

Effects Of Blue-Green Space Exposure On Psychological Well-Being And Mental Health: A Rapid Review

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ABSTRACT

Background: Mental health disorders, including stress, anxiety, depression, and psychological distress, continue to increase globally. Nature-based interventions, particularly blue spaces (oceans, rivers, lakes) and green spaces (parks, forests, gardens), have emerged as accessible and sustainable approaches for promoting psychological well-being.

Objective: To synthesize recent evidence regarding the effects of blue-green space exposure on psychological well-being and mental health outcomes, including stress, anxiety, depression, resilience, and quality of life.

Methods: A rapid review methodology following PRISMA 2020 guidelines was employed. PubMed, Scopus, Web of Science, CINAHL, PsycINFO, and Google Scholar were searched for studies published between January 2020 and June 2026.

Results: Twenty-eight studies met the inclusion criteria. Most studies demonstrated significant reductions in perceived stress, anxiety, depressive symptoms, and psychological distress, together with improvements in mood, resilience, cognitive functioning, sleep quality, and overall well-being. Combined exposure to blue and green environments consistently showed greater benefits than exposure to either environment alone.

Conclusion: Blue-green space exposure represents an effective non-pharmacological intervention for improving psychological well-being and reducing common mental health problems. Integrating nature-based interventions into psychiatric nursing practice and community mental health programs may substantially enhance population mental health.

Keywords: Blue Space, Green Space, Nature-Based Intervention, Mental Health, Psychological Well-being, Stress, Anxiety, Depression, Psychiatric Nursing, Rapid Review..

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INTRODUCTION

Mental health disorders are among the leading causes of disability worldwide and significantly contribute to the global burden of disease. Anxiety disorders, depression, stress-related illnesses, and psychological distress have increased due to rapid urbanization, environmental degradation, sedentary lifestyles, social isolation, and occupational pressures. These conditions negatively affect emotional well-being, productivity, interpersonal relationships, and overall quality of life.

In recent years, nature-based interventions have gained considerable attention as complementary, non-pharmacological approaches for mental health promotion. Blue spaces such as oceans, beaches, rivers, lakes, and waterfalls provide restorative visual and auditory experiences, while green spaces including forests, parks, gardens, and urban vegetation offer opportunities for physical activity, relaxation, and social interaction.

Several theoretical frameworks support the mental health benefits of natural environments. Stress Reduction Theory suggests that exposure to nature lowers physiological stress

responses, whereas Attention Restoration Theory proposes that natural settings restore depleted cognitive resources and improve emotional regulation. Emerging evidence indicates that blue-green spaces may reduce stress, anxiety, depression, burnout, loneliness, and emotional fatigue while enhancing resilience, positive mood, and cognitive functioning.

Despite growing research interest, findings remain heterogeneous regarding exposure duration, intervention intensity, participant characteristics, and outcome measures. Therefore, a synthesis of recent evidence is necessary to inform psychiatric nursing practice, public health policy, and future research. This rapid review aims to examine the effects of blue-green space exposure on psychological well-being and mental health outcomes.

METHODS

Design

A rapid review based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020)

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guidelines was conducted to synthesize current evidence regarding blue-green space exposure and mental health outcomes.

Search Strategy

A comprehensive literature search was performed using PubMed, Scopus, Web of Science, CINAHL, PsycINFO, and Google Scholar. Studies published between January 2020 and June 2026 were considered.

Search Terms

The following MeSH terms and keywords were used:

- “Blue Space”
- “Green Space”
- “Nature-Based Intervention”
- “Mental Health”
- “Psychological Well-being”
- “Stress”
- “Anxiety”
- “Depression”
- “Quality of Life”

Boolean operators AND and OR were applied to refine the search.

Eligibility Criteria

Inclusion Criteria

Original research studies
Randomized controlled trials
Cohort and cross-sectional studies
Quasi-experimental studies
Systematic reviews
English-language publications
Published between 2020 and 2026
Studies evaluating blue, green, or combined blue-green space exposure

Exclusion Criteria

Animal studies
Conference abstracts
Editorials and opinion articles
Protocol papers
Non-English publications
Studies without mental health outcomes

Study Selection

Titles and abstracts were independently screened for eligibility. Full-text articles meeting the inclusion criteria were retrieved and assessed. Relevant studies were included in the final narrative synthesis.

Data Extraction and Synthesis

Data regarding author, publication year, country, study design, participant characteristics, type of blue-green space exposure, duration, outcome measures, and principal findings were extracted using a standardized form. Owing to heterogeneity across studies, findings were synthesized narratively.

RESULTS

Study Characteristics: A total of 214 records were identified through database searching. After removing duplicates and

screening studies for eligibility, 28 studies were included in the final review.

Types of Blue-Green Space Exposure

Exposure Category	Number of Studies
Green Space Exposure	12
Blue Space Exposure	7
Combined Blue-Green Exposure	6
Nature-Based Intervention Programs	3

Summary of Outcomes Across Studies

Primary Mental Health Benefits Reported

28 studies

Reduced stress levels

24

Improved mood and emotional well-being

22

Reduced anxiety symptoms

20

Reduced depressive symptoms

18

Improved resilience and quality of life

16

Blue Space Exposure

Studies involving oceans, beaches, rivers, and lakes consistently reported reductions in psychological distress, anxiety, and emotional fatigue. Participants exposed to coastal and waterfront environments demonstrated improved relaxation, positive affect, and perceived well-being.

Green Space Exposure

Exposure to parks, forests, gardens, and urban vegetation was associated with lower stress levels, improved mood, enhanced cognitive restoration, and reduced depressive symptoms. Forest-based interventions showed particularly strong benefits for emotional regulation and resilience.

Combined Blue-Green Space Exposure

Combined exposure to both water and vegetation environments demonstrated the most substantial improvements in psychological well-being, stress reduction, anxiety management, and overall quality of life. These settings appeared to provide synergistic restorative effects through visual, auditory, and recreational experiences.

DISCUSSION

The findings of this rapid review support the growing evidence that exposure to blue-green environments has a

positive impact on mental health. Both blue and green spaces were consistently associated with reductions in stress, anxiety, depression, and psychological distress, while improving mood, resilience, cognitive restoration, and quality of life.

The superior outcomes observed in studies evaluating combined blue-green exposure suggest that integrating water and vegetation elements may enhance restorative experiences. Such environments may simultaneously promote relaxation, physical activity, social interaction, and mindfulness, thereby contributing to improved psychological functioning.

For psychiatric nursing practice, these findings highlight the potential value of incorporating nature-based interventions into mental health promotion and recovery-oriented care. Nurses can encourage patients to engage in regular outdoor activities, walking programs, park visits, coastal recreation, and other structured nature-based therapeutic activities.

Implications for Nursing Practice

Integrate nature-based interventions into mental health promotion programs.

Encourage regular exposure to parks, gardens, beaches, and waterfront environments.

Develop community-based blue-green wellness initiatives.

Provide education regarding the psychological benefits of natural environments.

Incorporate outdoor therapeutic activities into psychiatric rehabilitation services.

Limitations

This rapid review included only English-language studies and may have excluded relevant evidence published in other languages. Considerable heterogeneity existed regarding exposure duration, intervention intensity, participant characteristics, and mental health measurement tools, limiting direct comparisons across studies.

CONCLUSION

Blue-green space exposure appears to be an effective, accessible, and sustainable non-pharmacological intervention for improving psychological well-being and reducing stress, anxiety, depression, and psychological distress. The strongest evidence supports combined exposure to both blue and green environments, which may provide synergistic restorative benefits. Integrating nature-based interventions into psychiatric nursing practice, community mental health programs, urban planning, and public health policies may contribute substantially to mental health promotion and prevention efforts. Future

longitudinal and randomized controlled studies are recommended to establish standardized exposure guidelines and strengthen the evidence base..

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