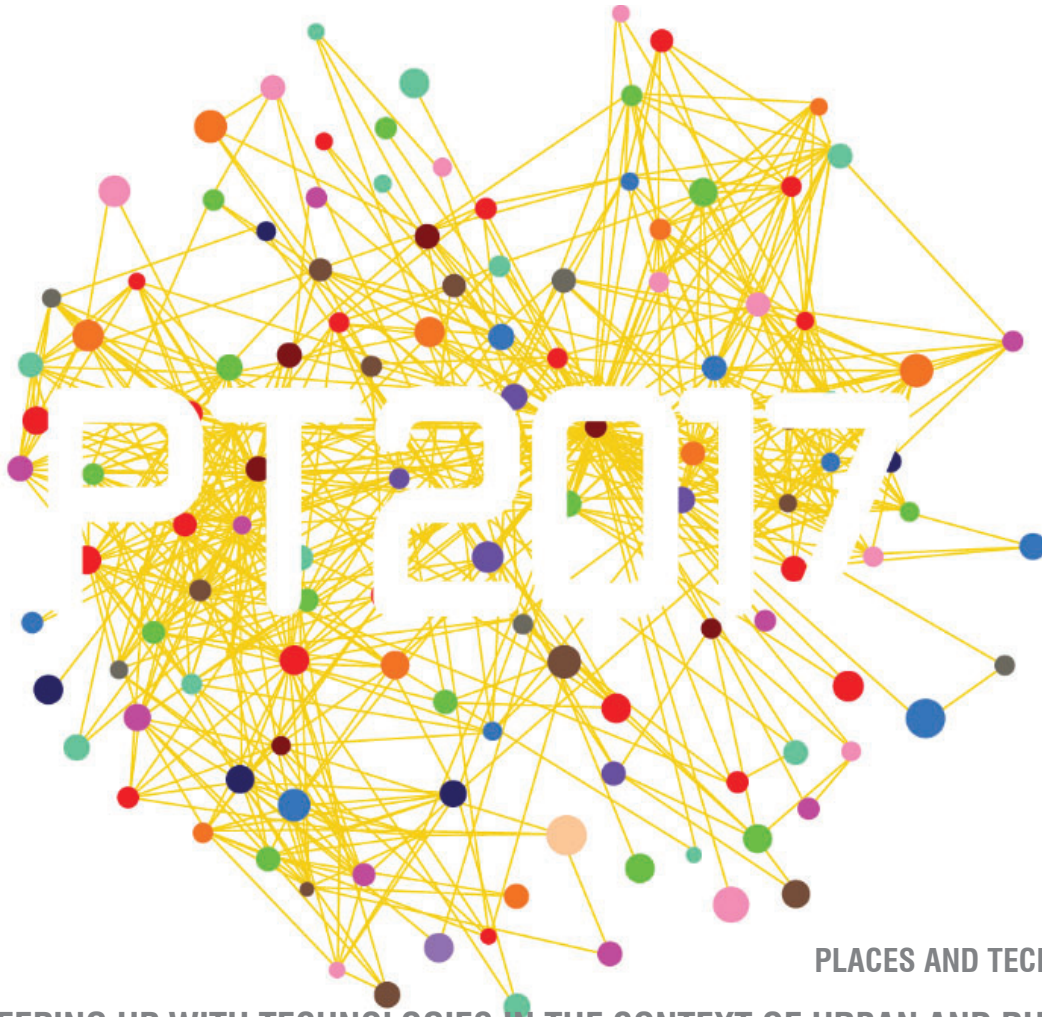


4th International Academic Conference



PLACES AND TECHNOLOGIES 2017
KEEPING UP WITH TECHNOLOGIES IN THE CONTEXT OF URBAN AND RURAL SYNERGY
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SYNERGY

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Dženana Bijedić, Aleksandra Krstić-Furundžić, Mevludin Zečević



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TOPIC II:
URBAN AND RURAL PLACES TOWARD HUMAN COMFORT, HEALTH AND INCLUSION

PERSPECTIVES THAT ARISE FOR PREVENTIVE MEDICINE FROM THE SYNERGY OF URBAN AND RURAL AREAS

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ABSTRACT

Health care is very important for modern society in every country of the world whether in urban or rural areas. Depending on the area where people live, for them life conditions may differ in many ways. In both environments for human life there are advantages and disadvantages. Regardless of the differences, in rural and urban areas in the human population appear similar health disorders. It would be interesting to determine which factors that occurs in the village and in the city disrupt human life, comfort and health. This paper considers factors that influence human health in urban and rural settlements. Cooperation in sharing of information and experience can overcome differences and lead to better life for all. The synergy of urban and rural areas can provide new knowledge that combines the advantages that these areas possess. The paper points to the positive effects that provide rural areas and the presence of the advantages that cities have in terms of preserving people's health, and thus pulling out the essence of these advantages in order to indicate the perspective that occur for preventive medicine from the synergy of urban and rural areas.

Keywords: Human health, Urban area, Rural area.

INTRODUCTION

Health is of the same importance for people wherever they live and whatever they do, regardless of origin and nationality, as well as the age group they belong to. From time immemorial human beings are living in communities which are nowadays generally defined as specific two types: urban and rural. When it comes to population of these

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areas, the following facts are stated: More than half of the world's population now live in urban areas, compared to 29 per cent in 1950 and 15 per cent in 1900; By 2050, it is estimated that seven out of every ten people will be living in towns or cities – more than 6.25 billion people; During the period 2000-2050, developing regions could add 3.2 billion new urban residents, a figure larger than the entire world's population in 1950 (UN, 2013).

'Urban' and 'rural' are terms that mark two types of populated areas, which are different in many aspects. Defining the concept of urban and rural areas is a complex task, because it is hard to find a unique criterion by which the division performs. These terms are often used by policymakers, researchers, national administrations and international organizations. To account for differences among rural and urban regions, the international Organization for Economic Cooperation and Development established a regional typology (OECD, 2010; Brezzi et al., 2011), based essentially on the percentage of regional population living in urban or rural communities, classifying regions in three classes: 1. predominantly urban (PU-if the share of population living in rural local units is below 15%), 2. intermediate (IN-if the share of population living in rural local units is between 15% and 50%) and 3. predominantly rural (PR-if the share of population living in rural local units is higher than 50%). 'Urban' and 'rural' terms are readily understood by the general public, but a clear definition at the international level has remained elusive. In this respect Dijkstra and Poelman (2014) comment that the UN publishes data on cities, urban areas and rural areas, but relies almost entirely on national definitions of these areas, and that the UN principles and recommendations state that due to different characteristics of urban and rural areas across the globe, a global definition is not possible.

The population density is the dominant difference between rural and urban areas, but for the population are also important the parameters that vary for different communities, such as unemployment, crime, availability of different kinds of jobs, incomes, health services and education potentials, infrastructure, housing typology, energy efficiency and quality of connections with the surrounding areas.

A common confusion concerning what constitutes urban is commented by Todd Litman (2017) in the following way: "The term conjures up images of skyscrapers, crowded sidewalks, subways, and concentrated poverty; although these conditions exist, they are not representative of the overall urban experience. Urban includes many community types ranging from city centres to suburban villages. Most urban residents live in moderate-density neighborhoods that contain a mixture of single-family and low-rise apartments, and rely on a combination of walking, cycling, public transit, and automobile travel, and most cities have a mixture of low, middle- and high-income households. People who imply that most urban residents live in high-rise apartments, forego automobile travel, and are poor, are using atypical examples."

Gey Howard et al. (2002) point to the following concepts of villages: "A village may be a small group of people living in a settlement who practise subsistence agriculture, with no specialization or division of labour, and who are isolated from national development agencies. A village may also be a large and differentiated conurbation where some people work in agriculture, some work in small-scale industries and others provide education, health care, administration and a variety of services. It is also recognized that many villages do not operate independently from cities, in that cities require sustained interaction with rural communities for their food and natural resources (including land for waste disposal)."

When it comes to quality of life, there are so many advantages and disadvantages in city life and village life. There are a lot of facilities for people in the city and they have more opportunities to progress in their lives. Cities provide



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great facilities for education, medical treatments, job opportunities etc. However, present are many disadvantages, mainly the air of poor quality polluted from traffic and factories, often poor water quality, the environment is polluted with dust, smoke, garbage and dioxide gases, the streets are mostly dusty and unclean, intense traffic and therefore noise. It appears that it is difficult to lead a healthy life in cities. The lifestyle in villages has other specifics in comparison to lifestyle in the city. People well known among themselves and more connected to each other than people in the city. As village has not lot of vehicles the pollution is less so the air is clean, less noise and rush is present. The environment of the village is pleasant and silent and it has scenic beauty. But, the village also has bad points. Often lifestyle is not as advanced as in the cities. Many people have difficulties to keep up with new developments in their field or profession. Since the functioning of the village is closely linked with the city, traveling problems village people often have to face. Rural environment can be considered healthy.

Mutual understanding, connections and collaboration between communities, disregarding how large they are, is crucial for the development in all fields and overcoming the problems and challenges that arise. In this respect advantages and disadvantages of both areas for human health are discussed in the paper. The aim of the paper is perception of new knowledge and perspectives that arise for preventive medicine from the synergy of urban and rural areas. It should be noted that some knowledge and perspectives have universal character, while some related to specific regions.

FACTORS AFFECTING HUMAN HEALTH

The impact of urbanization on human health Tord Kjellstrom et al. (2008) comment in the following manner: "Urbanization itself is a determinant of health and poverty leads to slum formation and ill-health. Determinants that influence urban living conditions and health include economic, social and environmental conditions. Along the gradient of inequalities, the risks to health are greatest for a billion people living in unhealthy, lifethreatening conditions in informal settlements or 'slums'."

The effect of urbanisation on health can be double-edged however, as a result of overcrowding, pollution, social deprivation, crime, and stress. Urbanisation can also result in hypertension, heart disease, obesity, diabetes and asthma (Godfrey and Julien, 2005). Current rise of chronic non-communicable diseases (NCD) is characterized as an urban health crisis. Despite the many advantages of living in urban areas, for many millions of people cities are places of ill health (Pinoncely, 2014).

Public health interventions designed to reduce the risk of ill-health and promote feelings of well-being in a community must consider many social and environmental factors (Howard et al., 2002). Due to differences in communities, these factors will vary in importance.

Taking about non-communicable diseases, several authors pay attention to determinants that can provoke ill-health and can be recognized as "causes of the causes" of ill-health, such as transport, limited access to green space, pollution, noise, housing quality, access to food, unsatisfactory community participation, social isolation, violence and crime. Factors that influencing human health, particularly urban mental health, Tod Litman (2017) classified in the self-selection, economic and social and environmental factors (Table 1).

Table 1: Factors affecting urban mental health (Litman, 2017)

Self-Selection	Economic and Social	Environmental Factors
Differences in the types of people who locate in different community types. Does not reflect causation.	Differences in how people live and interact. May reflect causation, but often changes over time.	Factors innate to urban locations. These do reflect causation, but can change over time.
<ul style="list-style-type: none"> • Poverty and income • Age and life stage • Mobility (duration of residency) • Family & community connections 	<ul style="list-style-type: none"> • Higher incomes and disparities • Higher costs of living • More subcultures • Higher crime rates 	<ul style="list-style-type: none"> • More interactions with strangers • More racial and cultural diversity • Noise and air pollution • Less interaction with nature

Oral health contributes to general health, self-esteem and quality of life and although oral health may have a low priority in the context of mental illness, the impact of mental illness and its treatment on oral health must be addressed (Griffiths et al., 2000). Depression and stress increase the level of the hormone cortisol, which can contribute to periodontal disease (Rosania et al., 2009). Furthermore, medications, lack of motivation for maintaining good dental hygiene, dental phobia, dental care costs, geography and access to care have all been shown to contribute to oral diseases (Bardow et al., 2001; Selwitz et al., 2007; Ramon et al., 2003; Vargas et al., 2002).

Environmental factors

Environmental factors as noise, light pollution and interaction with nature are discussed.

Urban areas tend to have more ambient noise and light pollution, which can induce stress and interrupt sleep (WHO 2011). Common urban noise sources include vehicle traffic, sirens and alarms, construction, loud music and voices, etc. (Jaffe, 2015).

Modernization of populated areas provided artificial light at night. Night light makes urban area secure for living but also to misalignment among physiology, behavior and the environment. Electrical light in living and working spaces and on streets is indispensable for activities of population that lives in urban areas. But, over 99% of individuals living in the United States and Europe experience nightly light pollution (Cinzano et al., 2001). New researches suggest that any unnatural timing of light exposure, or lack of appropriate light/dark cues in the environment, can cause misalignment between internal biological processes and the external environment, putatively leading to impaired mood (Bedrosian and Nelson, 2013). As modern life has allowed humans to manipulate lighting easily and has led to unnatural exposure to night light, the prevalence of major depressive disorder (MDD) has increased in parallel (Kessler et al. 1993).

Frequent street lighting and decorative lighting of building facades are the features of urban areas. Streetlights and external decorative lighting illuminate the bedroom spaces, TV and computer screens, causing glow in the home at night. Nocturnal light exposure may have serious consequences for circadian timing and contributes to depressed mood. Depression has a complicated mechanism which effects on oral health, as already mentioned above.

Noise and light pollution exposure tends to increase with density, and so can be considered as inherent to cities, but can often be managed and reduced with improved design (Litman, 2017).



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In recent years, because of the rapid urbanization of the world can be noticed the increasing number of scientific articles which suggest professional community about the positive effects that nature has on human beings. For achievement of healthy lifestyle, scientific papers indicated the necessity of interaction between human and nature. Some people argue that people require regular interactions with nature, and that urban living leads to nature deficit syndrome (Berto, 2014; Hartig and Kahn, 2016).

Natural environment has a restoring effect on people's mental health that is conclusion of 20 years of research of Rachel and Stephen Kaplan. Based on this research they have conceived theory "Attention Restoration Theory" (Kaplan, R. and Kaplan, S., 1989) that describes the restorative effect of natural environments on human mental fatigue. Some studies have indicated a positive effect of nature on the healing process. One of the research approaches relating to health effects of landscapes is known as "Healing Gardens". If the view from a hospital window is important in terms of improving recovery (Ulrich, 1984), then the design of hospital gardens becomes a new and significant topic. There are different and sometimes conflicting ways to provide urban residents access to nature, as summarized in Table 2.

Table 2: Three ways to increase interaction with nature (Litman, 2017)

Approach	Advantages	Disadvantages
Lower density development, such as housing with large private gardens, or near farms and forests.	Private gardens tend to provide more privacy, plus physical and emotional involvement.	Increases per capita land consumption and costs associated with dispersed development.
Higher density development with public greenspace, such as apartments near urban parks.	Reduces land consumption per capita and provides benefits of compact urban development.	Increases costs associated with compact development. Requires more planning.
Green infrastructure, such as green roofs, and street trees.	Provides greenspace within developed areas.	Can increase infrastructure costs.
Natural area visiting, such as parks programs and holidays.	Allows more people to experience natural environments.	Tend to be infrequent. Increases transport costs.

To be biophilic, cities should devote sufficient area (generally more than 15% of their total area) to public greenspace, provide public parks and recreational facilities within a five-minute walk of most houses, incorporate landscaping such as street trees and planters, and offer community gardens, green infrastructure (such as plants incorporated into buildings), and nature visiting programs in order to ensure that residents have frequent and significant exposure to natural environments and associated benefits (Green, 2016).



Figure 12: Greenspaces in the areas of life and work allow for window view at the landscape, Photos: Authors. (left-Housing settlement Konjarnik, Belgrade; right- Main office of SOLON AG für Solartechnik, Berlin-Treptow)

The aforementioned facts point to the positive effects that provide the plants in the areas of life and work, as well as the positive effect of window view at the landscape. Greenspaces in the areas of life and work allow for window view at the landscape (Fig. 1). Urban and architectural design should take it into consideration as an imperative. Appropriate dimensions, orientation and views through windows in high density urban areas are crucial. In such areas streets are usually narrow, buildings are close to each other, facade distance between neighboring buildings improper which disrupt intimacy and window view is often poor, directed into the walls and skylights, which can be recognized as urban mental health impacts, and might result in stress and depression. Such situations are not present in rural areas, villages.

HEALTH ASPECT

The scientific and empirical knowledge that is related to advantages and disadvantages of urban and rural life can be used for illness prevention and also for treatment of patients.

Prevention is usually about prevention of disease, sometimes it is promotion of health and sometimes it is about medication or other agent used for prophylaxis. From medical point of view it is important to understand how urban areas can affect human health, and how rural advantages are healthful. Considering the effects of environment on human health, it is important to remind that in order to make a medical diagnosis in routine conversation with patients there is need for asking questions related to the quality of living space.



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In everyday dental practice conversation with patient is crucial, to understand his problem and need and visualize cause of his dental problem. Using a larger number of information related to lifestyle of patient and handling this information in right way it can be useful for finding the right therapy for him. In order to achieve the results from therapy patient should be motivated to stick to therapy procedures. From the previous text it can be concluded that absence of natural environment and interaction with nature as well as exposure to night light can induce stress and depression mood. Patients with depression mood have decrease in motivation, which leads to uncertainty of therapy results. Depression mood is often clearly manifested through patient poor oral hygiene which results in other oral diseases.

CONCLUSION

Cities are the main place of social development. The future of cities and their sustainability depends on the ability to predict problems that might be encountered. In this respect should be considered prevention of human health. Factors that can promote or harm health and wellbeing in urban and rural areas are discussed in the paper. The paper points to the positive effects that provide rural areas and the presence of the advantages that cities have in terms of preserving people's health. The synergy of urban and rural areas can provide new knowledge which opens up new perspectives for preventive medicine. Exhaustive interviews with patients are important preventive and prophylactic measures in medicine and dentistry and the information thus obtained may be directed to experts in other fields. It can be concluded that the progress of society largely depends on mutual cooperation between different professions and multidisciplinary work is the key to success in all domains.

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TOPIC II:

URBAN AND RURAL PLACES TOWARD HUMAN COMFORT, HEALTH AND INCLUSION

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