



OPEN ACCESS

EDITED AND REVIEWED BY
Pablo Fernández-Berrocal,
University of Malaga, Spain

*CORRESPONDENCE
Megan Woods
✉ megan.woods@utas.edu.au

RECEIVED 22 February 2025
ACCEPTED 27 March 2025
PUBLISHED 14 April 2025

CITATION
Woods M, Brown SG and Norris K (2025)
Editorial: Optimizing psychosocial work
environments and experiences for people
working in isolated, confined, and/or extreme
conditions. *Front. Psychol.* 16:1581336.
doi: 10.3389/fpsyg.2025.1581336

COPYRIGHT
© 2025 Woods, Brown and Norris. This is an
open-access article distributed under the
terms of the [Creative Commons Attribution
License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or
reproduction in other forums is permitted,
provided the original author(s) and the
copyright owner(s) are credited and that the
original publication in this journal is cited, in
accordance with accepted academic practice.
No use, distribution or reproduction is
permitted which does not comply with these
terms.

Editorial: Optimizing psychosocial work environments and experiences for people working in isolated, confined, and/or extreme conditions

Megan Woods^{1*}, Shanique G. Brown² and Kimberley Norris³

¹Tasmanian School of Business and Economics, University of Tasmania, Hobart, TAS, Australia, ²City University of New York, New York, NY, United States, ³School of Psychological Sciences, University of Tasmania, Hobart, TAS, Australia

KEYWORDS

isolated, contained, extreme, psychosocial, work, team, social support, lunar

Editorial on the Research Topic

Optimizing psychosocial work environments and experiences for people working in isolated, confined, and/or extreme conditions

People who work in isolated, confined, and/or extreme (ICE) environments often work in conditions which are physically and psychologically hazardous and limit access to resources and support beyond those immediately and locally available. These conditions introduce additional hazards and opportunities for worker functioning, productivity, and growth into psychosocial work environments (PWEs), generally by increasing demands on workers and reducing the resources available to deal with them.

The seven articles in this Research Topic examine aspects of PWEs in Arctic, space, prisons, long-distance truck driving, fly-in-fly-out (FIFO) work and online ICE work environments. They provide new insights into PWEs in ICE work contexts by examining the psychosocial hazards—and the impacts on workers—posed by physical isolation, separation from non-work life, operation in closed work systems, loneliness, and forced proximity to colleagues who both heighten and alleviate the stressors that individuals experience. Five of the articles also advance recent work on the positive impacts of ICE environments on workers' self-efficacy, self-reliance, personal discovery (Blight and Norris, 2019) and resilience (Harrison et al., 2021) by emphasizing how workers create social support for themselves and others in such contexts. Podgorski et al. explored how demands and resources of organizational justice, job dangerousness and job stress impacted job involvement and job satisfaction of Slovenian prison officers working in a closed system work environment. Unsworth and Seiwright examined how FIFO workers navigate the necessity of managing multiple and separate identities at home and away on work sites. Bell et al. examined how long-term isolation, confinement and support source impacted the perceived social support (PSS) of crewmembers in five spaceflight analog missions. They found PSS declined over time and was more impactful when provided by other crew members, highlighting the criticality of support from peers in ICE work. Marques-Quinteiro et al. illustrated how this can occur by examining how members of a two-person lunar analog mission adapted their behavioral and affective responses to the evolving challenges, focus and needs of their mission to support themselves and each other.

Landon et al. examined, and developed new measures for, group living skills (GLS) as an influence on the supportiveness (or stressfulness) of PWEs experienced by 24 teams in space and space analog environments. Their findings highlight specific skills that workers need, and may need to develop, to support themselves and others in contained work environments. Martinescu and Beersma demonstrated that long-distance truck drivers in Europe use gossip to reduce demands, enhance resources and social support, and enable emotion-focused coping and problem-focused coping for themselves and other truck drivers. Zhou et al. examined how online workers offset isolation and loneliness finding that the use of enterprise social media usage had a positive effect on workplace loneliness but this was moderated by ICT hassle, such as system failures.

The articles in this Research Topic offer promising directions for future research about optimizing PWEs in ICE work conditions. Increased interest in unique work environments, commercial developments in Arctic and space tourism, and increased adoption of virtual reality and AI-supported tools for social and psychological support (Anderson et al., 2023; Kim et al., 2024; Ren et al., 2024; Wiederhold, 2025) will likely provide more. For example, commercial space travel will involve longer-term confinement and crews that include non-scientists and diverse travel motivations, necessitating expansion of past research that has primarily examined crews of astronauts traveling for scientific purposes, and/or with previous experience in isolated environments. Technological advancements will enable investigation of novel support tools, such as virtual and augmented reality, for alleviating isolation, providing social support, and enhancing mental health (Holt, 2023; Thomas, 2023), and potentially enabling explorations of PWEs without real-time real-world access to ICE work sites.

Leveraging these opportunities depends, however, on researchers, reviewers and audiences understanding ICE work research also presents specific challenges and success factors

evidenced in this Research Topic. These include: theorizing which accounts for the specialized contexts of ICE environments (i.e., constructivism) rather than extends generalizable theory to these settings (i.e., positivism); research and statistical methods (e.g., qualitative, experience sampling, non-frequentist approaches) which maximize the usefulness of small sample sizes (a feature of, and valuable to, this work); and the criticality of co-design with industry partners, interdisciplinary teams, insights from team science (see Kane and Emich, 2024) and the pragmatic use of analog environments to accommodate the cost, rarity and operational imperatives of ICE work sites.

Author contributions

MW: Conceptualization, Writing – original draft, Writing – review & editing. SB: Conceptualization, Writing – original draft. KN: Conceptualization, Writing – original draft.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

- Anderson, A., Stankovic, A., Cowan, D., Fellows, A., and Buckey Jr, J. (2023). Natural scene virtual reality as a behavioral health countermeasure in isolated, confined, and extreme environments: three isolated, confined, extreme analog case studies. *Hum. Factors* 65, 1266–1278. doi: 10.1177/00187208221100693
- Blight, S. J., and Norris, K. (2019). Positive psychological outcomes following Antarctic deployment. *The Polar J.* 8, 351–363. doi: 10.1080/2154896X.2018.1541552
- Harrison, D., Sarkar, M., Seward, C., and Sunderland, C. (2021). Exploration of psychological resilience during a 25-day endurance challenge in an extreme environment. *Int. J. Environ. Res. Public Health* 18:12707. doi: 10.3390/ijerph182312707
- Holt, S. (2023). Virtual reality, augmented reality and mixed reality: for astronaut mental health; and space tourism, education and outreach. *Acta Astronaut.* 203, 436–446. doi: 10.1016/j.actastro.2022.12.016
- Kane, A. A., and Emich, K. J. (2024). The value of small samples to groups and teams research: Accumulating knowledge across philosophies of science. *Group Organizat. Managem.* 2024:10596011241282703. doi: 10.1177/1059601124128270
- Kim, M. J., Hall, C. M., Kwon, O., and Sohn, K. (2024). Space tourism: value-attitude-behavior theory, artificial intelligence, and sustainability. *J. Retail. Consumer Serv.* 77:103654. doi: 10.1016/j.jretconser.2023.103654
- Ren, C., Jóhannesson, G. T., Ásgeirsson, M. H., Woodall, S., and Reigner, N. (2024). Rethinking connectivity in Arctic tourism development. *Ann. Tour. Res.* 105:103705. doi: 10.1016/j.annals.2023.103705
- Thomas, L. J. (2023). The future potential of virtual reality countermeasures for maintaining behavioural health during long duration space exploration. *Front. Virtual Real.* 4:1180165. doi: 10.3389/frvir.2023.1180165
- Wiederhold, B. K. (2025). From cyberspace to outer space: how technology will preserve mental health in the final frontier. *Cyberpsychol. Behav. Social Network.* 28, 1–3. doi: 10.1089/cyber.2024.0609