UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Nature's Prescription: UBC Social Media Nature Scavenger Hunt

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What human health outcomes have been examined?

Human health outcomes related to time spent in nature are overwhelmingly associated with mental and emotional health, as well as social well-being. Stress levels are greatly influenced by exposure to natural spaces, and there is overwhelming evidence that engagement with nature at all levels is beneficial for mental and emotional wellbeing (Pretty, 2004). One critical aspect of well being is social connectedness, as addressed by Leavell et al. (2019), which can be prescribed in conjunction with engagement with natural spaces. Leavell et al. (2019) as well as Shensa et al. (2017) identify adolescents, youth and young adult populations experiencing great stress, especially those from marginalized populations, to be a particularly vulnerable population to social isolation. It is clear that social connection is a "major public health challenge among adolescents," as "suicide is now the second leading cause of death in American individuals age 10 to 34" (Leavell et al., 2019, p. 298). Many of these adverse health effects have been linked to social media use, especially among adolescents and young adults (Berryman et al., 2018, p. 308). "Stress is a major problem for people living in modern societies," in which social media is inescapably prevalent (Pretty, 2004, p. 69).

Some outcomes of spending time in nature are "positive contributions to our health," such as recovery from stress and an increased immunity to future stresses (Pretty, 2004, p. 71). Engagement with natural spaces is associated with "higher levels of cognitive function" and concentration, (Pretty, 2004, p. 71) feeling relaxed, "refreshed and rejuvenated," (Pretty, 2004, p. 72). These outcomes have been found at all three levels of engagement with nature; viewing nature, as through a window or in a picture; being in the presence of nature, such as walking to work; and active participation with nature, such as gardening. Positive outcomes related to

wellbeing are particularly present when exposure to nature is combined with physical exercise (Pretty, 2004) and social interaction (Leavell, 2019). All three levels of engagement with nature deliver mental health benefits, thus "green spaces and nearby nature should be seen as a fundamental health resource" (Pretty, 2004, p. 71). The full benefits of such settings are vastly underappreciated, "particularly in the face of competition for multiple other leisure and entertainment opportunities of modern life," (Pretty, 2004, p. 73) such as the prevalent distraction of social media.

Social media has been linked to numerous negative mental health outcomes, many of which parallel the outcomes that spending time in nature is associated with reducing. There is overwhelming evidence for links between social media use and mental health issues, such as increased stress and negatively impacted interpersonal relationships, particularly among adolescents (Berryman et. al., 2018 and Shensa et al., 2017). These effects specifically include "suicidal ideation, social anxiety, loneliness, and decreased empathy" (Berryman et al. 307). Spending time in nature, especially with others and while being physically active can counter these negative effects of increased stress, negatively impacted social relationships and cognitive function, which are compounded by the use of social media. The world of medicine is beginning to take notice of this with the introduction of Nature rx.

What does the evidence suggest are the effects of nature prescriptions on these outcomes?

As a result of the increasing research that links positive health outcomes to spending time outdoors and in nature (Chang, Davidson, Conklin and Ewert, 2019; Kondo, Jacoby and South, 2018; Pretty, 2004), an increasing number of public health initiatives have attempted to start encouraging "health care providers to encourage patients to engage in physical activity in

greenspaces by writing “nature”, “park”, or “green” prescriptions” (Koselka et al., 2019, p.2). Although definitions differ, James, Christiana & Battista, (2019) define Park Prescriptions or Nature Rx as “a focus on programs or interventions that … Include a health or social service provider, who encourages their patients/clients to spend time in nature and with the goal of improving their health and well-being” (p. 311). One of the most well-known and established Nature Rx programs was conceived in Washington, DC in 2010. The primary goal of this program, DC Park Rx was to encourage families to spend more time in parks as a means to combat adverse childhood health problems (James, Christiana & Battista, 2019; ; Rakow & Eells, 2019; Zarr, Cottrell & Merrill, 2017). At its inception, the DC Park Rx program created an online database of 342 parks in the DC area that health care providers were able to access and filter through based on a patient’s location, mobility or other needs (James, Christiana & Battista, 2019; Zarr, Cottrell & Merrill, 2017). Due to the success it achieved in DC, the program expanded and rebranded itself as Park Rx America (Rakow & Eells, 2019, p. 32). According to their website, Park Rx America operates in “46 states and Mexico, with nearly 500 registered "prescribers" nationwide” (Park Rx America, 2020). While Park Rx America is only one example of a Nature Rx program, it is clear that programs such as these are increasing in popularity, with similar programs being developed in other countries, such as Australia and the United Kingdom (James, Christiana & Battista, 2019). Despite the increased popularity of these types of programs, research surrounding this topic is still in its infancy and thus further research surrounding this topic is important moving forward (Koselka et al., 2019, p.2; James, Christiana & Battista, 2019).

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The current discourse regarding the relationship between social media usage and the effects on mental health have conflicting results, where some studies claim that the amount of time spent on social media is associated with adverse mental health outcomes (Flannery, Ohannessian, & Vannucci, 2016), while other research argues that time spent on social media does not heighten negative effects on mental health with relation to adolescent users (Berryman et al., 2017; Coyne et., 2019), therefore, the question regarding the linkage between social media use and mental health must take into account the way social media is used, rather than focusing on the time an individual spends online, to better illustrate the negative outcomes related to social media in general (Berryman et al., 2017; Coyne et al. 2020; Kelly, Zilanawala, Booker & Sacker, 2018). Specifically, Kelly et al. (2018) demonstrates how "greater social media use related to online harassment, poor sleep, low self-esteem and poor body image" were associated with "higher depressive symptom scores" (p. 59). Similarly, Berryman et al., (2017) claim "that the best evidence suggests that quality rather than quantity of [social media] use is more crucial" (p. 308). Research shows that there is an increased benefit of natural and social prescription in populations vulnerable to social isolation and loneliness, (Leavell et al., 2019) showing a connection between social engagement and engagement with natural spaces. For all of the reasons mentioned above, in our workshop we will be exploring the potential for students to use their mobile devices and social media to engage with nature, the goal being to encourage students not to get off social media completely, but to use their social media as a tool to appreciate the aesthetics found in natural spaces on campus. A possible additional outcome would be if the social media followers of these students sharing the photos also experience a sense of calm or stress relief upon seeing photos of the natural environment on their feed,

counter to the usual anxiety inducing content (such as photoshopped photos they might compare themselves to, or alarming news) that they are used to seeing, as an example of the first level of engagement with nature; viewing nature, as described by Pretty (2004). In essence, our workshop will aim to combine the positive aspects of social media use, such as increased social connection and decreased social isolation with the positive outcomes of Nature Rx, including the reduction of stress on one's mental health.

What mechanisms explain these outcomes?

Nature inherently holds certain mechanisms that make being present in nature compatible with human well-being. Nature has many restorative qualities, offering an environment where one can feel like they are "getting away"; natural environments are full of "soft fascinations" such as clouds, trees, critters, plants and historical artifacts that grab our attention while giving our minds a break; and finally natural settings provide a peaceful environment where humans instinctively feel relaxed in contrast to the disruptions common in "civilized" society, such as loud city noises and traffic (Kaplan, 1995, p.174). Some studies have demonstrated that even just seeing photos of nature can have a positive effect on people undergoing anxiety inducing situations (Hullan Frisman, Nielsen & Wahlin, 2018). This is because photos of nature provide a sufficient level distraction while also possessing a relaxing quality (Hullan Frisman, Nielsen & Wahlin, 2018). It has been shown that spending excessive time on social media is linked to greater symptoms of dispositional anxiety and greater odds of developing an anxiety disorder (Flannery, Ohannessian, & Vannucci, 2016). That being said, it is also shown that complete abstinence from social media can lead to self-reported reduced life satisfaction, and an increase

in perceived stress and loneliness (D'souza & Vally, 2019). Therefore, it is plausible that replacing anxiety evoking content with photos of nature has the potential to reduce the anxiety associated with social media use. In the case of activities where individuals are actively participating with nature, social involvement is an indirect mechanism leading to improved health status, because a space is fostered where individuals can establish a sense of community, stimulating processes such as "learning, trust and engagement" that improve the community members' emotional wellbeing (Buchenau, Hale, Litt, Sancar & Schmiege, 2015, p.6). Screen time has a negative effect on mental health because screens displace other recreational activities such as physical activity or face-to-face socializing (Babic et al., 2017). In contrast, natural spaces can provide opportunities to participate in physical and cultural activities (Seltenrich, 2015). We are hoping to utilize all of the aforementioned mechanisms of natural spaces in our workshop, urging students to seek both mental and physical restoration all while admiring and sharing their experience through social media in order to nurture a healthier online community.

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