

Methods: We conducted a comprehensive review of the scientific literature using PubMed database with the following keywords: DNA methylation, brain and urbanity.

Results: Our search revealed a scarcity of scientific articles reporting methylome studies with assessment of correlations between methylome, cognitive status and urban environment. Among these papers, a Chinese study (2021) found a significant correlation between childhood urbanicity and better cognitive performance by measuring genome-wide methylation profile using more than 850,000 genome-wide CpG sites. In this study, the authors suggested that the impact of childhood urbanicity on cognition is partially mediated by the methylome and brain structure/function in humans whose childhood urbanicity differed. Other studies using other research approaches, suggested that the impact of living in an urban area is linked to better performance in terms of working memory, processing speed and verbal learning. We also found that the vast majority of studies investigating DNA methylation involved in rapid adaptation to new environments, including urban environments, focused on plant and animal species.

Conclusions: The effects of urbanization on human beings are a topic of ongoing debate. Some studies suggest that urbanization can have beneficial effects on cognition, while others find that it can have harmful effects. Quantitative studies of methylation and the correlations between methylome, cognition, and urbanicity offer new opportunities to measure these effects and gain a better understanding of their mechanisms.

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EPV0785

Natural soundscapes, urban design and psychological well-being

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Introduction: While the acoustic environment in the cities correlates with various health-related problems, health benefits of natural sounds are proven. These positive effects of the sounds of nature should probably be taken seriously in urban design and urban renewal projects.

Objectives: The aim of this study was to review the paradigm of natural soundscapes in the cities, psychological effects of natural soundscapes and the potential urban recommendations for such architecture design.

Methods: We conducted a comprehensive review of the scientific literature using Web databases with the following keywords: natural soundscapes, natural sound, urban design, and mental health.

Results: Our research found that improving the urban environment soundscape for the well-being of city dwellers has become one of the most pressing challenges of modern times. In a growing number of published studies, positive psychological effects of natural soundscapes are explored using various methods such as questionnaires, biofeedback sensors coupled with virtual reality

experiences in laboratories, and quantification of the prevalence of restorative acoustic environments in parks. In a recent study (2023), Jian Kang from the United Kingdom, reported that “by taking psycho-acoustical, neural and physiological, and contextual factors into account, the European Research Council Soundscape Indices project will adequately reflect levels of human comfort, to integrate side-by-side with (and eventually replace) decibel-based metrics into existing (international) regulations”. The same paper highlighted how the transition from fighting noise pollution to creating soundscapes is key.

Conclusions: Architects should develop mandatory guidelines regarding the spatial planning focusing on managing natural soundscapes in cities. Various sites such as green urban public spaces that offers exposure to natural sounds should be an integral part of the urban environment. These areas must be with a high abundance of natural sound (geophony and bio phony) and a low anthropogenic sound to enhance human physical and psychological health.

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EPV0786

The Impact of Climate Change on Mental Health: A General Population Study

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Introduction: Climate change and its impact on mental health is a growing area of research. Several studies have explored the relationship between climate change and mental health, highlighting the various ways in which climate change can affect individuals' psychological well-being. Incorporating mental health indicators into climate change and health vulnerability and adaptation assessments is another important aspect of research in this area (Hayes & Poland, 2018). The study suggests that standardized methods to measure and predict the psychosocial outcomes of climate change should be implemented to better understand the mental health impacts. While the physical health consequences of climate change have received more attention, the mental health impacts are often overlooked (Nicholas et al., 2020).

Objectives: This study was planned to examine the impact of climate change the impact of climate change on mental health

Methods: This descriptive and cross-sectional study was conducted with individuals who willing to participate the study and above 18 years age. Individuals who saw the online advertisement and click on the study's link were brought to the study's home page on Online Surveys. Should they wish to proceed, they will be brought to an information page detailing the purpose of the study, how their confidentiality and anonymity will be preserved and how their data will be treated.

Socio-Demographic Data Form, Climate Change Worry Scale, Eysenck Personality Questionnaire Revised- Abbreviated, general health questioner and Depression, Anxiety, Stress scale were used

for collecting data. Data analyses was planned to run via Statistical Package for the Social Sciences version, 27.0.

Results: The analysis of the data is still ongoing in detail by the researchers. The findings and relational implications of the study will be presented.

Conclusions: In conclusion, this study highlight the importance of understanding the mental health impacts of climate change and developing strategies to address them. Climate change can have direct and indirect consequences on mental health, and vulnerable populations such as children and adolescents may be particularly at risk. Reducing psychological distance and incorporating mental health indicators into assessments can help in understanding and addressing the mental health consequences of climate change.

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EPV0787

The short- and long-term effects of yoga on relaxation states measured by the Smith Relaxation States Inventory 3

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Introduction: The beneficial effects of yoga have been researched for decades, and in some countries it is also used in health care to maintain physical and mental health. Its effectiveness in the treatment of stress and anxiety, as well as in achieving a relaxed state, is supported by numerous studies.

Objectives: In the present research, our aim was to investigate the direct and subclinical effects of yoga, where the subjects did at least 10 minutes of yoga a day for two weeks. Our hypotheses are that the participants experience relaxation, mindfulness and positive emotions significantly (1) more often and (2) more intensely as a result of yoga.

Methods: We included 25 average population, healthy people between the ages of 18 and 30, who exercised at least 10 minutes of yoga a day for two weeks with the help of a mobile app. We used the Smith Relaxation States Inventory (SRSI3) and its disposition-measuring version (SRSI3d), which examine 19 relaxation states (R-states) presumably related to relaxation, divided into 4 categories: basic relaxation, mindfulness, positive energy and transcendence. During the statistical analyses, the values taken at the beginning of the research, before practice, were compared with the values taken directly after the last practice using the Wilcoxon test. Bonferroni correction was used to correct the first-order error that increases when testing several hypotheses simultaneously.

Results: Immediately after practicing yoga, the participants had significantly higher basic relaxation ($M_0=2.74$, $M_1=4.24$, $p<0.0001$), awareness ($M_0=2.71$, $M_1=2.89$, $p<0.0001$) and positive energy ($M_0=3.88$, $M_1=4.81$, $p<0.0001$) and in the long term they experienced significantly more relaxation ($M_0=3.12$, $M_1=3.94$, $p<0.0001$), awareness ($M_0=3.41$, $M_1=4.40$, $p<0.0001$), positive

energy ($M_0=4.39$, $M_1=5.14$, $p<0.001$) and transcendence ($M_0=3.23$, $M_1=4.05$, $p=0.001$).

Conclusions: Based on our results, yoga can be an effective additional tool in maintaining and improving health, but also in improving the condition and quality of life of mental and somatic patients.

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EPV0788

Cerebral-cognitive reserve: concept and functions of the cerebral-cognitive reserve

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Introduction: The modern understanding of AD allows us to consider it through the constructs of “vulnerability” and “stability” of the brain as a dynamic system of dialectical interaction between the pathogenic process and the protective process that prevents neurodegeneration. The concept of cognitive reserve (CR) is based on observations of discrepancy between the degree of brain pathology and the severity of clinical manifestations. The concept of “reserve” was proposed to describe the resistance of the brain to a developing damage caused by a pathological process. Stern (2002) considered CR as a protective factor that modifies the impact of brain pathology on cognitive function. The researchers have defined CR as an ability to optimize cognitive function through differential involvement of structures or neural networks of the brain into brain activity.

Objectives: A systematic review of scientific studies has been conducted

Methods: The review includes an analysis of full-text literature sources.

Results: Several possible directions of CR influence on cognitive functions have been described:

- 1) CR may reduce the risk of MCI or dementia through mechanisms, which do not depend on the level of neurodegenerative pathological changes in the brain.
- 2) CR can interact with the markers of brain pathology or healthaffectingthe future cognitive decline or risk of progression. It has been found that smaller volumes or thickness in some AD vulnerable areas of the brain represent a stronger risk factor for cognitive impairment in people with low CR than in people with higher CR. CR protective effects on clinical outcomes reduce as the number of damaged neurons increases.
- 3) The protective effect of CR increasesduring late AD onset and at a low rate of the damaged substrate accumulation.
- 4) CR changes the relationship between genetic factors and aging withclinical and cognitive outcomes. The relationship between age and AD pathology level or age-related structural changes in the brain may weaken in people with higher CR

Conclusions: The concept of cerebral-cognitive reserve actualizes the problem of the search for compensatory mechanisms of cognitive deficit in AD, the assessmentof the structure of the reserve, the development and implementationof programs to maintain the