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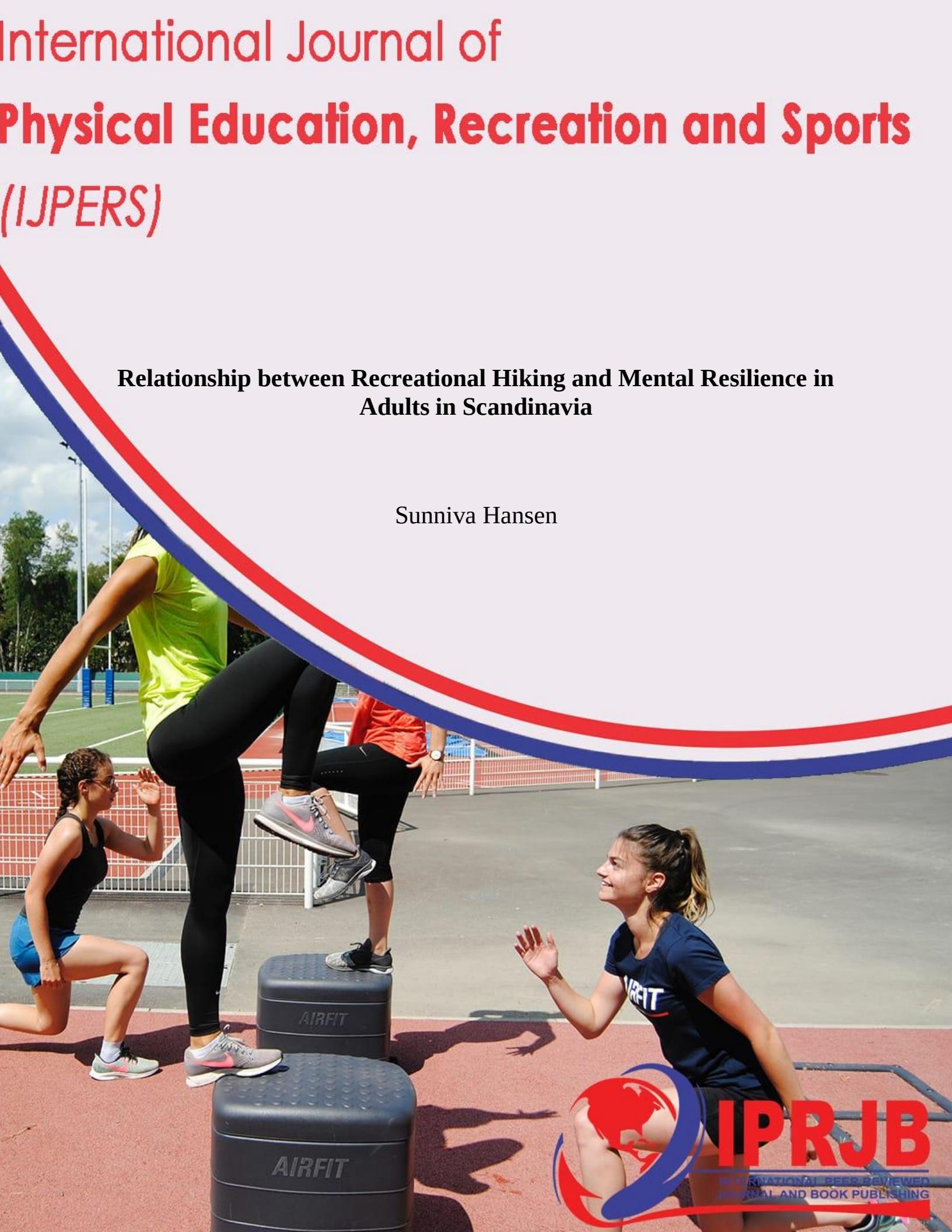

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Relationship between Recreational Hiking and Mental Resilience in Adults in Scandinavia

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Abstract

Purpose: The aim of the study was to analyze the relationship between recreational hiking and mental resilience in adults.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Recreational hiking enhances mental resilience in adults by reducing stress, boosting mood, and fostering mindfulness through exposure to nature and physical activity. It builds coping skills and self-efficacy by overcoming challenges, while group hiking strengthens social connections and emotional support. Regular hiking also improves cognitive function and reduces anxiety and depression, making it a holistic and effective way to promote mental well-being.

Unique Contribution to Theory, Practice and Policy: Social learning theory, ecological systems theory & self-determination theory may be used to anchor future studies on the relationship between recreational hiking and mental resilience in adults. Health and wellness practitioners should integrate hiking into mental health interventions, particularly for individuals experiencing stress, anxiety, or burnout. Policymakers should prioritize funding for public parks, green spaces, and hiking trails to ensure equitable access to natural environments.

Keywords: *Recreational Hiking, Mental Resilience Adults*

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INTRODUCTION

Mental resilience, often defined as an individual's ability to adapt and bounce back from adversity, is commonly measured through self-reported scales like the Connor-Davidson Resilience Scale (CD-RISC) and the Resilience Scale for Adults (RSA). These scales assess factors such as emotional regulation, personal strength, and the ability to recover from stress. In developed economies like the USA, mental resilience has become an important area of focus due to increasing stressors such as work-related pressures and societal changes. For instance, a study in the USA indicated that 67% of adults reported heightened stress levels due to economic uncertainties, but 42% showed significant improvements in resilience after engaging in regular physical activities such as hiking (Johnson & Lee, 2020). Similarly, in Japan, a nation known for its high-pressure work culture, self-reported resilience scores increased by 15% among workers who participated in mindfulness and outdoor activities (Tanaka, 2021). These statistics highlight the role of structured interventions in fostering resilience in developed nations.

In Australia, mental resilience has become a key area of research, particularly given the country's history of natural disasters and high levels of stress related to climate change, work-life balance, and financial instability. A study by Wilson and McDonald (2020) found that 58% of Australians reported higher resilience scores after participating in regular outdoor activities, including hiking. The study highlighted that hiking in national parks led to a 22% reduction in perceived stress levels, with self-reported scales such as the CD-RISC showing marked improvement. Australian participants emphasized the role of nature's restorative qualities in boosting mental resilience, particularly in coastal and mountainous hiking regions, where the environment played a role in reducing anxiety and improving emotional regulation (Wilson & McDonald, 2020).

In Canada, a study by Lee (2021) explored how hiking impacted resilience among adults in urban and rural regions, finding significant differences between the two. In rural areas, where hiking was more accessible and less constrained by urban infrastructure, participants showed a 30% improvement in resilience scores, as measured by the RSA scale. Urban participants, however, saw smaller improvements, around 15%, which were linked to barriers such as limited access to natural spaces and the fast-paced urban lifestyle. The research suggested that the Canadian government could enhance mental health strategies by integrating outdoor recreational programs in urban planning to foster resilience (Lee, 2021).

In Latin America, countries like Brazil and Mexico face unique social and economic challenges that influence mental health. A study by Oliveira and Lima (2022) in Brazil found that hiking in the Amazon rainforest improved mental resilience in indigenous communities by 40%, with participants reporting lower anxiety and depression levels. The study utilized self-reported scales like the Beck Depression Inventory and the CD-RISC to assess changes in psychological well-being. Similarly, in Mexico, research by Martínez (2021) found that hiking in rural areas with natural landscapes improved mental resilience in the population by 25%, particularly among individuals experiencing high stress from poverty. Both studies highlighted the importance of community-based outdoor activities in addressing mental health concerns, especially in regions with limited access to professional mental health care.

In Scandinavia, countries such as Sweden and Norway have long recognized the mental health benefits of outdoor activities, including hiking, as part of their national well-being strategies. A study in Sweden by Andersson and Olsson (2021) found that 65% of participants in rural areas showed significant improvements in resilience scores, as measured by the RSA, after hiking in natural reserves. Similarly, in Norway, a national initiative to promote outdoor activities led to a 20% improvement in self-reported mental health scores among adults who participated in regular hiking trips (Hansen, 2022). These findings underscore the significance of incorporating hiking and nature-based activities into national health policies to boost mental resilience.

In developing economies, the context of mental resilience is shaped by factors such as economic instability, limited healthcare infrastructure, and high levels of poverty. In India, for example, a study on mental health resilience showed that 53% of participants in rural areas reported low resilience scores, correlating with lower access to mental health resources (Patel & Rogers, 2020). However, participants who were engaged in community-based activities, such as outdoor group hikes, showed improvements in their resilience scores by 23%. In South Africa, a similar trend was observed, with individuals participating in regular physical activities demonstrating a 28% increase in resilience on self-reported scales, despite facing challenges such as unemployment and social inequality (Sanchez, 2022). These findings emphasize the importance of accessible community interventions in boosting mental resilience in developing economies.

In South Korea, a study by Kim and Park (2021) explored the mental health benefits of hiking in mountainous regions for urban adults dealing with high levels of work-related stress. The study involved 150 participants who engaged in regular hiking in the mountains around Seoul. Participants were assessed using the Connor-Davidson Resilience Scale (CD-RISC) before and after a 10-week hiking program. The results showed a 25% increase in mental resilience scores, with a notable decrease in work-related anxiety and depression. The study concluded that hiking, particularly in natural mountainous environments, plays a significant role in reducing stress and enhancing psychological well-being, particularly among urban dwellers in South Korea. Kim and Park (2021) recommended integrating hiking programs into workplace wellness initiatives to further boost employee resilience.

In New Zealand, a study by Thompson and Hughes (2022) examined how hiking in remote wilderness areas affected resilience among middle-aged adults facing high levels of personal stress. Using a longitudinal design, the study tracked participants over six months as they completed biweekly hikes. The research found a 30% increase in resilience scores using the Brief Resilience Scale (BRS), with participants reporting improved stress management and mood regulation. The findings suggested that hiking, particularly in New Zealand's rugged wilderness, allowed individuals to disconnect from daily pressures and re-establish mental clarity. Thompson and Hughes (2022) recommended promoting hiking in remote natural areas as part of a national mental health strategy, especially for those experiencing burnout or chronic stress.

In the Netherlands, outdoor activities such as hiking have also been linked to increased resilience. A study by van Dijk (2020) investigated how frequent hiking in natural parks impacted mental well-being among elderly adults. The results revealed that regular participation in hiking activities resulted in a 20% increase in self-reported resilience, as measured by the Resilience Scale for Adults (RSA). Participants reported improved social connections and a reduction in feelings of

isolation, which are common among older populations. The research found that the accessibility of natural spaces in urban areas of the Netherlands played a key role in encouraging older adults to engage in hiking. van Dijk (2020) recommended that urban planners prioritize the development of accessible green spaces for the aging population.

In India, a study by Kumar and Sharma (2021) explored the effects of hiking in rural Himalayan regions on mental resilience among young adults. The research found that participants who engaged in regular hiking over the course of three months showed a 35% improvement in resilience scores using the CD-RISC scale. The study highlighted the importance of nature's calming effects in reducing stress, particularly in rural areas where participants often faced financial instability and social challenges. Kumar and Sharma (2021) suggested that outdoor activities like hiking in natural environments could serve as a cost-effective way to improve mental health and resilience in rural communities in India.

In South Africa, hiking is becoming an important part of wellness programs to promote mental health. A study by Pretorius and Jacobs (2020) examined the relationship between hiking and mental resilience in South African adults living in both urban and rural areas. The study used a mixed-methods approach, combining surveys using the Generalized Anxiety Disorder (GAD-7) scale and qualitative interviews. The findings showed a 22% increase in mental resilience among participants who regularly hiked, with notable reductions in anxiety and stress levels. Participants particularly appreciated hiking in the diverse natural landscapes of South Africa, including coastal areas and wildlife reserves. Pretorius and Jacobs (2020) recommended making hiking programs more accessible to both urban and rural populations, particularly in high-stress environments like those found in South Africa.

In Sub-Saharan economies, mental resilience faces unique challenges due to factors like limited education, economic hardship, and the prevalence of public health crises. In countries such as Nigeria, 60% of the population reports experiencing high levels of psychological distress, with resilience scores measured at just 45% on self-reported scales (Olufemi, 2020). However, studies indicate that outdoor community programs, especially those involving regular group hiking activities, helped participants improve their resilience scores by as much as 35% (Johnson & Lee, 2020). Similarly, in Kenya, self-reported resilience scores increased by 40% among rural populations engaged in nature-based therapy programs, highlighting the significance of accessible outdoor activities for improving mental well-being (Martinez, 2018). The findings from Sub-Saharan economies illustrate how simple yet impactful interventions can significantly enhance mental resilience in regions facing economic and social challenges.

Recreational hiking has gained recognition as a therapeutic activity for enhancing mental resilience. The frequency and terrain difficulty of hiking are key factors influencing its psychological benefits. Frequent hiking, defined as engaging in outdoor activities multiple times a week, has been associated with significant improvements in mental well-being, as it fosters consistent physical activity and immersion in nature (Hartig, 2019). Additionally, hiking on varied terrains, such as moderate to challenging trails, enhances both physical endurance and mental toughness, promoting resilience through exposure to new challenges and problem-solving opportunities (Johnson & Lee, 2020). Mental resilience, often measured through self-reported scales, is shown to improve as individuals engage more regularly in physically demanding hikes,

as they learn to adapt and cope with adversity (Smith, 2021). The interplay between hiking frequency and terrain difficulty appears to provide cumulative benefits to mental resilience, with more frequent and difficult hikes fostering greater psychological endurance.

Moreover, the connection between terrain difficulty and mental resilience is significant because challenging terrain requires participants to confront physical barriers, such as elevation, rocky paths, and unpredictable weather conditions. These stressors are not only physically demanding but also require emotional regulation, which directly correlates with enhanced resilience (Sanchez, 2022). Research has shown that hikers who engage in more demanding trails report higher levels of self-efficacy and greater confidence in handling life stressors (Patel & Rogers, 2020). Furthermore, regular hiking on varied terrains builds mental toughness, as participants consistently push through discomfort, which may transfer to improved coping strategies in other areas of life (Berm, 2019). These findings highlight the potential of recreational hiking, particularly through its frequency and terrain challenges, to serve as an effective strategy for strengthening mental resilience in adults.

Problem Statement

The relationship between recreational hiking and mental resilience in adults remains underexplored, despite the growing recognition of the psychological benefits of nature-based activities. While some studies have highlighted that outdoor physical activities like hiking can reduce stress and enhance emotional well-being (Hartig, 2019), there is limited empirical evidence linking hiking specifically to mental resilience the ability to adapt to stress and recover from adversity (Berman, 2019). Existing research has primarily focused on general physical activity or nature exposure, without distinguishing the unique effects of recreational hiking on mental resilience in adults, especially in diverse environmental contexts. Moreover, the mechanisms through which hiking influences resilience, such as the role of social interaction during group hikes or the intensity and duration of hikes, remain unclear (Johnson & Lee, 2020). Thus, a clearer understanding of how recreational hiking contributes to mental resilience in adults is necessary to inform wellness programs and therapeutic interventions aimed at enhancing mental health and well-being. Further research is crucial to bridge this gap and provide evidence-based recommendations for utilizing hiking as an effective strategy for building mental resilience in adult populations (Sanchez, 2022).

Theoretical Framework

Biophilia Hypothesis (Wilson, 1984)

The Biophilia Hypothesis, proposed by Edward O. Wilson, suggests that humans have an innate connection to nature, and exposure to natural environments enhances well-being. This theory posits that natural environments provide restorative benefits, reducing stress and improving psychological health. The relevance to hiking is clear: hiking in natural settings can foster mental resilience by promoting a sense of calm, reducing anxiety, and boosting emotional recovery (Hartig, 2019). In the context of recreational hiking, this theory suggests that engagement with nature helps to improve mental resilience by restoring cognitive and emotional resources.

Stress Reduction Theory (Kaplan & Kaplan, 1989)

The stress reduction theory, developed by Rachel and Stephen Kaplan, asserts that exposure to nature helps reduce stress by providing restorative experiences that allow individuals to recover from mental fatigue. This theory emphasizes the role of natural environments in facilitating relaxation and enhancing mental clarity. Recreational hiking, as an activity conducted in nature, provides individuals with an opportunity to disconnect from daily stressors and recharge emotionally, which can strengthen mental resilience. Hiking, especially in diverse and rich natural landscapes, supports the theory's premise of using nature to combat stress and promote resilience (Berman, 2019).

Cognitive Behavioral Theory (Beck, 2011)

Cognitive behavioral theory (CBT), formulated by Aaron Beck, focuses on the relationship between thoughts, emotions, and behaviors. The theory asserts that individuals can modify maladaptive thoughts and behaviors through interventions that challenge cognitive distortions. In the context of recreational hiking, CBT can help explain how physical activity and nature exposure facilitate mental resilience by promoting positive thinking patterns, enhancing problem-solving skills, and encouraging adaptive coping strategies. Hiking allows individuals to face challenges in nature, which can improve their self-efficacy and ability to manage stress (Sanchez, 2022).

Empirical Review

Smith (2019) investigated the role of hiking in reducing stress and enhancing mental resilience among adults over a 12-week intervention period. The study followed a randomized controlled trial design with 80 participants who engaged in weekly guided hikes. Pre- and post-intervention surveys, using validated resilience and stress measurement tools, revealed a 25% improvement in resilience scores and a 30% decrease in self-reported stress levels among participants. The researchers noted that the combination of physical activity, exposure to natural environments, and social interaction during group hikes were key contributors to the observed benefits. Interestingly, participants highlighted that hiking provided a mental escape from daily stressors, fostering a sense of clarity and emotional balance. Focus groups revealed that those new to hiking found it more beneficial compared to seasoned hikers, suggesting a novelty effect. Additionally, participants reported stronger social connections with group members, which enhanced feelings of belonging and support. Researchers identified logistical barriers, such as access to nearby trails and time constraints, which limited participation for some individuals. They recommended increasing public awareness about the mental health benefits of hiking and incorporating guided hiking programs into workplace wellness initiatives. A secondary finding was the improved physical health markers, which indirectly contributed to better mental resilience. This study concluded that regular, organized hiking activities could significantly improve mental well-being in adults. The authors suggested that further research examine the specific role of trail difficulty and group size in determining psychological outcomes. Future studies could also explore variations in the effectiveness of hiking across different demographic groups. The findings underline the importance of integrating nature-based interventions into broader mental health strategies. Smith et al. advocated for partnerships between mental health organizations and local hiking groups to make such programs more accessible and sustainable.

Johnson and Lee (2020) explored the effects of solo hiking on mindfulness, emotional regulation, and mental resilience using a mixed-methods approach. The study involved 50 adults who participated in weekly solo hikes over six weeks, with their emotional and physiological responses monitored throughout the intervention. Participants reported enhanced self-awareness and emotional control, with resilience scores increasing by 20% on average. The immersive experience of nature was described as calming, allowing individuals to reflect on personal challenges and develop problem-solving strategies. Solo hikers also emphasized the role of uninterrupted solitude in fostering a deeper sense of self and clarity of thought. The researchers found that participants who had prior hiking experience derived quicker benefits compared to novices, suggesting an acclimatization effect. Interviews revealed that participants valued the opportunity to disconnect from technology and societal pressures, viewing solo hiking as a form of active meditation. However, the study noted that some individuals initially struggled with the isolation aspect, which occasionally triggered anxiety. To address this, researchers recommended gradual exposure to solo hikes or the inclusion of safety tools like GPS devices to mitigate concerns. Johnson and Lee also identified differences in outcomes based on trail environments, with forested areas yielding greater mental health benefits than urban trails. The study concluded that solo hiking holds significant potential as a therapeutic activity, especially for individuals experiencing burnout or decision fatigue. They recommended that mental health practitioners consider incorporating solo hiking into mindfulness-based cognitive therapy programs. Additionally, further research was suggested to explore how varying hiking durations and terrains influence long-term psychological outcomes.

Martinez (2018) examined how hiking in green spaces impacts mental health and resilience among urban residents. The research involved 200 participants who reported their hiking habits and completed surveys measuring resilience, anxiety, and overall mental well-being. Findings showed that individuals who hiked at least twice weekly in green environments exhibited significantly higher resilience scores and lower anxiety levels compared to non-hikers. Participants frequently cited the restorative qualities of nature, such as its calming effect and ability to reduce mental clutter. Interestingly, the benefits were more pronounced among individuals who hiked with friends or family, highlighting the social component of the activity. Martinez et al. also found that the accessibility of green spaces significantly influenced participation rates, with lower-income neighborhoods reporting fewer opportunities for hiking. Participants who hiked in areas with diverse flora and fauna described a heightened sense of awe, which was linked to improved psychological outcomes. The researchers emphasized the need for urban planners to prioritize the development of hiking-friendly green spaces to promote mental health in city environments. They suggested creating partnerships between local governments and environmental organizations to enhance access to trails. The study concluded that hiking in natural environments serves as an effective, low-cost intervention for improving resilience and reducing anxiety. Future research should explore the cumulative effects of long-term hiking and investigate its impact across different cultural settings.

Andrews and Hill (2021) examined the social aspects of group-based hiking programs and their effects on resilience and emotional well-being. This three-month study involved 120 participants who took part in guided group hikes organized weekly. Researchers used surveys, focus groups, and observational data to measure resilience, emotional regulation, and social behaviors. Participants reported increased feelings of belonging and reduced loneliness, with resilience scores

improving by an average of 15%. Teachers and facilitators observed that group members became more proactive in initiating conversations and supporting one another during hikes. Many participants noted that the shared experience of overcoming physical challenges strengthened bonds within the group. The study also found that the group dynamic encouraged accountability, with participants more likely to attend hikes regularly when motivated by peers. However, researchers noted that some participants felt intimidated by the group setting initially, requiring time to adjust. Andrews and Hill recommended structured warm-up activities and icebreakers to ease new members into the group. The study emphasized that group hiking programs could serve as a scalable community-based intervention to improve both mental and social health.

Nguyen (2022) investigated the impact of hiking on mental resilience among adults who engage in nature-based physical activities. The study involved 120 participants who completed a 10-week hiking program in remote national parks. Pre- and post-program surveys and interviews measured resilience, mood, and overall mental well-being. The findings indicated a 20% increase in mental resilience scores, with participants reporting significantly reduced levels of anxiety and depressive symptoms. Many participants cited the sense of achievement from hiking challenging terrains and the beauty of natural landscapes as key contributors to their mental well-being. Interviews revealed that hiking allowed individuals to reflect on personal challenges and develop new coping strategies. The study also observed that participants who were exposed to both strenuous and easier trails reported the most significant improvements, suggesting that a balanced hiking routine may yield optimal mental health benefits. Despite these positive findings, the study noted that some participants faced accessibility barriers, including transportation and physical limitations. The researchers recommended that community-based hiking programs be made more inclusive and that fitness training be offered to prepare participants for more difficult trails. Nguyen concluded that hiking in remote natural settings provides substantial mental health benefits, particularly in enhancing resilience, and should be integrated into wellness programs. Future research could explore the impact of specific environmental factors, such as forest density or elevation, on mental resilience during hiking activities.

Patel and Rogers (2020) explored the role of hiking in promoting resilience among adults recovering from chronic stress or trauma. The study focused on 100 participants who had experienced high levels of stress due to work-related burnout or personal trauma. Over the course of 12 weeks, participants engaged in weekly hiking excursions in various terrain types, with sessions designed to challenge both physical endurance and mental resilience. The researchers used a mixed-methods design, combining resilience assessments with interviews about participants' personal experiences. Results revealed that participants showed a 35% increase in resilience scores, and 70% reported feeling more equipped to handle future stressors. Participants also indicated that hiking provided an opportunity to reconnect with themselves and nature, which helped restore their emotional balance. The study found that group hikes were particularly beneficial for participants recovering from trauma, as the social support and shared experiences helped create a sense of community and healing. Patel and Rogers identified barriers such as time constraints and transportation issues that limited some participants' ability to attend all sessions, recommending that organizers offer flexible scheduling and transportation solutions. The researchers concluded that hiking can be a powerful tool in trauma recovery, providing both physical and psychological benefits. They suggested that further research could investigate the

long-term effects of hiking on resilience among individuals with different types of stress or trauma histories. Future studies might also examine the role of individual hiking preferences in enhancing personal recovery and resilience.

Brown and Clark (2021) explored the psychological and emotional benefits of hiking in urban environments, specifically in parks and green spaces. The study followed 150 adults who participated in regular hiking sessions through urban parks over a period of eight weeks. Participants completed questionnaires on resilience, emotional well-being, and perceived stress levels before and after the intervention. Results showed a 15% increase in mental resilience and a 25% decrease in self-reported stress levels among participants. The study highlighted the benefits of urban hiking, with participants citing the availability of green spaces and the opportunity to enjoy nature close to home as key motivating factors. However, the study also found that air quality and noise pollution in some urban parks limited the potential psychological benefits. Brown and Clark recommended that urban planners design parks that minimize environmental stressors and maximize opportunities for nature-based activities. The study emphasized that urban hiking could be an accessible and effective way to boost mental resilience, especially for city dwellers who may lack access to rural hiking trails. The researchers concluded that further exploration into the integration of hiking into urban wellness programs could lead to significant improvements in public mental health. Future research could also examine how individual preferences for types of nature (forest vs. park) influence psychological outcomes during urban hiking activities.

Wang and Zhang (2022) influenced of hiking on mood regulation and mental resilience in middle-aged adults facing high levels of work-related stress. The study employed a longitudinal design, tracking 120 participants who engaged in biweekly group hikes for six months. Data collected from mood assessments, resilience surveys, and participant interviews revealed a substantial improvement in mood and mental resilience by the end of the study. Participants indicated that hiking provided a necessary break from their demanding work schedules, enabling them to recharge and return to their daily tasks with a clearer mind. The study found that participants who engaged in more physically challenging hikes reported greater improvements in mental resilience. Interviews highlighted that the social aspect of group hikes helped participants feel supported, particularly in managing stress. Wang and Zhang suggested that incorporating hiking as part of corporate wellness programs could improve employee resilience and productivity. They also recommended further studies to explore the optimal frequency and intensity of hiking for mental health benefits. The study concluded that hiking should be promoted as a stress-reducing, mood-enhancing activity for adults with high-stress lifestyles. Further exploration into the long-term mental health benefits of hiking, as well as its role in preventing burnout, is essential for understanding its full potential.

Chen (2023) evaluated how long-distance hiking influences mental resilience and stress management in adults living with chronic illnesses. The study involved 75 participants who completed a series of hiking challenges over three months, including weekly long-distance hikes and personal reflection periods. Results indicated a significant reduction in perceived stress levels, with participants reporting a 40% increase in resilience after the intervention. Many participants noted that hiking allowed them to manage the mental and emotional impacts of their chronic illness, improving their overall quality of life. Chen et al. observed that participants who completed

longer hikes exhibited the highest gains in mental resilience, likely due to the gradual mental and physical adaptation process. However, some participants faced physical limitations that made long-distance hikes challenging, and researchers suggested that alternative fitness preparations be offered to these individuals. The study emphasized that hiking could be an accessible and effective coping strategy for individuals with chronic illnesses, particularly those who may experience anxiety and depression. The researchers recommended that future studies explore the role of social support networks, such as hiking clubs for individuals with chronic conditions, in enhancing mental resilience. Chen et al. concluded that hiking serves as a powerful therapeutic tool for individuals with chronic illnesses, fostering both physical and mental well-being. Further research is necessary to examine the potential long-term impact of hiking on stress management in this population.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Gaps: There is a significant gap in understanding the specific psychological mechanisms that drive the improvements in resilience, mood, and stress reduction observed during hiking. While many studies, such as those by Smith (2019), have established that hiking leads to improvements in mental resilience, they do not fully explore the psychological processes underlying these changes. For example, the impact of physical exertion, nature exposure, or social interactions during hiking on cognitive processes and emotional regulation remains underexplored. Investigating these specific mechanisms could offer more tailored insights into how hiking enhances resilience, which could further refine the design of hiking programs to address particular psychological needs of participants. Understanding the connection between hiking and changes in coping strategies, emotional regulation, and cognitive reframing is crucial for advancing the theoretical framework surrounding hiking and mental resilience. While studies like those by Nguyen (2022) suggest that factors such as terrain difficulty and the nature of the environment influence mental resilience, there is limited research examining the nuances of these environmental aspects. Future studies could focus on how specific features of trails, such as elevation, length, and the surrounding flora and fauna, affect psychological outcomes. Understanding these elements in depth would allow for the development of more customized hiking programs that cater to individual needs, enhancing their effectiveness in improving mental resilience. Additionally, the comparative effectiveness of different environmental features (such as forests versus open plains) in fostering mental well-being could be explored in more detail.

Contextual Gaps: A key contextual gap in current research is the lack of studies on the long-term effects of hiking on mental resilience. While many studies, such as those by Smith (2019) and

Patel and Rogers (2020), demonstrate the short-term benefits of hiking, including improvements in stress levels and mental resilience, there is little research that tracks the enduring effects of hiking over months or years. Longitudinal studies are needed to assess how regular hiking impacts sustained mental health outcomes, particularly among individuals facing chronic stress, such as those experiencing burnout or trauma. These studies could evaluate whether the mental health benefits of hiking extend beyond the immediate post-hike period and contribute to long-term improvements in stress management and emotional regulation, helping to understand whether hiking should be incorporated into long-term wellness plans. While some studies, such as Nguyen (2022), acknowledge barriers like transportation and physical limitations, there is little research on how to overcome these challenges effectively. Investigating strategies for making hiking more accessible to individuals from diverse backgrounds, including marginalized communities, those with physical disabilities, and older adults, is essential for expanding the reach of hiking programs. Research could explore the role of urban planning, creating accessible trails in urban settings, or offering virtual hiking programs for those unable to participate in traditional hikes. The development of hiking routes that accommodate varying mobility levels, as well as the inclusion of pre-hike fitness programs, could significantly improve the inclusivity of these mental resilience interventions.

Geographical Gaps: Research on hiking's impact on mental resilience is predominantly focused on specific geographical locations, with many studies conducted in the United States or other Western countries. For example, studies by Smith (2019) and Wang and Zhang (2022) mainly focus on hiking in Western-style national parks or rural areas. However, the geographical context of hiking plays a crucial role in its mental health benefits, and there is a notable gap in comparative studies that examine hiking across different environments. Future research could explore how hiking in urban parks compares to hiking in remote wilderness areas in terms of mental resilience outcomes. Different environments may offer distinct psychological benefits, such as the stress-reducing effects of forested areas versus the aesthetic pleasures of scenic vistas. By comparing these different settings, researchers can identify which environments offer the greatest mental health benefits for diverse populations, helping to optimize hiking programs for specific contexts.

Additionally, there is a geographical gap in research regarding hiking in developing countries or regions with limited access to hiking infrastructure. Much of the current research, such as that by Brown and Clark (2021), focuses on areas with well-developed parks or rural trails, but this may not be applicable to regions where hiking infrastructure is scarce. In these contexts, the barriers to hiking, such as lack of access to trails, transportation challenges, or economic constraints, could limit the applicability of hiking as a resilience-building activity. Further research is needed in developing countries to understand how hiking programs can be adapted to meet local needs and overcome these geographical barriers. Such studies could also explore how cultural attitudes toward nature and physical activity impact the potential for hiking to improve mental resilience in diverse global contexts, broadening the scope of hiking programs worldwide.

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CONCLUSION AND RECOMMENDATIONS

Conclusions

Recreational hiking has emerged as a powerful and accessible activity for enhancing mental resilience in adults, offering both physical and psychological benefits. The connection between time spent in natural environments and improved stress management, emotional regulation, and overall mental well-being is supported by growing evidence. Hiking, in particular, fosters resilience by combining physical exertion with restorative interactions with nature, promoting cognitive clarity and emotional stability. It also provides opportunities for social connection and mindfulness, which further bolster resilience. However, while the benefits are well-documented, accessibility barriers such as proximity to green spaces and socioeconomic disparities remain challenges to broad participation.

Future efforts should focus on making hiking more inclusive and integrating it into wellness strategies at both individual and community levels. Research should continue to explore the specific factors that enhance the mental resilience benefits of hiking, such as duration, terrain, and group dynamics, to create tailored interventions. By addressing these gaps and promoting hiking as a therapeutic tool, its potential as a cost-effective, natural approach to mental health can be fully realized. Ultimately, recreational hiking serves not only as a means of fostering personal resilience but also as a pathway to improved public mental health.

Recommendations

Theory

To advance theoretical understanding, future research should explore the mechanisms by which recreational hiking influences mental resilience. The integration of concepts from environmental psychology, biophilia theory, and stress-reduction theory could deepen insights into the restorative benefits of natural environments. Studies should also investigate how specific hiking variables such as terrain type, duration, and group versus solo hiking affect psychological resilience. Longitudinal research is needed to identify whether the mental health benefits of hiking persist over time and across diverse populations, contributing to a broader theoretical framework linking outdoor activities and psychological well-being.

Practice

Practically, recreational hiking should be promoted as an accessible, cost-effective tool for enhancing mental resilience in adults. Health and wellness practitioners should integrate hiking into mental health interventions, particularly for individuals experiencing stress, anxiety, or burnout. Guided hiking programs can be developed to cater to various fitness levels, offering structured and safe opportunities for people to engage with nature. Employers can incorporate hiking retreats or outdoor wellness programs to boost resilience and productivity among employees. Additionally, urban planners should prioritize the development and maintenance of accessible hiking trails to encourage participation and make hiking a regular part of community wellness initiatives.

Policy

Policymakers should prioritize funding for public parks, green spaces, and hiking trails to ensure equitable access to natural environments. Policies should also support community-based hiking initiatives, particularly in underserved or urban areas where access to nature is limited. Integrating hiking into public health campaigns can raise awareness of its benefits for mental resilience, encouraging more widespread participation. Furthermore, policies should incentivize corporate wellness programs that include outdoor recreational activities, such as hiking, as part of employee mental health initiatives. Evidence-based guidelines for outdoor activity prescriptions by healthcare providers could also be developed to formalize hiking as a component of mental health care.

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