (she) does not search for a balance between the biological and the psychological (10)
The person does not search for a balance between body and spirit.
The person is very agitated.
Each one is responsible for his (her) own illnesses.
The person carries out tasks beyond his (her) capacity.
The person becomes boring.
It depends on the individual is biological nature.
He (she) pays too much attention to symptoms.
The person is inconvenient.
Illness is a divine punishment.
He (she) has some sort of mental problem.
The social relations are impaired.
The person's financial conditions are precarious.
To eat tinned food.
He (she) has an imbalanced social life.
His (her) social life is not satisfatory.
He (she) is in "low spirits".
He (she) easily becomes irritable.
The person does not have any appetite.
Each disease has an emotional background.
The person becomes very dependent on others.
The person has negative thoughts.
He (she) is psychologically imbalanced.(7)
The individual is under psychological tension or is emotionally excited.(8)
Psychological factors cause organic problems.(12)
The person is psychologically unstructured.
The person is always complaining.
The person gets depressed easily.
He (she) does not have future prospects.
The person does not recognize his own limits.
To have pain.
He (she) cannot cope with tasks which he (she) previously coped with.
He (she) is not reasoning properly.
The person behaves oddly.
The person does not manage to finish his daily activities.
To display nervousness.
The person loses autonomy.
The person cannot articulate his thoughts.
The person is tired and stressed.
The person presents abnormal physical changes.
There is a lack of physical strength.
The person has a lack of psychological strength.
There is no interest in sexuality.
Illness is inherited.
The person is less active.
He (she) does not feel well. (8)
The person has a sad appearance.
There is a lack of physical energy.
The opposite of health.
The person shows an imbalance in his (her) organic functioning. (14)
The body is invaded by germs. (7)
Something is not functioning well organically. (10)
Hereditary factors determine the appearance of illnesses. (7)
He (she) displays some sort of physical impairment.
The individual's physical and emotional structure is affected by unfavourable social variables. (11)
Negative environmental conditions affect the individual. (11)
The environmental conditions are bad.
The social conditions of the individual are precarious.
Excessive work leads to stress.
Excessive work reveals some sort of disequilibrium.
Basic care is ignored by the person. (7)
To neglect the body.
The individual does not take precautions in relation to his (her) sexual partners.
Food intake is inadequate.
To disregard the bodily changes which follow organic imbalance.

Clélia Maria Nascimento-Schulze, Ygor Fontes Garcia, Daisy Costa Arruda, Universidade Federal de Santa Catarina, Campus Universitario, Trindade, Caixa Postal 476, 88010-970 Florianópolis SC, Brazil.