


Does a visit to a blue-green space evoke positive feelings? Blue and green spaces survey in Shkodra' Lake, Albania

¿Evocan sentimientos positivos las visitas a un espacio verde y azul? Encuesta sobre espacios azules y verdes, en el lago Shkodra, Albania

Samel Kruja

samel_kruja@universitetipolis.edu.al  0000-0003-2717-138X
Polis University. Rr. Bylis 12, Tirane-Durres Highway, Km 5.1051 Tirana, Albania

Olta Braçe

oltabrace@msn.com  0000-0001-6335-5085
Polytechnical University of Tirana. Rr. Muhamet Gjollësja, 54, Tirana, Albania

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ABSTRACT

People living in urban areas must face several challenges to improve their health and well-being.

The purpose of this research is to further explore how the use of urban blue and green spaces is related to the people's mood feelings when visiting these spaces. A cross-sectional study is carried out with an adult sample population in Albania with people between 16-74 years old by an online survey. Respondents have been asked to complete the survey via the platform Google Form, from April to May 2021. The questionnaire included questions related to socio-economic characteristics, urban green and blue spaces (GBS), and self-reported feelings information. After the validation and cleaning process, a representative sample (95% level of confidence) of 530 respondents was obtained. Descriptive statistics were used to analyze indicators such as (1) sociodemographic characteristics; (2) frequency of visits in GBS in the last 4 weeks; (3) time spending during the visit; (4) activities carried out during the visit; (5) type of accompaniment; (6) the reason for not visiting GBS and the quality of GBS. The SPSS software platform was used for the statistical analyses. The frequency, percentage, mean and standard deviation calculations were used to calculate data from the sample. The Chi-square test was used to examine the relationship between the frequency of visits in blue space and the people' mood. The study shows a significant relationship among the frequency of visits of blue and green spaces and positive mood feelings.

RESUMEN

Las personas que viven en zonas urbanas se enfrentan a varios retos para mejorar su salud y bienestar.

El propósito de esta investigación es explorar más a fondo cómo el uso de los espacios azules y verdes urbanos está relacionado con el estado de ánimo de las personas cuando visitan estos espacios. Para ello se realizó un estudio transversal de una muestra de población adulta en Albania de entre 16 y 74 años mediante una encuesta en línea a través de la plataforma Google Form entre abril y mayo de 2021. El cuestionario incluía preguntas relacionadas con las características socioeconómicas, los espacios verdes y azules urbanos, e información sobre los sentimientos autodeclarados. Tras el proceso de validación y depuración, se obtuvo una muestra representativa (nivel de confianza del 95%) de 530 encuestados. También, se utilizaron estadísticas descriptivas para analizar indicadores como: (1) las características sociodemográficas; (2) la frecuencia de las visitas en espacios azules y verdes en las últimas 4 semanas; (3) el tiempo empleado durante la visita; (4) las actividades realizadas durante la visita; (5) el tipo de acompañamiento; (6) el motivo de no visitar EVA y la calidad de EVA.



Para los análisis estadísticos se utilizó el software SPSS, realizando cálculos de frecuencia, porcentaje, media y desviación estándar. Se utilizó la prueba de Chi-cuadrado para examinar la relación entre la frecuencia de las visitas al espacio azul y el estado de ánimo de las personas. Como resultado, el estudio mostró una relación significativa entre la frecuencia de las visitas a los espacios azules y verdes y el estado de ánimo positivo.

1. INTRODUCTION

1.1. The role of natural environment

Cities have historically adapted their shape in response to the challenges of public health. Actually, cities are home to over half of the world's population, and it is estimated that by 2050, the number of people living in cities will have increased by around 2.5 billion (American Psychological Association, 2005). Over 60% of the metropolitan areas that will exist by 2050 are expected to be built, implying that enormous additional infrastructure requirements would be required, notably in Asia and Africa (Hartig *et al.*, 2014). At the same time, current cities throughout the world are aging and in desperate need of infrastructural upgrades. Infrastructures are critical for human well-being and economic progress. They offer water, electricity, food, shelter, transportation and communication, waste management, and public spaces (European Commission Directorate, 2015). However, when considered as a whole, these seven infrastructure sectors impose a significant environmental burden and have a significant influence on human health. These consequences are dominated by urban needs; cities account for over 70% of worldwide greenhouse gas (GHG) emissions (American Psychological Association, 2005).

Stanley Milgram began his seminal study on urban psychology on a positive note, claiming that "cities have great appeal because of their variety, eventfulness, possibility of choice, and the stimulation of an intense atmosphere that many individuals find a desirable background to their lives" (Von der Lippe *et al.*, 2005). Cities, he added, provide "unparalleled opportunities" for face-to-face engagement and conversation (Von der Lippe *et al.*, 2005). Living in a city may be advantageous for people since it allows the formation of social networks and access to a variety of services, including health care, but cities also confront a number of issues related to health and well-being of people. In his work, Milgram emphasized psychology's contribution to comprehending the experience of city living. He highlighted overload as a psychological notion that can be used to connect objective urban conditions like high population density to observable behaviors like incivility. These viewpoints are valuable for informing urban psychology study.

Urbanism promotes numerous changes in human behavior that influence their health since smoking, traffic injuries, mortality and adult obesity are prevalent in existing cities (World Health Organization, 1998). A stressful and fast-moving environment, high noise levels, unhealthy lifestyles such reduced physical activity, poor nutrition habits, alcohol and tobacco consumption, and accelerated living reduce well-being and physical and mental health of urban dwellers (Galea & Vlahov, 2005). By 2030, depression is anticipated to be the main cause of Disability Adjusted Life Years (DALYs) in middle to high-income nations (World Health Organization, 2004), with urbanization playing a key part in this direction (Goryakin *et al.*, 2017). However, in addition to the numerous health and wellbeing benefits of living in cities (Dye, 2008; Godfrey & Julien, 2005), the urbanism faces many health challenges such as smog, water contamination, respiratory diseases (Benjamin *et al.*, 2017; Samet *et al.*, 2000; Taylor-Gooby, 2004; Tong & Chen, 2002), heart diseases (Mustafi *et al.*, 2012), and gastro-intestinal disorders (Brunekreef & Holgate, 2002).

However, urban environments contain facilities that may help in reducing the severe health consequences of city living. Because many chronic diseases are avoidable, there has been a need for reasonable measures taken by population and government to minimize risk or mitigate damages from smoking, physical inactivity, alcohol consuming, and an unhealthy diet (Bauer *et al.*, 2014). Due to the great benefits provided by nature, in both theoretical and practical aspects during the last two decades, there has been an increasing interest in ecological, nature-based health-promoting initiatives (Hartig *et al.*, 2014). The construction, protection, maintenance, and growth of blue and green areas (BGS) are the goals of new strategies.



Urban planners and public health authorities are becoming increasingly interested in reducing the harmful consequences of the built environment on population health and well-being (Bailey, Anderson & Cox, 2021; Edwards & Tsouros, 2006; Ewing, 2005; Popkin, Duffey & Gordon-Larsen, 2005). By minimizing air pollution, promoting physical exercises, and lowering mental and emotional tension, parks and other 'natural habitats' within cities can assist to mitigate some of these risks (Hartig & Kahn, 2016; Hartig *et al.*, 2014). Previous evidence from various studies shows that people who live in areas surrounding with green spaces have better health conditions (Maas *et al.*, 2006; Mitchell & Popham, 2007; Seresinhe *et al.*, 2015); such as a decrease in heart and lung diseases (Vitorio *et al.*, 2017; Kardan *et al.*, 2015; Maas *et al.*, 2009); a low level of diabetes (Astell-Burt *et al.*, 2014) and some cancers (Demoury *et al.*, 2017); favorable mental health and wellbeing (Gascon *et al.*, 2015; White *et al.*, 2013); good reproductive outcomes (Dadvand *et al.*, 2012); and, eventually, fewer deaths (Demoury *et al.*, 2017; Gascon *et al.*, 2016; Mitchell & Popham, 2008; Takano *et al.*, 2002; Villeneuve *et al.*, 2012). Proximity to aquatic environments, also known as 'blue spaces,' such as coastlines, lakes, and rivers, has also been shown to have similar positive effects (Gascon *et al.*, 2017; Volker & Kistemann, 2011; Wheeler *et al.*, 2012), particularly for mental health and wellbeing (Gascon *et al.*, 2017; Volker & Kistemann, 2011; Wheeler *et al.*, 2012; De Bell *et al.*, 2017; Nutsford *et al.*, 2016). The importance of proximate access to natural habitats has received less attention (Grahn & Stigsdotter, 2003) and some few studies are based on objective assessments (De Vries *et al.*, 2003).

Understanding what wellbeing entails is essential before considering how blue spaces may play a role in its creation. In global conceptualizations, wellbeing is frequently emphasized as a multidimensional state linked to a country's economic, social, cultural, and environmental output (Daykin *et al.*, 2018). A subjective sensation of feeling 'well' or 'excellent' is referred to as wellbeing on a local level, a concept that encompasses the physical, social, environmental, educational, spiritual, emotive, and neurobiological components of a person's life (Liamputtong *et al.*, 2012), which it is become a popular partner to blue space. It might refer to an interior condition that is difficult to categorize yet palpable to the person experiencing it. It's also becoming more common as a description for what a community considers to be a decent existence. While it is admirable to adjust wellness to local situations and settings, as Loera-González (2016) mentions, it is also critical to ensure that the "diversity of viewpoints within a social group" (p. 241) are uncovered in these communal perceptions. It's possible that a combination of various and context-dependent methods of conceptualizing wellbeing, as well as how this idea expanded perceptions of health without diseases to a comprehensive theory involving physical, social, environmental, educational, spiritual, affective, and cognitive dimensions of life (Liamputtong, Fanany, & Verrinder, 2012), has contributed to it becoming such a popular companion to blue space.

Environmental experiences, including recycling, submitting petitions for environmental conservation, and using public transportation have been shown to have significant correlations with pro-environmental behavior (Finger, 1994; Nord, Luloff & Bridger 1998). There have been substantial associations established between the frequency of visits to forest regions and self-reported pro-environmental acts including, making donations to environmental organizations and practicing ecologically conscious consumption (Teisl & O'Brien, 2003). According to Pyle (1978), the elimination of direct touch with the natural world has resulted in a cycle of indifference and a lack of care for ecological concerns, the natural environment, and animals. Previous study has indicated that both direct and indirect exposure with the natural environment especially during childhood, is essential for creating significant connections with the natural environment promoting positive values regarding it (Trougakos *et al.*, 2020; Leaf *et al.*, 1996; Kellert, 2002).

1.2. The benefits of green and blue spaces in human health and wellbeing

The US Environmental Protection Agency (EPA) defines green spaces as the land that is partly or completely covered with grass, trees, shrubs, or other vegetation which includes parks, community gardens, and cemeteries (US Environmental Protection Agency, 2017) whereas blue urban open spaces encompass "large-scale, normally natural water bodies connected to the ocean, such as seas, bays, gulfs, lagoons or estuaries, flowing inland water bodies like rivers, streams or canals of different sizes, flow rates, turbulence and transported sediments,



stagnant inland water bodies like lakes, ponds, pools or basins of different size and turbidity and other urban blue elements which are not water bodies, such as geysers or waterfalls" (Völker *et al.*, 2018).

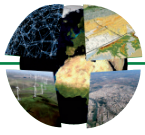
Interactions with nature have been shown to improve psychological well-being (Kaplan 1995), improve mood (Hartig *et al.*, 2003, Barton & Pretty, 2010, Roe & Aspinall, 2011), increase focus (Hartig *et al.*, 2003; Ottosson & Grahn, 2005), and lower level of stress and anxiety (Hartig *et al.*, 2003; Ottosson & Grahn, 2005). The reasons of poor mental health are numerous and complex (Kinderman *et al.* 2015), and cultural and socioeconomic variations between locations may impact how people respond to natural interactions (Keniger *et al.*, 2013). Nature is likely to have an impact on mental balance by a series of functions (Shanahan *et al.*, 2015b). According to the attention-restoration theory (Kaplan, 1995), the nature aids in the improvement of mental collapse that occurs during cognitive functioning and necessitates the sustained maintenance of directed attention, whereas the stress-reduction theory claims that natural environments aid in reducing subjectively aversive physiological states, including stress (Ulrich *et al.* 1991). Both corresponding theories show that exposure to nature promotes mental health by reducing rumination, increasing cognition functioning, and lowering stress (Berman *et al.*, 2012; Jiang *et al.*, 2014; Tyrväinen *et al.*, 2014; Bratman *et al.* 2015). The access to BGS is related with improvement health outcomes through several of mechanisms, psychological restoration, (White *et al.*, 2013), noise mitigation, (Hystad, *et al.*, 2014), heat and humidity regulation, (Kingsley *et al.*, 2019), increased social relations, and cohesion (Van den Berg *et al.*, 2019) and increased physical activity (Thompson *et al.*, 2012). BGS has been connected to physical and psychological advantages due to their purported impact on physical activity (Morris, 2003). In general, BGS are underutilized as a resource for physical exercise. As a result, there is significant potential for improving population health through more visits and active use of BGS.

A range of factors impact personal and societal health and well-being, including place, or the physical surroundings in which they live (Marmot & World Health Organization, 2013). Healthy places, or locations that aid in the advertising, maintenance, and restoration of better health, are increasingly recognized, and the relevance of green and blue spaces for health and wellbeing is becoming more widely recognized. Recognizing the links between green space and human health, the United Nations (UN) Sustainable Development Goals (SDGs) expressly state to "provide universal access to safe, inclusive, and accessible green and public spaces, particularly for women and children, older people, and people with disabilities" by 2030. Green spaces have the capacity to inhibit 'upstream' problems, which is more efficient than dealing with 'downstream' issues of poor human health and wellbeing, according to the belief that they provide cultural ecosystem services that encourage human health and wellbeing in a wider environmental context (Martin *et al.*, 2020). On the other hand, outdoor water habitats or blue spaces are receiving increasing interdisciplinary interest and awareness for its cultural ecological functions and potential health benefits (Chen & Yuan, 2020).

Green spaces are thought to provide health advantages through encouraging physical exercise, contact with nature, and social interaction, according to a paradigm built based on existing studies (Lachowycz & Jones, 2013). We will discuss numerous ways in which the utilization of blue and green areas can promote human health in the following sections.

Green environments have also been demonstrated to have mental health advantages in studies. It has been discovered that having them and having access to them is linked to improved mental health (Sturm & Cohen, 2014; Wood *et al.*, 2017). Stress is all too typical in today's world, is a proven risk factor for mental illnesses like depression (Cohen *et al.*, 2007). According to studies, public green spaces might help people relax. Evidence suggests that spending more time in green areas is linked to lower stress levels as measured by cortisol and a decreased risk of psychological distress (Ward Thompson *et al.*, 2012; Astell-Burt *et al.*, 2013). Exposure to green areas is associated to decreased stress levels and pleasant feelings due to physiological reactions of a relaxed state (Hazer *et al.*, 2018; Honold *et al.*, 2016).

The mentally and physically healing benefits of interaction with the natural environment, pollution reduction, and possibilities for social connections and physical activity are all possible causative factors (Pretty *et al.*, 2005). Some studies of the links between green space and human health have been founded on evolutionary concepts, which explain why humans have an inherent need for nature. We are naturally calmer and less anxious when we visit green settings (Kellert S, 1995). These advantages can be achieved through



purposeful contacts with nature (such as visiting local green spaces or spending time in a garden), accidental encounters (such as going to the store), or indirectly while not physically present in nature (such as observing it through a window) (Keniger *et al.*, 2013). Because the natural area surrounding the home is the nature that most people will meet on a daily basis, all three forms of nature interactions will contribute considerably to people's daily nature experience.

The research supporting a link between blue space availability and health, on the other hand, is limited and inconsistent (Gascon *et al.*, 2015). Despite this, research utilizing population census data from England found that persons who lived near the coastline were more likely to be in excellent health (White *et al.*, 2014). Using English panel data, researchers discovered that living fewer than 5 kilometers from the seaside improved both general and mental health when compared to living further away (White *et al.*, 2013a). Both studies, however, did not include inland surface waters. Other studies, which included surface waterways alongside coastal waters, found no link among mental health and the quantity of blue space or its accessibility (De Vries *et al.*, 2003; Triguero-Mas *et al.*, 2015). Nonetheless, empirical, and qualitative research shows that using blue spaces in urban areas has a favorable impact on both physical and mental health. Even though most studies have concentrated on coastal environments, there is an expanded literature that investigates the impact of inland surface waters (Finlay *et al.*, 2015), which found that people who witnessed urban blue scenes experienced higher levels of restorativeness than those who witnessed other scenes. Several studies have demonstrated that blue space, particularly turbulent water bodies, can protect and promote health by masking road noise (Jeon *et al.*, 2010) and mitigate summertime temperatures (Völker *et al.*, 2018).

In addition, blue space exposure has been connected to enhanced health and well-being in terrestrial settings, including non-water-based physical activity (Vert *et al.*, 2019), reduced psychological distress from water observation (Nutsford *et al.*, 2016), and social engagement in waterside regions (De Bell *et al.*, 2017). Therefore, although the empirical value of these factors is unknown the presence of water and the status of waterside regions, such as route quality or open space availability, play a vital part on health and well-being benefits. De Bell *et al.*, (2017) developed a healing blue space experience transdisciplinary model along the seaside based on four overlapping therapeutic experience dimensions: symbolic, accomplishing, immersive, and social (pg. 58). These dimensions are useful for identifying a range of components that are relevant to a broader leisure research regarding coastal locations and the interaction between people and ways that promote and restrict wellbeing.

Living near water, promotes the creation of shared spaces as well as a sense of association, devotion, individuality, and social interactions (Völker & Kistemann, 2012). Furthermore, appealing seaside leisure activities like swimming and surfing have been found to offer significant cognitive and physiological advantages. Another study on outdoor swimming recommends focusing on health as a process of affection and emotion, with swimming considered as a "healing activity" (Foley, 2017).

Blue space advantages can be connected to several ecosystem services, such as water purification, fish production, nutrient cycling, and leisure activities (Costanza *et al.*, 2017). Since the introduction of the European Union's Water Framework Directive (Directive/2000/60/EC), policymakers have placed a greater emphasis on measuring the economic value of freshwater ecosystem services.

In reality, understanding the economic value of freshwater ecosystem services is a critical component of establishing socially optimum water resource management strategy (Llopis-Albert *et al.*, 2018). Anyhow, because freshwater ecosystem services usually create non-market benefits, experimentally assessing their economic value is difficult (McDougall *et al.*, 2020). Financial experts have developed a range of ways for evaluating non-market advantages in recent years, the majority of which rely on individuals expressed or disclosed preferences (Mitchell and Carson, 1989). By monitoring real-world behavior and relating it to the number and/or quality of environmental resources such as rivers and forests, revealed preference techniques can estimate economic values.

To evaluate economic values, customer behavior in correctly constructed hypothetical markets is examined utilizing expressed preference approaches (Hanley & Czajkowski, 2019). Because most individuals are unfamiliar with fictitious markets and non-market items, stated preference judgments are typically



confusing (Butler & Loomes, 2007). When people's attitudes toward environmental improvements are characterized by uncertainty, research reveals that respondents prefer to provide a variety of economic value statements rather than a single value statement in expressed preference questionnaires (Mahieu *et al.*, 2017). Anxiety and mood disorders, such as depression, are predicted to cost Europe €187.4 billion per year in economy's production (Gustavsson *et al.* 2012, Olesen *et al.* 2012). This emerging problem is at least partly related to the growing distance between people and nature because of more urbanized and sedentary lifestyles (Miller, 2005; Soga & Gaston, 2015). Understanding and capitalizing on the processes through which natural surroundings deliver psychological advantages has the capacity to be a unique and cost-effective strategy for lowering the pervasiveness of various mental illnesses (Hartig *et al.* 2014, Shanahan *et al.* 2015).

Even though the relationship among blue and green spaces and human health is complicated in every country, understanding of its dynamics, as well as amounts of information and data on health and well-being, as well as access to green and blue spaces, vary. The goal of this study is to bridge the gap between (1) understanding complex relationship among blue and green spaces, and positive effects on mood feelings in the Shkodra' population, and (2) describing its complicated dynamics. In Albania, studies that relate the impact of blue and green spaces on the population's wellbeing has been limited and poorly explored.

2. METHODOLOGY

2.1. Study area

Shkodra is an ancient town of 2500 years old and one of the most important cities of Albania. It is situated in the northwest of Albania at a latitude 42° 4' N, and longitude 19 ° 31' E, with a surface area of 872,71 km². According to INSTAT data (2021) on 1st January, the Shkodra' municipality has a population of 200,007 inhabitants where 48,6% are men and 51,4% are women (INSTAT, 2020).

The lake of Shkodra with 369 km² (figure 1), the largest lake in Albania and Montenegro, is located on the west of the city of Shkodra and serves as a border between the two countries (Sadori *et al.*, 2014), with 149 km of it belongs to Albania. Both countries put their decisions and procedures for managing this region into action, using national legislation and international accords to preserve this area. The Albanian side of Shkodra' Lake and the green areas surrounding, is a protected area and one of the most important national and international ecosystems, proclaimed Managed Nature Reserve as well as Ramsar Area (Albanian Government Decision No.684, dated 11/02/2015, while the Montenegrin side is proclaimed National Park in 1983 (Government Report, 2020).

This area also has an essential value in terms of hydrology and ecology thanks to the lake's connection with the large hydrographic network of the Balkan, through the Drin River and the Adriatic Sea through the Buna River (Sadori *et al.*, 2014). The Shkodra' Lake basin is dominated by a Mediterranean climate with an annual solar radiation potential of 2054 km/m², which qualifies it as an area of high ecological value (Darwall *et al.*, 2014). Shkodra' Lake represents a complex of habitats with 420 different species (Petkovic, 1981; Hindak & Hindakova, 2000; Rakocevic, 2001; Miho & Witkowski, 2005; Dhora, 2005).

The shoreline of Shkodra' Lake is picturesque, with plenty of peninsulas and islets that resemble wetlands. The lake frames the historic and artistic town of Shkodra, a tranquil and relaxing environment, reflecting the effect of the water that elegantly surrounds it. It is also rich in cultural and historical monuments, which stretch along an important part of this managed nature reserve. Many visitors pass through the impressive Buna River delta to reach Lake Shkodra. Many others choose to take a cycling tour to fully immerse themselves in the natural environment of the area. During the summer, several lakeside resorts offer excellent alternatives to visitors thanks to their clear waters and proximity to the city. Visitors should not miss the waterfront restaurants offering the famous Carp fish in a variety of meals (figure 2).

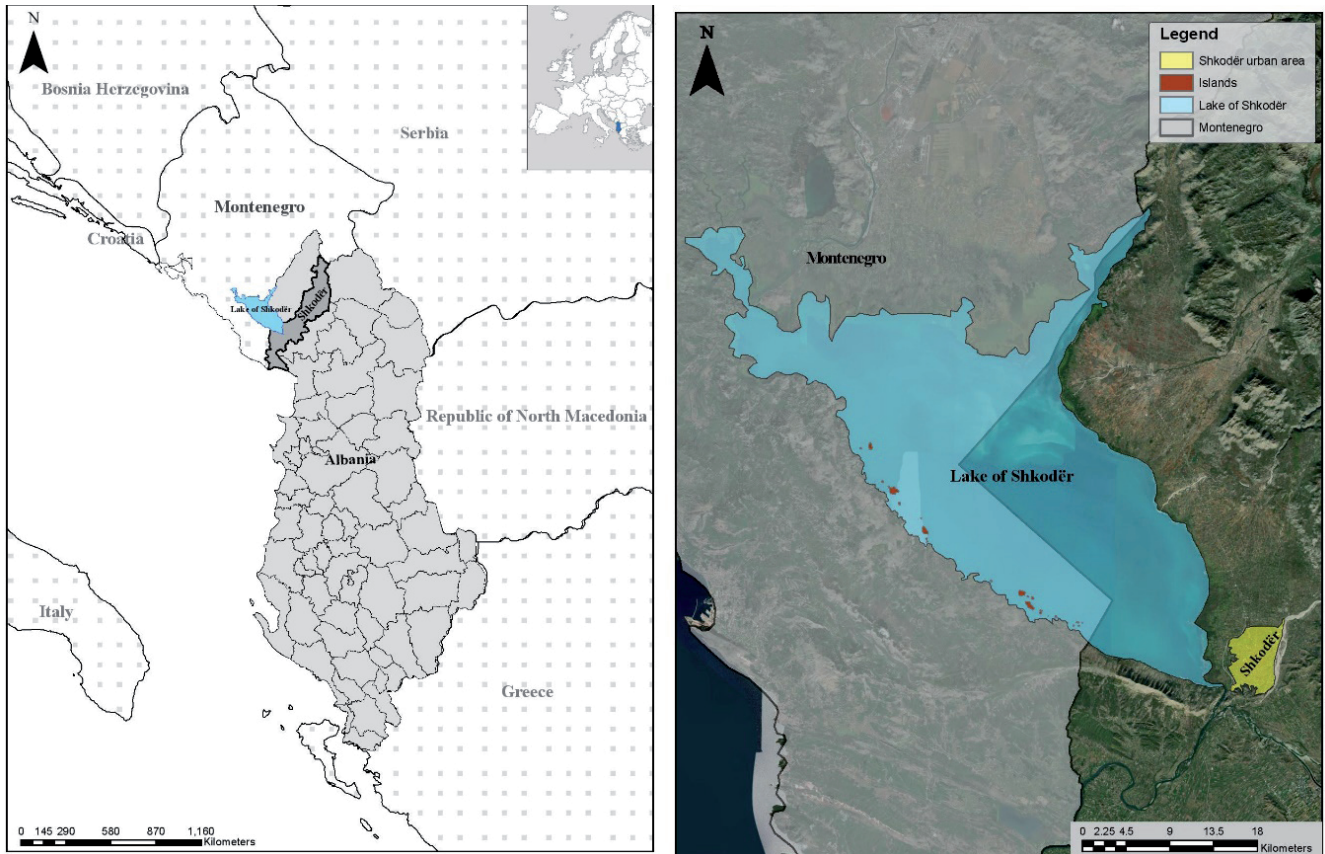


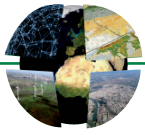
Figure 1. Location of Shkodra' Lake. Source: Author.



Figure 2. Waterfront view of Shkodra' Lake. Source: Author.

2.2. Survey

Population data presented in this paper are preliminary data extracted from an online cross-sectional survey on BGS carried out in Shkodra' city. Respondents have been asked to complete the survey via the platform Google Form, from April to May 2021. During this period, Albania was open to all citizens and visitors, with some restrictions in place, such as masks required outside and inside certain buildings and institutions,



no gatherings of more than 50 people, and public movement prohibited from 10:00 p.m. to 5:00 a.m. The questionnaire used in the study was prepared by an interdisciplinary panel formed by urban planner, geographer, psychologist, and environmental scientist. The questionnaire provided 68 questions, designed in 3 main sections: 1) General information, 2) Natural environment information, 3) Self-reported health information. To improve the clarity of the questions before launching the survey, a pilot study was conducted. After the validation and cleaning process, a representative sample (95% level of confidence) of 530 respondents was obtained. This survey targeted people over 16 years old and was disseminated to the public using social media platforms.

2.3. Variables

2.3.1. Socio-demographic characteristics

In the first part of the survey, the participants were asked to report information related to their gender (female, male), age (in years) categorized in following groups: 16-31, 32-48, 49-64, >65, marital status (married, single, divorced, in a relationship, widowed), education level (no formal education, primary school, high school, university (completed), following university studies), job status (employed, unemployed, temporary sick leave, permanently sick, disabled, retired, student homemaker), and years living in Shkodra.

2.3.2. Visits at a blue-green space

In the second section, the participants provided information related to their visits to a blue-green space by answering the following questions: "In the last 4 weeks, how many times have you visited the Shkodra' Lake? (Not at all in the last four weeks, once or twice in the last four weeks, once a week, several times a week", "How much time approximately do you spend during your visits? (in minutes)", "What kind of activity do you realized during the visit? (Quiet activities (e.g., reading, meditating), cycling, walking with a dog, walking or playing with children, eating or drinking, swimming, fishing, running/physical activity, boating (canoeing, kayaking)", "With who are you visiting Shkodra' Lake (alone, children, friends, parents (mother/father, grandma/grandpa), wife/husband or boyfriend/girlfriend)", "If you have not visited the Shkodra' Lake, what has been the reason for that? (Do not have time, this area is too crowded, this area is too far from my home, never thought about it", "Overall, how would you describe the quality of Shkodra' Lake (Very good, good, neither good nor bad, bad, very bad)".

2.3.3. Mood feelings

The information about the emotional people's mood after the visit in a green-blue space was extracted from the question: "How did you feel after visiting Shkodra' Lake? (I felt safe, I felt tranquillity, I felt part of nature, I was satisfied with the visit)".

2.4. Statistical Analyses

Descriptive statistics were used to analyze such as indicators (1) sociodemographic characteristics (age, gender, marital status, level of education and job status, years living in Shkodra; (2) frequency of visits in BGS in the last 4 weeks; (3) time spending during the visit; (4) activities carried out during the visit; (5) type of accompaniment; (6) the reason for not visiting BGS and the quality of BGS. The SPSS software platform was used for the statistical analyses. The frequency, percentage, mean and standard deviation calculations were used to calculate data from the sample. The Chi-square test was used to analyze association of visits frequency in blue-green space with the people' mood. There exists any statistical significance when p-value was $P < 0.05$.



3. PRELIMINARY RESULTS

As shown in Table 1, according to the analysis of the sociodemographic variables, the mean age of the respondents was 30.32 ± 12.971 . It can be observed that the population sample was young, with 63.4% between 16 and 31 years old, 23.4% between 32 and 48 years old, 12.6% between 49 and 64 years old, and only 0.6% over 65 years old, including 76.2% of women and 23.8% of men.

Regarding employment status, 55.8% were working at the time of the survey, 30.2% were students, 1.9% were unemployed, 1.1% were homemakers followed by 0.8% retired, and 0.2% disabled. It is interesting to remark that only 14.7% of the respondents had not visited Shkodra' Lake during the last four weeks of whom 43.5% for lack of time, 37.1% for living too far from this area, and only 3.8% for describing it as an overpopulated area.

In terms of frequency of visits to Shkodra' Lake, 30.9% had visited once or twice in the last four weeks, 28.1% several times a week, 26.2% had visited only once a week and 14.7% had not made any visits in the last four weeks.

Concerning the type of accompaniment during the visits, 37.9% visited Shkodra Lake with friends, 14.2% with wife/husband or boyfriend/girlfriend, 13.4% with children, 8.5% with parents, 5.8% with another adult, and 2.8% alone. In their visits, the respondents spent approximately 60 minutes at the Shkodra' Lake BGS as follows: 31.1% cycling, 18.3% consuming food and drink, 8.9% walked or played with children, 4.3% engaged in quiet activities (e.g., reading, meditating), 0.8% walked with a dog, 0.6% went swimming and 0.2% used this time for fishing.

In terms of quality, 46.6% of the people who had visited during the last 4 weeks rated this area as good quality, 29.8% rated it as acceptable, 14.8% considered Shkodra' Lake as very good quality and only 7.5% thought that the quality of this area was bad or very bad.

Table 1. Sample of socio-demographic, and other variables related with visits in Shkodra' Lake, Albania (N=530).

Sociodemographic variables		Visits at Shkodra' Lake	
Variables	Mean \pm SD/ n (%)	Variables	Mean \pm SD/ n (%)
Gender N=530		Visiting Shkodra' Lake during the last 4 weeks N=530	
Female	404 (76.2)	Not at all in the last four weeks	78 (14.7)
Male	126 (23.8)	Several times a week	149 (28.1)
		Once a week	139 (26.2)
Age group N=530	30.32 ± 12.971	Once or twice in the last four weeks	164 (31)
16-31	336 (63.4)	Time spending during the visit N=452 (in minutes)	(72.43 38.737)
32-48	124 (23.4)	Activities carried out during the visit	
49-64	67 (12.6)	Quiet activities (e.g., reading, meditating)	23 (4.3)
>65	3 (0.6)	Cycling	165 (31.1)
Marital status N=530		Walking with a dog	4 (0.8)
Married	29 (5.5)	Walking or playing with children	47 (8.9)
Single	297 (56.0)	Eating or drinking	97 (18.3)
Divorced	7 (1.3)	Swimming	3 (0.6)
Widowed	180 (34.0)	Fishing	1 (0.2)



Sociodemographic variables		Visits at Shkodra' Lake	
Variables	Mean ± SD/ n (%)	Variables	Mean ± SD/ n (%)
Neither of these	4 (0.8)	Other	6 (1.2)
Prefer not to answer	12 (2.4)	Running/Physical activity	104 (23)
Education level N=530		Boating (canoeing, kayaking)	2 (0.4)
Primary school	3 (0.6)	Type of accompaniment N=452	
High school	117 (22)	Wife/Husband or Boyfriend/Girlfriend	75 (16.5)
University (completed)	257 (48.5)	Children	71 (15.7)
Following university studies	153 (28.9)	Friends	201 (44.4)
Job status N=530		Another adult	31 (6.8)
Employed	296 (55.8)	Parents	45 (9.9)
Unemployed	63 (11.9)	Other	14 (3.0)
Disabled	1 (0.2)	Alone	15 (3.3)
Retired	4 (0.8)	Reason for not visiting the lake N=78	
Student	160 (30.2)	This area is overpopulated	3 (3.8)
Homemaker	6 (1.1)	This area is too far from my home	29 (37.1)
Years leaving in Shkodra	28.22 ± 14.557	I have no time	34 (43.5)
		I have never thought about this area	1 (1.2)
		Other	11 (14.1)
		Quality of Shkodra' Lake N=452	
		Neither good, nor bad	135 (29.8)
		Bad	31 (6.8)
		Good	211 (46.6)
		Very bad	8 (1.7)
		Very good	67 (14.8)

Source: Own elaboration.

In terms of mood after the visits to Shkodra Lake, there are significant differences between positive feelings with the visit ($p=0.032$) and feeling part of nature ($p=0.004$). It is generally observed that regardless of the frequency of visits 87.6% felt tranquility and 87.6% felt safe (table 2).



Table 2. Association of visits in Shkodra' Lake with the mood feelings (N=452).

Association of visits in Shkodra' Lake with mood feelings					
Variables	Once a week 139 (30.8%)	Once or twice a week 164 (36.2%)	Several times a week 149 (33%)	Total 452 (100%)	p value
I was satisfied with the visit					
Agree	122 (87.8)	7 (5.0)	116 (77.9)	382 (84.5)	
Neither agree nor disagree	10 (7.2)	7 (4.3)	11 (7.4)	28 (6.2)	0.032*
Disagree	7 (5.0)	13 (7.9)	22 (14.8)	42 (9.3)	
I felt part of nature					
Agree	127 (91.4)	141 (6.0)	112 (75.2)	380 (84.1)	
Neither agree nor disagree	6 (4.3)	8 (4.9)	16 (10.7)	30 (6.6)	0.004*
Disagree	6 (4.3)	15 (9.1)	21 (14.1)	42 (9.3)	
I felt tranquility					
Agree	127 (91.4)	144 (87.8)	125 (83.9)	396 (87.6)	
Neither agree nor disagree	6 (4.3)	5 (3.0)	5 (3.4)	16 (3.5)	
Disagree	6 (4.3)	15 (9.1)	19 (12.8)	40 (8.8)	0.157
I felt safe					
Agree	89 (64.0)	115 (70.1)	91 (61.1)	295 (65.3)	
Neither agree nor disagree	18 (12.9)	18 (11.0)	17 (11.4)	53 (11.7)	
Disagree	32 (23.0)	31 (18.9)	41 (27.5)	104 (23.0)	0.432

* P < 0.05

Source: Own elaboration.

4. DISCUSSION AND CONCLUSIONS

The current study found a correlation between people's mood and visits to blue and green spaces (BGS), in a way that people who visited Shkodra' Lake more frequently demonstrated higher positive feelings. Therefore, the results of this study confirm the results acquired from previous studies claiming the benefits of visits to BGS on mood and well-being of people (White *et al.*, 2013; Su Sugiyama *et al.*, 2008; Pretty *et al.*, 2005).

Although there are studies that affirm that visiting green spaces has beneficial impact on physical and mental health (White *et al.*, 2013) and helps us to be more relaxed and less stressed (Kellert, 1995), there is noticeable a lack of studies in the Mediterranean area in general (Braçe *et al.*, 2020) and Albania in particular, that would provide knowledge on the impact of BGS on the population health and well-being.

The objective of this study is to bring a general review on the potential health and well-being benefits of BGS exposure as in the case of Shkodra's lake (Albania). The results of this study show that 85.3% of the respondents had visited the lake of Shkodra at least once during the last four weeks doing activities such as walking, cycling, or relaxing by consuming something in the surroundings of the lake. Most of the visitors frequented the BGS spaces accompanied by their wife/husband or boyfriend/girlfriend. According to



statistical analysis, there is a significant link ($p < 0.05$) between the two variables, a) frequency of visits to the BGS and b) feelings of positive mood stating that people who visit Shkodra' Lake several times a week feel safe, more satisfied and really calm. Referring to the methodology, one of the limitations of this study is conducting the survey using an on-line platform which created biases in the obtained sample, in order to better identify gaps in research on the benefits of blue and green spaces on the population health and well-being.

The results of this study show that 85.3% of the respondents had visited the lake of Shkodra at least once during the last four weeks doing activities such as walking, cycling, or relaxing by consuming something in the surroundings of the lake. Most of the visitors frequented the BGS spaces accompanied by their wife/husband or boyfriend/girlfriend.

From the methodological aspect, another limitation of this study is conducting the survey using an on-line platform which created biases in the obtained sample, mostly expressing the opinion of relatively young people, with an average age of 30.32 years, leaving apart the opinion of older people who use fewer social media and have difficulties in using electronic devices such as computers, tablets, and mobile phones (Vaportzis *et al.*, 2017).

However, one of the study's strengths was the significant number of respondents, which ensured that the survey was representative at the population level. In addition, it is an original survey, designed specifically for this study.

Considering the positive effects that visits to BGS evoke in people's mood, it would be important to promote their visit by organizing activities, as well as the creation of green spaces with water surfaces in urban areas that do not dispose of them.

The results of this study reinforce the importance of BGS as a community resource to promote good health. Therefore, local governments who are often in charge of the design and maintenance of BGS could address community health problems by improving and creating BGS.

However, studies have shown that BGSs, in general, are underutilized. Although the health benefits of BGS have been shown, it is likely that such findings have not been adequate to persuade decision-makers to act. It is critical to emphasize that strengthening BGS is probably a practical health promotion effort that local governments can undertake.

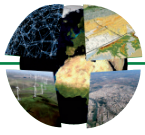
Although the findings are not conclusive, there is evidence that access to safe, clean, and appealing blue spaces has several health and wellness advantages, due to different processes such as reducing temperatures, increasing physical activity, reducing stress, and promoting quality time with relatives and friends.

As the study was a cross-sectional one, the results should be interpreted with attention. Although the findings show that visits to the BGS positively influence people's mood, to establish a true cause-effect relationship we would need longitudinal data to state this finding with certainty.

The current study's goal was to decrease the gaps that exist in research, trying to provide the potential advantages that BGS bring in the population health and well-being (Grellier *et al.*, 2017), contributing to improve some of the most significant public health issues of the twenty-first century such as depression and anxiety (WHO, 2013), lack of physical activity that may increase the risk of cardiovascular diseases (Guthold *et al.*, 2018), dementia and several malignant tumours in the long term (WHO, 2018). In addition, BGS can be used for more than just disease prevention, such as the promotion of excellent psychological health and the rehabilitation of persons with chronic diseases, recovering conditions or health problems in progress.

Responsible reporting and conflict of interest

The authors declare no conflict of interest. S.K. processed the visitor's data. S.K. and O.B. developed the methodology. S.K. wrote the manuscript and prepared the visualization. O.B. wrote the discussion and revised the manuscript.



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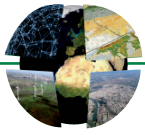
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