

Grounded Theory

Grounded theory is a research methodology used primarily in the social sciences. It involves generating theories through the systematic collection and analysis of data. Unlike traditional research methods that start with a hypothesis, grounded theory begins with data collection, from which theories are developed inductively.

Key features of grounded theory include:

1. **Data Collection and Analysis**: Researchers collect qualitative data (e.g., interviews, observations) and analyse it simultaneously. This process is often iterative, allowing researchers to refine their data collection based on emerging insights.
2. **Coding Process**: Data is coded in stages—open coding (identifying initial concepts), axial coding (exploring relationships between concepts), and selective coding (developing a core category).
3. **Theoretical Sampling**: As theories develop, researchers may select new data sources based on their relevance to the emerging theory.
4. **Constant Comparative Method**: Researchers continually compare new data with existing data and codes, ensuring that the theory is grounded in the data itself.
5. **Theory Development**: The ultimate goal is to produce a substantive theory that explains patterns or phenomena observed in the data.

Grounded theory is particularly useful for exploring complex social processes and understanding how people make sense of their experiences.

Examples

Grounded Theory (GT) has been utilized in sport management research to explore socially constructed processes [1]. GT allows researchers to understand social phenomena by examining natural settings where these phenomena occur. By integrating GT into sport management studies, researchers can gain insights into the social constructions associated with sports [1].

Outdoor therapy experiences have also been studied using GT methodology. Participants in outdoor therapy programs reported that being in the outdoors was the most helpful aspect of their experiences [2]. This finding contradicted previous research that emphasized the importance of the therapeutic relationship in such settings [2]. Further investigation into the meaning attached to being outdoors and its impact on therapeutic relationships is warranted [2].

Female veterans' involvement in outdoor sports and recreation has been examined using GT to understand how recreation opportunity structures contribute to their adjustment post-service [3]. These structures provide environments for developing physical skills, emotional capacities, social networks, and a sense of freedom [3]. Outdoor sports and recreation offer opportunities for female veterans to redefine their identities and bond with others [3].

A safety model in sports was designed using GT methodology to create a safe environment for sporting activities [4]. Factors such as professional management, safety culture, legal and ethical requirements, safety instructions, health principles, and specialized qualifications were identified as crucial for promoting safety in sports [4]. By considering these factors, injuries in sporting activities can be prevented [4].

Perceived constraints to outdoor recreation experiences for students at Historically Black Colleges/Universities (HBCUs) were explored using GT [5]. Themes such as family impact, companionship, social media, technology, and cultural influences were identified as factors influencing Black student participation in outdoor recreation activities at HBCUs [5]. The perception of Whiteness in outdoor spaces was noted as a potential barrier to involvement in outdoor activities [5].

1. Using Grounded Theory in sport management research

Shilbury, David, Sotiriadou, Kalliopi. 2010.

Abstract: This paper argues for Grounded Theory (GT) to be more widely used to allow emergence of socially constructed sport related processes. The aim of GT is to explain social phenomena and the resources that are required to support social processes. GT is attractive to researchers as it uses the natural setting where the phenomena studied takes place to examine and understand social constructions. This paper demonstrates the importance of using GT by using a sport management study to exemplify GT processes and assess its efficacy in the discipline. Integration of GT method will strengthen sport management research and enable researchers understand social constructions associated with sport.

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2. Helpful aspects of outdoor therapy experiences: An online preliminary investigation

Cooper, Mick, Revell, Stephanie, Duncan, Elaine. 2014.

Abstract: Background: The term outdoor therapy can be used to refer to a wide range of outdoor programmes including adventure therapy and wilderness therapy. Much of the research in the outdoor therapy field has focused on outcomes of these programmes rather than exploring the actual processes that are inherent in these experiences. Aim: This study investigated participants' perspectives of helpful aspects of outdoor therapy experiences. Method: By means of an international online survey, participants reported what was helpful about their experiences of outdoor therapy. A mixed method approach was used, with the qualitative data being analysed with the use of grounded theory methodology to conduct thematic analysis. The quantitative data was analysed using descriptive and inferential statistics. Findings: A total of 43 complete responses were received. Quantitative and qualitative analysis established that being in the outdoors was the most helpful factor. Of 19 given aspects 'to be outdoors' was ranked the highest and 'being outdoors' emerged as a main category in the thematic analysis (84%, (n=36)). 'Group related aspects' were all rated higher, on average, than 'your relationship with therapist'. Such findings contradict previous research on how important the therapeutic relationship is in facilitating positive therapeutic encounters. Conclusion: Although very much a preliminary survey, findings suggest that further investigation into the meaning attached to being outdoors and how this might affect/impact upon the therapeutic relationship is needed.

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3. Female Veterans' Involvement in Outdoor Sports and Recreation

Taniguchi, Stacy, Lundberg, Neil, McGovern, Rachel, Smith, Shauna. 2016.

Abstract: Previous research has recognized the need to better understand the experience of female veterans and their adjustment upon returning home, especially considering that a growing number of veterans are women. Their stories, particularly as they relate to combat and the associated wounds of war, largely remain untold. Therefore, the purpose of this project was to employ a theoretical sample from Grounded Theory methodology to determine if similar recreation opportunity structure patterns existed in the use of outdoor sports and recreation for a sample of female veterans, as had been found in previous research with individuals with physical disabilities. The investigation revealed findings that substantiated the way in which recreation opportunity structures provide novel environments where physical skills and emotional capacities could be developed through (a) establishing social networks and bonding, (b) facilitating a sense of freedom from constraints, and (c) by providing opportunities to redefine or recapture their identity.

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4. Designing Safety model in Sports (Using Grounded Theory)

Eskndar Hosseinpour, Ebrahim Ali dost ghahfarokhi, Majed Jalali farahani, Ghodratola Bagheri, Mogtaba Amiry. 2018.

Abstract: Background and aims: Today, creating a safe environment for sporting activities is an important and vital issue. The present qualitative study with the aim of designing a safety model in sport was conducted using Glaserian Grounded theory which is data-based. Methods: To this end, on the basis of snowball technique, 25 experts in the field of safety and sport management participated in this study. They participated in an unstructured in-depth interview. Data obtained from the interview were analyzed by using a set of open coding, theoretical coding and selective coding simultaneously. Results: Results showed that professional and committed management could be regarded as the main factor and positive safety culture, specialized qualifications, legal and ethical requirements (responsibility, abiding by ethics and law), safety instructions, complying with health principles, positive

environmental approach, physical, mental and individual equipments, human factors (ergonomics), sporting sites and buildings, and standard sporting facilities, medical actions and emergency services and application of new technologies, were determined as other safety categories in sporting. Conclusion: According this model, it is recommended that we consider the role of different factors in safe sporting activities in order to prevent injuries. By paying enough attention to essentials and factors which promote the safety in sporting activities, we can achieve safety in sporting, hence preventing the sporting injuries.

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5. Will I See Faces Like Mine?: Exploring Perceived Constraints to Outdoor Recreation Experiences at an HBCU

Dorwart, Catherine E., Patterson, Anthony F., Smith, Cameron. 2022.

Abstract: The purpose of this qualitative study was to explore perceived constraints of structured outdoor recreation experiences for students attending a Historically Black College/University (HBCU). Data were collected from four focus group sessions. Grounded Theory was used to analyze the data and from an analysis of data, four themes emerged: 1. Family impact, 2. Companionship, 3. Social media and technology, and 4. HBCU and Black American cultures. This study confirmed the importance of social companionship and the need for relevant marketing strategies as motivators for Black student participation in outdoor recreation activities at this HBCU. A common thread among the groups, was the perception of Whiteness in outdoor spaces and its negative impact on outdoor recreation involvement.

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Action Research

Action research is a collaborative and participatory research approach that focuses on solving real-world problems while simultaneously generating knowledge. It often involves practitioners—such as teachers, community members, or organizational leaders—working together to improve practices and address specific issues within their contexts.

Key features of action research include:

1. **Cycle of Action and Reflection**: Action research typically follows a cyclical process of planning, acting, observing, and reflecting. This allows participants to implement changes, assess their effectiveness, and refine their actions based on feedback and insights gained.
2. **Collaboration**: It emphasizes collaboration among stakeholders. Researchers work closely with participants to ensure that the research is relevant and grounded in the participants' experiences and needs.
3. **Contextual Focus**: Action research is often context-specific, aiming to understand and address issues within a particular setting, whether that be a classroom, community, or organization.
4. **Empowerment**: The approach seeks to empower participants by involving them in the research process. This can lead to increased ownership of the solutions developed and greater investment in the outcomes.
5. **Practical Outcomes**: The primary goal is to produce actionable results that can lead to improvements in practice. This may include developing new strategies, enhancing skills, or fostering change in policies.

Action research is commonly used in education, healthcare, community development, and organizational change, making it a valuable tool for practitioners looking to effect meaningful change while contributing to knowledge in their field.

Examples

Action research in sport and outdoor adventure education involves a participatory approach to understanding and enhancing the learning experience. One key theme is the importance of incorporating adventure activities with environmental awareness efforts [1]. This tension can be resolved by capitalizing on teachable moments, managing the technical nature of activities, and careful program planning [1].

Another theme is the significance of a "sense of place" in enriching student experiences in adventure sports [2]. By integrating formal and informal pedagogy, students can develop a sociocultural and historical understanding of the environment where activities take place, enhancing their learning experience [2].

Participatory research methods in sport and physical activity offer transformative potential by involving participants in the research process [3]. This approach covers various phases of research, including design, data collection, analysis, and knowledge mobilization, using methods like social photo-elicitation and collaborative analysis [3].

In monitoring and evaluating sport-for-development programs, Participatory Action Research (PAR) has shown to be effective in engaging local communities and ensuring program sustainability [4]. Collaboration, training local volunteers, and establishing success indicators contribute to the program's impact and effectiveness [4].

Learning in action sports is a growing area of interest, with a focus on informal and self-regulated learning experiences [5]. Studies have explored learning in social, physical, cultural, and cognitive contexts, highlighting the individualistic nature of learning in action sports [5].

In conclusion, action research in sport and outdoor adventure education emphasizes the importance of integrating activities with environmental awareness, fostering a sense of place, utilizing participatory research methods, engaging local communities in program evaluation, and understanding the learning dynamics in action sports.

1. Traditional Adventure Activities in Outdoor Environmental Education

Thomas, Glyn. 2005.

Abstract: Recently, the place of adventure activities in outdoor education has become contentious, particularly in Australia and the United Kingdom. It can be challenging for outdoor leaders to incorporate adventure activities with attempts to foster environmental awareness, understanding and action. Recently, some authors have suggested practitioners eliminate the tension by removing adventure activities from outdoor environmental education programs altogether. This paper presents the findings of an ongoing action research project exploring ways to resolve the tension between using adventure activities and helping participants to learn about particular regions, communities, and their histories. The research described in this paper utilised thematic analysis of data collected through a professional journal, focus groups, and student writing. The emerging themes included: the need to capitalise on teachable moments; the importance of managing the technical nature of adventure activities; the importance of deliberate planning and facilitation; and the need for careful consideration of the impact of program length or duration.

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2. More than activities: using a 'sense of place' to enrich student experience in adventure sport

Nicholls, Fiona, Leather, Mark. 2016.

Abstract: There has been increasing interest in recent years in the significance of a sense of place in the literature of outdoor adventure education. In the UK relationships between outdoor education and the environment still appear largely focused on the science of the natural environment and the activity in question. In this paper, we present empirical evidence from an action research project to demonstrate how a combination of formal and informal pedagogy in a higher education context can lead to a sociocultural and historical understanding of place and enrich the learning experience of students when teaching the classical outdoor adventurous activity of sailing. The sport of dinghy sailing is a module within a Bachelor's undergraduate degree in outdoor education and was taught from a small fishing town in Devon, England. We adopted an integrated and experiential critical pedagogy of place that allowed theory and practice, thought and action to be a holistic experience, and this approach provided opportunities for informal, as well as formal learning. This action research project explored the impact on the student experience when sailing skills were developed along with a sense of place. It used methods including: photo-elicitation, focus group

interviews and evidence from the analysis of written student assignments. Our findings show that students discover a significance of the meaningful relationship between the sociocultural history of where that activity takes place and the activity itself and that as a result their experience of the learning and research process was enriched.

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3. Participatory Research in Sport and Physical Activity

. 2024.

Abstract: This is the first book to focus on participatory research in the context of sport and physical activity. It explores the transformative potential of participatory research methods and provides an introduction to the practicalities of doing participatory research in sport and physical activity. The book is structured around phases of the research process, covering research design, data collection, data analysis, and knowledge mobilization and translation. Chapters cover research design topics such as building research partnerships, reflexivity and ethical issues; methods such as social photo-elicitation, go-along interviews, and biographical mapping; analytical approaches such as collective memory work and collaborative analysis; and knowledge mobilization and translation topics such as podcasting, digital tools, and peer review. Every chapter includes a review of key developments, a guide to how that approach can be employed, an example from the author's own work, and critical reflections on how that approach can shape future research and have an impact on public discourse. This book is an invaluable resource for students and researchers working in sport studies, the sociology of sport, sport and exercise psychology, sport management and policy, and human movement and health studies more broadly. It will be particularly useful for those interested in diverse and inclusive approaches to qualitative research methodologies.

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4. Participatory action research (PAR) in monitoring and evaluation of sport-for-development programmes : sport and physical activity

Burnett, Cora. 2008.

Abstract: International agencies are becoming increasingly involved in sport-for-development work, as sport is seen as pivotal in addressing socio-political, health and

cultural issues in affected and / or impoverished communities earmarked for 'development'. A comparative case study of the Siyadlala Mass Participation Programme (a national sport development programme) and the Active Community Clubs' Initiative (an Australian programme) in the South African context of poverty, served to demonstrate the potential role of Participatory Action Research (PAR). Utilizing the S*DIAT (Sport Development Impact Assessment Tool) in both cases allowed for quantitative and qualitative data collection, and informed researchers about contextual issues essential for interpretation and the potential application of results. A collaborative relationship developed between researchers and research subjects, as local volunteers of the Active Community Clubs were trained as fieldworkers inherent in a Participatory Action Research Training (PART) model. Following an inductive research paradigm and offering training in monitoring and evaluation, positively influenced the sustainability and 'local penetration' of the Active Community Clubs' Programme, compared to the top-down delivery and deductive approach of the Siyadlala Mass Participation Programme. Collaboration, the establishment of success indicators and benchmarks for assessing programme-related impact in a local context, contributed to the implementation of a needs-based service delivery.

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5. Learning in action sports : A scoping review

Enright, Eimear, Ellmer, Eva, Rynne, Steven. 2020.

Abstract: Action sports have increased in popularity, particularly over the past two decades. Research in the area has also proliferated, as multiple disciplinary perspectives and theoretical and conceptual frames have been applied to understanding and exploring a host of research questions concerning action sports culture, contexts and participants. However, despite this flurry of research activity, not much is known empirically about the learning of action sport participants, and few studies have focused specifically on learning in action sports. A scoping review was, therefore, conducted with the aim of synthesising the work that has been undertaken, and mapping future research agendas. Informed by Arksey and O'Malley's six-stage framework, leading sports and education databases and Google Scholar were searched for empirical literature on learning in action sports published before July 2018. After the results were screened and relevant studies identified, data were extracted and analysed using a frequency and thematic analysis to form both a descriptive and thematic summary. A total of 78 empirical studies both from the peer-reviewed and grey literature were included in the scoping review. The frequency analysis concerned information on publication year, academic field, study design, study tools, sport and population. The

thematic analysis led to the development of five main themes, addressing learning in social, physical, cultural, and cognitive/psychological contexts and via various forms of feedback. The majority of articles on learning in action sports were published from 2010 onward, suggesting a growing interest in the area. More theses/dissertations resulted in peer-reviewed publications; however, less than half of all reviewed journal articles were published in education/pedagogy journals. Theoretical and conceptual frameworks were rarely explicitly referenced and/or lacked clarity. There was consensus that learning in action sports is largely informal and self-regulated. With the increasing professionalisation of many action sports and their inclusion in international competition events and also in national curricula, an increase in more formalised learning is predicted. Finally, learning in action sports can be highly individualistic but only a few studies acknowledged this. A greater variety of research questions and methodologies, and more work across disciplinary boundaries will assist in the generation of new knowledge. [Author abstract]

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Experimental Research

Experimental research is a systematic and scientific approach to investigating cause-and-effect relationships by manipulating one or more variables while controlling others. It is commonly used in fields like psychology, medicine, and the social sciences to establish causal relationships.

Key features of experimental research include:

1. **Manipulation of Variables**: The researcher intentionally changes (manipulates) an independent variable to observe its effect on a dependent variable. For example, a psychologist might manipulate the amount of sleep participants get (independent variable) to see how it affects their performance on a cognitive task (dependent variable).
2. **Control Groups**: Experimental research often includes control groups, which do not receive the treatment or manipulation, allowing researchers to compare results with the experimental group. This helps establish whether any observed effects are due to the manipulation or other factors.
3. **Random Assignment**: Participants are often randomly assigned to different groups (e.g., experimental and control) to minimize biases and ensure that the groups are comparable. This enhances the internal validity of the study.
4. **Replication**: Experimental studies can be replicated by other researchers, allowing for validation of results and increasing confidence in findings.
5. **Quantitative Data**: Experimental research typically involves quantitative data, which can be statistically analysed to draw conclusions about relationships between variables.

Experimental research is powerful for testing hypotheses and establishing causal links, making it a fundamental method in scientific inquiry. However, it may not always be feasible or ethical to conduct experiments in certain contexts, such as studying human behavior in natural settings.

Examples

Experimental research in sport and outdoor adventure settings can provide valuable insights into the effects of different interventions on participants. One study compared the health effects of team-sport training and fitness training for sedentary men with lifestyle diseases. Both training methods showed improvements in cardiovascular health and reduced fat mass, with team sport also enhancing balance [1]. Another research project aimed to maximize fun experiences in youth sport to improve adherence. The PlayFit Youth Sport Program focused on creating enjoyable sport games to increase reflective evaluations of sport enjoyment among adolescents, showing promising feasibility and acceptability results [2].

In a quasi-experimental study, an adventure recreation program was found to significantly increase adolescent participants' outdoor and academic self-efficacy. The program involved outdoor activities and showed a positive relationship between growth in outdoor and academic efficacy beliefs [3]. Additionally, a review highlighted the importance of equivalence and non-inferiority tests in exercise physiology and sport science research. These tests offer alternative approaches to traditional null hypothesis testing and can provide valuable insights into the effects of interventions [4].

However, challenges exist in conducting randomized controlled trials (RCTs) in adventure therapy research. A Norwegian wilderness therapy project faced obstacles in implementing RCTs due to the complex nature of the interventions and the difficulties in randomizing at-risk adolescents into control groups. As a result, alternative methodologies were chosen to overcome these challenges [5].

Experimental research in sport and outdoor adventure settings offers a diverse range of insights, from comparing training methods to exploring the impact of fun experiences on sport enjoyment and self-efficacy. While RCTs are considered the gold standard, challenges in implementation may lead researchers to consider alternative methodologies to study complex interventions in these settings.

1. Health Effects of 12 Weeks of Team-Sport Training and Fitness Training in a Community Health Centre for Sedentary Men with Lifestyle Diseases

Andersen, R, Randers, M B, Møller, T K, Lundager, I, Hansen, H F, Ottesen, L, Krstrup, P, Nielsen, T-T. 2018.

Abstract: This study compares the effects of team-sport training, for sedentary men with lifestyle diseases, with fitness training in a pragmatic set-up in a community health centre (CHC). Thirty-two men in the fitness group (FiG) and 36 men in the team-sport group (TsG) completed the training and trained for 60–90 min, two times/week for 12–16 weeks. In FiG and TsG, mean heart rate (HR) during training was 73.2% and 74.5% of HRmax, respectively. Percentage of training time above 90%HRmax was $6 \pm 9\%$ and $10 \pm 15\%$ and the percentage of participants who spent $> 10\%$ of total training time with HR $> 90\%$ HRmax was 20% and 41%, in FiG and TsG, respectively. In FiG, total fat mass was reduced by 3.5% ($P<0.01$), while performance in the 6 min walking test (6MWT) increased by 11% ($P<0.001$). In TsG, total fat mass was reduced by 2.2% ($P<0.01$), while 6MWT performance improved by 5% ($P<0.05$). Between-group differences were observed for systolic BP ($P=0.041$) and mean arterial pressure ($P=0.050$) in favour of TsG and for sit-to-stand test ($P=0.031$) in favour of FiG. In conclusion, small-sided team sport is a worthy alternative to fitness training since the overall health effects are comparable, for example, improved balance and reduced fat mass. Team sport elicits high heart rates and improves cardiovascular health by reducing blood pressure, while fitness training improves sit-to-stand test performance related to activity of daily living.

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2. Improving reflective evaluations of sport through repeated experiences of fun-rationale, design, feasibility, and acceptability of the PlayFit Youth Sport Program

Ladwig, Matthew A., Sciamanna, Christopher N., Visek, Amanda J., Luzier, Gavin, Agans, Jennifer P., Blaker, Joshua M.. 2023.

Abstract: Adolescents who drop out of sport often report that it had become less 'fun' and 'enjoyable' over time. Although preadolescent sport typically emphasizes experiences of fun, emphases on competition and elite performance often dominate during adolescence. We theorized that adherence to adolescent sport might be improved if the overarching goal were to maximize repeated experiences of fun during sport and, subsequently, increase reflective evaluations of sport enjoyment. To that end, this manuscript reports on the rationale and design of the PlayFit Youth Sport Program (PYSP), as well as its preliminary feasibility and acceptability. The

main objectives were to evaluate the feasibility of recruitment strategies and data collection procedures and the acceptability of the intervention.

An outdoor, multipurpose grass field at a south-central Pennsylvania middle school.

A mixed-methods, single-arm feasibility trial lasting for 8 weeks (August-October 2021) offered 3-times per week for 1-h per session. The equipment, ruleset, and psychosocial environment of the PYSP sport games were modified to reduce several of the constraints theorized to impair experiences of fun during sport and hamper reflective evaluations of enjoyment afterward.

Eleven healthy, but sedentary adolescents in grades 5-7 completed the program. The median number of sessions attended (of 16 possible) was 12 (range = 6-13). Post-intervention, 9/10 respondents indicated that they 'looked forward' to the PYSP, 8/10 would recommend it to a friend, and 8/10 were interested in continuing the program. Ten of 11 participant guardians expressed interest in reenrolling their children if the PYSP were offered again. Some changes recommended were to improve recruitment via advertising the positive aspects of the program and "word of mouth" techniques, offering the program immediately following the school day, having contingencies for inclement weather, and minor changes to the sport equipment to improve the experience among the population the PYSP intends to attract.

The adjustments recommended in this preliminary work could be used to further refine the PYSP. A future efficacy trial could explore whether the PYSP may reduce attrition for adolescents who experience existing sport programs negatively by offering an alternative that better matches their unique needs and preferences.

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3. Increasing and Generalizing Self-Efficacy

Taniguchi, Stacy T, Duerden, Mat D, Widmer, Mark A. 2014.

Abstract: This quasi-experimental study examined the impact of an adventure recreation program on adolescent participants' outdoor recreation and academic self-efficacy. The study also explored the transferability of efficacy beliefs across non-related domains. The sample included 262 adolescents, 194 who served as participants in the program and 68 who served as comparisons. The average age for each group was 13.6 years. The intervention, a two-week, theory-based program, involved a variety of outdoor recreation activities. Pre-/post-instruments measured perceived levels of outdoor efficacy and academic efficacy, attitudes, and motivations. Results indicated participants experienced significantly more growth than comparisons on both outdoor

and academic measures and a small, yet significant, relationship existed for participants between the growth across outdoor and academic efficacy.

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4. Myths and methodologies: The use of equivalence and non-inferiority tests for interventional studies in exercise physiology and sport science

Porcelli, Simone, Lakens, Daniël, Mazzolari, Raffaele, Bishop, David J.. 2022.

Abstract: Exercise physiology and sport science have traditionally made use of the null hypothesis of no difference to make decisions about experimental interventions. In this article, we aim to review current statistical approaches typically used by exercise physiologists and sport scientists for the design and analysis of experimental interventions and to highlight the importance of including equivalence and non-inferiority studies, which address different research questions from deciding whether an effect is present. Initially, we briefly describe the most common approaches, along with their rationale, to investigate the effects of different interventions. We then discuss the main steps involved in the design and analysis of equivalence and non-inferiority studies, commonly performed in other research fields, with worked examples from exercise physiology and sport science scenarios. Finally, we provide recommendations to exercise physiologists and sport scientists who would like to apply the different approaches in future research. We hope this work will promote the correct use of equivalence and non-inferiority designs in exercise physiology and sport science whenever the research context, conditions, applications, researchers' interests or reasonable beliefs justify these approaches.

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5. Why Randomized Trials Are Challenging Within Adventure Therapy Research

Ferneer, Carina Ribe, Gabrielsen, Leiv Einar, Aasen, Gunnar Oland, Eskedal, Leif Torvald. 2016.

Abstract: There are few high-quality studies using randomized controlled trials (RCTs) in the adventure and wilderness therapy literature. Thus, a unison call is heard for more such studies to be carried out. This article presents a Norwegian wilderness therapy research project that planned to incorporate this “gold standard” that is regarded as the

most scientific and rigorous approach available. We did not succeed. Mounting challenges led us to discard the RCT altogether and select other methodologies. Here, we account for the ethical, health outcome, practical, and empirical obstacles that we encountered when attempting to randomize at-risk adolescents into experiment and control groups. Our conclusion is that although RCTs may be superior in some aspects, they hold the potential to become bad science when the interventions are as complex and multi-faceted as adventure and wilderness therapy programs.

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Correlation research

Correlation research examines the relationship between two or more variables to determine whether they are associated with each other. This type of research helps identify patterns and trends but does not imply causation.

Key features of correlation research include:

- Measurement of Relationships:** Researchers measure the extent to which two variables change together. For example, they might investigate the correlation between study time and exam scores.
- Correlation Coefficient:** This is a statistical measure (often represented by "r") that indicates the strength and direction of a relationship. Values range from -1 to +1. A positive correlation indicates that as one variable increases, the other does as well, while a negative correlation indicates that as one variable increases, the other decreases.
- No Manipulation:** Unlike experimental research, correlation research does not involve manipulation of variables. It simply observes and analyzes existing data.
- Causation vs. Correlation:** It's crucial to remember that correlation does not imply causation. Just because two variables are correlated does not mean that one causes the other.

Examples

Outdoor physical activity has been linked to lower somatic anxiety levels and higher Nature Relatedness experience [1]. Engaging in sports activities, especially those that require complex motor skills and individual sports, has shown a positive association with improved academic performance in adolescents [2]. Additionally, sustained participation in sports activities has been found to be important for academic success, as quitting sports activities can negatively impact academic performance [2].

Participating in sports has been shown to have significant benefits for cognitive functions in children, positively influencing attention, thinking, language, learning, and memory [3]. The mental health status of athletes was better than non-athletes during the COVID-19 pandemic, with physical activity playing a protective role in mental health [4]. Boys participating in regular sports have shown lower body mass, body mass index, and body fat values, along with higher cardiovascular fitness and attention levels compared to non-active peers [5].

In conclusion, research has demonstrated the positive impact of outdoor physical activity and sports participation on various aspects of well-being, including psychological health, academic performance, cognitive functions, and mental health. These findings highlight the importance of engaging in physical activities, particularly outdoor and sports-related activities, for overall health and well-being.

1. The Relationship between the Physical Activity Environment, Nature Relatedness, Anxiety, and the Psychological Well-being Benefits of Regular Exercisers

Emma Lawton, Peter Clough, Andrew Denovan, Eric Brymer. 2017.

Abstract: Research from a variety of scientific fields suggests that physical activity in nature and feelings of connection to nature enhance psychological health and well-being. This study investigated the psychological health and well-being impact of the physical activity environment for those already undertaking the recommended weekly amount of physical activity. This topic is important for the design of health and well-being environments and interventions involving physical activity. Participants (= 262) aged 18-71 years ($M = 34.5$, $SD = 13.1$) who met the UK physical activity guidelines completed the Nature Relatedness Scale, the trait section of the State Trait Inventory for Cognitive and Somatic Anxiety and the Psychological Well-Being Scale. Analysis via Multivariate ANOVA indicated that participants who engaged in outdoor physical activity reported significantly lower somatic anxiety levels and higher Nature Relatedness experience (NRexp). Significant results were not evident for wellbeing. Hierarchical regressions revealed that the psychological well-being facet of autonomy, NRexp, and outdoor physical activity predicted lower somatic anxiety, whereas indoor physical activity predicted higher somatic anxiety. Results indicate that somatic anxiety is lower for outdoor physical activity participation, and that outdoor activity, in conjunction with autonomy and NRexp, predicts lower anxiety levels. The findings extend previous work by demonstrating the impact of the physical activity environment on anxiety levels, as well as the contribution of outdoor physical activity and well-being facets to the previously established Nature Relatedness-anxiety relationship.

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2. Relationship of participation in specific sports to academic performance in adolescents: A 2-year longitudinal study

Okita, Koichi, Morita, Noriteru, Ishihara, Toru, Nakajima, Toshihiro, Yamatsu, Koji, Sagawa, Masato. 2020.

Abstract: Physical activity is considered a promising behaviour to improve cognitive function and academic performance in adolescents. As evidence on the relationship of specific sports activity is not conclusive, this study aimed to determine the longitudinal relationships of different sports to academic performance in adolescents and evaluate the cardiorespiratory fitness mediation effect of these sports. We focused on the demands of complex motor skills and the differences between individual sports vs team

sports. Four hundred and sixty-three 7th-grade students (227 girls and 236 boys) were followed up over 2 years. Data regarding participation in sports activities, types of sports activities, academic performance, and cardiorespiratory fitness were obtained at baseline and after a 2-year follow-up. Structural equation modelling revealed that participation in all sports activity was positively associated with improvement of academic performance from baseline to follow-up, and that these associations were mediated by cardiorespiratory fitness gains. Participation in sports activities that require more complex motor skills and individual sports activity was directly associated with an improvement of academic performance from baseline to follow-up. Furthermore, quitting sports activities was negatively associated with academic performance via a reversal in cardiorespiratory fitness gains. These findings indicate that participation in specific sports may have significant benefits for academic performance in adolescents. Although these relationships are presumably mediated by cardiorespiratory fitness, sports activities that require more complex motor skills and individual sports participation may be directly related to academic performance. Considering that quitting sports activities reversed these benefits, sustained participation in sports is important for academic success.

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3. Physical Activity and Cognitive Functioning of Children: A Systematic Review

Lipowska, Małgorzata, Bidzan-Bluma, Ilona. 2018.

Abstract: Childhood is an important and sensitive period for cognitive development. There is limited published research regarding the relationship between sports and cognitive functions in children. We present studies that demonstrate the influence of physical activity on health, especially a positive correlation between sports and cognitive functions. The keywords "children, cognition, cognitive function, physical activity, and brain" were searched for using PsycInfo, Medline, and Google Scholar, with publication dates ranging from January 2000 to November 2017. Of the 617 results, 58 articles strictly connected to the main topics of physical activity and cognitive functioning were then reviewed. The areas of attention, thinking, language, learning, and memory were analyzed relative to sports and childhood. Results suggest that engaging in sports in late childhood positively influences cognitive and emotional functions. There is a paucity of publications that investigate the impact of sports on pre-adolescents' cognitive functions, or explore which cognitive functions are developed by which sporting disciplines. Such knowledge would be useful in developing training programs for pre-adolescents, aimed at improving cognitive functions that may guide

both researchers and practitioners relative to the wide range of benefits that result from physical activity.

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4. The effect of isolation on athletes' mental health during the COVID-19 pandemic

Tunç, Serhat, Denerel, Nevzad, Köyağasioğlu, Ogün, Şenışık, Seçkin. 2021.

Abstract: We aimed to explore whether the mental health status of professional athletes was affected by the isolation period in which organized sports were suspended due to the COVID-19 pandemic.

A total of 612 volunteers between the ages of 18-38 enrolled in the study, 418 of them were athletes engaged in team sports or individual sports and 194 of them were non-athletes. Participants completed the Depression - Anxiety - Stress Scale 21 (DASS-21), the Impact of Events Scale-Revised (IES-R) and International Physical Activity Questionnaires (IPAQ). Non-parametric methods were used for comparisons between groups. The presence of a linear relationship was tested with the Spearman Correlation Test. A value of $p < 0.05$ was accepted statistically significant.

A total of 571 participants, 372 males and 199 females, completed the study. Depression and anxiety symptoms were lower in athletes compared to non-athletes ($p < 0.05$). Depression, anxiety and stress symptoms were similar in team athletes and individual athletes ($p = 0.232$, $p = 0.444$, $p = 0.116$; respectively). The post-traumatic stress symptoms were lower in male team athletes than female team athletes ($p = 0.020$) and non-athletes ($p < 0.001$). Depression, anxiety and stress symptoms were found to be similar in men and women ($p > 0.05$). There was a negative correlation between physical activity level and mental health symptoms ($p < 0.05$).

The mental health status of athletes was better than non-athletes, and the positive effect of sport, which was done until the break due to the isolation period, on mental health continued. These findings show that physical activity may help to protect mental health.

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5. Body composition, cardiovascular fitness and attention of school-aged male children practicing sports club activities: A cross-sectional

Tanir, Halil, Ates, Bahar, Akinci, Yasin. 2024.

Abstract: **BACKGROUND:** The positive effects of physical activity on physical fitness, bone health, academic achievement, cognitive functions, mental health, and reduced obesity have been proven. This study aims to investigate the relationship between sports club activities, physical activity selected health-related fitness, and the d2 attention test. **MATERIALS AND METHODS:** A cross-sectional study was conducted in different sports clubs. A total of 78 male students aged 10-13 years participating in various branches of sports clubs were included in the study, 42 of whom were assigned to the sports group and 36 to the control group. Questionnaires were administered to assess sports club participation and attention levels, while physical health profiles were tested with body composition and Yo-Yo IR1C performance measures. Data were analyzed according to sports participation and the five most frequently reported sports. The means and standard deviation of each study value were calculated for the total subjects and by participating in sports activity using the IBM SPSS (version 23) analysis program. Data normality was checked and confirmed by the Skewness and Kurtosis Tests. **RESULTS:** The results showed that boys enrolled in a sports activity had lower body mass (-17.9%, $P < 0.05$ $d = 0.72$), body mass index (-13.4%, $P < 0.05$, $d = 0.87$), and body fat (%) (-54.1%, $P < 0.05$, $d = 1.38$) and higher VO 2 max 32.3% ($P < 0.05$, $d = 3.67$), than the non-active group. The boys active in sports clubs also had better results in the total number of items processed (11%, $P < 0.05$ $d = 0.50$) and in concentration performance (17.7%, $P < 0.05$ $d = 0.56$) than the non-active group. In correlation analyses, VO 2 max was negatively associated with body mass, body mass index, and body fat ($P = 0.011$; $P = 0.001$ and $P = 0.00$, respectively) and positively related to the total number of items processed and concentration performance ($P = 0.003$ and $P = 0.015$, respectively). In the Pearson Correlation analyses, body fat showed a lower negative correlation with TN ($r = 0.33$; $P = 0.003$) and CP ($r = 0.28$; $P = 0.015$). **CONCLUSIONS:** Boys participating in regular sports have lower body mass, BMI, and BF values. In addition, boys who participated in sports showed higher imaginary fitness and selective attention and concentration capacity results, as expected, for any sports part compared to their body peers. Another attempt from this study is that body mass and body fat percentage recovery are negatively associated with fitness. Considering the increasing prevalence of obesity in children and adolescents due to sedentary living, which has become a worldwide epidemic, it is recommended that pedagogical and public health strategies and policies be developed based on the physical fitness level of children.

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Longitudinal Research

Longitudinal research is a research design that involves repeated observations of the same variables over a period of time. This method allows researchers to track changes and developments in subjects, whether they are individuals, groups, or populations. Longitudinal studies can be used in various fields, including psychology, sociology, medicine, and education.

Key features of longitudinal research include:

1. **Time Frame**: Data is collected at multiple time points, which can span months, years, or even decades.
2. **Cohorts**: Often focuses on specific groups (cohorts) who share a common characteristic or experience, allowing for comparisons over time.
3. **Data Types**: Can involve qualitative or quantitative data, depending on the research question.
4. **Benefits**: Helps establish cause-and-effect relationships, tracks developmental trends, and provides insights into long-term changes.

This approach contrasts with cross-sectional studies, which analyze data at a single point in time.

Examples

Longitudinal research on sport and outdoor activities has provided valuable insights into the impact of participation on physical activity levels and overall health.

Membership in sport or exercise groups has been shown to predict sustained physical activity and longevity in older adults compared to physically active matched controls [1]. This suggests that engaging in physical activity within a group setting can help protect against age-related declines in physical activity.

Another study focused on the stability of habitual physical activity and sport participation over time, showing that tracking of physical activity levels varied but remained relatively stable within certain intervals [2]. This highlights the importance of maintaining consistent participation in physical activities for long-term health benefits.

Furthermore, research on changes in sport and physical activity participation for adolescent females revealed shifts in the modes and settings of participation throughout adolescence [3]. While overall levels of physical activity did not significantly decrease over time, there were changes in the types of activities engaged in, with a transition from structured sports to non-organized physical activities.

Additionally, participation in organized competitive youth sport has been found to predict adult physical activity, with persistent participation in youth sport significantly influencing activity levels in adulthood [4]. This underscores the long-term impact of early engagement in sports on future physical activity habits.

Overall, longitudinal studies on sport and outdoor activities emphasize the importance of group membership, consistency in participation, and the potential influence of early sport engagement on lifelong physical activity levels. These findings provide valuable insights for promoting sustained physical activity and overall health across different age groups.

1. Membership in Sport or Exercise Groups Predicts Sustained Physical Activity and Longevity in Older Adults Compared to Physically Active Matched Controls

Stevens, Mark, Cruwys, Tegan. 2020.

Abstract: Abstract

Background

Physical activity tends to decline in older age, despite being key to health and longevity. Previous investigations have focused on demographic and individual factors that predict sustained physical activity.

Purpose

To examine whether engaging in physical activity in the context of sport or exercise group membership can protect against age-related physical activity decline.

Methods

Drawn from the English Longitudinal Study of Ageing, participants were members of sport or exercise groups aged 50 and over (N = 2015) as well as nonmember controls, who were matched at baseline for age, sex, and physical activity levels (N = 1881). Longitudinal mixed effects models were used to assess the effect of sport or exercise group membership on physical activity and longevity across a 14-year follow-up.

Results

Members of sport or exercise groups experienced an attenuated decline in both moderate and vigorous physical activity over a 14-year follow-up compared to physically active matched controls. Sport or exercise group members were also less likely to have died at follow-up, an effect that was mediated through sustained physical activity.

Conclusions

Promoting membership in sport and exercise groups may be a beneficial strategy for supporting sustained physical activity and health among older people.

Older adults who belonged to a sport or exercise group maintained greater overall levels of physical activity over time and lived longer, compared to non-sport or exercise group members who were equally physically active at baseline.

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2. Stability of habitual physical activity and sport participation: a longitudinal tracking study

Leskinen, E., Yang, X., Telama, R.. 1996.

Abstract: Although one of the most important aims of physical education and public sport policy is to encourage life-long habitual physical activity, very little is known of the stability or tracking of physical activity. As a part of a larger research project called Cardiovascular Risks in Young Finns, the purpose of the study reported here was to investigate the stability (tracking) of leisuretime physical activity and sport participation at intervals of 3, 6, 9 and 12 years from age 9 to 30. The subjects, chosen by stratified random sample, represent five geographical areas of the country and eight gender-age cohorts (9, 12, 15 and 18 years old in 1980). Physical activity and sport participation were measured using a short questionnaire. Tracking was analysed by Spearman's rank order correlations and by simplex model. The tracking correlations within a 3-year interval of all individual variables were significant but rather low. The tracking correlations of the sum index of physical activity comprising five variables varied from 0.50 to 0.80 among boys and from 0.40 to 0.61 among girls. Simplex models that fitted the data very well showed higher stability coefficients than rank order correlations. With one exception the correlations of physical activity index within the 12-year interval were significant but low.

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3. Changes in sport and physical activity participation for adolescent females: a longitudinal study

Craike, Melinda J, Sawyer, Neroli A, Eime, Rochelle M, Harvey, Jack T, Payne, Warren R, Symons, Caroline M. 2016.

Abstract: Participation in sport and physical activity is reported to decline during adolescence, particularly for females. However we do not have a clear understanding of changes in the context (i.e., modes and settings) of participation throughout adolescence. This study investigated longitudinal changes in physical activity participation and the specific modes and settings of physical activity, together with cross-sectional comparisons, for two age cohorts of female adolescents.

Survey of 729 adolescent girls (489 recruited in Year 7 and 243 in Year 11). Participation in eight different modes/settings was reported. PA was measured using 24-h recall diary and metabolic equivalent weighted energy expenditure (MET-min) in Leisure Time Moderate and Vigorous Physical Activity (LTMVPA) on the previous day was calculated.

There were no significant changes in duration or total MET-min of LTMVPA on previous day. However, there were significant changes in the modes/settings of participation across time. Participation in school physical education rose during early adolescence before decreasing significantly, and participation in competitive sport and club sport significantly decreased over time; however there were increases in non-competitive forms of physical activity.

Overall levels of physical activity did not significantly decrease over adolescence, which is positive for physical health. However, the transition from structured sport to non-organised physical activity may effect social and psychological health, which needs to be further examined.

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4. Participation in Organized Youth Sport as a Predictor of Adult Physical Activity: A 21-Year Longitudinal Study

Telama, Risto, Raitakari, Olli, Hirvensalo, Mirja, Yang, Xiaolin. 2006.

Abstract: The aim of this study was to investigate how participation in organized competitive youth sport predicts adult physical activity. A random sample of 2,309 boys and girls ages 9–18 years participated in the Cardiovascular Risk in Young Finns Study in 1980, and 1,606 (70%) of them again in 2001. Physical activity was measured using a short, validated questionnaire. The results showed that participation in youth sport, and persistent participation in particular, significantly predicted adult physical activity. Participation in sport competitions increased the probability of high activity in adulthood more among males than females.

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5. Impact of physical activity domains on subsequent physical activity in youth

Rowe, David A, Hardie Murphy, Michelle, Woods, Catherine B. 2017.

Abstract: This study evaluates how domains of physical activity (PA) in youth predict later PA and assesses factors influencing changes in sports participation. Young people from the Children's Sport Participation and Physical Activity study (n = 873; baseline age 10-18 years; 30.4% male) completed self-report surveys in 2009 and 2014. In a multiple linear regression analysis, participation frequency in club sport ($\beta = 0.18$) and extracurricular sport ($\beta = 0.13$) significantly predicted PA 5 years later, adjusted for age, sex and urban/rural classification ($P < 0.01$). Overall, rates of regular (at least once per

week) youth sports participation were high (males 79.3-85.5%; females 74.8-83.2%). Uptake and dropout of specific sports varied widely. Despite high levels of migration into and out of Gaelic games, they remained popular at follow-up. Weight training was the only sport that increased in both sexes ($P < 0.05$). Fitness, friends and enjoyment were top motivations for taking up a new sport. Other commitments, a lack of interest and time were important factors leading to sports dropout. PA promotion strategies should include youth sport, take into consideration what sports are attractive to young people and address reasons for uptake and dropout. (Autor).

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Descriptive Research

Descriptive research is a method of studying a subject in a detailed and systematic way, without manipulating it or seeking to establish cause-and-effect relationships. Instead, it focuses on describing characteristics, patterns, and behaviors as they naturally occur. This approach is often used to gather information about a specific group, event, or phenomenon to better understand its nature and the conditions under which it exists.

Key methods in descriptive research include:

1. **Observational Studies:** Watching and recording behaviors or characteristics without interference, often in a natural setting.
2. **Case Studies:** In-depth analysis of a single individual, group, or event to explore complex issues in real-life contexts.
3. **Surveys and Questionnaires:** Gathering data from a larger population through questions that explore specific attitudes, opinions, or behaviours.

Examples

Descriptive research in sport and outdoor activities is evident in various publications. One study contrasts descriptive statistics and participation patterns of adventure tourists with active local residents attending an annual outdoor event, revealing differences in outdoor activity involvement based on income classes [1]. Another study explores future perspectives on outdoor recreation in Finland, highlighting the expected diversification of recreation needs and the importance of supporting equality of access to nature for health and well-being benefits [2]. Additionally, a study in Latvia examines outdoor recreation habits and changes during the COVID-19 pandemic, showing increased nature visits driven by health benefits and lower perceived risks, particularly in forest areas [3]. The impact of the COVID-19 pandemic on outdoor recreation visitation in New England's national forests is also analyzed, indicating a significant increase in overall visitation and changes in visitor behaviors and decision-making during the pandemic [4]. Furthermore, a study in Australia investigates outdoor gym use, revealing that males are more likely to use the equipment for exercise, with young-to-middle-aged adults being the predominant user group [5]. These publications collectively contribute to the understanding of descriptive research in sport and outdoor activities, highlighting trends, patterns, and the influence of external factors like income, pandemics, and demographic characteristics on participation and behaviour.

1. Outdoor Recreation and Adventure Tourism: Unique but Allied Industries

Kang, H.K, Lewis, T. Grant, Bailey, Andrew W. 2017.

Abstract: Outdoor recreation and adventure tourism are overlapping industries serving similar clientele. While descriptive marketing research exists for both industries (George Washington University School of Business [GW], Adventure Travel Trade Association [ATTA], & Xola Consulting [XC], 2010; Outdoor Foundation [OF], 2014), there is no clear distinction between those who recreate routinely in their home region and those who travel a significant distance for adventure activities. As such, national reports on outdoor recreation participation (cf. OF, 2014) are useful as economic indicators, but not very instructive for industry policy and practice. The purpose of this study was to contrast descriptive statistics and participation patterns of adventure tourists with active local residents attending an annual outdoor event. The findings demonstrate that there are differences of which both industries should be aware. For example, while outdoor recreation is often portrayed as an upper-class activity, that only held true for tourists in this study. Poorer local residents were involved in more outdoor activities than were residents in higher income classes. This and other atypical findings draw attention to the need for regional data to supplement national reports.

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2. Future perspectives on outdoor recreation in Finland

Sievänen, Tuija, Nummelin, Tuomas, Riala, Maria, Tuulentie, Seija, Neuvonen, Marjo. 2018.

Abstract: The purpose of this study was to identify the different driving forces in society and trends in outdoor recreation to capture insights and improve understanding of the alternative futures of nature-based recreation and tourism in Finland. Professionals in recreation resources management, sport, land use, and forestry planning (n = 38) were invited to discuss the future of nature-based recreation and tourism in three workshops in 2015. The workshops consisted of prematerial gathered with mind map, structured discussions, and the use of futures table method. Ten alternative descriptions of futures were created, with the time perspective being 2030. The future needs for recreation are expected to be more diversified and the population more polarised in terms of the time and money available for recreation. The outcomes suggest the need to support equality of access to nature and as a consequence the fair distribution of health and well-being benefits from nature.

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3. Outdoor Recreation Habits of People in Latvia: General Trends, and Changes during the COVID-19 Pandemic

Jūrmalis, Edgars, Bārdule, Arta, Lībiete, Zane. 2022.

Abstract: Outdoor recreation opportunities are crucial for sustaining people's physical and mental health, and forests are important recreational venues in Europe, especially in its northern part. Our study sought to characterise outdoor recreation patterns and their changes in Latvia due to the COVID-19 pandemic. We conducted a representative population survey with public participatory GIS elements that allowed the respondents to map their favoured recreation destinations. Our results revealed increased visitor numbers to nature areas during COVID-19. The main stated psychosocial factors behind the increased frequency of nature visits are health benefits and lower perceived risks in the context of the pandemic. Forests as areas simultaneously providing multiple ecosystem services have significant importance in providing space for outdoor recreation. Outdoor recreation hotspots concentrate around major urban areas and in some of the largest and most popular nature areas.

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4. The Outdoor Renaissance: Assessing the Impact of the COVID-19 Pandemic upon Outdoor Recreation Visitation, Behaviors, and Decision-Making in New England's National Forests

Barcelona, Robert, English, Donald B K, Ferguson, Lauren A, Leberman, Marianne, McIntosh, Kyle, Giles, Georgia, Ferguson, Michael D, Fraser, Olivia. 2022.

Abstract: The COVID-19 pandemic has profoundly changed outdoor recreation. As a result of the pandemic, parks and protected areas around the world have witnessed dramatic increases in recreation visitation. While various studies have examined this premise, this is one of the first to examine the influence of the COVID-19 pandemic upon recreation visitation across an entire parks and protected areas system in New England, utilizing both spatial and temporal scales. Study findings provide empirical evidence to inform future research and theory related to the social-ecological systems and recreation opportunity spectrum frameworks. A unique combination of primary, secondary, and geospatial data was used to explore recreation visitors' decision-

making, behaviors, and visitation trends during the pandemic. Inferential and regression analyses suggest overall recreation visitation increased by ~61% (2+ million additional site visits) during the summer of 2020 at the height of the pandemic. Moreover, significant changes in visitation, site, and geo-spatial characteristics were observed for both in-state and out-of-state visitors during the pandemic. This research validates the influence of the pandemic upon parks and protected areas in the United States.

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5. Descriptive epidemiology of outdoor gym use in an Australian regional setting

Duncan, Mitch J., Jansson, Anna K., Robards, Sara L., Plotnikoff, Ronald C., Lubans, David R., Smith, Jordan J., Plotnikoff, Mikisha. 2022.

Abstract: Background

Outdoor gym installations have become a popular initiative by local government agencies globally to increase community-based physical activity. Despite their rapid spread, usage rates and user characteristics are not well described, particularly the mode/type of activity performed. This study aims to investigate the proportion and timing of outdoor gym use, and demographic characteristics of gym users across seven locations.

Method

The current study employed a cross-sectional research design with observational measures to examine outdoor gym use across seven locations in a large regional area in New South Wales, Australia. An outdoor gym audit including the number of pieces and names of the equipment, and type of outdoor gym was undertaken in the month prior to data collection.

Results

A total of 56 h of observation periods were conducted, during which 2950 individuals were observed moving through the observation target areas. Across all parks, 3.8% of individuals (n = 112) were observed using the outdoor gyms for exercise purposes. Males (65%) were more likely to be observed using the equipment than females (35%) and there were more young-to-middle aged adult (83.9%) users than seniors (6.3%), adolescents (4.5%) and children (3.6%).

Conclusion

Outdoor gyms have the potential to influence community-based physical inactivity rates as they appear to be a popular strategy by many government jurisdictions globally.

To increase usage, local government agencies would benefit from working collaboratively with researchers to determine effective education and promotion strategies and in developing interventions to increase usage of outdoor gym equipment, particularly among women and older adults.

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Case Study Research

Case study research is a qualitative research method that involves an in-depth investigation of a single subject, such as an individual, group, organization, or event. This approach provides a comprehensive view of complex issues within real-life contexts, often exploring how or why something occurs. Case studies are commonly used in fields like psychology, sociology, education, and business to gain detailed insights that may not emerge from larger, quantitative studies.

Key characteristics of case study research:

1. **Focus on Context:** Case studies delve deeply into specific, often unique situations or cases, offering insights that reflect the context of the study.
2. **Multiple Sources of Evidence:** Researchers typically use multiple data collection methods—such as interviews, observations, and documents—to gather a rich set of information.
3. **Exploratory or Explanatory Goals:** Case studies can explore new areas where little information is available or explain complex dynamics and relationships.

This method is valuable for generating hypotheses, developing theories, or providing practical applications by understanding real-world situations in great detail.

Examples

Case study research in the context of sport or outdoor activities can provide valuable insights into the effectiveness of mindfulness interventions for athletes. Several studies have explored the benefits and challenges of incorporating mindfulness into athletic training programs.

One study evaluated a low-dose mindfulness program for student-athletes at a sport academy, which involved introducing mindfulness in health classes and applying it within sports through guided meditations and reflections [1]. Despite challenges such as lack of buy-in and time commitment, the program led to increased academic vitality scores and provided athletes with relaxation and new skills.

Another publication highlighted the use of mindfulness to enhance performance and well-being in various disciplines, including sports, dance, and music [2]. The authors emphasized the importance of mindfulness-based programs in different cultural contexts and their potential to improve personal well-being and peak performance.

A pilot study focused on mindfulness training for a college women's lacrosse team, where a coach delivered a Mindful Sport Performance Enhancement (MSPE) intervention with positive outcomes [3]. The study demonstrated significant improvements in sport anxiety, mindfulness, emotion regulation, and performance satisfaction among athletes, suggesting the feasibility of integrating mindfulness into university athletic departments.

Furthermore, a study on sub-elite squash athletes explored the effectiveness of a Mindfulness Acceptance Commitment (MAC) program in enhancing sport performance through present-moment focus and non-judgmental thoughts [4]. The results showed improvements in mindful practice levels and coach-rated sport performance, supporting the application of MAC programs in real-world settings.

In conclusion, case study research in sport and outdoor activities has shown promising results in utilizing mindfulness interventions to enhance athlete well-being, performance, and injury prevention. These studies underscore the potential benefits of integrating mindfulness into athletic training programs to support athletes' mental and physical health [5].

1. Mindfulness in the Sport Academy Classroom: Exploring Benefits and Barriers of a Low-Dose Intervention

Zizzi, Sam J., Augustus, Andrew N.. 2023.

Abstract: This study evaluated the feasibility and effectiveness of a low-dose mindfulness program with student-athletes (SA) at a sport academy in the USA. First, SAs were introduced to mindfulness in their health class with conceptual lessons and guided meditations from the Headspace 'Guide to Meditation' series. Following each episode, SAs reflected on their experience via guided prompts led by their teacher. The second phase shifted towards applying mindfulness within their sport through app-based guided meditations and sport-based reflections led by teachers in their mental skills classes. Student-athlete perceptions of these experiences were captured through the reflection exercises and a post-program evaluation survey. Preliminary outcome data related to mindfulness, mental health, and thriving was gathered at baseline, 8 weeks, and 16 weeks. The sport academy staff provided in-depth feedback throughout and at the conclusion of the program. Although there were several barriers and challenges (i.e., lack of buy-in, time commitment, and competition travel), numerous benefits were also uncovered in SA reflections and evaluations. The Headspace series provided SAs with a time and space to relax, consider new perspectives, and learn new skills. Academic vitality scores increased over the first eight weeks of the program as well. Future research in this setting may consider spending additional time on SA buy-in, increase the integration of key staff members, and ensure SAs are able to practice meditation on their own time.

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2. Mindfulness and Performance

Baltzell, Amy L. 2016.

Abstract: Incorporating the theoretical conceptualizations of Jon Kabat-Zinn and Ellen Langer, this volume illustrates how performers from a variety of disciplines - including sport, dance and music - can use mindfulness to achieve peak performance and improve personal well-being. Leading scholars in the field present cutting-edge research and outline their unique approach to mindfulness that is supported by both theory and practice. They provide an overview of current mindfulness-based manuals and programs used around the globe in countries such as the United States, China and Australia, exploring their effectiveness across cultures. Mindfulness and Performance

will be a beneficial reference for practitioners, social and sport psychologists, coaches, athletes, teachers and students.

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3. Mindfulness training for a college team: Feasibility, acceptability, and effectiveness from within an athletic department

Minkler, Thomas O, Hut, Megan, Glass, Carol R. 2021.

Abstract: Mindfulness-based interventions for athletes-including Mindful Sport Performance Enhancement (MSPE)-have demonstrated promising results. While initial studies of MSPE have found improvements in many areas of athlete functioning (e.g. flow, anxiety, sport performance), questions regarding the feasibility, acceptability, and effectiveness of the protocol when implemented in real-world settings remain. The present pilot study was the first in which a college coach was supervised in using the MSPE protocol to learn mindfulness and develop a consistent practice, and later delivered a 6-week MSPE intervention to all 30 athletes on a Division III NCAA women's lacrosse team. With a 100% completion rate, players rated the program as highly successful, engaged in mindfulness practice outside of weekly sessions, and strongly recommended MSPE training for other athletes; qualitative data also suggested several perceived benefits. After the intervention, participants showed significant improvements in questionnaire measures of sport anxiety, mindfulness, difficulties in emotion regulation, and sport performance satisfaction, with medium to large effect sizes. Furthermore, improvements in sport mindfulness and flow were associated with several dimensions of lacrosse performance. As many universities lack resources to support sport psychology services for athletes, the present study-with its focus on generalizability and feasibility-suggests that MSPE can be delivered by a trained coach to potentially benefit athletes' well-being and performance satisfaction. Ultimately, this "train-the-trainer" model could create a foundation for sustainable integration of mindfulness and/or mental training in general into college athletic departments.

Lay summary: The feasibility and success of a mindfulness intervention with a collegiate women's lacrosse team, when led by a coach trained in mindfulness rather than a professional clinician, sport psychologist, or mindfulness expert, suggests that this "train-the-trainer" model could promote feasible and sustainable integration of mindfulness programs into university athletic departments.

Implications for practice

In addition to direct delivery of mindfulness training to athletes, sport psychology professionals may be able to affect positive change by offering train-the-trainer services to coaches instead, potentially contributing to the sustainable, long-term integration of mindfulness into university athletic departments.

Following supervised mindfulness training and the establishment of their own continuing mindfulness practice, the results of the present study suggest that collegiate coaches can feasibly deliver a mindfulness intervention to an entire team with a high degree of acceptability and athlete engagement.

Having coaches trained in mindfulness could impact student-athlete well-being and performance satisfaction, and may be especially beneficial for secondary school or university-level athletic departments that lack the financial resources to employ a sport psychology professional.

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4. The Effectiveness of a Mindfulness Training Program on Selected Psychological Indices and Sports Performance of Sub-Elite Squash Athletes

Cheong, J. P. G., How, P. N., Wong, R. S. K.. 2022.

Abstract: Mindfulness Acceptance Commitment (MAC) programs have garnered much support in enhancing sport performance through present-moment focus and non-judgmental thoughts. Expanding on previous studies conducted in collegiate and professional settings, the current study investigates the application of MAC amongst national sub-elite athletes. The study was conducted utilizing a single case A-B design, with a total of six sub-elite Malaysian Squash athletes (2 males, 3 females; M

age

= 15 ± 2 years) purposively sampled from the Malaysian national squash team.

Participants underwent 6 weeks of baseline testing, 7 weeks of program intervention, and a retention test 4 weeks post-intervention. The intervention consisted of psycho-education, centering and cognitive defusion among other aspects as purported in MAC programs. Changes in proficiency of mindful practice was observed through the Mindfulness Awareness Acceptance Scale (MAAS), experiential avoidance through the Acceptance Action Questionnaire (AAQ-II), stress levels through the Perceived Stress Scale (PSS), and sport performance through both coach- and self-rated scales. Overall, visual analysis revealed improvements in MAAS levels ($M = 1.15 \pm 0.15$), with no marked changes in AAQ-II ($M = -0.002 \pm 1.12$) and PSS ($M = 0.7 \pm 0.93$) after 7 weeks of intervention. Coach-rated sport performance also improved across the phases ($M = 0.86 \pm 0.93$), with mixed responses for self-rated improvements ($M = 0.01 \pm 1.19$).

Overall, the benefits of MAC program were well-maintained past the post-intervention phase. The current study supported the implementation of an MAC program for sub-elite athletes in real-world settings.

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5. Integrating Mindfulness to Reduce Injury Rates in Athletes: A Critically Appraised Topic

Genoese, Francesca, Baez, Shelby, Reiche, Elaine, Lam, Kevin. 2023.

Abstract: Clinical Question

Is there evidence to support the use of mindfulness to reduce injury risk in athletic populations?

Clinical Bottom Line

There is currently inconsistent, good-quality evidence to support that mindfulness interventions are effective in decreasing injury rates in athletes compared to the standard of care. Future research should investigate the effectiveness of mindfulness in other populations and types of sports activity (e.g., basketball, gymnastics, etc.). Additionally, future research should investigate different mindfulness delivery techniques in addition to the Mindfulness–Acceptance–Commitment (MAC) approach. Due to the inconsistent, good-quality evidence to support the use of mindfulness to reduce injury rates, the grade of B is recommended by the Strength of Recommendation Taxonomy. Mindfulness interventions should be incorporated into clinical practice but stakeholders (e.g., coaches, athletes, administration) should be included in the decision to implement these programs.

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Ethnographic Research

Ethnographic research is a qualitative research method focused on studying people and cultures in their natural environments. Rooted in anthropology, it involves immersing oneself within a community or social group to observe behaviors, rituals, values, and social interactions over an extended period. This method helps researchers understand cultural practices and the meanings individuals or groups attribute to them from an insider's perspective.

****Key characteristics of ethnographic research:****

1. ****Participant Observation****: Researchers engage with the community, often participating in daily activities to better understand the cultural context from within.
2. ****Fieldwork****: Ethnographers spend significant time in the community, sometimes months or years, to gather a comprehensive view of the social and cultural landscape.
3. ****Unstructured Data Collection****: Data is gathered through informal conversations, observations, interviews, and notes, allowing for a more flexible and open-ended approach to understanding the subject.

Ethnographic research is particularly useful in fields like anthropology, sociology, and education, where understanding cultural nuances and social dynamics is essential. It enables researchers to capture complex social realities and provide detailed insights into human behaviours and cultural systems.

Examples

Ethnographic research in sports and outdoor activities provides valuable insights into the experiences and dynamics within these contexts. One study focused on women's participation in a community hiking group, highlighting themes such as empowerment, health, cultural expectations, vulnerability, and navigation [1]. It revealed how gendered assumptions and socialized beliefs impact women's outdoor experiences, influencing their sense of empowerment and well-being.

Another study explored the liminoid character of contemporary sea kayaking adventures, emphasizing the marginal danger and the transformative nature of venturing into the sea. Participants described moving from comfort to hardship, security to uncertainty, and passivity to commitment, seeking belonging and escape in these liminal environments [2].

In a windsurfing community, gender relations and identities were examined, revealing the negotiation of competing masculinities within this less institutionalized sport culture. The study suggested that windsurfing broadens the boundaries of sporting masculinities, offering a space for diverse expressions of gender within the community [3].

Furthermore, research on roller derby as an alternative sport for women highlighted the importance of considering both insider and outsider perspectives. The study emphasized the need for collaboration and curiosity in feminist research, acknowledging the value of insights from participants and observers alike [4].

Lastly, a study on outdoor informal sports in multicultural urban spaces discussed the right to the city for migrant and ethnically diverse populations. It explored how informal sports activities foster urban belonging and democratize access to urban resources, despite structural constraints faced by marginalized groups [5].

Ethnographic research in sports and outdoor activities offers a nuanced understanding of gender dynamics, community belonging, and urban inclusivity, shedding light on the complex interactions and experiences within these contexts.

1. 'We have to be a little more realistic': women's outdoor recreation experiences in a community hiking group

McAnirlin, Olivia, Maddox, Callie Batts. 2022.

Abstract: Grounded in the theoretical framework of ecological feminism, this study explores the tension between constraint and empowerment that often marks women's participation in outdoor recreation. Drawing on ethnographic fieldwork and thirteen semi-structured interviews, this study examines how women in a co-ed community hiking group in the Midwest region of the United States experience the gendered space of outdoor recreation. Analysis of the observational and interview data resulted in five themes: Empowerment, Being Healthy, Cultural Expectations of Age, Vulnerability, and Navigation. Focusing on the latter three, we suggest that women's experiences are impacted by gendered assumptions (such as a lack of navigational skill) and socialized beliefs (such as the fear of being alone) that temper the potential for expected outcomes of personal empowerment and improved physical and mental health.

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2. Sea kayakers at the margins: the liminoid character of contemporary adventures

Varley, Peter Justin. 2011.

Abstract: The ethnographic data considered here were gathered over a seven-month period on and around the Isle of Anglesey in North Wales. The data were partly collected during sea kayaking courses at a commercial outdoor centre and also during more informal outings with independent members of a sea kayaking club. Material recorded on accompanied journeys, during participation on group courses and on expeditions was triangulated with notes from semi-structured interviews and spontaneous discussions. The notions of marginal danger and of apparently approaching the 'edge' are key characteristics of the late-modern forms of adventurous leisure. It is proposed that, rather like the strange vertical world of the rock climber or the subterranean one of the potholer, the sea kayakers' environment is an alien, marginal, liminoid world. The ocean is not the natural territory of human beings. The kayakers move from the land to the sea and from comfort to hardship, from security to uncertainty, passivity to commitment and from action governed via ocular experience to total bodily/sensual immersion. Importantly, these shared experiences provide belonging in the ecstatic, temporary, Dionysiac communities who meet in these marginal places and situations in search of adventure and escape. Danger is but a small part of the meaning of such activity; it is the liminoid experience that is of key importance to participants.

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3. "New Lads"?

Wheaton, B. 2000.

Abstract: Historically, sport has been so closely identified with men that sport has become one of the key signifiers of masculinity in many Western societies. Traditional institutionalized sports cultures in these societies have been a central site for the creation and reaffirmation of masculine identities and for the exclusion and/or control of women. Since the 1970s, women have permeated many sporting spheres; thus, exploring the role sport plays in the reproduction and/or transformation of contemporary relations between and within the sexes is a prime concern. This article explores how gender relations and identities in a less institutionalized, "new sport" culture are constructed. Ethnographic research focused on a windsurfing community in England and examined men's (and women's) sporting experiences within this community. The ethnographic data suggests that while competing masculinities are negotiated in the windsurfing culture, this individualized new sport broadens the recognized boundaries of sporting masculinities.

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4. On the track/in the bleachers: authenticity and feminist ethnographic research in sport and physical cultural studies

Pavlidis, Adele, Olive, Rebecca. 2014.

Abstract: Much contemporary ethnographic research about alternative sports and physical cultures tends to value the 'insider' perspective, claiming that it provides a level of embodied understanding that cultural 'outsiders' struggle to access. Participatory research perspectives have come to be viewed as the most 'authentic', with participation itself defined by those who are doing/playing the activity. This often diminishes the value we place on meanings experienced by those on the sidelines/bleachers, which may be similar to or different from those of participants. This article explores these issues by placing the observations, experiences and insights of a 'intimate insider' in dialogue with those of an 'interested outsider', and considers the ways in which roller derby, as an alternative sport and leisure activity for women, presents both opportunities and limitations as a feminist and queer space. Taking a dialogic approach to questioning the authentic value of 'insider' research, we reveal a

space where collaboration and curiosity become vital for maintaining high-quality, rigorous feminist research.

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5. The right to the city: outdoor informal sport and urban belonging in multicultural spaces

Wise, Amanda, Parry, Keith D., Velayutham, Selvaraj, Neal, Sarah, Aquino, Kristine. 2022.

Abstract: Studies on 'everyday multiculturalism' and 'lived multiculture' have advanced knowledge on the kinds of inclusive everyday spaces and practices that characterize our culturally complex, mobile and superdiverse cities. This paper expands this agenda by exploring informal sporting and leisure interactions amongst migrant and ethnically diverse urban populations. Embedded in a larger comparative city project that examines how urban environments and wider social structures mediate inclusions and exclusions of urban dwellers, this paper presents a case study of temporary migrant workers in Singapore and their participation in outdoor informal sport. It deploys Lefebvre's notion of 'Right to the City' to understand city dwellers' access to urban resources and their collective ability to democratically inhabit the city. Despite structural constraints imposed on marginalized migrants, the nature of informal sport, the spontaneous coming together to play, creative use of public space and a range of convivial practices, generate a sense of urban belonging.

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Observational Research

Observational research is a research method where researchers observe and record behaviours, events, or conditions as they naturally occur, without interference or manipulation. This type of research is often used when it's unethical, impractical, or impossible to control variables, making it ideal for studying behaviors in real-world settings. Observational research is commonly used in fields like psychology, sociology, and market research.

****Types of Observational Research:****

1. ****Naturalistic Observation****: Observing subjects in their natural environment without any interaction or interference from the researcher. This method helps understand authentic behaviors.
2. ****Participant Observation****: The researcher actively engages with the subjects while observing, which allows them to gain a deeper understanding of the group's dynamics and behaviours.
3. ****Structured Observation****: Observations are systematically recorded, often using checklists or specific guidelines, to ensure consistency and focus on specific behaviors or events.

Observational research is valuable for gathering data on complex social interactions, behaviours, and settings, helping researchers identify patterns, trends, and correlations in natural contexts.

Examples

Observational research in sports is a valuable tool for understanding various aspects of athletes' behaviours and interactions. One study focused on developing the Assessment of Coach Emotions (ACE) tool to evaluate coaches' emotions in youth sports [1]. The ACE tool includes 12 categories of behavioural content and eight emotion modifiers, providing insight into coaches' interactive behaviours. Another study analysed the verbal behaviour of family spectators of youth athletes, highlighting the importance of family involvement in sports activities [2]. The study found significant differences in verbal comments based on athletes' gender, geographical area, type of sport, and sporting category. Additionally, logistic regression was applied to determine the best-adapted football discipline for children based on their playing area usage [3]. This technique offers effective prognosis regarding the probability of successful moves in different football disciplines. Furthermore, observing scenes of cooperation or competition in sports can affect athletes' motor behavior, particularly in relation to their specific sport attitude [4]. The study showed that athletes with a cooperative attitude were speeded when observing scenes of cooperation. Lastly, combining observational and survey data at running events revealed influencing factors of runners' sports apparel value [5]. Visual data gathering methods proved useful in explaining sports apparel usage and consumption, correcting for selection bias and providing insights into runners' behaviours. Overall, observational research in sports offers valuable insights into coaches' emotions, family involvement, athletes' behaviours, and sports apparel consumption patterns.

1. Development of the Assessment of Coach Emotions systematic observation instrument: A tool to evaluate coaches' emotions in the youth sport context

Côté, Jean, Davis, Paul A., Vierimaa, Matthew, Allan, Veronica, Turnnidge, Jennifer. 2016.

Abstract: Current research on emotions in sport focuses heavily on athletes' intrapersonal emotion regulation; however, interpersonal consequences of emotion regulation are garnering recent attention. As leaders in sport, coaches have the opportunity to regulate not only their own emotions, but also those of athletes, officials, and spectators. As such, the present study set out to develop an observational tool, demonstrating evidence of validity and reliability, for measuring coaches' overt emotions in the youth sport context. Categories were derived and refined through extensive literature and video review, resulting in 12 categories of behavioural content and eight emotion modifiers (Neutral, Happy, Affectionate, Alert, Tense, Anxious, Angry and Disappointed). The final coding system is presented herein, complete with supporting evidence for validity and reliability. As a tool for both researchers and practitioners in sport, the Assessment of Coach Emotions (ACE) offers enhanced insight into the contextual qualities underlying coaches' interactive behaviours.

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2. Systematic Observation of the Verbal Behaviour of Families of Youth Athletes in Grassroots and Team Sports

Borràs, Pere A, García-Mas, Alejandro, Sánchez-Romero, Elisa I, Verdaguer, Francisco J Ponseti. 2020.

Abstract: Some of the more protective and favourable factors for the development and health in children and teenagers are family and sport, so family involvement in the children's sports activities is vital in their sports process. The purpose of this study was to analyse the verbal behavior (positive, negative, and neutral comments) of family spectators of school-age athletes regarding sociodemographic and sporting variables. The sample consisted of 190 family spectators of 215 male and female ($= 11.66; = 1.60$) football, basketball, and volleyball players. The Parents' Observation Instrument at Sport Events (POISE) was used for the observation and LINCE was used to codify the verbal comments made. After registering 38,829 comments, the results showed statistically significant differences in relation to the comments made and the gender of athletes, geographical area, kind of sport, and the sporting category. The findings highlight that in a competitive environment, the comments made by spectators related

to athletes do not seem to be initiators of potentially violent situations but rather are dependent on the atmosphere in question. Further research is required in this area to foster positive conduct relating to grassroots sports.

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3. Adapting football to the child: an application of the logistic regression model in observational methodology

Arana, Javier, Anguera, María Teresa, Garzón, Belén, Lapresa, Daniel. 2013.

Abstract: Logistic regression is included into the analysis techniques which are valid for observational methodology. However, its presence at the heart of this methodology, and more specifically in physical activity and sports studies, is scarce. With a view to highlighting the possibilities this technique offers within the scope of observational methodology applied to physical activity and sports, an application of the logistic regression model is presented. The model is applied in the context of an observational design which aims to determine, from the analysis of use of the playing area, which football discipline (7 a side football, 9 a side football or 11 a side football) is best adapted to the child's possibilities. A multiple logistic regression model can provide an effective prognosis regarding the probability of a move being successful (reaching the opposing goal area) depending on the sector in which the move commenced and the football discipline which is being played.

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4. Factors affecting athletes' motor behaviour after the observation of scenes of cooperation and competition in competitive sport: the effect of sport attitude

Gentilucci, Maurizio, De Marco, Dorian, Stefani, Elisa De. 2015.

Abstract: This study delineated how observing sports scenes of cooperation or competition modulated an action of interaction, in expert athletes, depending on their specific sport attitude.

In a kinematic study, athletes were divided into two groups depending on their attitude toward teammates (cooperative or competitive). Participants observed sport scenes of cooperation and competition (basketball, soccer, water polo, volleyball, and rugby) and then they reached for, picked up, and placed an object on the hand of a conspecific

(giving action). Mixed-design ANOVAs were carried out on the mean values of grasping-reaching parameters.

Data showed that the type of scene observed as well as the athletes' attitude affected reach-to-grasp actions to give. In particular, the cooperative athletes were speeded when they observed scenes of cooperation compared to when they observed scenes of competition.

Participants were speeded when executing a giving action after observing actions of cooperation. This occurred only when they had a cooperative attitude. A match between attitude and intended action seems to be a necessary prerequisite for observing an effect of the observed type of scene on the performed action. It is possible that the observation of scenes of competition activated motor strategies which interfered with the strategies adopted by the cooperative participants to execute a cooperative (giving) sequence.

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5. The Purchase Price of Runners' Sports Apparel: Combining Observational and Survey Data at Running Events

Vos, Steven, Scheerder, Jeroen, Thibaut, Erik. 2019.

Abstract: The aim of the current study is twofold. First, it investigates the influencing factors of runners' sports apparel value at a running event. Second, the potential value of observational data in the socioeconomic field is investigated, as this study combines data retrieved by a survey and by visually scanning pictures of event runners. The results demonstrate that visual data gathering methods contribute to explaining sports apparel usage and consumption. For example, it is found that runners who wear a shirt of the running event spent less money on their running shoes and overall sports apparel. From a methodological point of view, it is shown that observation leads to no nonresponse and thus corrects for selection bias. Other advantages (e.g., less selection bias, less recall bias, time-efficiency for research subject, potential automatic computer analysis in future) and disadvantages (e.g., technical, labor intensiveness for researcher, privacy) of visual data are discussed.

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Mixed Methods Research

A mixed methods study combines both quantitative and qualitative research approaches within a single study to leverage the strengths of each method and gain a more comprehensive understanding of the research question. This approach is especially useful when exploring complex topics where neither quantitative nor qualitative data alone can provide a complete picture.

****Key Characteristics of Mixed Methods Studies:****

1. ****Integration of Quantitative and Qualitative Data****: Mixed methods studies collect both numerical data (e.g., surveys, experiments) and descriptive data (e.g., interviews, observations).
2. ****Complementary Insights****: The quantitative data may provide a broad overview, such as trends or correlations, while qualitative data offers depth and context, helping to explain or elaborate on the findings.
3. ****Sequential or Concurrent Design****: Researchers may conduct one method first (sequentially) or use both simultaneously (concurrently) to achieve a fuller understanding.

Commonly used in fields like healthcare, education, and social sciences, mixed methods studies help validate findings, illuminate diverse perspectives, and provide nuanced insights that are valuable for both theory and practice.

Examples

Mixed methods research in the context of sports and outdoor activities is evident in various studies. One study focused on the effectiveness of a school-based outdoor education curriculum and online learning environment for prospective physical education teachers [1]. The research design involved a mixed method approach, combining qualitative and quantitative data to assess the impact of the curriculum on outdoor sports learning. Prospective teachers reported improved achievement in outdoor sports lessons and enhanced abilities through the combined school-based outdoor education and online learning approach.

Another study explored the experiences and perceptions of users of outdoor gyms in public open spaces [2]. The synthesis of qualitative and quantitative evidence highlighted the diverse characteristics of outdoor gyms and the central theme of health in users' experiences. The findings emphasized the role of outdoor gyms in promoting structured physical activity and social connectedness within communities.

Furthermore, a study on children's physical activity levels during primary school break times utilized a mixed method approach [3]. The research identified predictors of physical activity levels among boys and girls, emphasizing the importance of social interactions and activity types during outdoor recess. The qualitative findings suggested interventions focusing on the social environment to enhance physical activity levels among children.

Lastly, a qualitative study explored participants' experiences with a community-based physical activity intervention during the COVID-19 pandemic [4]. The research highlighted the impact of the pandemic on engagement with outdoor exercise facilities and overall physical activity levels. The study revealed mixed effects of the pandemic on participation in the intervention, emphasizing the need for further research to understand the implications of such interventions during challenging circumstances.

In conclusion, these studies demonstrate the value of mixed methods research in examining the effectiveness of outdoor education curricula, understanding user experiences in outdoor gym settings, assessing children's physical activity levels during school breaks, and exploring the impact of external factors on community-based physical activity interventions.

1. Effectiveness of a School-Based Outdoor Education Curriculum and Online Learning Environment among Prospective Teachers

Tekakpınar, Erhun, Tezer, Murat. 2020.

Abstract: The aim of this study is to determine the effectiveness of a curriculum developed for prospective physical education teachers to learn an outdoor sports course, using both the school-based outdoor education approach and online learning. The research design involved a mixed method that used both qualitative and quantitative approaches. Since qualitative data were collected in order to support quantitative data, the researchers applied a sequential–descriptive pattern of mixed methods. As a result of the research, the achievement of the outdoor sports lesson and the ability of doing outdoor sports were improved among prospective teachers using both the school-based outdoor education and online learning physical education approaches. The prospective teachers stated that they learned the subjects better by doing, and that they were more motivated to improve their subsequent performance after watching the recorded activities and performances on the learning management system. The prospective teachers generally expressed the positive opinion that the course was helpful for passing the final exam or other evaluations, and that the teaching activities were motivational.

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2. Understanding Outdoor Gyms in Public Open Spaces: A Systematic Review and Integrative Synthesis of Qualitative and Quantitative Evidence

Lee, Janet Lok Chun, Temmy Lee Ting Lo, Rainbow Tin Hung Ho. 2018.

Abstract: (1) Background: An outdoor gym (OG) is environmental infrastructure built in a public open space to promote structured physical activity. The provision of OGs is increasingly seen as an important strategy to realize public health agendas promoting habitual physical activity. A systematic review was conducted to synthesize characteristics of OG and OG users' experiences and perceptions in different cultural contexts; (2) Methods: Online searches of multidisciplinary databases were conducted in health, sport and recreation, and urban planning disciplines. Characteristics of OGs were synthesized by integrating evidence from quantitative, qualitative, and mix-methods studies. The experiences and perceptions of OG users from both qualitative data and survey responses were synthesized through framework analysis; (3) Results: Nine studies met the inclusion criteria (three quantitative studies, four mixed-methods studies, and two pure qualitative studies). None were excluded on the basis of quality.

OGs mainly serve adult and older adult population groups. Their size, design, and instructional support vary across studies. The inclusion of functional types of equipment did not have a unified standard. Regarding experiences and perceptions of OGs, five major themes emerged: "health", "social connectedness", "affordable", "support", and "design and promotion"; (4) Conclusions: The OG characteristics synthesis guides the direction in further studies regarding exploration of design parameters. The qualitative and quantitative synthesis revealed that health was a central theme of users' experiences. OGs are also spaces where community-dwellers can find social connectedness while participating in structured physical activity at no cost. Findings from this review create knowledge support for OG as environmental infrastructure for further research and facilitate the understanding of users' experiences and perceptions of OGs in different cultural contexts.

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3. Children's physical activity levels during primary school break times

Woodfield, Lorayne A, Nevill, Alan AM, Powell, Emma. 2016.

Abstract: The overall aim of this study was to assess the diversity of primary school children's physical activity (PA) during outdoor recess. The study was grounded in a mixed method approach, assisting in the identification of multifaceted predictors of children's PA, including insights to social behaviours during break time. Data were obtained from children aged 7-10 years across five primary schools in the West Midlands, United Kingdom. Data were collected during the English winter months from November 2013 to January 2014 and involved two distinct phases. In the quantitative phase (n = 82), children's PA levels and social play behaviours were directly observed at break time using the system for observing children's activity and relationships during play (SOCARP). The SOCARP instrument coded 820 minutes of school break time across the categories of: physical activity; group size; activity type and social play behaviours. In the qualitative phase (n = 80), children participated in group interviews in relation to their perceptions and experiences of the playground environment. Findings indicated boys and girls have different predictors of their PA levels. Participating in sports activities and engaging in large groups were positive predictors of boys' moderate to vigorous physical activity (MVPA), whereas pro-social interactions and small/medium groups were positive predictors of girls' MVPA. The qualitative findings highlighted several themes including: boys and sport; power hierarchies; girls' walk and talk; and imaginary play. Drawing from the current findings, it is suggested that interventions should focus on the social environment of break times, facilitating walk and talk routes for girls and sporting opportunities for boys. (Autor).

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4. A Qualitative Study Exploring People's Experience With the Multicomponent Community-Based Physical Activity Intervention ecofit During the COVID-19 Pandemic

Hansen, Vibeke, Duncan, Mitch J, Smith, Jordan J, Plotnikoff, Ronald C, Jansson, Anna K, Lubans, David R. 2022.

Abstract: The COVID-19 global pandemic greatly impacted lifestyles and physical activity routines. This study explored how the COVID-19 pandemic impacted participant experience and motivation in ecofit, a large, community-based, multicomponent intervention that supports aerobic and resistance-based physical activity using publicly available, outdoor exercise facilities and smartphone technology.

Fifteen participants from the intervention arm of the study were interviewed. Audiotaped telephone interviews were transcribed verbatim and analysed by a researcher uninvolved in the intervention. Through an inductive thematic approach, data were coded and organized into themes. The quantitative measure of participant smartphone application engagement was used as a classification during analysis.

Several themes representing participants' experience of the COVID-19 pandemic in their engagement with ecofit, overall physical activity levels, motivation to exercise, and perception and usage of outdoor gym facilities were identified.

The impact of the COVID-19 pandemic on clinical trials is beginning to emerge. Although the present study showed a mixed impact of the pandemic on participation in the ecofit program, the overall implications for the intervention are yet to be determined. Interestingly, although a large review found a negative impact of COVID-19 on physical activity, this sample reported an overall increase.

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The below is not a true example of MM primary research. This is secondary research but an interesting study nonetheless.

5. 'You can change your life through sports'—physical activity interventions to improve the health and well-being of adults experiencing homelessness: a mixed-methods systematic review

Broderick, Julie, Dawes, Jo, Rogans-Watson, Raphael. 2024.

Abstract: Objectives Systematically synthesise evidence of physical activity interventions for people experiencing homelessness (PEH). Design Mixed-methods systematic review. Data sources EMBASE, Web of Science, CINAHL, PubMed (MEDLINE), PsycINFO, SPORTDiscus and Cochrane Library, searched from inception to October 2022. Eligibility criteria PICO framework: population (quantitative/qualitative studies of PEH from high-income countries); intervention (physical activity); comparison (with/without comparator) and outcome (any health/well-being-related outcome). The risk of bias was assessed using Joanna Briggs Institute critical appraisal tools. Results 3615 records were screened, generating 18 reports (17 studies, 11 qualitative and 6 quantitative (1 randomised controlled trial, 4 quasi-experimental, 1 analytical cross-sectional)) from the UK, USA, Denmark and Australia, including 554 participants (516 PEH, 38 staff). Interventions included soccer (n=7), group exercise (indoor (n=3), outdoor (n=5)) and individual activities (n=2). The risk of bias assessment found study quality to vary; with 6 being high, 6 moderate, 4 low and 1 very low. A mixed-methods synthesis identified physical and mental health benefits. Qualitative evidence highlighted benefits carried into wider life, the challenges of participating and the positive impact of physical activity on addiction. Qualitative and quantitative evidence was aligned demonstrating the mental health benefits of outdoor exercise and increased physical activity from indoor group exercise. Quantitative evidence also suggests improved musculoskeletal health, cardiovascular fitness, postural balance and blood lipid markers ($p < 0.05$). Conclusion Qualitative evidence suggests that physical activity interventions for PEH can benefit health and well-being with positive translation to wider life. There was limited positive quantitative evidence, although most was inconclusive. Although the evidence suggests a potential recommendation for physical activity interventions for PEH, results may not be transferable outside high-income countries. Further research is required to determine the effectiveness and optimal programme design.

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Review Research

Review research, also known as a literature review or research review, involves systematically examining and synthesizing existing research on a specific topic or question. Rather than collecting new data, review research analyzes past studies to identify trends, gaps, and overall insights in a particular field. It helps provide an overview of what is known, supports evidence-based conclusions, and guides future research directions.

Types of Review Research:

1. **Systematic Review:** This approach involves a comprehensive, structured, and transparent process of collecting and analyzing studies on a particular research question. Systematic reviews aim to minimize bias by following a rigorous methodology.
2. **Narrative (Traditional) Review:** A more flexible approach, where researchers summarize and discuss findings from various studies, often to provide an overview or historical context on a topic.
3. **Meta-Analysis:** This statistical approach combines data from multiple quantitative studies to draw more robust conclusions, often used to assess the effectiveness of interventions.
4. **Scoping Review:** This review type maps the existing literature on a broad topic, identifying key concepts, sources, and gaps without delving as deeply as a systematic review.

Review research is valuable in fields like healthcare, social sciences, and education, where it helps researchers, practitioners, and policymakers make informed decisions based on existing evidence.

Examples

Adventure sports research has focused on defining adventure sports and understanding human-environment interactions. The lack of a shared conceptualization of adventure sports has been identified as a limitation for research and practice [1]. An ecological dynamics approach has been proposed to provide a more nuanced theoretical explanation of participation in activities such as freeride skiing/snowboarding, white-water kayaking, climbing, and mountaineering [1]. Gamification techniques have been explored as effective tools for increasing attraction, engagement, and retention in adventure and wilderness sports coaching [2]. The role of the adventure-sports coach has been conceptualized within the context of existing roles in the field and motivations for outdoor activities, aiming to stimulate debate and research in this area [3]. Risk in nature-based tourism and recreation has been examined, with differing perspectives on risk as a negative consequence or a meaningful component of the outdoor experience [4]. Nature-based recreation has shown potential mental health benefits, including improvements in affect, cognition, restoration, well-being, and reductions in anxiety and depression symptoms [5].

In conclusion, research in adventure sports has addressed the conceptualization of adventure sports, the role of gamification in coaching, the identity of adventure-sports coaches, perspectives on risk in outdoor activities, and the mental health benefits of nature-based recreation. These studies contribute to a better understanding of human-environment interactions, coaching strategies, risk perceptions, and the therapeutic effects of outdoor activities.

1. An Ecological Dynamics Approach to Understanding Human-Environment Interactions in the Adventure Sport Context-Implications for Research and Practice

Brymer, Eric, Immonen, Tuomas, Jaakkola, Timo, Davids, Keith. 2022.

Abstract: The last few decades have witnessed a surge of interest in adventure sports, and has led to an emerging research focus on these activities. However, recent conceptual analyses and scientific reviews have highlighted a major, fundamental question that remains unresolved:

constitutes an adventure sport. Despite several proposals for definitions, the field still seems to lack a shared conceptualization. This deficit may be a serious limitation for research and practice, restricting the development of a more nuanced theoretical explanation of participation and practical implications within and across adventure sports. In this article, we address another crucial question,

can adventure sports be better understood for research and practice? We briefly summarize previous definitions to address evident confusion and a lack of conceptual clarity in the discourse. Alternatively, we propose how an ecological perspective of human behaviors, such as interactions with the environment, may provide an appropriate conceptualization to guide and enhance future research and practice, using examples from activities such as freeride skiing/snowboarding, white-water kayaking, climbing, mountaineering and the fields of sport science, psychology and avalanche research and education. We draw on ecological dynamics as a transdisciplinary approach to discuss how this holistic framework presents a more detailed, nuanced, and precise understanding of adventure sports.

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2. Gamification in Adventure and Wilderness Sports: A literature review of game-based mechanic's ability to increase attraction, engagement, and retention in outdoor sports

Johnson, Christopher P. 2016.

Abstract: This article is intended to provide adventure and wilderness sport coaches with a comprehensive overview of existing research introducing gamification techniques also known as game theory or game-based mechanics that are gaining popularity in fields such as business, marketing, education, and the military for use in employee, customer, and student attraction, engagement, and retention to the world of adventure and wilderness sports coaching. A broad range of existing literature related to gamification was compiled, examined, analyzed, and disseminated. The examined research findings suggest that gamification methods are effective for acquiring, engaging, and retaining individuals towards improved athletic performance.

Furthermore, existing research clearly supports a strong positive correlation between gamification and effective motivational strategies for athletes. Specifically attraction, engagement, and retention as athlete's progress through their athletic careers and the demands and traditional structure of their sport lose their interest. As well as benefits of adventure and wilderness sports to children that other sports may not provide. Game-based mechanics serves as an excellent tool to further engage athletes towards their goals in adventure and wilderness sports. Fitness and sport coaches desiring to increase athlete participation, engagement, and performance must examine and implement sound research-supported strategies associated with motivating athletes. By developing an understanding of the concepts identified and incorporating the practices prescribed within this essay, fitness and sport coaches may establish coaching strategies that effectively engage their athletes in sport and fitness activities that are traditionally less game-based than their ball- and team-based counterparts.

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3. Conceptualizing the adventure-sports coach

Collins, Loel, Collins, Dave. 2012.

Abstract: As a comparatively recent development, the adventure-sports coach struggles for a clear and distinct identity. The generic term 'instructor' no longer characterizes the role and function of this subgroup of outdoor professionals. Indeed, although the fields of adventure/outdoor education and leadership are comparatively well researched, the arrival of this 'new kid on the block' appears to challenge both the adventure-sports old guard and traditional views of sports coaching. In an attempt to offer clarity and stimulate debate, this paper attempts to conceptualize the adventure-sports coach in the context of the existing roles in the field and current motivations for activity in the outdoors. We identify issues that are specific to the adventure-sports coach while also recognizing those skills and competencies shared with other professionals, both in the adventure sports profession and traditional sports coaching fields. Based on this review, we offer a conceptual model which may be used to focus debate, stimulate research and, at a possible later stage, to underpin accreditation, training and professional development.

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4. The concept of risk in nature-based tourism and recreation - a systematic literature review

Gstaettner, Anna Maria, Rodger, Kate, Lee, Diane. 2018.

Abstract: Risk is a complex concept, with its conceptualizations depending on epistemological perspectives and methodological approaches of the various research disciplines it is embedded within. It was the aim of this literature review to provide a scientific basis to understand how current academic research has approached the phenomenon of risk in the context of nature-based tourism and recreation. Using a systematic quantitative literature review method, we assessed how risk was conceptualized in a selection of 59 original research papers that have been published in English language peer-reviewed academic journals from 2000 to 2015. We identified fundamental differences in the perspectives taken by researchers discussing risk. Whilst 37 papers (63%) viewed risk as a potential negative consequence of participating in recreational outdoor activities, 22 studies (37%) investigated risk as a meaningful component of the outdoor experience dimension. The presented review led to the identification of specific risk factors that increase the likelihood of negative outcomes as well as potential benefits from participation, and also offers an overview of underlying psychological processes involved in the participation in 'risky' nature-based activities. Further research implications are discussed.

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5. Mental health benefits of nature-based recreation: a systematic review

Lackey, Nancy Qwynne, McNay, G. David, Joyner, Leah, Hodge, Camilla, Baker, Kensey H., Tysor, Deborah A.. 2021.

Abstract: The demand for mental health services around the world has risen dramatically. Many researchers and practitioners are looking for alternative mental health treatments, including nature-based recreation. However, reviews examining nature-based recreation's therapeutic effectiveness are limited. The purpose of this study was to conduct a systematic review of available research regarding the potential mental-health benefits of nature-based recreation. Following the preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) guidelines, a global standard established to ensure consistency and quality in literature reviews, a systematic search generated 51 articles for review. Most articles (n = 46, 90%) observed at least one positive association between nature-based recreation and mental health, including improvements in affect, cognition, restoration, and well-being, and decreases

in anxiety and depression symptoms. Trends regarding the setting, population, methodology, and theoretical orientation of existing research, as well as recommendations for future research, are discussed in this review.

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Collaborative Research

Collaborative research refers to a process where researchers work together, often across disciplines or organizations, to address a common research question or problem. This approach emphasizes teamwork and shared resources.

****Key features of collaborative research include:****

1. ****Interdisciplinary Teams****: Researchers from different fields bring diverse perspectives, expertise, and methodologies to the project, enhancing the richness and depth of the research.
2. ****Shared Goals****: Collaborative research often focuses on a shared objective, such as tackling complex social issues or developing new technologies.
3. ****Resource Sharing****: Collaborating researchers can pool resources, including funding, data, and facilities, making it possible to undertake larger and more ambitious projects.
4. ****Improved Outcomes****: By leveraging the strengths of various collaborators, the research often leads to more comprehensive findings and practical applications.

Both correlation research and collaborative research play important roles in advancing knowledge in their respective areas. If you meant a different term or concept, feel free to clarify!