

## A MODEL OF PARTNERSHIP PROJECT FOR HEALTH AND COMMUNITY DEVELOPMENT BETWEEN UNIVERSITY OF PITESTI AND A RURAL POPULATION, FROM A DISADVANTAGED GEOGRAPHICAL AREA

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### Abstract

*The purpose of this project aimed to apply a sanogenetic intervention on a rural population, from a disadvantaged geographical area. 50 students in Physical Therapy and 4 teachers were involved in assessment and intervention activities for optimization of the individual and collective health status of inhabitants of a village located in the Caras-Severin district, in the Cerna Mountains. The project results consisted in: a database regarding the health of the subjects; a model of therapeutic education and promoting of a healthy lifestyle among inhabitants; creating a network of social interaction among project participants; professional and transversal skills development of students; developing research skills of teachers. The activities referred to: subjects health assessment (medical diagnostic, anthropometric and physiometric measurements); recommending and implementing of programs of kinetic prophylaxis and rehabilitation; conducting activities to provide opportunities for social interaction and support. The project offered also the possibility of optimizing the students training by developing their professional skills of assessment and physiotherapeutic intervention, their transversal skills of teamwork, respect for the principles for professional ethics and self-assessment of needs for professional training and also for developing good inter-institutional relations, designed to facilitate the development of specific research activities, in benefit of both parts.*

*Keywords: partnership, health intervention, community, rural population, vulnerability*

### 1. INTRODUCTION

At present, similar to other European countries, Romania is facing with the problem of inequities related to providing health care services to different environments and situational contexts. Thus, from this point of view the rural population compared to the urban one is significantly disadvantaged. To support this idea there are mentioned a series of difficulties such as the distribution of material and human resources and the access to health, preventive, curative and rehabilitation services.

In addition, the level of poor development of many rural locations from Romania, which are being disadvantaged due to geographical position, determine a greater vulnerability of residents in relation to environmental, social, economic factors, etc.

These differences between urban and rural environments from Romania regarding the health of human communities and the access to medical services are widely recognized at informational level. Moreover, recent studies called attention to the inequality in the territorial distribution of services, disparities being more pronounced in the western region of the country, especially in terms of providing primary health care services through the network of family doctors (Vâlceanu et al., 2012).

In the context of demographic transition, vulnerability seems to be even more noticeable among rural residents, especially for certain age groups, mainly children (Probst et al., 2005) and elderly (Salinas et al., 2010).

An additional comment should be done when it comes to the underprivileged population residing in certain geographical areas. Consequently, the legislation in Romania defines a strict territorial delimited area as being disadvantaged if there are problems regarding the employability of inhabitants (layoffs, high unemployment, lack of productive structures) or in the case of isolated areas, deprived of means of communication and with underdeveloped infrastructure (Law no. 20/15.01.1999).

It is well known that the population living in deprived areas presents higher values of particular indicators suchlike morbidity, mortality, disability and life expectancy, as result to the restricted access to health care services (Vlădescu, 2004; Zanoschi, 2003). A valid explanation consists in the fact that in these situations the limiting factors of individuals and communities health, which are represented by the low living standard of population and the diminished resources, manifest in a more obvious manner (Doboş, 2005). In other words, we can speak about a real economical, medical and social vulnerability that is attached to such needy areas and will ultimately conduct to increased risks to health and quality of life of every individual in the community.

Most authors believe that the strategies of intervention to erase inequities must be created on adequate social policies, with the support of the health insurance system for equitable and non-discriminatory access of population to a basic service package (Cicea, 2009). Besides, the educational component of the intervention, which is provided in the form of health education and therapeutic patient education, ensures the premises for the efficiency of the various sanogenetic programs (Liu et al., 2007; Şoitu et al., 2013).

Given the phenomenon complexity of the medical and social vulnerability of residents from geographically deprived areas in Romania, it becomes a priority to develop and implement special national programmes, adapted to the various local contexts.

As the state, through public policies, fails to cover all intervention needs for these target groups, we started from the idea that we can succeed in elaborating a project model to demonstrate the usefulness and effectiveness of academic involvement in community life. Conjointly, one of the missions of higher education is to facilitate student and staff involvement in solving everyday life problems faced by community, the final purpose of the educational process targeting precisely to establish mutual relations with economic and social environment.

The project directed towards developing a partnership between the University of Pitesti and a rural community from a disadvantaged geographic area in western country, in order to implement a pilot program of evaluation and intervention for the promotion of health for the benefit of the inhabitants of that area.

## 2. MATERIALS AND METHODS

The purpose of this project aimed to apply a sanogenetic intervention in a rural population, from a disadvantaged geographical area. Thus, 50 students in first year of study in Physical Therapy and 4 teachers were involved in assessment and intervention activities for optimization of the individual

and collective health status of inhabitants of a village located in the Caras-Severin district, in the Cerna Mountains (medium altitude of 700 m).

The activities referred to: subjects health assessment (medical diagnostic, anthropometric and physiometric measurements); recommending and implementing of programs of physiotherapy, prophylaxis and rehabilitation; conducting activities to provide opportunities for support and social interaction. Practically, 15 subjects were included in the study group, with age between 18-78 years, 7 men and 8 women, belonging to a number of 6 families.

For each subject we performed a semistructured anamnestic interview, a complete medical physical exam on apparatus and systems, as well as a series of somatic and functional assessments. During anamnesis we had been interested in physiological and pathological personal antecedents of each investigated subject, professional and occupational history, level of education, lifestyle and risk behaviours (smoking, alcohol consumption, type of food), regime of physical activity, place of living, environmental resources/barriers, social interactions, local cultural habits, addressing the health services etc. Also, systematic observations were carried out and locally routed on the environmental factors that interfere with the activities of daily living of the inhabitants, on a case by case basis extending the collection of information by researching additional documents (medical records of subjects, touristic brochures of informing over the visited sightseeing area, Internet sites containing useful information for data dissemination in conjunction with local community etc.).

Under these circumstances, for each subject we completed a somatic and functional evaluation form, with the following details:

- identification data, anamnestic data;
- height, weight, body mass index (BMI), percentage of adipose tissue (body fat monitor);
- the thoracic diameters (antero-posterior and transverse), bitrohanterian and biacromial diameters, thoracic perimeters (rest, inspire, exhale), abdominal perimeter;
- Schober test, finger-ground test;
- goniometry for shoulder, elbow, hand, hip, knee, ankle;
- heart rate and blood pressure measurements;
- determination of respiratory frequency and peak flow meter test;
- biochemistry investigations: pulsoximetry, blood glucose, summary urine test (Clinistix).

This model of evaluation form was designed in order to perform a rapidly and systematic investigation of subjects condition, a screening of their health status.

Therefore, visits have been done in the local community, with the distribution of assessment activities in 4 workshops, each consisting of one teacher and 10 students. For considerations regarding time and space, arranging an evaluation circuit, which was then run by each subject, was the preferred option.

Following the completion of all evaluations, we proposed and applied to each subject a program of therapeutic education and health counselling, as well as a short physiotherapy session, with a prophylactic and rehabilitation character, based on massage, passive and active mobilization, stretching exercises, postures, exercises of medical gymnastics, etc.

Considering the heterogeneity of investigated subjects, which is determined by the specific conditions of a rural community that is distributed over a broad geographical area, we can consider that our research experimental design can be acknowledged as that of a series of case studies. For this reason, the study results will be presented in the form of the most characteristic typology without using inferential statistical methods.

Furthermore, the limits of such a research start exactly from the difficulty of generalizing the recorded data, the most appropriate formula being that of individualisation of reports. However this situation may become an opportunity, in terms of appealing to the principle of patient/client centred

approach, which is very much appreciated and used in medical rehabilitation, physiotherapy and occupational therapy.

### 3. RESULTS AND DISCUSSIONS

As a result of field observations, documenting and discussions with residents from visited place, as well as with persons who have managerial responsibilities and are considered as an authority for the local community, we have extracted a series of important information for delimiting the natural frame of life of these persons.

Hence, the visited community lives in an isolated geographical area, located just north of the 45° parallel (45 degrees north latitude), at a distance of 35 km from the nearest town, having difficult access along a rugged mountain route, with tourist sign or travel mark.

The respective area is characterized by a temperate continental climate, with an annual average temperature of 8.5 degrees, with relatively high humidity and low temperatures in winter. As regards to the organization of the rural community, we can mention the existence of several individual households that are scattered over a wide area. Speaking about the population density this is greatly reduced (less than 10 inhabitants per km<sup>2</sup>). Additionally, the population structure is characterized by a sex ratio of approximate 1, with a high percentage of elderly and a reduced one of children. Besides, during the last two decades the recorded tendency have being of depopulation of the area, a phenomenon noted also in other disadvantaged geographical areas of Romania.

Most residents are involved in socio-economical activities in agriculture, maintenance of households, and only a small population segment is temporarily employed in other economic sectors, with or without shuttle.

As in other areas, rural or urban (Marza et al., 2015), most of family income is intended to cover the basal needs related to daily life (food, clothing, supplies, etc.).

Within the visited village there is a religious community of Christian worship, grouped around a small church. There is also a local school, where primary schools classes are taught by grouping children by age. For courses in secondary school, children have to go to a larger school, which is located in the center of the commune that the village belongs too.

In respect to housing conditions, we can note that there is a limited access to water resources, being required the transport of water from local springs, which are situated far away. There are no facilities related to running water in most households, heating is possible only using wood fuel and there is no connection to the power grid.

Most residents are assigned to a family physician that is located in the nearest commune, with no possibilities of health care services provided at home.

The physical activity regime of residents is high, given the daily distances travelled on a mountain trail, the farm working activities performed in their private households and for the daily living sustenance. Other studies have revealed that physical inactivity is less common in rural populations in Romania, with reference to young population (Sandor et al., 2011).

Continuing this perspective we can affirm the fact that, through the constraints imposed by living environment, to some extent residents of this isolated areas benefit from the protective effects of regular physical activity, but then again in the conditions in which the exercise does not exceed the overload of the organism.

Food regime of residents is a mixed one, normocaloric, based on local traditional products, fruits and vegetables from owned gardens, meat and dairy products from private raised animals, and less alimentary products regularly procured from loco-regional food supply units. Family income being relatively small, most people rely on their own products, which are distinguished by the ecological character, with reduced intake of chemicals and food additives.

However it is difficult to quantify the proportion in which the residents of rural area turn to food other than that of self-production, aspect confirmed by other authors (Petroman et al., 2013).

At the same time, the nutritional status of the majority of evaluated subjects is within the category of normal weight status (66.7% of subjects), a percentage of 26.7% of subjects being overweight and 6.6% underweight respectively.

It can be also noted that the body composition of subjects is normal, with reduced percentages of body fat, in terms of already mentioned daily physical demands sustained and natural type diet.

According to recent data of the National Institute of Statistics (INS), in Romania the percentage of obesity is higher in rural areas in relation to urban while for overweight the records are opposite (INS, 2015). Without being able to generalize, we can observe that, for the studied group, the nutrition status of subjects exclude the obesity cases.

Another aspect we focused on was represented by the personal habits of subjects. Thus, 33.3% of subjects used to consume foods rich in containing animal fats, 40% of them are smokers (with an average of 10 to 20 cigarettes/day) and 80% consume small amounts of alcohol, daily or occasionally, usually prepared at local level.

Overall, after discussions with all 15 subjects we found that they have limited knowledge in regard to sanogenetic behaviours and give little importance to lifestyle, most of them following local cultural customs and traditions, and being strongly anchored in the traditions of the community. This suggests the need for educational interventions for prevention and sanogenetic behaviour across risk groups, fact which is otherwise recommended through national health strategies (Doboş, 2005).

The evaluation results of subject's health indicate that adults, especially the elderly, have comorbidities with a diverse pattern, only 26.7% of subjects being clinically healthy and without significant medical history.

Most of the recorded pathology includes cardiovascular chronic diseases (hypertension, ischemic cardiomyopathy, and deficits post ischemic stroke), metabolic diseases (diabetes, senile osteoporosis), respiratory diseases (chronic obstructive pulmonary disease) and degenerative diseases (spinal and peripheral osteoarthritis, presbycusis, cataract and presbyopia). It is confirmed that 46.7% of subjects present a history of traumatic events, due to falls or household/professional injuries that needed orthopaedic and surgical treatment, and 13.3% of subjects present locomotor sequels, but without limits or restrictions in the level of autonomy.

This suggests the existence of inherent risks of living in a hostile environment, which raises questions about the possibility of rapid access to emergency medical services, especially during periods of bad weather.

For the interpretation of the morbidity spectrum of the study group we can appeal to recent numbers provided by the INS, under which the people who live in rural area from Romania and are affected by a chronic disease or health problem represent approximately 24.9% of the population (less than for urban areas, where records reveal a rate of 26.8%) (INS, 2015). Thereby, we consider that at the level of our study group there are significant health problems with evolutionary potential in the long term, which require specialized medical supervision and prophylactic and curative type intervention.

Likewise the assessments carried out on the field have highlighted a series of issues, which can be summarized as follow:

- anthropometric and physiometric data were estimated in relation to recommended average normal values by age and gender, the measurement results being correlated with the above mentioned diseases;

- muscle and arthrokinetic investigations revealed values above population average, suggesting a high motor potential of subjects;
- cardiovascular and respiratory indicators (except for one subject who had elevated blood pressure values at rest of 160/95 mm Hg) confirms a good adaptability of the subjects to exercise, despite recording the history of cardio-respiratory diagnoses;
- there were identified two cases of hypoglycemia (blood glucose above 120 mg%), but the tests were not fasted prior applied;
- urinary test raised suspicion of urinary infection in two females.

After finalizing the evaluation circuits, each subject participated in a short program of therapeutic education and health counselling, which focused on their individual needs. Also, we applied individualized programs of physiotherapy, prophylaxis and rehabilitation, insisting upon the idea of repeating and continuing on long-term the exercises and techniques presented.

Worth to mention is also the high adherence and the increased level of residents' participation to the proposed therapeutic solutions. Last but not least, the hospitality and generosity of these people can be real role models for social networking, with an extrapolative character in the specific conditions of urban life.

#### 4. CONCLUSIONS

The quality of life of the rural population in Romania is the subject of many studies and optimization strategies (Nițescu, 2014), but, unfortunately, most solutions do not exceed the level of intentionality. The concept of rural, maintainable, sustainable and harmonious development (Burja & Burja, 2014; Borza, 2015), mainly constructed on the economic dimension (Dachin, 2008) and with its noble ideals, is very attractive, but its applicability is very difficult, especially in the disadvantaged geographic areas.

Overall, study results, with medical and anthropological value, indicate a high adaptability of the subjects in the difficult life environment (involving constraints of daily living), despite the pathological wear fund accumulated over time.

Life under difficult conditions and privations surprisingly increases the organism's adaptive potential, which explains the present performance of subjects and their resistance to environmental barriers.

Observation and data obtained from the field confirm the difficult life of the inhabitants of disadvantaged geographic areas, due to physical overloading, economic and social constraints, environmental factors with aggressive potential etc.

If most studies in this field offers a pessimistic perspective on rural areas in Romania, in terms of infrastructure development, household equipment and access to public utilities and facilities (Chipea et al., 2013), we can appreciate, however, that beyond these barriers, people in deprived areas live on a much closer desideratum of integration in an ecosystem.

Despite the hardships of life, these people show optimism, based on the joy of a quiet existence in which wellbeing is not subject to material benefits of a stressful, overcrowded and over-technologized urban environment.

For residents of rural areas that are disadvantaged geographically, high adaptability to hostile natural environment becomes a form of continuous challenge in everyday life, in which individual resources are required permanent and often exceeded the levels of compensation.

The project results can be summarized as follows: a database regarding the health of the subjects; a model of therapeutic education and promoting of a healthy lifestyle among inhabitants; creating a network of social interaction among project participants; professional and transversal skills development of students; developing research skills of teachers.

The project offered also the possibility of optimizing the students training by developing their professional skills of assessment and physiotherapeutic intervention, their transversal skills of teamwork, respect for the principles for professional ethics and self-assessment of needs for professional training and also for developing good inter-institutional relations, designed to facilitate the development of specific research activities, in benefit of both parts.

In circumstances where the need for social interaction is strongly manifested in isolated communities, the sanogenetic intervention projects with a social component are necessary as an effective alternatives for optimization of medical and functional status of the inhabitants of these disadvantaged areas, offering the possibility to combat those feelings of loneliness and lack of belonging to the community that these people live in.

## 5. REFERENCES

- \*\*\* Institutul Național de Statistică (INS) (2015). Domeniul: Statistica sănătății. Starea de sănătate percepută în anul 2014 de populația din România, Comunicat de presă, nr. 321, [http://www.insse.ro/cms/sites/default/files/com\\_presa/com\\_pdf/sanatare2015r\\_0.pdf](http://www.insse.ro/cms/sites/default/files/com_presa/com_pdf/sanatare2015r_0.pdf)
- \*\*\* Legea nr. 20 din 15 ianuarie 1999 pentru aprobarea Ordonanței de urgență a Guvernului nr. 24/1998 privind regimul zonelor defavorizate.
- Borza, M. (2015). The funding projects for sustainable development of Romanian rural area: benefits and limits. *Economy Transdisciplinarity Cognition*, 18(1), 53-62.
- Burja, C., Burja, V. (2014). Sustainable development of rural areas: a challenge for Romania. *Environmental Engineering and Management Journal*, 13(8), 1861-1871.
- Chipea, F., Osvat, C., Marc, C. (2013). The assessment of health services for children in Romania. *Revista de cercetare și intervenție socială*, 41, 40-59.
- Cicea, C. (2009). Factors of access to public health services in Romania. The Ninth International Conference "Investments and Economic Recovery", May 22 – 23, 2009. *Economia seria Management*, 12(2), 32-39.
- Dachin, A. (2008). Rural development – a basic condition for narrowing regional disparities in Romania. *Romanian Journal of Regional Science*, 2(2), 106-117.
- Doboș, C. (2005). Serviciile publice de sănătate și dezvoltarea socială. *Calitatea vieții*, XVI(3-4), 373-385.
- Doboș, C. (2005). Serviciile publice de sănătate și dezvoltarea socială. *Calitatea vieții*, XVI (3-4), 373-385.
- Liu, M., Zhang, Q., Lu, M., Kwon, C.S., Quan, H. (2007). Rural and urban disparity in health services utilization in China, *Med Care*, 45(8), 767-774.
- Mârza, B., Mărcuța, L., Mărcuța, A. (2015). Statistical analysis of the indicators that have influenced the standard of living in Romania during the economic crisis. *Procedia Economics and Finance*, 27, 587 – 593.
- Nițescu, A. (2014). Aspects of rural development in Romania. *Annals of the University of Petroșani, Economics*, 14(1), 251-258.
- Petroman, I., Marin, D., Gabris, D. R., Ciolac, R., Văduva, L. (2013). Consumption of food in quantitative terms on average of origin. *Animal Science and Biotechnologies*. 46(1), 382-384.
- Probst, J.C., Moore, C.G., Baxley, E.G. (2005). Update: health insurance and utilization of care among rural adolescents. *J Rural Health*, 21(4), 279-287.
- Salinas, J.J., Al Snih, S., Markides, K., Ray, L.A., Angel, R.J. (2010). The rural-urban divide: health services utilization among older Mexicans in Mexico. *J Rural Health*, 26(4), 333-341, doi: 10.1111/j.1748-0361.2010.00297.x.
- Sandor, I., Biddle, S.J.H., Soos, I. (2011). The relation between physical activity and rural space concerning 13-18 year-old Romanian youth. *Journal of Settlements and Spatial Planning*, 2(1), 53-55.
- Șoitu, D., Rebeleanu, A., Oprea, L. (2013). Politicile publice sociomedicale, între „vulnerabilității” și „riscuri”. *Revista Română de Bioetică*, 11 (1), 18-29.
- Vâlceanu, D., Matei, M., Crintea, C., Doband, I. (2012). Interregional disparities on rural-urban, West-centre regions, Romania. *Management in health*, 16 (2), <http://journal.managementinhealth.com/index.php/rms/article/view/231/709>.
- Vlădescu, C. (2004). Sănătate publică și management sanitar. București: Cartea Universitară.
- Zanoschi, G. (2003). Sănătate publică și management sanitar. Iași: Edit Dan.