

Esports are pretty far from Bodhi trees: Touch grass for performance and wellbeing

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### Abstract

Nature exposure has been cross-culturally linked to psychological growth, spiritual awakening, recovery and relaxation. Psychology research supports this, showing that nature exposure can benefit performance and wellbeing through improving mindfulness, sustained attention, and connected to nature. In stark contrast, esports environments can be drab, sombre and dark, with not even natural light permitted within the performance context. In the absence of nature exposure in esports psychology research or practice, we draw on existing educational and organisational psychology to encourage academics and psychologists to experiment with nature exposure, adding a few suggestions and guidelines of our own. By bringing life into esports performance environments, we look to sustainably provide a competitive edge to players and help their wellbeing bloom.

The Buddha, Siddhartha Gautama, attained his awakening after sitting under a Bodhi tree (Gethin, 1998). The American naturalist, writer, poet, and philosopher Henry D. Thoreau developed his own transcendentalist perspective by living in a cabin in the woods and observing nature (Thoreau, 1854). Our mums like to grow vegetables on their allotments to reflect and relax from work. It is no coincidence that time spent in nature is often linked to spiritual and philosophical growth, whatever the scale. In esports culture, “Touch Grass” is a meme to tell people they spend too long online and to instead go outside and experience the real world (Hootsuite, n.d.; Verdant, 2024). In this essay, we argue that such flippant statements might actually be good advice. In absence of any discussion of nature exposure within esports psychology so far, we encourage esports players and staff to “Touch Grass” and use nature exposure to promote performance and wellbeing through mindfulness.

Nature exposure generally is linked to greater performance and wellbeing across psychological and psychophysiological research. Academic and organisational psychology research have shown that nature exposure improves performance and wellbeing: outdoor nature exposure has improved task-directed attention and reduced mental fatigue in students (Mason et al., 2022), and improved workers’ recovery, stress reduction, and coping (Sadick & Kamardeen, 2020); indoor nature exposure embedded in office environments has also improved short-term memory by 14% (Yin et al., 2018), and improved workers’ health and motivation (Sadick & Kamardeen, 2020). Psychophysiological research agrees that nature exposure, indoor and outdoor, is beneficial (Jimenez et al., 2021; Ulrich et al., 1991): nature exposure had led to benefits either through sympathetic (Scott et al., 2021) or parasympathetic activity through increased heart rate variability (Eisen et al., 2024; Mygind et al., 2018). However, these benefits may be somewhat moderated through preferences towards green environments (McSweeney et al., 2021): you benefit more from nature exposure if you like nature.

Nature exposure's improvements to performance and wellbeing are at least partly due to increases in mindfulness (Horne & Swettenham, in press). Mindfulness is defined both as attention to, and awareness of, the present moment and non-judgemental acceptance of the discomfort that may bring (Choi et al., 2021). Many theories in positive, performance, cognitive, and clinical psychology argue that attention to the present moment or task is crucial to performance and wellbeing, and that acceptance can help promote this (Csikszentmihalyi, 2013; Gardner & Moore, 2004; Hayes et al., 1999; Horne & Swettenham, in press; Masters & Maxwell, 2008). Practically, mindfulness helps people to catch uncomfortable thoughts and feelings, recognise and accept them as thoughts not truths, and reinvest their attention into the present moment, whether that be a blooming meadow, a volleyball serve, or an esports final. Accordingly, nature exposure's benefits to wellbeing are at least partially mediated by trait mindful awareness in cross-sectional research (Kang et al., 2023; Swami et al., 2020), and are mediated by state, in-the-moment mindfulness in experiments comparing nature and urban videos (Steward & Haaga, 2018). Where mindful attention/awareness and mindful acceptance have been analysed separately, nature exposure was positively and uniquely related to both (Swami et al., 2020); and mindfulness interventions with nature sounds also show better improvements than with non-nature spa sounds (Ray et al., 2020). Nature presents us with a rich, beautiful environment to observe (Van Gordon et al., 2018), its vibrance pulls us out of our heads and encourages us to pay attention.

Connectedness to nature may also mediate the relationship between mindfulness, and performance and wellbeing after nature exposure. Nature connectedness measures how strongly people see their emotional connection with the natural world (Pritchard et al., 2020). People who feel more connected to nature are more mindful, and vice versa ( $r = .25$ ; Schutte & Malouf, 2018), and in their cross-sectional study, Swami et al. (2020) found that connectedness to nature partially mediates the relationship between nature exposure and wellbeing, and fully mediates the relationship mindfulness and psychological wellbeing (measured as body appreciation). Nature connectedness was also found to mediate the relationship between nature exposure and quality of life in a different study (Bacevicine & Jankauskiene, 2022). It is worth noting here that these studies seem implicitly linked to the cognitive-behavioural paradigm, which argues that actions follow thoughts and feelings, and thus to improve actions we need to first change thoughts and feelings (Scott & Dryden, 1996). Instead, these cross-sectional studies could also be showing that mindfulness, connectedness to nature, and other constructs such as engagement with nature, could all be changing near simultaneously due to nature exposure (e.g., Ray et al., 2020; Horne & Swettenham, in press). Buddhism's interdependence (Waldron, 2000) and Thoreau (1854)'s transcendentalism were both developed while spending time in nature and 'touching grass'; while nature is hugely important to both of these philosophies of nature connectedness, it is impossible to say whether these philosophies preceded awakening experiences or whether both are just symptoms of underlying contextual changes from spending time in nature. We doubt the mechanism is quite as sequential and defined as this quantitative research claims - to find a deeper and more profound answer it might be more fruitful to interview our parents.

Esports, on the other hand, are about as far away from nature exposure as possible. Esports are played indoors, with computers at desks; natural lighting is often removed from play environments as much as possible to reduce monitor glare (Mondal & Nithish, 2024). I (the first author) recently attended an in-person gaming festival with my esports team where players brought their computers to play next to each other in-person (Insomnia 72; The NEC Birmingham, 2024). Despite sunny skies outside, the only light in the gaming hall was from players' monitors. In elite competition too, soundproof booths, software, or noise cancelling headphones are often used to mute external, potentially distracting noise (Mistry, 2023; Stubbs, 2017).

While some (Poulus et al., 2020; Sharpe et al., 2024), have recommended applying sports psychology interventions to esports, the performance contexts of traditional sports and esports are quite different. Sports like golf, beach volleyball, football, and rugby are typically played outdoors or in well-lit indoor environments. In contrast, esports are predominantly desk-based, often taking place in controlled, indoor settings. Instead, the organisational and academic psychology research on office- and desk-based work above (Mason et al., 2020; Sadick & Kamardeen, 2020; & Yin et al., 2018) may have more similarities to esports contexts, but even academic and office environments have more light and bustle than a gaming hall, and may at least have windows to nature. As it stands, esports are novel, relatively unexplored contexts for sports and performance psychologists and researchers (Horne et al., in press): in esports' dark, sombre, technological environments, players may feel less connected to nature, play less mindfully, and experience worse performance and wellbeing.

So far, nature exposure has not been discussed in esports psychology. To date, we know of no esports psychology research which mentions nature exposure and its possible benefits. This includes our own research, where we neglected to discuss nature exposure in our model of practice ([Blinded for review]), and where other qualified sport and exercise psychologists have presented their models of practice too (e.g., Ashford, 2023; Pedraza-Ramirez, 2023). However, this does not mean nature exposure is not used by players, teams, coaches or even psychology researchers in esports. Despite not mentioning it, I (the first author) have used outdoor nature exposure to break up players' sessions in-person and remotely, and I am also beginning to use nature exposure in my writing too - this sentence, for example, was added sitting under a tree in Greyfriars Kirkland, Edinburgh. In fact, since publishing this essay as a preprint, a great coach I have worked with has posted online about his use of nature exposure during a bootcamp ([Blinded for review]). Additionally, player-participants in one of my studies have told me (the second author) that they use time outdoors to reduce anxiety, as encouraged by their coaches. For such a simple and accessible performance and wellbeing intervention, it is odd that nature exposure has been thus far neglected by esports psychology research. Perhaps this is due to the hegemonic masculinity prevalent in esports' techno-culture (Scholz & Nothelfer, 2022), where gendered behaviours look to validate masculine ideals of dominance, control and suppression over femininity, women, and one's own existential dread (Connell & James, 2005; French, 1994). In this culture, activities like spending time outdoors and being mindful of thoughts and feelings may be less common. Alternatively, perhaps we have all thought that

simply “going outside” was so obvious we did not think to mention it. Regardless, there is huge scope to explore and discuss the impact of nature exposure on performance and wellbeing in esports.

We encourage esports psychology practitioners and researchers to explore and critically evaluate how much nature exposure could be used to improve player performance and wellbeing. Currently myself (the first author) and other practitioners have no esports-specific guidelines to use nature exposure. Sure, there are reviews which suggest that 10 minutes of walking or sitting in nature might be enough for students (Mason et al., 2020; Meredith et al., 2020), but how generalisable is that for esports players? If, as we suggested, esports players are exposed to nature less than others, might they need longer in nature to compensate? Esports researchers could investigate optimal dose-response relationships between nature exposure and performance and wellbeing for esports players and develop guidelines from larger quantitative studies. Esports researchers and practitioners could then explore how these guidelines could then be individualised and integrated within a training schedule. Where outdoor nature exposure is less feasible, indoor nature exposure through house plants and biophilic office design could be a cost-effective compromise for players and esports teams to improve their performance environment while also not suffering with issues of monitor glare (e.g., Mondal & Nithish, 2024). In addition to using outdoor nature exposure, we encourage players and in-person gaming teams to bring plants into their workplaces and mindfully give them care and attention - see and perhaps test how they affect cognitive fatigue and gameplay performance over periods of training.

We also encourage practitioners and researchers to focus on *how* esports players are engaging with the nature they are exposed to. Are players passively engaging with nature (e.g., while on a run or walk), or are they actively and mindfully paying attention to nature? Passive nature exposure generally involves engaging in an activity within a natural setting without explicitly focusing on nature itself, while active nature exposure involves intentionally engaging with and directing attention towards natural elements and environments. Currently there are no esports psychology studies which examine nature exposure, but nature exposure studies elsewhere overwhelmingly investigated passive nature exposure (Vella-Brodick et al., 2022). Passive nature exposure generally is less aligned with our argument and previous theories that nature improves performance and wellbeing through present moment attention (Hayes et al., 1999; Horne & Swettenham, in press), however, we do not doubt that passive nature exposure could still improve performance and wellbeing through this mechanism (even if by reduced amount), as well as a result of compounding effects of exercise as light as walking (e.g., DiFrancisco-Donoghue et al., 2021), vitamin-D production from the sunlight (Humble, 2010; Khan et al., 2022), and even better air quality (Fan et al., 2023; Finell et al., 2024) as a few examples. We would love to see some intuitive and fun research designs and interventions which try to combine the compounding effects of exercise (and potentially other factors) with mindful, attentive nature exposure. For example, a 10-15 minute tree identification orienteering challenge could combine high-intensity interval exercise with mindful attention to nature. This

and similar interventions might yield both the benefits of mindful engagement with nature, as well as the exercise often seen with passive nature exposure.

Another consideration for researchers and practitioners is the generalisability of using nature videos and sounds as a simulated nature exposure intervention. In my (first author) practical work, players have told me they play nature sounds as part of their recovery between games. And in fact, nature sounds and videos are very often used in experimental research to simulate actual nature exposure (e.g., Ray et al., 2020; Steward & Haaga, 2018; Ulrich et al., 1991); we imagine to standardise the intervention and make a comparable control condition of a non-nature video. However, watching nature videos in a lab is quite different to actually spending time in nature outdoors, and unsurprisingly has shown smaller benefits when compared to real nature exposure (e.g.,  $B = 0.53$  vs  $0.79$  for positive mood; Browning et al., 2020). Browning et al. (2020) recommend simulated nature content only where accessibility is an issue, and we encourage researchers to explore how generalisable this claim is to esports players.

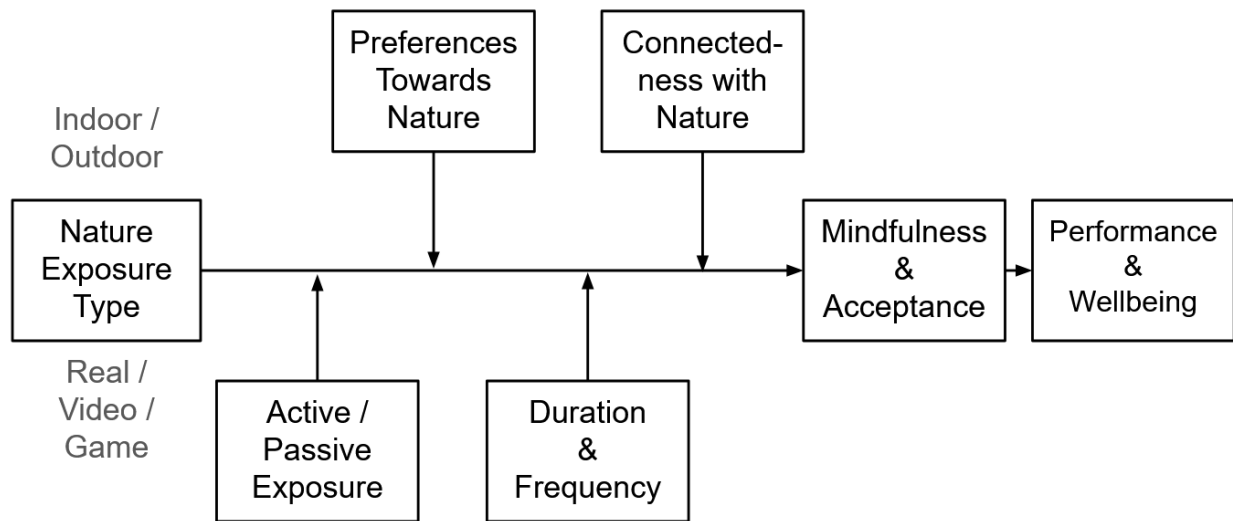
A more novel alternative would be using video games, not just videos, to simulate nature exposure. Despite the disconnect between esports and nature, there is overlap within the broader gaming genre. Games such as “Ghost of Tsushima” and “ABZÛ” are either entirely nature-based or have nature-based game mechanics core to the gameplay. Compared to passively watching a video, playing a nature-based video game could encourage this more mindful, active nature exposure we have encouraged thus far. Comparatively, there seems to be slightly more research around nature in non-esports video games, suggesting that nature-based landscapes in games are preferred, if not for connectedness to nature, but escapism (Truong et al., 2018); video games may also be able to allow people to explore and navigate through nature that otherwise would be accessible (e.g., rainforests; Fletcher, 2017). In the one comparison of nature- and urban game environments we found, Reetz et al. (2021) used a basic, low-graphic exploration game designed for the study, which showed no differences in affect, but a post-hoc test showed improvements to attention in nature vs. urban game environments (in line with our theory). Where realism and beauty are present in game’s graphics, such as the games above, perhaps improvements to attention, stress and mood may be more dramatic. Nature environments in games played while sedentary contrasts games such as Pokemon Go, which while potentially played in nature, actively takes attention away from nature and towards people’s phones. Comparisons of these approaches and their effectiveness in improving attention and wellbeing, and thus sustainable performance (Horne & Swettenham, in press), would be very interesting to explore.

We are reluctant to be too prescriptive in terms of set research questions for the area, as we strongly encourage our readers to critically evaluate our opinions, our and pre-existing theory, and past research for applications in different contexts. As nature exposure research in esports is currently so farrow, to specify any research question would naturally neglect others, especially others that have a different theoretical underpinning than our own. Above we have given several questions in the text, but below in Figure 1 we outline some key variables and

moderation considerations for nature exposure interventions. As before, the variable of connectedness with nature could be a potential mediator instead, but this may depend on your theory of behaviour and even analytical design underpinning your experiment.

**Figure 1**

Nature exposure and performance and wellbeing mechanism with potential moderators



**Conclusion**

“Touch Grass” can and should be more than just a flippant remark. Within a community that spends so long working behind screens, perhaps this is something we should be saying out of compassion and kindness instead. So touch grass, hug a tree, decorate your desk with houseplants. Politely convince others to do so too! The Buddha’s Bodhi tree undoubtedly encouraged his own spiritual awakening and research supports this, with nature exposure causing improvements in mindfulness, connectedness to nature, performance and wellbeing. Because esports performance contexts are often so drab and sombre, nature exposure may be especially important - more so than other performance contexts in sport, academia, or organisational office-work - and present an accessible competitive edge to performance while

nurturing wellbeing. We encourage researchers and practitioners to get creative and experiment with different types of nature exposure using our guidelines and suggestions to see what works best for esports players in esports' contexts.

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