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MEDICAL TOURISM IN VATRA DORNEI RESORT

Case study

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Abstract

Both at national and international level, medical tourism in general and the therapeutic in particular tend to be more and more often prescribed and utilized as an extremely efficient alternative therapeutic practice in treating various medical affections with almost the same positive results as the ones obtained after therapies/treatments under medication, but with fewer financial resources. Vatra Dornei resort owns a great diversity regarding both natural therapeutic factors (climateric, mineral, hydromineral, pedologic therapeutic factors, moffettes, aerosols, etc.) and the spectrum of affections treated (from simple anaemia to complex disease of the locomotory, muscular system, etc.). Practiced since the 19th century, medical tourism (which turned Vatra Dornei resort into a "Meca of recovering") has represented and continues to represent at present an important attraction factor for the tourists who choose to spend their holidays for recovering and maintaining health state.

INTRODUCTION

Even if a good health state doesn't represent the only desirable goal of existence, but only a component of wealth, in a general sense (Dumitrache, 2003), acquiring and maintaining health is the main objective of any individual, family, community and human society (Ioanac 2000), reason for which, in defending population's health, a great emphasis is on the medicine of the healthy individual, on the measures regarding the maintainance of physical and psychical health (Teleki et al 1984), in the absence of which the progress of any kind would be almost impossible.

Certain factors such as: the effects and impact in growing of the so-called "modern civilization disease"; the trend of combining holiday with the need of an active rest and body's recovery; the older people worrying more and more about maintaining health, preventing and fighting against getting old or the individuals' concern (especially the women) of maintaining their vitality and beauty, lead to a strong development of the balneal and health tourism at international level (Condrea et al, 2014).

Compared to the hospital medicine which operates especially with surgical and pharmacodynamical therapeutic means, the health resort brings a different methodology, with an accent on the reaction and regulation therapy (Teleki et al, 2014), and the balneoclimateric treatment with a specific methodology, scientifically founded, (Nemes et al, 2010), brings an important contribution to the prophylaxis and/or the cure of different medical affections.

I. Medical tourism-general notions

I.1. Medical tourism at international level

Considered the most dynamic part of tourism, the health tourism includes: balneal tourism (balneal recovery treatment, which requires a longer period of staying 18-21 days), maintainance (treatment for keeping fit or for a good mental state) and medical tourism (surgery and treatment) (Dinu et al, 2011), the latter having, it seems, an annual growing rate of approx. 20% (Andrei et al, 2014).

In some opinions (Cianga et al, 2009- after Dinu et al, 2011), the etymology of the SPA concept seems to come from the latin "Saluti per Aqua", while others connect it to the name of the Belgian town Spa, known since the Middle Ages for its mineral waters (Dinu et al, 2011), and at present, the main destinations in the medical tourism industry are (according to United Nations 2010, after Andrei et al, 2014): Asia (in countries like India, Thailand, Singapore, Malaesia, the Philipines and China), the Middle East and Africa (Tunice, Jordany, the Emmirates, Arabia Saudita) or Latin America and the Carribeans (Brasil, Chile,

Columbia, Costa Rica, Cube, Dominican Republic, Mexico, Panama, Bahamas, Barbados, Jamaica).

If during the communist period, the balneal tourism functioned at its full capacity, at present, the interest for it decreased dramatically, the demand for balneal tourism coming from the retired persons (even if this type of tourism is addressed to all age categories), phenomenon having direct impact on the balneal infrastructure of low quality and unfunctional in many cases (for more informations to see Dinu et al, 2011, Erdeli et al, 2011, Ioan et al, 2014, Luca et al., 2014, Snak, 1976, Teodoreanu, 2004, Talaba et al, 2010).

Despite all these facts, tourism development also brings less desirable effects, such as: the creation of two parallel health systems (one for the foreign patients who pay for the medical services and are offered high quality services and one for the local population, where only the basic services are offered - an illustrative example being India) or the absorption of the best doctors from the public sector to private clinics, which offer higher wages and in which the local population can't get medical assistance because of the high costs, thus affecting the quality of public health system (York, 2008, after Andrei et al, 2014).

I.2. Balneal tourism in Romania

Practiced since the 19th century, the balneal tourism has represented and still continues to represent an important attraction factor in the resort, both for the persons with a precarious health state, and with preventive purpose for the population in mass (Cruceanu et al, 2015), this representing both a classical medicine alternative, and its completion.

From the accomodation capacity point of view, balneal tourism is on the fourth place, before the sea regions and after the mountainous ones (Aluculesei & Nistoreanu, 2014), but, even if Romania owns important natural resources in balnear resorts, hasn't managed to attract a significant number of foreign tourists for treatment, fact especially due to the lack of investments in this field (implicitly in the specific touristic infrastructure) and to the lack of a clear strategy of its development. Even if the number of beds in sanatoriums has raised from 910 in 2002 to 1939 in 2012, the number of tourists arrived and the number of accomodation has decreased in this period. The number of foreign tourists arrived is also only about 5.6% from the total number of arrivals in 1994 and this indicator decreases to 4.2% in 2012. A similar trend is observed for the number of accomodation of foreign tourists in the resort: 5.3% in 1994, 2.6% in 2012 (Andrei et al., 2014), and in 2013 the percentage is of only 4% (Aluculesei & Nistoreanu, 2014).

According to the National Institute of Statistics (through the Press official statement no. 69/2015), in 2015 the number of non-residents

tourists in hotels and pensions has been about 1911,4 thousand and the total of their expenses about 5090,9 million lei. The main reason of their staying in Romania was represented by the business, attending to congresses, conferences, courses, fairs and exhibitions (64% from the total number of non-residents tourists), their expenses representing 72,8% from the total expenses. The second reason was represented by the self-interested journeys (36,0% from the total number of non-residents tourists), their expenses representing 27,2% from the total expenses. These include the journeys for holidays, shopping, cultural and sport events, visiting friends and relatives, **medical treatment**, religion, transit and other activities.

The existence of certain mineral exploitable resources, of some climatic and environmental factors scientifically recognized and of some proper technical facilities, offer the opportunity for the urban areas to be classified as balneoclimateric resorts, the case of Vatra Dornei resort (Garbea, 2014), known since 1750, grouping today three special treatment bases: Calimani, Intus and Ozon (Muresan et al., 2012).

With over 70 balneal existing resorts, only 25 are classified as of national interest and only a few are attractive for the foreign tourists: Baile Felix, Baile Herculane, Vatra Dornei (with a touristic attractivity index of 2.11 - sixth place after Baile Herculane, Calimanesti-Caciulata, Slanic Moldova, Eforie Nord-Techirghiol, Baile Tusnad) (for more informations regarding the evolution of this type of tourism, to see: Dinu et al, 2011, Dimitriu et al, 2014, Dinca, 2013, Dinca & Surugiu, 2013, Dinca et al, 2014, Turnock, 2005, Ielenicz et al, 2010, Brezuleanu, 2008, Briciu & Oprea-Gancevici, 2011, Iatu et al, 2011, Minciu & Stanciu, 2010, Patrichi et al, 2013, Talaba et al, 2010).

I.3. The appearance of balneal tourism in Vatra Dornei health resorts

The interest of the evolution of various physical and geographical processes in general and the tourism in particular (with special mentions of the Vatra Dornei health resort), can be found in numerous studies and publications, such as those realised by: Taranu (1999, 2002), Gherman (2008, 2011), Dinca (2013), Dinca et al (2014), Iatu et al (2011), Muntele & Iatu (2006), Manescu et al (2014), Calugaru et al (2014), Ciobanu (2012), Cojoc et al (2014), Cruceanu et al (2014, 2015), Erdeli et al (2014), Ghiorghilas (2011), Hapenciu & Nastase (2006), Romanescu et al (2014), Stoica et al (2014) etc.

Vatra Dornei is an intramountainous area, with limited agricultural development possibilities - especially based on cattle raising, with a rich forestry industry, mineral water resources, therapeutic muds, attractive landscapes, resources

that can be better promoted through tourism. Having these advantages, the area has also been entitled "Bucovina's Pearl" (Petrescu & Burny, 2008) or even a "Mecca of recovery" (Taranu, 1999).

About the mineral springs are first reminded in 1790 in the journey writings of Hacquet de Nuremberg, and the region's chief doctor - Dr. Pluschk - create after 1809 a spa installation with ten cabinets for bathrooms, inauguration which will take place in 1896 after the capture of seven mineral spring (for more informations regarding the valorization of hydromineral resources from this geographical area, see Stoicescu & Munteanu 1976; Pricajan, 1972; Popa, 1997, Taranu, 1999, Gherman, 2011, Nichitus, 1997, Pata, 1999).

At 29th of September 1855, date of turning the place into fair, the balneotherapy had a privileged role in the economic and social life system (Taranu, 1999), fact confirmed by the balneologists Congress from Vienne in 1899 which positively appreciates the value of mineral waters in the resort or the visit at Vatra Dornei made by the participants to the fifth Congress of the Romanian doctors in 1914 (Stoicescu & Munteanu, 1976).

II. Balneoclimateric-therapy

II.1. What kind of medical affections are treated in Vatra Dornei resort?

If until recently Vatra Dornei has been associated to rheumatic affections, this fact was not due to the growing incidence of the disease in the area, but rather to the therapeutic practices predominantly used in this sense (Muntele et al, 2014).

Indications regarding the utilization of therapeutic cure factors focus on a various spectrum of medical affections, (after Taranu, 1999), such as:

-myocardium affections

-states after acute myocardium, toxic-infectious (rheumatic, diphtheric, etc.) or after recurrences

-myocardiodystrophy of metabolic origin, endocrinologic, toxic, infectious, probably with rare phenomena of pectoral angina, cardiac insufficiency of first degree or rhythm troubles;

-myocardium cardiosclerosis or arteriosclerosis, paroxysmal tachycardia, fibrillation

-side-effects of myocardial infarction, at least after a year from acute phenomena, without cardiac insufficiency signs

-valvular and aortic lesions

-vessels disease

-coronary irrigation disorders, angina with easy strokes

-arterosclerosis of extremity vessels with intermittent claudication phenomena, with trophic disorders

- obstructive thrombin (Burger's disease) in ischaemia and except active periods and gangrene;
- residual side-effects after thromboflebitis (pains,tumefactions,inflations,skin trophicmodifications)
- hypertonic disease
- hypotonic disease
- acrocyanosis
- erythromelalgia
- Reynaud disease
- cardiac neurosis with or without rhythm disorders(paroxysmal tachycardia which appears rarely and lasts a little) and extrasystole
- articulations,bones and muscular disease**
- degenerative chronic rheumatism mono or poliarticular (arthrosis,spondylosis)
- arthritis and poliartthritis with known cause(secondary) chronic,asthenic forms,with infectious etiology,traumatic,etc.
- allergic states after Soloski-Boullaud rheumatism
- vessels,muscles and tendons disease**
- fractures of delayed consolidation or with painful callus where there are no organic causes(syphillis,malaria)
- postinfectious or traumatic osteitis with sustaining and locomotory function disorders; myosites, fibromyosites, myalgia, bursyitis, postinfectious tendovaginitis,toxic,traumatic,with slow recovery or periodically aggravating;
- peripheral nervous system disease**
- radiculity,poliradiculity-plexus disease,neuritis,polineuritis,rheumatic neuralgia,infectious,traumatic,toxic,dependent on gynecological disease or on spine disease
- posttraumatic side-effects of the peripheral nervous system not requiring surgery and counting,if possible,on function reestablishment.

In Vatra Dornei resort other medical affections are recommended for cure,if these are associated with the above mentioned affections.We can thus enumerate:gynecological disease(in summer for the rheumatology sanatorium,and for the cardiology one all the year round);secondary anaemia; endocrynological affections (hyperthyroidism), hypoacid gastritis etc.

Counter-indications

- all acute disease,the infectious ones in the contagious period
- all acute venereal diseases and contagious
- psychical diseases,among which progressive-evolutive general paralysis;
- narcomania
- malignant tumors,irrespective of the form,location or stage
- all serious blood diseases
- abundant and frequent haemorrhages of any kind
- malaria
- cardiovascular insufficiency of II B degree and III
- acute endocarditis,subacute and reccurent

- myocardium chronic affections,with rhythm disorders,
- coronary insufficiency associated with frequent crises of angina
- myocardium infarct side-effects,one year earlier from the accident or after a year if it presents cardiac insufficiency signs
- mitral stenosis with pronounced stasis in slow blood circulation
- hypertonic disease,with advanced phenomena of myocardiac renal or cerebral sclerosis
- strong phenomena of arteriosclerosis
- heart's aneurisms or of the main vessels
- obliterant thrombosis and extremities arteriosclerosis
- reccurent or migratory thrombophlebitis
- arthritis and accute poliartthritis
- evolutive chronic poliartthritis and spondylitis ancylopoetic with progressive evolution of the pathological process
- osseous lesions or tuberculous articular
- osteomyelitis with great side-effects or big metal pieces in the osteomyolitic focus (after Taranu,1999).

II.2.How are these medical affections treated?

II.2.1.Medical techniques and procedures used in the prophylaxis and treatment of medical affections

The treatment procedures,techniques and methodology are similar in most treatment bases,varying in some cases through the period and costs of a medical procedure,different according to the doctor's reccomendations,the economic politics existent in each of these balneal units and of course to the marketing strategies used for the attraction of a large number of direct beneficiaries.

Examples of medical procedures used in the treatment bases in Vatra Dornei (and in the Rest and Treatment Base "Procopie and Elisabeta" from Dorna Arini-at approx.3 km from the resort),are as it follows:**medical diathermy,lasertherapy,galvanic baths,plant baths,dry and humid sauna,ozone therapy** at Dorna Arini and in **carbon** at Vatra Dornei,**diadynamic currents,Tens,rectangular and inferential,ultrasound,jacuzzi,mud packings**(at Dorna Arini brought from Techirghiol),**short waves,magneto therapy,aerosols,etc.**(Muntele et al, 2014).

Besides these we can also mention:

-air therapy; hot mud applications; hydro-thermo-therapy installations; electro kineto therapy, kinetotherapy; basin for hydro kinetotytherapy; inhalotherapy; mecanotherapy, ground cure(Berlescu,1996);**contrasting thermic factors applications; crenotherapy; dietotherapy; sweating cures; mecanic factors**

applications under the form of massage(Teleki et al.,1984).

It is considered that water is correctly bottled if it preserves all qualities for a period of four-six months from bottling, but by using it, there's the patient's tendency to abuse of prolonged cures (Teleki,1984).

An important element in the balneal therapeutic practice is the **balneal reaction**. This comprises (according to Nemes et al.,2010) vegetative modifications determined by the stimulating action of the natural factors used in the balneoclimateric treatments on the human body. It appears like unspecific reactions of adaptive type, which depend on the individual reactivity level: the same stimulus can release moderate or important reactions, influencing a pathology's evolution, whether in a favorable way, or to a decompensation. These have a phasic evolution (after some authors they appear after 10 days) and they manifest through the intensification of the disease symptoms. For example, in the locomotory system affections: pain intensification, tiring states, little subfebrilities (Nemes et al,2010).

II.2.2. Natural therapeutic factors used in the balneoclimateric resort

The Oriental Carpathians contain numerous mineral springs that provide famous resorts in Romania (among which Vatra Dornei), waters used for obtaining different therapeutic effects (Magdas et al.,2009, Botezatu & Iacob,2006), and of course for the maintaining and/or the prophylaxis of certain medical affections.

Mineral waters. It is known that not any mineral water is also therapeutic, thus, only the waters the physico-chemical qualities of which can have pharmaco-dynamic effects, are considered therapeutic and used therapeutical (Teleki, et al.,1984, Gherman,2011), for prophylactic, curative and recovery purpose, predominantly in the treatment bases and only sometimes under the doctor's recommendation, at the patient's location (Teleki et al.,1984).

The moffettes. The carbon dioxide emanation met under the form of natural gas in the volcanic areas (Teleki et al.,1984) is, it seems, much superior to the carbo mineral waters, because they reduce the thermic and mechanic factor present in the baths case, an advantage especially for the patients with cardiovascular affections (Popescu & Patru, 2003), affections successfully treated in this resort.

Therapeutic muds. Present at Poiana Stampei, the peat mud, used in the empirical medicine at Dorna a long time ago (Taranu, 1999), is at present, for certain political and/or economical reasons, exploited and commercialized by a private company as flower fertilizer and its

valorization for therapeutic purpose is interrupted at the moment (Muntele et al.,2014).

The tonic-stimulating bioclimate. In the case of the resort, the air temperature is situated at about +6,4 C degrees, the average atmospheric pressure of 690 mm, the annual average precipitations of 900 mm, most part of the year accessible to the west, Atlantic air masses (Popa,1997), the insolation (the sun's shining period) is moderated all year long and the day's average length rises at this latitude at 7 hours and 40 minutes between the winter solstice and the summer solstice, compared to 6 hours in the south of the country (Chirita,2003, after Cruceanu et al.,2014).

In general, the balnear cure can be done in all seasons, but there are, however, significant seasonal differences in the climate's action in certain resorts, differences that can become, for some patients, unfavorable, while for others play the role of additional therapeutic factor (Teleki et al.,1984). Thus, accidents are tried to be avoided through the overdose of biological action of climatic factors, accidents generally determined by: an exaggerated contribution of solar caloric energy in the body (for eg. caloric collapse, caloric syncope, caloric shock), accidents through excessive cooling (cold, catarrh, pharyngitis, flu, etc.), accidents determined by solar radiation (erythema, photoophthalmia), accidents due to the biological action of luminous solar radiation (photodermatitis, actinodermatitis, forodynamic eruptions, cutaneous photoallergies, shingles, herpes (Teodoreanu et al,1984).

III. Demand and offer

III.1. The demand for the balneary tourism

According to some studies (Muresan et al.,2012), it can be observed that the tourists choosing Vatra Dornei as destination, are generally persons with a high educational level (more than 50% of them with university studies), with an average age of 45 and the main services requested during their stay were: accommodation (100%), food and beverage (91,22%) and **treatment (34,46%)**. Thus, the tourists in Vatra Dornei are generally middle-aged, with average monthly income and who prefer to come here to relax and to admire the beauty of the landscape.

Contrary to the trend at national level where the average staying length in the resorts is about 8 days, in this case, the average period is about only 2,84 days (Muresan et al.,2012).

III.2. Balneal tourism offer

III.2.1. Treatment bases

The main touristic complex **S.C. DORNA TURISM S.A.** present in the resort is formed from Calimani Hotel and Bradul Hotel, both three star

hotels and having a treatment base in common (see Table no. 1, Table no.2,)

IV.Tendencies and perspectives of balneal tourism in Vatra Dornei

The study realized by Dinca et al.,2014,illustrates the great dependence of tourism in Vatra Dornei on the local natural resources and a high exposure to the effects of climatic changes.This can affect the therapeutic activities in open air,mountain climbing or winter sports tourism,that form the touristic offer nucleus.A lot of the actors implied also declare that the effects of climatic changes are already felt by the touristic activities in Vatra Dornei,both negatively by the reduction of snow's quality and duration that can endanger winter sports,and positively,by extending the summer touristic season to the autumn months,once with the rising of the thermic comfort (Dinca et al.,2014).

Another problem is the local natural resources used by the treatment bases in the therapeutic practices,with an accent on the therapeutic muds(the peat from Poiana Stampei) and the moffette gas(used less and less in the resort).For the first case,of the peat deposits,the situation is more worrying as this resource is used at the moment for a totally different purpose(as flower fertilizer),and for the second case-the moffette gas,which,even though it represents an abundant resource,the spaces/buildings especially built for the therapeutic practice,are less used,fact due especially to the non-inclusion of these practices in the list of compensated treatments of the Health Insurances or Retirement Insurances House.

Similar information can be found in *The year-book of Suceava County - 2012*) - The National Institute of Statistics - The Statistics Direction of Suceava County), *The statistic breviary of Suceava County*, 2013, or on the web-site:

<http://www.cnpas.org/portal/media-type/html/language/ro/user/anon/page/ticket>
<http://www.insse.ro/cms/>
<http://www.vatra-dornei.ro/>

CONCLUSIONS

-Vatra Dornei town owns an important touristic potential in general,and a balneal one in particular,potential the valorization of which has contributed,in time,to its balneoclimateric resort status.

-the exploitation,valorization and management of natural and/or anthropic therapeutic resources in the resort,has faced differences from one historical period to another,according to the economical and socio-political existent factors.

-however,Vatra Dornei tends to be more and more associated lately to active tourism (for eg.

adventure tourism,mountainous tourism),rural tourism,ecotourism,ethnographic,etc.and less to the balneal tourism.Thus,the future tendencies regarding the main tourism forms practiced,can be predicted by the number,intensity and predominance of the first ones.

-if until recently Vatra Dornei has been associated to rheumatic affections,this thing was not due to the disease's increasing incidence in this geographical area,but rather to the therapeutic practices used in the treatment bases for prophylactic and curative purpose,and of course the social and cultural stereotypes connected to the resort in general and to the affections treated here in particular.

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BIBLIOGRAPHY

- [1] Aluculesei, A-C, Nistoreanu, P., 2014, Exhaustiv Analysis of the Way in which were Promoted Romanian Spas/Water Thermal Villages at the November 2013 Edition of the Romanian Tourism Fair, *International Journal of Economic Practices and Theories*, Vol. 4, No.3, e-ISSN 2247-7225
- [2] Andrei, C-L, Tigu,G., Dragoiescu, R-M, Sinescu, C-J, 2014, Analysis of medical tourism for cardiovascular diseases, *Amfiteatru Economic – Contemporary Approaches and Challenges of Tourism Sustainability*, pp.1136-1150
- [3] Berlescu, E., 1996, *Mica enciclopedie de balneo-climatologie a Romaniei (Smal encyclopedia of Romania balneoclimatology)* , Editura All, Bucure ti
- [4] Brezuleanu, S., 2008, Studies regarding the sustainable development of rural tourism and agri-tourism in the Vatra Dornei microzone, Suceava county, *Sustainable tourism of rural tourism and agro-tourism – Cercet ri Agricole in Moldova*, Vol. XLII, NO.3(139) pp.81-86
- [5] Briciu, A-E., Oprea-Gancevici, D., 2011, The touristic potential of water resources in Suceava district, *Revista de Turism, studii i cercet ri în Turism*, No.11
- [6] Botezatu E., Iacob, O., 2006, Natural radionuclides in some romanian medicinal mineral water, *iaea.org*
- [7] Calugaru A., Mihai D., Nedelcu B.,2014, Flood prevention map on Bistrita river, Romania, In:

- SGEM - Conf. Proceedings, Bulgaria, vol. 19/issue 1*, pp. 19-25
- [8] Chirita V., 2003, *Depresiunea Dornelor Studiu fizico-geografic (Dornelor Depression – Physico-geographical study)*, Editura Universit ții Stefan cel Mare, Suceava
- [9] Ciobanu A., 2012, Strategies of Water resources use in the hidrographic area of the Bistrita river, In: *SGEM - Conf. Proceedings, Bulgaria, vol. 13/issue 2*, pp. 817-824
- [10] Cojoc G.M., Romanescu G., Tirnovan A., 2014, Exceptional floods on a developed river. Case study for Bistrita River from Oriental Carpathians (Romania), *Natural Hazards*, DOI: 10.1007/s11069-014-1439-2
- [11] Condrea, E., Stanciu, A-C, Constandache, M., 2014, The Role of Quality Assurance in Romanian Balneotherapeutic tourism services, *SEA – Practical, Application of Science, Volume II, Issue I (3)*, pages 117-122
- [12] Cruceanu, A., Muntele, I., Cazacu, M-D., 2015, The management of tourism and development in Vatra Dornei health resort from the sustainable development, in: *PEEC – Ecological Performance in a Competitive Economy - Conf. Proceedings*, Bucharest, Romania, 5-6 March,
- [13] Cruceanu A., Cojoc G. M., Cozma D-G., 2014, When the wather really influences our health state?, *SEA - Practical, Application Sci., vol. 3/issue 5*, pp. 261-268, 2014.
- [14] Dimitriu, R.I., Bulai, M., Minea, I., 2014, Mineral groundwater resources and health tourism in the Eastern Carpathians (Romania), in *SGEM Conf. Proceedings, vol.1*, pp.463-470
- [15] Dinca, A., Surugiu, C., Surugiu, M., 2014, Stakeholder perspectives on climate change effects on tourism activities in the northern Romanian Carpathians: Vatra Dornei resort case study, *Studies of Humain Geography Studies, Vol 8(1)*, pp.27-41
- [16] Dinca, A., Surugiu, C., 2013, Phases of development of Romania SPA tourism destinations, in *ICOT, Proceedings of the international conference on tourism*, Limassol, Cyprus 5-8 June, , Editor Konstantinos Andriotis
- [17] Dinca A., 2013, *Turismul durabil in Culoarul transcarpatic Gura Humorului – Campulung – Vatra Dornei (The sustainable tourism in Transcarpathian corridor – Gura Humorului – Campulung – Vatra Dornei)*, Editura Universit ții din București
- [18] Dinu, M., Zbughea, A., Cioaca, A., 2011, Health Care Tourism in Romania: Main Futures and Trends, *Journal of Tourism Challenges and Trends, vol.4*, no 2,
- [19] Dumitrache, L., 2003, *Geografie medicala. Metode si tehnici de analiza (Medical geography. Methods and techniques of analysis)*, Editura Universitar , Bucure ti
- [20] Erdeli, G., Dinca, A-I, Gheorghilas, A., Surigiu, C., 2011, Romanian SPA tourism: a communism paradigm in a post-communism era, *Journal of Studies and Research in Human Geographies, Volume 5(2)*, p.41- 56
- [21] Garbea, R-V, 2014, Tourism attractiveness of the urban environment in Moldavia, *Management & Marketing, Craiova, Issue 1*, pp 84-90
- [22] Gheorghilas, A, 2011, *Geografia turismului. Metode de analiz în turism (The geography of tourism. Methods of analysis in tourism)*, Editura Universitar , Bucuresti
- [23] Gherman R-V., 2011, *Vetre Satesti din Tara Dornelor – scurt documentar etnografic (Home villages from Tara Dornelor – a short ethnographic documentary)*, Look Art Graplics Chirilu , Vatra Dornei, Suceava
- [24] Gherman R-V, 2008, *Vatra Dornei intre legenda, istorie si viitor – ghid orientativ (Vatra Dornei between legend, history and future – indicative guide)*, Editura Lidana, Suceava
- [25] Hapenciuc V, Nastase, C., 2006, *Turismul la inceputul mileniului III – Provocari si tendinte (The tourism at the beginning of the Third Millenium – Challenges and Trends)*, Editura Sed com Libris, Iasi
- [26] Iatu, C., Munteanu, A., Boghinciu, M., Coca, A., Ibanescu, B., 2011, Active tourism in Dornelor basin – between possibilities and spatial manifestation, *International Journal of Energy and Environment, Volume 5, Issue 2*, p. 175-182
- [27] Ielenicz, M., Comanescu, L, Nedelea, A., 2010, Romania's Touristic Poytential: The Differentiation of the Potential Units, *South Asian Journal of Tourism and Heritaje*, Vol 3, No.1,
- [28] Ioan, C-A, Luca, F-A, Sasu, C, 2014, Personal marketing of doctors in the context of social networks, *Cross Cultural Management Journal*, pp.369-376
- [29] Ionac, N., 2000, *Mic tratat de geografie medicala (Small treaty og medical geography)*, Editura Universit ții din Bucure ti,
- [30] Luca, A. C., Ioan C.A.M., Luca F.A.I., 2014, The Role of Preventive Medicine and Marketing in Promoting of Anti-smoking Campaigns, *Management Intercultural*, Issue 31, pages 53-58,
- [31] Magdas, D., Cuna, S., Bordea, P., Balas, G., Cuna, C., Dordai, E., Falub, M, 2009, Study of mineral water resources from the Eastern Carpathians using stable isotopes, *Rapid*

- Communications in Mass Spectrometry, Volume 23, Issue 16, pp 2568-2572*
- [31] Manescu Stoica I., Battes K.W., Prisecaru M., 2014, Study on the status of fish communities on tributaries situated in the mountain area of Bistrita river upstream reservoirs, In: *Stud. Cerc. Biol. - Univ. "Vasile Alecsandri" of Bacau, Romania, vol. 23/issue 2*, pp. 60-67
- [32] Minciu, R., Stanciu P., 2010, Bucovina's tourism perspectives – a strategic approach, *Revista de turism – studii i cercetari în turism*, No.10, pp.81-90
- [33] Muntele, I, Iatu, C., 2006, *Geografia turismului. Concepte, metode si forme de manifestare spatio-temporala– editia a II-a revazuta (The geography of tourism. The concepts, the methods and the spatio-temporal manifestations forms – The second revised edition)*, Editura Sedcomlibris, Iasi
- [34] Muntele I, & Cruceanu, A., 2014 Valorization of therapeutic factors in the upper basin of Moldavian Bistrita river, in *Papers of Geographic Seminar "Dimitrie Cantemir"*, Vol.37, No.1, pp.181-191
- [35] Muresan, I.C, Arion, F.H, Paliescu, C.M, 2012, Particularities of tourism demand in a SPA resort, case of Vatra Dornei, *Management Agricol*, Vol 14, No.4 pp. 65-68
- [36] Nemes, D., Popa, D. Suci, O, Amaricai, E, Catan, E, 2010 *Curs de recuperare, medicina fizica i balneologie (The course of recovery, physical medicine and balneology)*, Editura Victor Babe , Bucure ti
- [37] Nichitus, M., 1997, *Ghid turistic Vatra Dornei (Vatra Dornei – Tourist guide)*, Asociația pentru Cultura, Istorie, Turism -Sentinela, Vatra Dornei, Suceava
- [38] Pata G., 1999, *Tinutul Vatra Dornei –studiu monografic (Vatra Dornei area, monographic study)*, Asociația pentru Cultură, Istorie și Turism Sentinela, Vatra Dornei, Suceava
- [39] Patrichi, I-C, Firoiu, D., Dodu, S-P, 2013, Romanian Health Tourism: Where to ? *Romanian Economic and Business Review*, Volume 8, Nr.3
- [40] Popa N., 1997, *Vatra Dornei Schita Monografica (Vatra Dornei – Monographic drawing)*, Asociația pentru Cultură, Istorie și Turism Sentinela, Vatra Dornei, Suceava
- [41] Popescu, R, & Patru, S., 2003, *Hidrotermoterapie i balneologie (Hydrotherapy and balneology)*, Edit. ALE, Iasi
- [42] Petrescu, I., Burny, P., 2008, The economic, social, and ecologic impact of the tourism in Vatra Dornei area, *International Conference "Ecological Performance in a Competitive Economy"*, Bucharest 20-21 November 2008: proceedings, volume II, Paper published in a book edited by Bran, F., Radulescu C-V, Ioan, I., Maruntelu, T., Publisher: Romanian Society for Quality Assurance, pages 252-259,
- [43] Pricajan, A., 1972, *Apele minerale si termale din Romania (The mineral and thermal springs from Romania)*, Editura Tehnica, Bucuresti
- [44] Romanescu G., Cojoc G.M., Tirnovan A., Dascalita D., Paun E., 2014, Surface Water Quality in Bistrita River Basin, In: *SGEM - Conf. Proceedings, Bulgaria, vol. 14/issue 1*, pp. 679-689,
- [45] Snak, O, 1976, *Economia si organizarea turismului (The economy and the organization of tourism)*, Editura Sport-Turism, Bucure ti
- [46] Stoica I, Battes KW, Prisecaru M, 2014, Study on the status of fish communities on tributaries situated in the mountain area of Bistrita river upstream reservoirs, *Studii si Cercetari, Biologie*, 23/2, 60-67, Universitatea "Vasile Alecsandri" din Bacau
- [47] Stoicescu, C., & Munteanu, L, 1976, *Factorii naturali de cura din principalele statiuni balneoclimaterice din România. Farmacodinamica i folosirea lor în scopuri terapeutice (The natural healing factors from the main Romania health resort. Pharmacodynamics and their use for therapeutic purposes)*, Editura Sport-Turism, Bucure ti
- [48] Talaba, I, Paduraru, T, Ungureanu D., & Rachieru, R, 2010, *Turismul rural romanesc in contextul dezvoltarii durabile (The romanian rural tourism in the context of sustainable development)*, Editura Tehnopress, Iasi
- [49] Taranu P., 2002, *Memoria Dornelor, vol. V – Repere istorice (The Dorna memory, vol. V – Historical mark)*, Editura Biblioteca Bucovinei
- [50] Taranu P., 1999 *Memoria Dornelor – Statiunea Balneoclimaterica Vatra Dornei (The Dorna memory – The Vatra Dornei health resort)*, vol III, Edit. Biblioteca Bucovina, 1999.
- [51] Teodoreanu, E., 2004, *Geografie medicala (Medical geography)*, Editura Academiei Romane, Bucuresti
- [52] Teodoreanu, E., & Dacos-Swoboda, M., & Enache, L., 1984, *Bioclima statiunilor balneoclimatice din Romania (The bioclimat health resorts from Romania)*, Editura Sport-Turism, Bucure ti
- [53] Teleki, N, Munteanu, L, Stoicescu, C, Teodoreanu, E., Grigore, L., 1984, *Cura balneoclimaterica din Romania (The balneoclimatheric cure from Romania)*, Editura Sport-Turism, Bucuresti
- [54] Turnock, D., 2005, Settlement history and sustainability in the Carpathians in the

eighteenth and nineteenth centuries, *Review of Historical Geography and Toponomastics*, Vol I, No. 1, pp.31-60

Anuarul statistic Suceava, Institutul Național de Statistic București, Direcția Județeană de Statistic Suceava, ediția 2012 (*The year-book of Suceava County - The National Institute of Statistics - The Statistics Direction of Suceava County*)

Breviarul Statistic al Județului Suceava (The statistic breviary of Suceava County), editia 2013,

Site-uri:

<http://www.cnpas.org/portal/media-type/html/language/ro/user/anon/page/ticket>

<http://www.insse.ro/cms/>

<http://www.vatra-dornei.ro/>

ANNEXES

Table 1. The full price of rest tickets in the treatment facilities from Vatra Dornei health resort. The source: The Economic Department and Budget Implementation (CNPAS)

Nr. crt	The Company	Accommodation	The full price of the rest and treatment tickets			
			2011	2012	2013	2014
1	SC COMPANIA PC UNIC SA	Codrin Hotel	399,78	1131,90	1232,76	900,00
		Incom Hotel	-	-	1232,76	900,00
2	SC DORNA TURISM SA	Bradul Hotel	-	1536	1604,00	1,420.00
		Calimani Hotel	-	1536	1604,00	1,420.00
3	SC INTUS SA	Intus Hotel	-	1384	1392,00	1,312.00

Table 2 The units of accommodation and treatment in Vatra Dornei health resort: (The sources: the brochures, leaflets - Mountain Rescue - Vatra Dornei and SC.DONA TURISM.SA)

Nr crt	THE UNIT OF ACCOMMODATION AND TREATMENT	A short description
1	BRADUL Hotel	<i>-is located near to the resort's park, and very closely to the ski slope. The accommodation capacity of 305 seats share out apartments (bedroom and living room); rooms with matrimonial bad and double rooms. All rooms are renovated, have new furniture, TV, telephone, cable, bathroom. Facilities: restaurant, safe-deposit box at reception, conference room, swimming pool and sauna.</i>
2	CALIMANI Hotel	<i>-completes the whole hotel, having an common corridor with Bradul Hotel and whith the treatment and recreation spa.the accommodation capacity of 284 seats, arranged in apartments (living and bedroom), rooms with matrimonial bad and double rooms. The rooms are renovated, equipped with new furniture, telephone, TV, cable, bathroom. Facilities: safe-deposit box, restaurant, conference sale, bar, terrace, direct access to the treatment and recreation center (swimming pool, sauna, gym, solarium,massage).</i>
3	INTUS Hotel	<i>-the hotel offers for the tourists, 295 seats. Dispose of consulting rooms in various specialties. -the treatment base is equipped with modern installations for: bathing with heated mineral water; electrotherapy; hydrotherapy (effusion, herbal baths); massage; medical and aerobics gym; packing with paraffin; artificial moffettes</i>
4	Ozon Villa	<i>-capacity for 850 procedures/day but in the present, the activity of this has been closed</i>

Figure 1. Images from the VatraDornei health resort
VATRA DORNEI



Calimani Hotel



Intus Hotel



Gym inside the Intus Hotel



Mineral spring – Health resort Park
Foto: Alexandrina Cruceanu

GHORGHITENI (DornaArini locality)



The monastery "AcoperamantulMaiciiDomnului" inside the Recreation and Treatment Base "Procopie and Elisabeta"



The Recreation and Treatment Base "Procopie iElisabeta"



Therapeutic pumrooms



