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# HEALTH - AN AUTOEVALUATION PREDICTOR OF PERSONAL LIFE QUALITY

Case study

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## Keywords

Declared health status  
Perceived health status  
Determinants of health  
Lifestyle  
Geographical disparities

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## Abstract

*The study in case makes part of the similar efforts at national and international level concerning health state and its determinants. Since it is a social desirable phenomenon, a person's health state is a susceptible element of developing life standard and productivity or not, of prolonging active life and implicitly reducing public expenses for holidays, sick-ness alimonies or any other forms of social support.*

*The starting point of our study has regarded the question at what degree health state is a determinant and a predictor of personal life quality or, opposite, a determinant of the last one.*

*The study focuses on the identification and explanation of certain behavioural models, the life styles present in a specific geographical area, in our case-the superior basin of Moldavian Bistrita.*

*All these are meant to explain the disparities and/or the mutual elements existent in the urban and rural environments of this study area, and the possible "endemisms" present in this area.*

## 1. INTRODUCTION

The article integrates generally in the field of human geography and especially in the field of medical geography and it contains the results of a case study realized in the superior basin of Moldavian Bistrita (Vatra Dornei town and its neighbouring towns) on the population's health state and its determinants.

The rather cryptical character of health state determinants guides us, at first stage, to a consensus regarding the explanatory theories, the vigilant dissemination of the inherent results of any scientific research without minimizing the complexity of the phenomenon in study.

According to Dumitrache, (2002), The medical Geography, also called health Geography, studies the medical phenomena in relation with space and tries to identify in particular the differences existing from one area to another and also their determining factors.

On the analogy of the previous definition, Teodoreanu (2004) mentions that: "medical geography is not a disease dictionary, whether infectious or not, but a field of theoretical and applied study of the environment's features which determines the health state or sickness of a human community, and tries to answer the demographical problems, continuously dynamic in time and space.

Moon and Kearn (2007) stated that this discipline has been focusing lately on health, with a high interest for wealth and the social models which explain health and its maintenance and not in the least the importance of places in the health study, seen as relevant for health, disease and health care.

At the same time, Curtis (2007), highlights the importance and role of the population's representations on health, traditional practices, complementary therapeutical practices and obviously the necessity of rather studying these aspects

than focusing on the biomedical, clinical and epistemological perspectives. The author also considers that only through these analyses can we point out the way people understand health and its determining factors, and also the beneficial non-clinical dimensions for sick people.

Regarding health, "this is not only the absence of sickness, but a completely physical, moral and social well-being state[...]and the comparable standards can differ from one person to another" (Fleuret, 2007), a plurisemantic concept, with a varying significance according to different groups, social classes or populations (Dumitrache,2002). Under numerous health definitions, the most used criteria are those connected to the functional well-being, the body's capacity to adapt to various life and working conditions and the human condition which makes the individual creative, thus, a tridimensional unity, that is bio-psycho-social (according to the above mentioned author).

Defined by O.M.S. (World Health Organization) as "an individual's perception on his existence, in the context of the values system and culture to which he reports and his objectives, standards, expectations and concerns", the quality of life is different from well-being. There is a distinction between objective and subjective well-being, the latter usually connected to life quality or happiness, while the first one is connected to living standards (Fleuret and Thonez, 2007).

Therefore, an extremely important role in the studies concerning health state and its determinants plays the understanding of the mechanisms which are the basis of the sick person's perception on his health state, on his prosperity and on his well-being in general, searching thus different explanatory models of the phenomena in cause and establishing values of life quality.

The analysis and comprehension of these “mechanisms” is realized by various and complex methodologies, from qualitative and quantitative methods of inferential and descriptive statistics, to what we call, in health geography, “regional medico-metric”.

Bailly and Fleuret (2007) define the concept as “the application of mathematical and statistical methods to test, criticize and predict the medical regularities in space, starting from the hypotheses and the point of view of all actors in the health system, in order of its global and spacial efficiency.”

As a part of qualitative research in health geography, Eyles(2007) identifies as basic research methods the inquiry, the biographical method, the phenomenological method and the case study.

Regarding our study in the superior basin of Moldavian Bistrita, we intended to use all the methods and techniques that proved to fit to our type of research and according to which, of course, we can study and evaluate health state as a predictor of personal life quality autoevaluation.

As formerly reminded, in the health state diagnosis, we should take into consideration the individual's tridimensional unity, the bio-psycho-social one, and from this point of view Oliver de La doucette (2008) identifies for each of the mentioned units, a series of determinants which can explain, at high level, though different from probability, their influence on health state in general.

The author offers examples the gender factors(for example it seems that women are more predisposed to health problems than men),but also genetical factors(certain genes and chromosomes with hereditary disease transmission),or individual factors, like the intelligence level(studies show that intelligent people live more, so, as getting old, the connection between mental and physical function is stronger and stronger.

We should also take into consideration (in the author's opinion),the disease related to age, such as osteoporosis, diabetes and cutaneous affections, anatomical and physiological modifications, which, although often associated with old age can be in fact the result of an insufficient utilization of the body's resources, of stereotypes and the prejudices related to age(the classical example of the retired persons adopting the image of “old”, by conformism.)

The psychological factors implied in determining health state are, according to this author, those related to the type of personality, specific psychological dispositions, optimism, self-confidence, anxiety, sedentariness (physical and intellectual), responsibility, egocentrism, hostility and fury, emotional balance, long term exposition to stress, control over one's life, compassion and altruism, usefulness and not in the least, life style.

Dumitrache (2002) offers us an extremely efficient example of what life style means, that is “those repetitive behaviours, favourable or not, to health state and implicitly to longevity, conditioned by the family, life conditions, economic resources, socio-cultural factors and not in the least, by the personal features. To these factors, Oliver de La doucette also adds the role of the individual's socio-professional and economic status(poverty being often associated with health problems),the education level, the quality of interpersonal relationships and social isolation, antidepressives, anxiolitics, adaption to environment conditions, the relation with spirituality, marital status and life in the couple, social supports, etc.

Anyway, this complex phenomenon that we generically call “health state and the perception of one's health state” seems enough comprehensible to the authors and researchers in the field of medical geography in special and to the social and medical sciences in general. The question

is whether health state and its perception represent the same thing for everybody, question that makes us think about the famous public opinion poll undertaken by Voucher Cloud on a population sample of 2392 American citizens over 18 and published in L.A. Times, (march 2014) concluding that:

-23% think that MP3 is a robot from "Star Wars"...

-18% think that Blu Ray is a marine animal...

-15% think that software is a casual outfit...

-12% think that USB is an abbreviation of a European country...

## 2. MATERIALS AND METHODS

The case study, which is the subject of the present article, is an important part of a larger empirical study on the population's health state and its determinants. It focuses on the identification and exploitation of behavioural patterns, the life styles in certain geographical areas, in our case the superior basin of Moldavian Bistrita, meant to explain the disparities and/or the mutual elements existent in the urban and rural environments.

The statistic observation contained the realization of a questionnaire in order to get information about the population's health state (real or declared) and its determinants and the analysis of the statistic data was accomplished through parametric and non parametric tests of the inferential descriptive statistics.

The questionnaire used in this inquiry is adapted after the model offered by Dumitrache in her book *Medical geography. Analysis methods and techniques* (2002), model to which we added new elements, determined by our present research hypotheses, theories and directions. Thus, it contains five main parts, each of them devised in secondary parts meant to bring out accurate, relevant

and pertinent information by answering the questions with pre-established and open answer.

Therefore, the first part, "General Information", contains questions related to residence, age, gender and civil status and the second part concerns especially "Health state and its appreciation", through questions regarding the present health state, its autoperception, taking medicine and not in the least the medical services and their location. The third part is about "The socio-economical features" of the respondents, more exactly their socio-professional status, activity field, education level, the type of house, the number of rooms, how many people live in it and the monthly family income. The fourth part (the most complex) contains items meant to identify the above mentioned behavioural models, the respondent's "Life style. The questions in this part focused on showing certain individual characteristics, such as nutrition (type of food, drinking alcohol, smoking) sport activities, the relation with the family, colleagues, superiors, neighbours, etc., appreciating sense of humour, optimism, self confidence, responsibility, intellectual activity, resting period, etc. The fifth part contains a series of five questions with open answer regarding the respondent's perception on the evolution of his/her health state and on the Romanian medical system in the next years, who and how should promote education for health among the population and of course the personal opinions regarding the health state's determinants. At the end the questionnaire contains recommendations for the questionnaire in case.

Therefore, this was applied between October 2013-January 2014 on a sample of 600 persons, especially Vatra Dornei citizens and other ten rural areas (542 residents only from our study area), but also non-residents following a therapeutic treatment in the above mentioned resort. We mention that the

total population of the concerning geographical space was according to the census in 2011 of 40.000 persons.

In order to establish an optimal volume of the sample in work, let's suppose that any qualitative variable in the study will be dichotomized (equivalent to the answering options Yes/No.) In this case, using Cochran's formula (Opariuc, 2009), we obtain:

$$n = \frac{z^2 * p * (1 - p)}{e^2}$$

where n=the sample volume, z= z score associated to confidence level (1-the risk threshold) wanted (here the confidence level=95%, or the risk threshold=5%). The z scores are constant values according to the desired confidence level, here, for 95%, z = 1,96), e = possible error or desired precision (let's say 3% error). It can be observed, by calculation, that a slightly higher miscalculation is operational, that is 4%), p=the answers' rate at population level (here, no matter how many subjects, p=0,50, because the variable is qualitative, dichotomic and we can't predict how the subjects will answer, that's why we choose the highest possible rate of the "yes" or "no" answers, that is 1/2 =50%).

By replacing in the above formula, we obtain:

$$n = \frac{1,96^2 * 0,50 * 0,50}{0,03^2} = 1067$$

For a possible miscalculation of 3% it would have been necessary to select at least 1067 respondents. At a higher miscalculation error, of 4%, we obtain:

$$n = \frac{1,96^2 * 0,50 * 0,50}{0,04^2} = 600$$

that is the exact volume of the selected sample.

The initial sampling criteria also regarded the heterogeneity of socio-professional categories and also of age and gender categories, of residential environment. In this inquiry, the urban residential environment is represented by Vatra Dornei town and the rural one by ten rural areas placed (except one) from

geographical point of view in the Moldavian Bistrita river basin, and from administrative point of view, in Suceava county.

Therefore, the ten rural areas in question are Carlibaba, Ciocanesti, Iacobeni, Poiana Stampei, Cosna, Dorna Candrenilor, Sarul Dornei, Panaci, Dorna Arini and Crucea, which, although not situated in the superior basin of the Moldavian Bistrita river, we wanted to include it in our study for socio-economical and administrative grounds, due to the fact that between Vatra Dornei town and the rural area there are strong commercial, cultural, educational connections, labour migration, etc.

As our study is concerned, the connections and statistical correlations identified here are quite numerous but we will especially refer to those making the title of our article, that is "Health state-a predictor of personal life quality autoevaluation". According to the specialty manuals (Jaba and Grama 2004), the statistical connections can express, according to the variables, associations (the nominal variables case), or correlations (the quantitative variables case).

We will examine at **what degree the persons who declared that suffer or not from certain affections can perceive their health state in accord with what they declared.** For example, **healthy people** (who declared they don't suffer from any disease), **do they perceive their health state as very good?** Let's see!

We will also try to identify **certain behavioural patterns between the two residential areas (rural and urban), and/or the possible spacial disparities concerning life style as a determinant of health state.** In other words, **healthy people have a different life style in comparison to the less healthy people?** Most of us will tend to agree with it...but does it fit in this case? We will see!

The experimental design of the study contains more research hypotheses,

on the ground that this complex process – health state-can be explained and understood through a lot of factors, even a plurality of independent and/or interdependent factors.

### **Research hypothesis 1.**

**The declared health state(the presence or absence of disease) is a predictor of the way in which the individual evaluates it?**

*Dependent variable:*

**Health state autoappreciation.**

*Independent variable:*

**The individual's present health state.**

*The null H0 hypothesis:* there is no connection between the individual's health state and health state autoevaluation.

### **Research Hypothesis 2.**

The residential area (urban/rural) "imposes" certain behavioural patterns responsible for the presence/absence of medical affections.

The hypotheses will try to determine certain **connections between the residential area and the questionnaire's items that measure the attributes of personal life quality**(for our study –the declared health state and its evaluation by the respondents, different life style attributes.)

## **3. RESULTS AND DISCUSSIONS**

For research Hypothesis 1 **The declared health state**(the presence or absence of disease)**is a predictor of the way in which the individual evaluates his health state?**, the statistical correlation was used as research method obtained by the software application of the statistical programme SPSS 14. The correlation was realized between item 2.6 "*Do you suffer or have you suffered any disease in the last two years?*"(with 10 answering options) and item 2.1 "*How do you appreciate your health state in general?*". The last item has

four answering options, which are:1) *very good*, 2) *good*, 3) *quite good*, 4) *bad*

Therefore, we get the following results from Table 1:

It was obtained a correlation value Kendall of 0,288 and a correlation value Spearman of 0,325,which suggests that **there is a statistical connection** between the qualitative variables "Health state autoappreciation" and "The person's health state" (The item "Do you suffer or have you suffered any disease in the last two years?"), **but not significant enough statistically speaking**. The value of the significance level associated to the test, named Sig., equal with 0,000,shows that a significant correlation value was obtained at a 0,000 threshold, so there are less than 1%chances to be wrong if we state that there is a statistical, but not significant connection between the two variables.

Similar results were obtained in correlating item 2.6.2. *Health state* (recoded in the data basis as binominal option from item 2.6 "**Do you suffer or have you suffered any disease in the last two years?**"With 10 answering options),and self-health. Obtained thus a correlation value Kendall of 0,296 and a correlation value Spearman of 0,311.The value of the significance level associated to the test, named Sig., equal with 0,000,shows that it was obtained a significant correlation value at a 0,000 threshold, so there are less than 1% chances to be wrong if we say that **there is a statistical, but not significant connection between the two variables**.

For research Hypothesis 2.The residential area(urban/rural) "imposes" certain behavioural patterns responsible for the presence/absence of medical affections, different graphics were used, through the software application SPSS 14

1. Regarding the associations between **the residential area,individual's health state and health state autoappreciation**,we find out from the graphic,using the

option Population Pyramid  
SPSS 14, the following aspects:

The persons from urban areas who don't suffer any disease appreciated at a larger degree that they have a very good health state and at a smaller degree that they have a good or quite good health state, comparatively to the persons in the rural areas being in the same situation and who appreciated their health state as good or quite good and bad.

The situation remains relatively constant in the case of the persons suffering from certain disease, except the ones in the urban areas who evaluated, at a larger degree, their health state as quite good, comparatively to those in the rural areas. There were some cases (rather isolated) in which, for both urban and rural areas, the respondents with health problems evaluated it as very good.

## **2. The residential area, health state and the reason for going to the family doctor.**

We get the following information: People from both urban and rural areas, who don't suffer any disease, go to the family doctor for a check first of all, and then for treatment or illness, prescription or more of them, comparatively to those suffering certain medical affections who go to the doctor rather for treatment than for a check or more of these services.

A special case was registered at the persons in the rural area with different affections who declared in a higher proportion than the urban respondents (in the same situation), that they go to the family doctor for preventive examination. Prevention seems to be, in our case study, a rural area characteristic, for both sick and healthy people.

## **3. The residential area, health state and choosing the right hospital and location for major medical problems.**

The respondents from the rural area, both the sick and the healthy people, have answered, at a larger degree, that they chose or will choose the hospitals in Vatra Dornei, comparatively to this town's

residents who chose the hospitals in Cluj - Napoca city.

The hospitals in Suceava city were chosen or will be chosen predominantly by the residents from the urban area who don't suffer any disease and by the respondents in the rural area suffering disease. The hospitals in Cluj were the option for the healthy respondents from both residential areas and at a larger degree for those less healthy from the urban area.

As for the hospitals in Targu Mures, the respondents' options from both residential areas, are somehow opposite, thus, the healthy persons from the urban area and those less healthy from the rural area chose at a higher degree than the other two categories, this option.

The hospitals in Bistrita were especially chosen by the respondents from the rural area who suffered any disease and the hospitals in Iasi and Bucuresti were chosen (in low proportion) even exclusively (the capital city) by those in the urban area.

The option "More of them" was numerous present for both residential areas and respondent categories. This suggests that the composite answering options are not welcomed in the context of existence, in the structure of the same item, of exclusive mutual options.

## **4. The residential area, health state and smoking.**

Both respondents from the urban area and those from the rural (predominantly), who don't suffer any disease, declared, at a higher degree than the respondents in the opposite situation, that they don't smoke. Thus, smoking seems to be in our case a good health state predictor, especially in the situation of the persons suffering from certain affections and who declared they had smoked in the past, at a higher degree than those without health problems.

## **5. The residential area, health state and nutrition.**

The respondents without any affections declared at a higher degree than those in the second category, that they have a combined various nutrition (meat products, but also vegetables and fruits, milk products, etc.), the same situation for both residential areas (with accent on the rural area). It also seems that meat consumption is characteristic for healthy people and vegetables and fruits for those less healthy. This result seems to be in contradiction with the theories that recommend a rather vegetarian nutrition for a good health state. Of course, the explanation could be that doctors recommend to sick people a nutrition rich in vegetables and fruits. Another difference found between the two categories of respondents, for both residential areas, is the fruits consumption, characteristic to healthy people. The respondents with certain affections declared, at a very low degree, even not at all (those from the rural area) that they would consume fruits.

#### **6. The residential area, health state and alcohol.**

Even in this case, healthy people declared at a higher degree than unhealthy people that they occasionally or never drink alcohol. With small differences between the two residential areas, the healthy people from the rural area declared they never drink alcohol and the healthy persons from the urban area declared they occasionally drink alcohol. There is a slightly different situation for the respondents with different affections from the urban area, who declared that they drink alcohol "only on special occasions", comparatively to those in the rural area, in the same situation.

#### **7. The residential area, health state and the problems that can affect emotional state.**

The respondents without medical affections, from both residential areas, declared in a very big proportion, that they haven't had lately problems to affect their emotional state, comparatively to those

less healthy, whose answers to the question "I haven't had such problems" are significantly lower.

The individuals with various affections complained most about health problems (especially those in the rural area) or "more of them. The healthy ones seem to complain more about familial problems, from both residential areas and not necessarily those with various affections, like we said, declared that the medical problems affected their emotional state a lot.

Regarding the financial problems, there are no significant differences between the two categories (healthy and unhealthy) and at the residential areas level, a bigger number of answers for this category was registered for the rural area, but the difference is not significant.

#### **8. The residential area, health state and the relation with the family.**

As you probably expect, the people without medical affections (from both residential areas) declared, in a highly superior number than the ones in the second category that they have a good and very good relationship with the family. Thus, this variable-the relation with the family-seems to be a good of the individual's health state.

#### **9. The residential area, health state and how pleased is the respondent about his/her present job (for students-school).**

Indeed, healthy people declared themselves pleased (especially in the urban area) and very pleased about the present job (especially in the rural area), at a higher degree than unhealthy people, with small differences between the two residential areas, but not very big.

#### **10. The residential area, health state and the relation with the work/school colleagues.**

Once again, healthy people declared they have quite a good relationship (especially those in the urban area), even excellent (equal scores for the individuals from both residential areas)



with the work/school colleagues, in more cases than those with medical affections, comparatively to those in the second category.

**11. The residential area, health state and how lucky thinks the individual is.**

Healthy people declared themselves, in a higher measure, lucky enough (especially in the urban area) and very lucky (more from the urban area) than the persons with certain affections the last year. There were no cases of healthy people in the urban area to declare they are unlucky and the proportion in the rural area is very small.

**12. The residential area, health state and optimism.**

Healthy respondents declared, in more cases, that they are optimistic enough (especially in the rural area) and even very optimistic (especially in the urban area), comparatively to those in the second category. A special situation we find in the case of healthy subjects from the urban area and unhealthy from the rural area, who obtained the same scores at the answering option "a little pessimistic". This is the same situation for healthy people in the rural area and unhealthy from the urban area.

**13. The residential area, health state and sense of humour.**

The graphical model obtained following this connection tends to convince us, indeed, that healthy people have a different behavioural pattern from the less healthy people. Therefore, in this case too, the respondents who declared themselves healthy, are those who evaluated their sense of humour as mostly developed (especially in the rural area) and even very developed (especially in the urban area).

**14. The residential area, health state and self confidence.**

Healthy respondents declared themselves in most of the cases quite self confident (especially in the rural area) and even very self confident (more for the

urban area), comparatively to the respondents with different affections.

**15. The residential area, health state and the resting period.**

The resting period between 6-8 hours and over 8 hours is characteristic in our study to healthy individuals, more than to unhealthy persons.

**16. The residential area, health state and the relation with spirituality.**

Healthy people declared at a very high degree that they have a good relationship with divinity (for respondents from both residential areas) and even a very good one (especially those in the rural area), comparatively to those in the second category. The relation with divinity seems to be in this case a good health state predictor.

#### 4. CONCLUSIONS

According to the results of this study, we consider legitimate the following conclusions, the sthenic character of which enforces the contiguity between the person's health state and his/her life style, with all the present and future psychological, social, economical and political implications.

The individual's health state represents, at least for our study, a redundant element for the way in which the individual evaluates his/her health state. As it can be seen in our research, health state auto appreciation in terms of "very good", "good", "quite good" or "bad" is influenced by both the presence or absence of medical affections and by the residential area.

The healthy people's life style is, indeed significantly different from the unhealthy people's one. Our study confirms, once again that, generally, the individual's health state is not a "divine gift", but rather our conscious choice to adopt all those favourable behaviours, or not, for a healthy, balanced, even moderate

life style, which influences the health state's evolution.

The residential area(urban/rural) "imposes" certain behavioural patterns regarding the health state perception, choosing medical services, hospital locations that they choose for treatment or other medical services. If the urban area residents will especially choose the medical services offered by the hospitals in Cluj, Iasi or Bucharest, the rural area residents prefer the hospitals in Vatra Dornei, Bistrita or Suceava.

All this information obtained following our research and other national and international level studies, should be disseminated in many socio-professional areas, so that the beneficiaries should be a larger number of persons, from pupils, students, to their extended families.

Therefore, the next step would be a better informing upon the health state's determinants among all human communities, that should be realized through education for health, by all the "actors" implied in this process. We refer to the medical personnel, teachers, decision factors, state and private areas with financial support and not in the least, to all of us, who choose to dispose and use this information for our benefit.

Because we wish to live in a healthy natural and social environment, the change,(where necessary),must start with us, "part of the geosystem", so that later on this should be the one in which we can benefit from a productive and active longer life, fewer situations of earlier retiring caused by sickness or invalidity, economical development and higher life standards.

And because "the whole is stronger than the total of parts", all that's left for us is to "perfect" this "almighty" whole that helps us evolve towards a society in which the standards of behaviour are generally those which come to "establish", constructively, that healthy life style that contributes to a longer life rate and of course to a better personal life quality.

## 5. ACKNOWLEDGEMENTS

We want to thank the over 600 respondents who had the time, patience and availability to answer the 53 questions of our questionnaire.

We are aware of the fact that not all the respondents will have the possibility to read this article or to find the results of our research, but we hope that by spreading the information especially in academic areas and social political in general, they will benefit from those positive "outcomes" that a society brings when life style is a lot higher.

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Table No.1

*Correlation between the declared health state and health state autoappreciation*

**Correlations**

			Do you suffer or have you suffered any disease in the last two years?	How do you appreciate your health state?
Kendall's tau_b	Do you suffer or have you suffered any disease in the last two years?	Correlation Coefficient Sig. (2-tailed) N	1,000 . 542	,288** ,000 542
	How do you appreciate your health state?	Correlation Coefficient Sig. (2-tailed) N	,288** ,000 542	1,000 . 542
Spearman's rho	Do you suffer or have you suffered any disease in the last two years?	Correlation Coefficient Sig. (2-tailed) N	1,000 . 542	,325** ,000 542
	How do you appreciate your health state?	Correlation Coefficient Sig. (2-tailed) N	,325** ,000 542	1,000 . 542

\*\* . Correlation is significant at the 0.01 level (2-tailed).