

A MULTIDISCIPLINARY APPROACH TO HEALTH PREVENTION WITH THE EMPHASIS ON MULTIMORBIDITY IN POST CONFLICT SERBIA – RESULTS OF THE QUALITATIVE RESEARCH

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Abstract In the period 2019-2021, the Serbian team (consisted form representatives of the Institute for Biological Research "Siniša Stanković", Institute of Public Health of Serbia "Dr Milan Jovanović Batut", Environmental Protection Agency, the Medical Faculty in Belgrade, Ministry of Health and the Institute of Social Sciences) conducted the research project on health prevention and multimorbidity in post conflict Serbia. Objective was to understand the perception of relevant actors about possible risk factors (environmental, behavioral, and socio-economic) for the occurrence of multimorbidity. Methodology applied in qualitative research was focus groups and interviews with the sampled population group representatives. Target population was health professionals, health providers' and local municipalities' management. The purposes of the research were: 1) insight into the main multimorbidity factors through the prism of stakeholders on the local level; 2) drafting recommendations on changing regulation and practice in public health prevention measures. Results of the research show that there is an agreement in the stakeholder perception that multimorbidity in Serbia is increasing and that preventive measures should be strengthened. All groups of predictors (environmental, behavioral, and socio-economic) are perceived as of equal

Keywords

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Serbia,
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importance. The research was the basis for development of the legislative and systemic recommendations.

1 Introduction

The Institute for Biological Research "Siniša Stanković", in cooperation with the Institute of Public Health of Serbia "Dr Milan Jovanović Batut", the Environmental Protection Agency, the Medical Faculty in Belgrade and the Institute of Social Sciences, implemented the project „A multidisciplinary approach to the prevention of multimorbidity in post-conflict Serbia“ in the period 2019-2021.

The Ministry of Health of the Republic of Serbia and the World Health Organization support the activities of this project, which the research team identified above is implementing in cooperation with the research department of the University of Sheffield, Great Britain (the School of Health and Related Research).

Project activities included two aspects of research: qualitative and quantitative. The implementation of the qualitative research, which is presented in this paper, included focus groups with health workers and interviews with the directors of the primary health centers and the representatives of the city municipalities.

The main topics of the interviews and focus groups are: understanding the life habits and lifestyles of patients (population), mapping possible risk factors for multimorbidity (hereinafter: MM), the functioning of the health system in the context of multimorbidity and possible preventive measures.

Before moving on to the substance of the project analysis and results, we will point out the basic organizational elements of the health system in Serbia, which has three levels: primary, secondary, and tertiary. Roughly speaking, the primary level includes health centers and general practitioners, i.e., doctors among whom an individual chooses a "personal doctor" (general practitioners, gynecologists, pediatricians, and dentists). In addition, the primary level consists of health institutions of the polyclinic, pharmacy institutions, and institutes that provide health care to certain population groups. The primary level also includes specific preventive examinations (screenings) for certain diseases, which are legally prescribed and are performed regularly in the specified periods, as well as curative treatments. The secondary level consists of general and specialised hospitals, as well as health centers (which exist in certain municipalities and perform both the activities of health centers and public hospitals). The tertiary level consists of clinics, institutes, clinical-hospital centers,

and university clinical centers. These institutions perform specialist-consultative and inpatient health care activities and differ in the content of the work they perform or organization. The first place where a patient goes is the primary level. After, if necessary, he is sent to the secondary (or further to the tertiary) level.

Having specific impact on safety issues in primary care, MM has moved onto the priority agenda for many health policymakers and healthcare providers (Rokas Navickas et al, 2016, p. 4). The purpose of this qualitative study is to describe and understand the stakeholders' perception, precisely health policymakers and healthcare providers, of potential MM risk factors in Serbia. Because of the significance of this topic, we consider it essential to continue developing our understanding of patients' experience of MM to advance the preventive and other relevant interventions adapted to patients' needs and goals.

2 Theoretical framework

The percentage of people “affected by multiple chronic diseases (multimorbidity) is increasing dramatically around the world, and caring for them has placed considerable strain on many health systems” (Rokas Navickas et al., 2016, p. 4). It has been estimated to affect up to 95 percent of the primary care population aged 65 years and older (Almirall & Fortin, 2013 according to Rokas Navickas et al., 2016, p. 5).

According to the World Health Organization, MM is defined as “a coexistence of two or more chronic conditions in the same individual” (WHO, 2016, p. 3). This term is used “throughout to mean people with multiple health conditions, that are, most often, long-term health conditions which require complex and ongoing care” (WHO, 2016, p. 3). Within this definition, theory recognizes concordant MM as co-existing diagnoses that are similar in their origin or that can be addressed by similar treatment plans (for example, coronary heart disease and cerebrovascular disease). Conversely, discordant MM has been used to describe co-existing conditions that appear unrelated and require different treatment approaches (for example, chronic obstructive pulmonary disease and type 2 diabetes) (Harrison et al., 2014; The Academy of Medical Sciences, 2018).

In this paper, we define a MM as the “co-occurrence of two or more chronic conditions” (Rokas Navickas et al., 2016, p. 5) that are independent (or whose

association is still unfamiliar). In this respect, we differentiate comorbidity (two or more related/conditioned diseases) from MM.

Risk factors for MM have not been well studied. Ageing is the most consistent and potent risk factor. It has recently been proposed that MM “may be the result of a multisystem loss of reserve and function that leads to a low-grade proinflammatory state, multiple hormonal dysregulations, and an increased susceptibility to chronic diseases” (Fabbri, 2015 according to Rokas Navickas et al., 2016, p. 5). The studies show that MM is usually “associated with lower quality of life, areas of high deprivation and higher psychological distress” (Prados-Torres, 2014, p. 255; Duguay et al., 2014, p. 11). Also, even though the reasons are unclear, individuals with MM are mostly women and individuals with lower socio-economic status (Rokas Navickas et al., 2016). The prevalence of MM increases substantially with age. According to literature, only a few studies have examined the experience associated with MM, and these were primarily in older people (Duguay, 2014, p. 11). Although the prevalence of MM increases with age, “it is not exclusively a condition affecting the elderly, with many studies reporting high rates of multimorbidity amongst working-age populations” (Violan, 2014 according to Rokas Navickas et al., 2016, p. 5).

On the other side, the Public Health Strategy of RS for 2018-2026 (Official Gazette RS, no. 61/2018) set the list of the activities to be undertaken, pointing out what is relevant for public health: Monitoring, evaluation, and improvement of living environment and assessment of risks for the health of the population; improvement of monitoring of risk factors on working places and disclosing risks for health; improvement of supply with the healthy drinking water; improvement of the system of waste management; improvement of the condition of the living environment and answer to climate change; improvement of the educational activities in the area of maintaining and improvement of living environment and health of the population; improvement of preventing and suppression of the chronic non-communicable diseases and injuries.

We assume that knowledge about the stakeholder’s perception of MM risk factors in a Serbian population has important implications for prevention, diagnosis, and treatment. As with other studies, this project provides essential information for

“developing guidelines that offer clinical management and treatment decision support for patients with multiple chronic diseases” (Prados-Torres, 2014, p. 255).

3 Methodological framework

The qualitative approach of the research included two methods: focus groups and semi-structured individual interviews.

The selection of local self-government units/primary health centers was based on the project team’s decision. Using purposive sampling, a total of four health centers and four municipalities were selected as representatives of the following regions: Belgrade, Vojvodina, Southern and Eastern Serbia, Šumadija, and Western Serbia.

Focus groups and interviews were scheduled with the support of the Ministry of Health. We reached the respondents via telephone. During the participant approach phase, we had two refusals, and, in both cases, the main reason was the Covid regime in health centers (hereinafter: HC).

For the face-to-face fieldwork, three specific instruments for data collection were made, the so-called conversation topic guides.

The focus-group discussion took place through a conversation with health workers. The research team consisted of two persons – the moderator and the moderator assistant. Accordingly, four focus groups were implemented, which had 35 health workers in total. Related to professional background, focus groups at HC’s were of diverse composition. They included general practitioners (16 respondents), specialists (6), nurses (9), senior nurses (2), and other medical staff (2 technicians) working in the field. Among the respondents, females visibly predominated over males (31 female in comparison to 4 male respondents). The average respondent's age was 50. The considerable number of respondents had many years of work experience, and only a few doctors were younger and had less experience. All respondents were open to cooperation and ready to present personal observations on specific topics.

We conducted individual interviews with four directors of selected HC’s (3 female; 1 male). Interviews were also conducted with four representatives of

municipalities/local self-governments (hereinafter: LSGs) (2 female; 2 male) of the same regions.

4 Data analysis

In our study, we applied thematic analysis, often described as “a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006 according to Vaismoradi et al., 2013, p. 400). In our case, two researchers were involved. We met all thematic analysis requirements (transcribing, generating initial codes, searching, and defining themes) and finally produced the report. The overall impression is that a wealth of experiential material has been collected, on pre-defined issues and on a wide scale.

We have divided the analysis according to topics that the interdisciplinary project team considered relevant. Data analysis is divided into chapters related to possible predictors of MM, Covid-19 and MM, the role and importance of prevention.

4.1. Possible risk factors for multimorbidity

We singled out three general groups that could be possible predictors for the occurrence of MM: ecological, behavioral and socio-economic. The specific factors from each group were identified through the analysis. The main objective of the conversation was to understand the perception of health workers, what the predictors are for MM and how they affect the occurrence of various forms of MM.

Health workers noted an upward trend of various types of diseases in Serbia.

“I think that in the last 10 or 20 years, the number of malignant diseases has increased...” (Specialist in General Medicine, F, 61 years old).

Consequently, they unanimously believe that MM is also on the rise.

“...I might add that we have an increased number of multimorbidities in the younger population, very young... to say simply from 24-5 years old, in the case of oncology patients as well...” (Specialist, F, 60 years old).

“...On the other hand, with the population aging, with the high percentage of the elderly in the population (and in the municipality), you also have an increase of multimorbidity. On the other hand, as health workers, the system or HC institution must respond to the demands of multimorbidity, so the services must be well connected...” (Director of Primary Health Center, F.)

Another significant impression is that HC workers assume that all groups of factors are important and jointly affect the occurrence of diseases. There is no group that could be singled out as the most important for the occurrence of MM. Therefore, the interactive effect of numerous factors is the primary impression of all discussions.

“The more in every aspect of life we separate from some natural and evolutionary things that exist in man as a species, as homo sapiens, it inevitably leads to infectious and non-infectious diseases.” (Doctor, M, 32 years old).

The participating health professionals agreed on the combined influence of the predictors; they only added some different ways of possible connection and influence of predictors.

“There are definitely many factors in our country that affect the appearance of MM, primarily environmental factors, but also the nutrition itself.” (Selected doctor, F, 31 years old).

The last observation is that respondents noticed that even younger people suffer from MM.

“Multimorbidity is more pronounced in young people and before it was from 50 above.” (Doctor, F, 43 years old).

4.1.1 Ecological factors - (non) pollution of the environment

All health workers, including directors of HC's, agree that air, water, and food pollution are predictors of various diseases, comorbidity, and MM.

“So, of course, environmental conditions affect health. They affect the appearance of diseases and the appearance of comorbidities and all these forms in general.”
(Doctor, F, 63 years old).

Air pollution in Serbia is something health workers singled out as a predictor of various respiratory diseases. Also, healthcare workers link the current trend of growth of lung diseases with air pollution, which is inevitably connected with other aspects of pollution.

“Air pollution is absolutely pollution of everything ... because, when the air is polluted, the land and water and food and everything else (is also polluted).”
(Nurse, F, 60 years old).

Excessive use of pesticides is recognized as a big problem, as well. Respondents associate the misuse of pesticides with an increase in eczema, skin changes, the increasing incidence of autism in young children, among other things. This association is supported by the work of other researches, such as research results published in 2019 and conducted in California’s main agricultural region, Central Valley, using 1998-2010 birth data from the Office of Vital Statistics. Findings of this research suggest that an offspring’s risk of autism spectrum disorder increases following prenatal exposure to ambient pesticides within 2000 m radius of each mother’s residence address during pregnancy, compared with offspring of women from the same agricultural region without such exposure. Infant exposure could further increase the risks for autism spectrum disorder with comorbid intellectual disability (Ehrenstein et al., 2019).

The bombing in 1999 was singled out as a predictor. Health workers link the bombing to an increase in breast cancer, cervical cancer, sterility in young people, and thyroid disease.

“I can say how many people... how many people after the bombing ...how much breast cancer has increased...And further, how much colon cancer increased... So, the pesticides that we take into the body have also increased, which means that it is considerable increase of colon cancer, too ...” (Nurse, F, 57 years old).

“Studies have been done for... the harms of this bombing that hit, Serbia, so that... breast cancer is on the rise, cervical cancer, and sterility among young people... diseases of the thyroid gland. So, it entered, for sure, the chain of food and water and everything, and it is simply a vicious circle, and, therefore, we still have children with huge anomalies...” (Specialist, M, 45).

On the other hand, bombing is not only a factor that has influenced the pollution of the environment, but it has also caused stress to a large number of the population (which can be considered another way of influencing the occurrence of the disease).

“...But again, we cannot say that it was only because of the pollution from the bombing, because the stress itself caused only the main stress during the bombing...”
(Doctor, F, 63 years old).

4.1.2 Behavioral factors - lifestyle

In the group of behavioral factors as possible predictors, continuous exposure to stress, consumption of cigarettes, alcohol, poor nutrition, and physical inactivity were singled out, which, in general, produces an unhealthy lifestyle. Respondents singled out this group of factors as very important, because it is based on individual responsibility, and everyone can independently influence their way of life. Each selected factor has been confirmed as a predictor in conversations with health professionals.

The primary impression is that patients do not care enough about their health and prevention. Poor nutrition and unhealthy habits were observed as a pattern in patients who have already suffered from certain combinations of diseases.

“I personally think that it is very important what attitude we have towards life, health... and of course, all these factors that we have just listed, after all, healthy sleep, rest, holiday... that you are not a smoker, that you do not consume fatty, salty foods... not to drink absolutely... Just that attitude towards health is, in my opinion... in my opinion, the most important. So, someone who wants to be healthy and who believes in everything he eats and drinks ... and when he drinks something and eats what is good for health, I think that's half the battle.” (Nurse, F, 53 years old).

Regarding physical (in)activity, most respondents assume that because of the development of technology, people have become static, and there is no more socializing and physical activity. However, regarding physical activity, one respondent added that it is important to exercise in a moderate way, as exaggeration may also be unhealthy.

Exposure to stress can be taken as a significant predictor, even responsible for any disease (either as a trigger or as a cause).

“We can simply say that every disease that occurs is caused by stress, and that long-term stress can affect every disease...” (Spec. of General Medicine, F, 60 years old).

4.1.3 Socio-economic status – poverty, social deprivation

In the group of factors related to socio-economic status, we singled out: poverty, social exclusion, and difficult working conditions/difficult jobs. We were also interested in whether certain groups of people (for example, those with lower income) may be more prone to certain diseases and, if so, how this could be explained.

The respondents estimated that there is no direct impact that has been confirmed. Still, indirectly, socially deprived people are marginalized and have less access to information, no means to eat as recommended, and no money for medicines - resulting in more difficult treatment or prevention that could be carried out to a lesser extent.

“I think that on the one hand there is this socio-economic component because lower education, lower social status, inability to understand, in general, all this information that is placed, puts people in a situation where they cannot even use it... If someone, especially women in some rural areas, is not even literate, let alone to know what we are propagating and what we are talking about as prevention... On the other hand, I think that we have some administrative obstacles, in the sense that you cannot organize services and organize everything, with a lack of staff, especially in these demanding circumstances ...” (Spec. Social Medicine, F, 48 years old).

According to health workers, it has been confirmed that people who perform more difficult work and activities (in the form of stressful work, long-working hours), suffer from similar non-communicable diseases.

“... as far as these chronic, mass, non-communicable diseases are concerned, I think they are on the rise...uh...I can illustrate an example: we work with people who, most often, now work as the security service, since they lost their jobs ... so they work as security, work at night, work with weapons. And let's say in such population, I especially notice an increase in diabetes. And, hypertension... almost everyone has hypertension... it is stressful work in some way, and this, with guns and without guns, there is also night work, but there is... some lifestyles are just not, adequate” (Doctor, F, 60 years old).

4.2. Covid-19 and multimorbidity

The influence of various factors on MM was the main topic and task of our qualitative research, but the discussion also tackled the situation related to the Covid-19 epidemic in Serbia.

In this sense, the following topics can be singled out: the influence of Covid-19 on the persons with existing MM; the influence of Covid-19 on the creation of the new forms of comorbidity and MM. The first aspect refers to the fact that people with MM were endangered, and even at high risk, regarding Covid-19. In addition, in that period, it was extremely difficult to take care of and conduct their examinations, therapies and conditions when almost the whole health care system was in the "Covid system".

“But specifically, since we are talking about chronic, non-communicable diseases, my experience is... is that to a large number of patients, their just some common, maintained conditions of their chronic diseases have gotten much worse.” (Doctor, M, 30 years old).

Another aspect is the emergence of new diseases and problems, after being infected with Covid-19.

“Depression is common among women. And now that I've been working in Covid regime of health system, depression is common - especially during the period when there was a lockdown and closure...” (Selected doctor, F, 32 years old).

“After Covid, many people complained about a lot of symptoms. And diseases they had, worsened, such as Parkinson's disease, eye diseases.” (Spec. of General Medicine, F, 60 years old).

4.3 Preventive medicine as the key to health

The primary level, i.e., the HC, is the central place for preventive medicine. The impression is that there is complete agreement among respondents that prevention is the first and most important step in maintaining health. Therefore, everyone believes that it is necessary to focus on prevention to an increasing extent and more seriously, and there is general agreement that the most important task for public health is to maximize prevention by investing significant funds into the health care system and hiring more medical workers. In that way, many diseases would be prevented, the pressure on the secondary and tertiary levels would be reduced, saving the state significant funds for more expensive treatments. The fact that a healthy person is a far more productive and helpful member of society than a sick one should not be overlooked.

“I think that everything could be organized well, as we have learned, it must start with prevention... then, we could expect less work.” (Nurse, F, 60 years old).

“In our service – pediatric service, we have a counseling center where we perform preventive work and, uh, we have a development counseling center and counseling

center for young people. Those counseling centers worked very well... (Nurse, F, 60 years old).

However, prevention is mostly carried out in various counseling centers (for children and youth, for pregnant women, for diabetes...). As their additional work, doctors often organize and engage in various, occasional activities in these centers, in the form of lectures and workshops on different topics.

"... During our preventive work ... we are trying to support primarily those habits that they can influence on their own, that is, regardless of all these factors that they cannot influence... which they can do themselves towards their children and the formation of their habits." (Pediatric, F, 43 years old).

Due to the insufficient number of medical staff, doctors are often overburdened and do not have the time or the ability to dedicate themselves fully to their patients, so prevention is sporadic and insufficient. In addition to the crucial problem of staff shortages, an additional problem is the age structure of employees.

"Earlier, there were 35 or 36 nurses in our service... I don't know how many, and we had preventive work in rural clinics... And now, uh, we have a total of 13 nurses ..." (Nurse, F, 60 years old).

"The age structure is extremely bad. We have 6 gynecologists ... according to the Specification (of working places), we should have 9. Out of these 6 gynecologists, 4 are about 60 years old and 2 are about 45 years old." (Spec. Gynecology and Obstetrics, M, 45 years old).

"Since 1993, only one doctor has been admitted ... We should have a larger number of people - of employees, of doctors and nurses - so that we can function in the future. It is very difficult to achieve everything that is necessary... Especially in such extraordinary circumstances... Even though we didn't have the equipment we have today we had enough people. What does it mean to have equipment and vehicles if you don't have professional people?" (Chief technician in Primary Health Center, M).

On the other hand, municipality representatives are aware of their role in preventing diseases and preserving healthy lifestyles. However, their perception of their role is

somewhat biased. On the one side, municipalities are actively engaged in prevention programs, social programs through social work centers, and other assistance to people with MM. All these activities strongly depend on the allocation of financial resources of the particular city. These representatives are also aware of the fact there is insufficient public information readily available on healthy lifestyles and health preservation. On the other hand, they are challenged with complex tasks to balance finances (economic growth), healthy environment (green technologies and environmental protection), and public health.

“So, we are aware that jobs are our priority, because it is a way to keep the younger population somewhere, but we are also aware that we have to respond to other challenges in the whole series, and that is to create opportunities for that sustainable development, as much as whatever we think is irrelevant, it is a priority. That is our challenge to keep that, exactly that balance.” (Assistant Mayor, M).

5 Conclusion and Recommendations

MM has become a significant issue in the economic, management, and human resource sphere in most European countries. The trend of “driving forward the multimorbidity research agenda” (The Academy of Medical Sciences et al, 2019, p. 2) has posed challenges for the medical systems “from general practice and community care to acute and long-term hospital settings” throughout the world (Whitty et al., 2020, p. 1). The realization of our team’s research results in Serbia also indicates that, fortunately, MM is continuing to gain interest and recognition.

In our paper, we started from the definition of MM as a parallel existence of two or more chronic conditions to understand the relevant actors' perceptions (primarily of health workers) about the potential predictors of MM.

The perception of healthcare professionals confirmed the findings that with improved life expectancy, the proportion of MM patients has risen steadily over the past decades (Whitty et al., 2020). Our work also confirmed that this trend is not restricted to older citizens. The growing number of younger people in the population (i.e., those well under 50 years of age), suffering from MM is rather alarming (Whitty et al., 2020). Thanks to the thematic analysis, we confirmed that all groups of factors have an equally significant impact on the occurrence of MM in the Serbian

population. However, several issues piqued our attention. Factors for the occurrence of MM do not differ much from factors for specific diseases.

Although our research has provided a qualitative view of the health system participants into MM factors, it also underscores the need for a holistic approach to MM that considers behavioral, environmental, and socio-economic factors through specific quantitative research to identify and select regions with high morbidity-hot spots, to collate, link, and analyse health data from those regions, to quantify the prevalence, patterns and impact of multimorbidity; to map the potential environmental, socio-economic and behavioral risk factors, all based on data.

Our research results also underline the need for more collaboration of all relevant stakeholders as well as the wider population. The quality data analysis points to the importance of strengthening health prevention through medical institutions' roles and services. However, this burden rests not only on health centers, but also on their founders and financing budgets, as relevant for investing in equipment, human resources, services, etc. (such as the Republic of Serbia, municipalities, Republic Health Insurance Fund). The State's role also is to strengthen prevention and preventive services in the legal regulation (Rulebook on the nomenclature of services primary health care level, Codebook of Republic Health Insurance Fund – for service payment through insurance financial resources). The Covid-19 pandemic has highlighted problems associated with the lack of medical staff, from the primary to tertiary levels (specialists and clinicians). In addition, the age structure of medical staff is unsatisfactory, meaning that the most experienced doctors and other medical staff are close to retirement. This situation leads not only to lower quality and quantity of the medical services, but also to a burnout of the existing staff. If the current situation were to continue, it could become unsustainable for the health system. As mentioned above, the present administrative requirements are putting additional pressure on already overburdened medical staff. Considering that almost every state has already invested in the current pandemic conditions, it may be difficult to provide necessary investments to overcome the observed problems.

Respondents recognized the opportunities in the systematic removal of obstacles at the state level. As a first step, governmental bodies should consider including medical students as professional help to doctors (who will be their mentors), primarily overtaking demanding administrative work. There are several arguments in favor of this proposal: 1) doctors could dedicate more time to the patients; 2) as

a young generation, students are digital natives and can perform existing administrative tasks much easier and more efficiently; 3) students would have the opportunity to learn a lot from their experienced colleagues both in the field of diagnostics and in terms of various procedures (selection of appropriate therapy, etc.); 4) in agreement with the doctor-mentor, students could propose topics of workshops for the prevention of specific diseases and participate in their organization and implementation; 5) with the experience gained in this way, medical students would better adopt all knowledge and, at the same time, get involved in practice faster and easier, after completing their studies.

Due to the importance and role of disease prevention, intensive investment is proposed to significantly strengthen prevention, and to hire additional medical staff. Respondents consider that the State (primarily through media and education) must be involved in preventive work and education as much as possible.

The results of our studies indicates that it is critically important to harmonize the work of local governments so that monies are allocated to fund educational programs in the field of promoting healthy lifestyles, educational programs aimed at promoting equality in health, and, above all, access to health care for vulnerable population groups (HealthCare Law, 2019; Health Insurance Law of Serbia, 2019). To achieve noticeable improvements, cross-sectoral cooperation is crucial. In that sense, local self-government, as a potential hub of the local environment and a decision-maker for a large part of the activities carried out on its territory in various spheres of life, should influence the balance between a stable economy and sustainable development, in one side and a healthy environment, on the other.

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References

- Duguay, C., Gallagher, F. & Fortin, M. (2014). The experience of adults with multimorbidity: a qualitative study. *Journal of Comorbidity*, 4(11), 11-21, doi: 10.15256/joc.2014.4.31.
- Ehrenstein, O., Ling, C., Cui, X., Cockburn, M., Park, S. A., Yu, F., Wu, J. & Ritz, B. (2019). Prenatal and infant exposure to ambient pesticides and autism spectrum disorder in children: population based case-control study. *BMJ*, 364:1962, 1-10, doi:10.1136/bmj.1962. Retrieved from <https://www.bmj.com/content/bmj/364/bmj.1962.full.pdf> (Oct. 6, 2022).
- Harrison, C., Britt, H., Miller, G. & Henderson, J. (2014). Examining different measures of multimorbidity, using a large prospective cross-sectional study in Australian general practice,

- BMJ Open*, 1-9, doi:10.1136/bmjopen-2013-004694. Retrieved from <https://bmjopen.bmj.com/content/bmjopen/4/7/e004694.full.pdf> (Oct. 6, 2022).
- Prados-Torres, A., Calderon-Larranaga, A. Hanco-Saavedra, J., Poblador-Plou, B. & Van den Akker, M. (2014). Multimorbidity patterns: a systematic review. *Journal of Clinical Epidemiology*, 67, 254-266. doi: <https://doi.org/10.1016/j.jclinepi.2013.09.021>.
- Rokas Navickas, R., Petric, V. K., Feigl B. A. & Seychell, M. (2016). Multimorbidity: What do we know? What should we do?. *Journal of Comorbidity*, 6(1), 4-11. doi: 10.15256/joc.2016.6.72.
- The Academy of Medical Sciences & Medical Research Council & National Institute for Health Research & Wellcome (2019). *Cross-funder multimorbidity research framework*, London.
- The Academy of Medical Sciences (2018). *Multimorbidity: a priority for global health research*, London, pp. 1-127. Retrieved from: <https://acmedsci.ac.uk/file-download/82222577> (Oct. 6, 2022).
- Vaismoradi, M. & Turunen, H. & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences*. 15(3), 398–405. doi: 10.1111/nhs.12048
- Whitty, J. M. C., MacEwen, C., Goddard, A., Alderson, D., Marshall, M., Calderwood, C., Atherton, F., McBride, M., Atherton, J., Stokes-Lampard, H., Reid, W., Powis, S. & Marx, C. (2020). Rising to the challenge of multimorbidity. *BMJ*, 368. doi: 10.1136/bmj.l6964.
- World Health Organization (WHO) (2016). *Multimorbidity: Technical Series on Safer Primary Care*.

Legal Acts

- Codebook of Republic Health Insurance Fund,
http://www.kcnis.rs/files/fakturisanje_info/sifarnici/Usluga_09_02_2015.pdf (5 October 2022).
- Health Care Law, Official Gazette RS, no. 25/2019.
- Health Insurance Law, Official Gazette RS, no. 25/2019.
- Public Health Strategy of RS for 2018-2026, Official Gazette RS, no. 61/2018.
- Rulebook on the nomenclature of services primary health care level, Official Gazette RS, no. 70/2019, 42/2020 and 74/2021.