RESEARCH ARTICLE

The Multiple Values of Nature

Acculturation as an ecosystem service? Urban natural space supports evolving relational values and identity in new female migrants

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Abstract

1. New migrants display unique use patterns and relationships with their host country's natural spaces. Understanding migrants' values about and interactions with nature requires identifying the meanings, benefits and capabilities that arise from their socio-ecological interactions.

2. This research seeks to understand how new migrants' engagement with their host country's urban nature affects their lives, behaviours and identities post-migration. Using qualitative semi-structured interviews and background surveys, this study characterizes the ways in which 27 recent international female migrants to Metro Vancouver use, perceive and derive value from their relationships with their host country's nature.

3. Participants were all female migrants of low socio-economic status, whose particular interacting marginalized identities provided a unique, though potentially limited, understanding of migrants' relationships to their host countries nature. However, they also came from diverse geographic and cultural backgrounds, indicating that common experiences may be indicative of broader trends.

4. Participants expressed a deep value of a generalized conceptualization of 'Canadian nature'—a relational value that nature is special and to be enjoyed—which informed their use and experiences of Metro Vancouver's natural environments. They felt that their interactions with these spaces provided therapeutic and acculturative ecosystem services by helping them learn about their host country's sociocultural landscape and engage with their own evolving identities relative to their new environment.

5. These findings highlight the complexity of migrant–nature relationships in Canada. Understanding these relationships is further complicated by the interacting influences of intersectional identities with gender and class being particularly relevant to this study. This research highlights how nature's non-material contributions to people can impact an individual's understandings, meanings and values about places and themselves.

1 | INTRODUCTION

Human activity is causing dramatic climate change and widespread biodiversity loss, jeopardizing existing ecosystem dynamics and threatening the well-being of current and future generations (Díaz et al., 2019; IPBES, 2019). A global sustainability transition comprised of transformative economic, social, political, legal and technological changes is necessary to combat current negative trends in climate, biodiversity and ecosystem health (Díaz et al., 2019; IPBES, 2019; IPCC, 2018). Such a transition requires widespread collective buy-in and action for transformative structural change that not only motivates efforts but also drives support for systemic changes implemented by government and industry. Despite this need for widespread environmental protection, migrants, particularly those from vulnerable and marginalized socio-economic and demographic groups, have historically been excluded from natural spaces and from the project of environmental sustainability (Kloek et al., 2013, 2015). For example, Canadian social justice scholar Jacqueline Scott highlights this marginalization by arguing that the outdoors is still portrayed and perceived as white spaces (Scott, 2018).

Relationships and stewardship inclinations towards nature are founded on environmental relational values, those associated with individual and collective senses of culture, identity, interpersonal relationships and quality of life (Chan et al., 2016). These values are shaped by cultural ecosystem services: the benefits, capabilities and experiences derived from nature that enrich and sustain human lives (Chan et al., 2011). One such ecosystem service is place attachment with regard to the identities, meanings and experiences tied to certain places (Abson & Termansen, 2011; Chan et al., 2011; Daniel et al., 2012; Tuan, 1974). Familiarity and duration of time spent interacting with a particular place have been associated with an individual's or community's degree of place attachment (Hay, 1998; Hernández et al., 2007), suggesting that newcomers and migrants may have a weaker connection to and place a lower value on their host country's natural environments.

Migrant's other identities such as their gender, age, religion and socio-economic status also shape their access to urban natural areas and their experiential socio-ecological relationships (Boyd et al., 2018; Byrne et al., 2009; Ho et al., 2005; Lovelock et al., 2011; Marne, 2001; Rishbeth et al., 2019). For example, Lovelock et al. (2011) found there to be gender differences in migrant park use. Female participants expressed safety concerns over entering local parks, particularly when alone or in unfamiliar areas. Their experiences of their host country's natural environments were simultaneously and interdependently shaped by various intersecting identities including those of newcomer and woman. Thus, access to and experiences of natural spaces might be fundamentally shaped by intersectionality or how experiences are informed by interlocking systems of oppression and the interaction between an individual's distinct marginalized identities (Crenshaw, 1989). In particular, urban-dwelling migrant women live at the intersection of multiple overlapping vulnerable identities which may interact synergistically or depreciatively to influence their use of and relationship with natural environments.

Leisure studies research has found that some migrants' experiences in their host country's natural environments allowed them to acquire sociocultural capital, make cross-cultural friendships, develop a sense of belonging and evolve their personal identities (Hordyk et al., 2015; Seeland et al., 2009; Stodolska & Floyd, 2016). These experiences might be viewed as cultural ecosystem services that contribute to the process of acculturation, the changes in cultural patterns of one or both groups of individuals, resulting from repeated cross-cultural contact (Redfield et al., 1936). Accordingly, migrant–nature experiences in their host country's natural environments may be heavily influenced by the evolution of migrants' imagined sociocultural meanings, identities, values and behaviour patterns. Cultural ecosystem services literature has not yet adequately considered this role of natural environments facilitating acculturation as an ecosystem service.

Using semi-structured qualitative interviews and a background survey, this study analysed 27 recent Metro Vancouver female migrants' experiences in and relationships to Metro Vancouver's natural spaces. This research sought to understand how new migrants' engagement with their host country's natural environments affects their lives, behaviours and identities post-migration. First, a brief review of specified existing relevant literatures will be provided. Then, this study's research methodology will be described. This will be followed by this study's findings, a discussion of them relative to existing literature and an exploration of their implications.

2 | BACKGROUND

Ecosystem services are the ways that ecosystems and their interacting components sustain and enrich humans' lives (Daily, 1997). Cultural ecosystem services are a subset of ecosystem services defined as "'ecosystems' contribution to the nonmaterial benefits (e.g. capabilities and experiences) that arise from human-ecosystem relationships", Chan et al. (2011, pp. 206). Cultural ecosystem services consider and situate social and cultural benefits including sense of place, identity and social interactions within the larger research framework of ecosystem services (Chan et al., 2011; Daniel et al., 2012). As a category of ecosystem services, cultural services have always sat awkwardly, such that only a small number of easily quantified services initially received the lion's share of attention (Chan, Guerry, et al., 2012; Daniel et al., 2012). Whereas initially culture was imagined by some as an ecological output of value, it has since become broadly recognized that cultural services and resulting benefits are socially

constructed (Chan, Satterfield, et al., 2012; Fish, 2011)—that is, there is no service that is not shaped by cultural context (Pröpper & Haupts, 2014). Thus, the benefits experienced by an individual are shaped by human social and economic systems which are influenced by many variables including class hierarchies, financial markets, traditions and prescribed gender roles (Fortnam et al., 2019). Recognition of this importance of cultural and social context was central to the proposed umbrella framework of nature's contributions to people (Díaz et al., 2018).

Despite these developments, the ecosystem services literature has largely focused on the benefits that individuals and communities derive from nature, rather than analysing how individuals' conceptualization and definition of their values is partially influenced by their experiences in nature (Chan & Satterfield, 2020). Thus, there is little cultural ecosystem work on how individuals' and communities' values, understandings, meanings and identities are affected by their encounters in and with natural environments, although such work is consistent with Fish et al.'s (2016) comprehensive conceptual framework for cultural ecosystem services.

More mutable and intangible cultural services such as the development of social connectedness, the evolution of cultural identities and the cultivation of sense of place can be supported by the emerging idea of relational values which reflect deeper conceptions of nature's contribution to human well-being (Chan et al., 2016, 2018). Chan et al. (2016) stress that some individuals believe that particular places mediate the benefits they receive and that these services and places impact their identity and well-being. Accordingly, engaging with particular places or elements of nature can provide services that strengthen or embody certain values by facilitating certain activities and interactions, both interpersonal and socio-ecological. It can also reinforce identities that relate to individual and communal values or visions of what it means to live a good life. Despite the utility of considering human–nature relationships through a relational values lens, few empirical ecosystem services studies have yet employed this conceptual framework.

Access to natural environments shapes an individual's relationship to and conceptualization of those environments. An individual's ability to derive certain services and benefits from natural environments can be constrained by their social, cultural and economic conditions (Wieland et al., 2016). Immigration and its associated circumstantial changes like downward socio-economic movement and unfamiliarity with a host country's physical and cultural environments serve as barriers to accessing outdoor spaces (Aizlewood et al., 2006; Boone et al., 2009; Byrne, 2012; Jay & Schraml, 2009; Rishbeth & Finney, 2006; Stodolska, 2000). Furthermore, women may face additional obstacles to accessing urban natural environments including safety concerns of using parks on their own (Lovelock et al., 2011; Rishbeth et al., 2019). The dimension of access defines migrant relationships to and values about their host country's nature as it constricts their ability to engage with or benefit from outdoor environments. Furthermore, such access may be further constrained or enlarged by individual migrants' other identities including their gender and class. From a relational values' perspective, access is a

defining feature of the meanings and identities that migrant communities may associate with nature in their host country. For example, the inability to access these shared spaces may reinforce perceptions of exclusion and an identity of being 'other'.

Place is a central concept in understanding both the services that individuals accrue from nature and the relational values that they develop about nature. Places can be understood as areas of experience and meaning (Wilson, 2003) or concentrations of social interactions and practices (Kearns & Gesler, 1998). This aligns with the description of place as a space for which meaning and significance are shaped by cultural, individual, emotional and social processes (Altman & Low, 1992; Stedman, 2003). As such, places are defined by the social interactions and activities that they host and the meanings that various actors ascribe to those phenomena (Altman & Low, 1992). Sense of place and the identities tied to those places are one example of individual and community benefits derived from cultural ecosystem services (Abson & Termansen, 2011; Chan et al., 2011; Daniel et al., 2012; Russell et al., 2013). This conceptualization of place situates sense of place as a cultural ecosystem service that should be viewed from a relational lens. In fact, Tadaki et al. (2017) argues, 'the concept of relational values is thoroughly place-based'.

Leisure literature has found that migrants' experiences in nature facilitate their acquisition of a range of beneficial services. Nature provided restorative and healthful services that were particularly beneficial to migrants facing multiple health stressors including family separation, foreign environments, poverty and linguistic limitations (Stodolska et al., 2011). Furthermore, nature could contribute to a range of acculturative benefits including cross-cultural engagement, socialization, development of a sense of belonging to a community, fostering of attachment to a particular place and evolution of migrant identities (Jay & Schraml, 2009; Lovelock et al., 2011; Peters et al., 2010; Rishbeth & Finney, 2006; Seeland et al., 2009; Stodolska & Floyd, 2016). In fact, Gordon (1964) found that Latino migrants in the United States cited acculturation as a reason for their leisure behaviour in natural environments. This literature identified acculturation and personal evolution as processes that migrants experience in their host country's natural environments. However, it emphasized the derivation of benefits from recreation and interaction with the outdoors (in general), rather than deeply engaging with how *particular* environmental contexts and natural places serve to shape migrants' values and identities. Thus, applying a cultural ecosystem services lens to analyse these phenomena could illuminate how specific natural places influence migrant relationships to their host countries and their perception of themselves.

3 | METHODS

3.1 | Study area

Metro Vancouver, British Columbia comprises 21 municipalities, one electoral area (land that remains unincorporated into any particular

municipality) and the Tsawwassen First Nation, and has a population of 2,463,431 residents (Statistics Canada, 2017b). Recent migrants, those who moved to Canada 5 years prior to the date of data collection, make up approximately 5.8% of Metro Vancouver's population (*N* = 142,535; Statistics Canada, 2017b). In 2016, 6.5% of recent migrants were refugees, 63% were economic migrants, 30% were family-sponsored migrants and 0.5% immigrated under an alternative category (New to BC, 2018). The median total income of recent migrant adults in Metro Vancouver in 2015 was $19,625 (New to BC, 2018), 40% lower than the median income of all Metro Vancouver residents in the same year ($32,612; Statistics Canada, 2017b). In 2016, the top five countries of origin of recent migrants to Metro Vancouver were China, India, the Philippines, Iran and South Korea (Statistics Canada, 2017a).

There are many green and 'blue' spaces across Metro Vancouver including public parks, beaches, community gardens, urban forests, street trees and private yard areas. Participants in this project lived in three Metro Vancouver municipalities: Burnaby, North Vancouver and the City of Vancouver. These areas house 152, 141 and 240 parks respectively (City of Burnaby, 2020; City of North Vancouver, 2019; City of Vancouver, 2020). This count does not include informal greenspaces like areas with canopy cover, community gardens and private yards. A 2012 City of Vancouver study found that 92.7% of residents lived within a 400-m radius of a park, green way or otherwise identified public greenspace (Greenest City Action Plan, 2012). Comparable spatial analyses of park and greenspace access were not available for the Metro Vancouver area, nor the specific cities of Burnaby and North Vancouver.

3.2 | Data collection and analysis

This study received ethical approval from the University of British Columbia's Behavioural Research Ethics Board (UBC BREB # H19-00703). Participants needed to meet predetermined inclusion criteria of being over 18 years old and having moved to Canada in the past 5 years. Neighbourhood community centres and regional immigration partnerships with pre-existing relationships to local migrant populations helped identify and recruit participants through oral announcements at their regular programming and pamphlet distribution. It is worth noting that this recruitment approach likely influenced the make-up of this study's sample, as newcomers who use the aforementioned organizations often require social services and support due to factors including poverty, financial instability, linguistic limitations, lack of childcare, unemployment and limited education. As such, the individuals recruited for this study likely over-represented more vulnerable and underprivileged migrants. These participant's other vulnerabilities likely interacted with their migrant status in shaping their socio-ecological relationships.

Participants indicated their preferred interview language. Participants were interviewed in English (8), Arabic (10), Spanish (2) and Cantonese (7). The mother tongues of the eight participants who chose to be interviewed in English included Spanish (1), Tigrinya (1), Farsi (3), Kurdish (1), Arabic (1) and Dari (1). Prior to the interviews, the consent forms and interview questions were reviewed with the translators. This process helped establish a shared understanding between the researchers and the translators of the aim and nuances of the research questions. While a multi-lingual approach was appropriate and necessary to engage with Metro Vancouver's diverse migrant population, reliance on translators for data collection creates the risk that the nuances and meanings conveyed in respondents' answers could be lost through the process of interpretation. This risk is especially pertinent given this study's emphasis on the meanings, understandings and perceptions of individual's experiences.

This study used semi-structured qualitative interviews and a background demographic survey to collect data. In advance of conducting the interviews, researchers and translators broadly described the study's purpose and reviewed its consent form with prospective participants in their preferred language. Participants then gave written consent before the formal interview process began. The semi-structured qualitative interviews helped capture recent migrant personal experiences, perceptions and attitudes of or about nature in Metro Vancouver. Participants were asked to describe a range of personal experiences with Metro Vancouver's natural spaces. These included questions about the outdoor spaces the participants used most frequently, spaces they felt represented Nature in Canada and the outdoor space they visited most recently. For each of these places, participants were asked to describe their experience, including details regarding visit duration, frequency, activities, individuals involved and felt emotions. Participants were also asked oral survey questions, some of which were administered pre-interview and some of which were asked post-interview. The background survey provided consistent and quantifiable information that was further explored and contextualized throughout the semi-structured interviews. The interviews were all audio recorded and transcribed.[1]

The interviews were coded in an iterative multistage process. A preliminary review catalogued data relative to the project's research questions which helped classify, compare and quantify some basic themes across interviews including barriers to natural spaces, frequency of outdoor experiences and outdoor activity types. Subsequent rounds of inductive analysis produced a series of codes that were then systematically categorized into larger themes. These later rounds of coding revealed broader trends that had not been captured in the initial analysis.

4 | RESULTS AND DISCUSSION

4.1 | Participant backgrounds

Participants needed to meet few prerequisites to qualify for this study. However, individuals interested in participating in the study were not as diverse as these modest restrictions might suggest. The final sample population consisted of 27 women between the ages

of 19 and 61, who had lived in Canada between 7.5 months and 5 years, from Syria, China, Iran, Iraq, Colombia, Eritrea, Honduras and Afghanistan. Eighteen participants immigrated to Canada as refugees, three as skilled workers, two as a skilled worker spousal applicant, one as a student visa spousal applicant and three did not know their immigration category. Twenty-four participants were mothers, with between one and six children. Twenty participants were not employed and the seven who were employed had only part-time jobs. Only one participant had an individual annual income over $C20,000, and no participant had an annual family household income above $C59,000. At least 10 (probably more) of the participants lived in families with annual household incomes below the Canadian poverty line of $C37,542 for a family of two adults and two children (Statistics Canada, 2015). Accordingly, many of the participants were living in large impoverished families. Although our sample was narrow in respect to its focus on new-migrant women of low socio-economic status, it also had members from multiple countries and cultural contexts. Thus, common findings across participants suggest that their shared cultural ecosystem services and relational values about Canadian nature are prevalent across diverse migrant populations.

4.2 | Overview of participant's outdoor experiences

4.2.1 | Frequency

Participants frequently used outdoor spaces with 48% ($n = 13$) spending time in nature every day and over 96% ($n = 26$) doing so at least once a week. While this basic finding seems to challenge claims that migrant and ethnically diverse populations use some natural environments less frequently than their white and native-born counterparts (Jay & Schraml, 2014; Johnson-Gaither, 2014; Kloek et al., 2015), it does not identify the kind of outdoor spaces that this study's participants were using. For example, Johnson-Gaither (2014) focused on migrants' infrequent use of more remote wilderness areas. The outdoor places that this study's participants visited most often were urban or semi-urban parks, beaches and forests, rather than more distant wilderness spaces. However, Jay and Schraml (2014) also found that individuals with a migrant background were less likely to use urban forests in Germany than their counterparts with no history of migration. This study's finding of frequent use of outdoor nature seem to contradict supposed blanket underrepresentation of migrants in outdoor environments. Although the new migrants in this study used natural environments often, their use of these spaces must be understood in tandem with the caveat that the type of outdoor spaces they accessed were often limited in variety and proximity. These use patterns seem to better align with findings presented in Kloek et al.'s (2015) analysis of migrant urban and non-urban outdoor recreation in the Netherlands, which found that migrants used urban natural environments more frequently and non-urban outdoor spaces less frequently than their non-migrant counterparts.

4.2.2 | Activity type

Research participants engaged in a wide variety of outdoor activities. The most frequently reported pastimes were walking ($n = 20$), having weekend family outings, often with food ($n = 18$) and bringing children to the park ($n = 16$). These findings reflect those in past studies (Jay & Schraml, 2009; Özgüner, 2011; Rishbeth & Finney, 2006). Fourteen participants reported changing the type of outdoor activities they engaged in after moving to Canada. For example, one respondent described her family's opportunity to try skiing for the first time. She said,

> "I really enjoyed everything, especially watching my kids skiing… It was a really different feeling because I have never experienced anything like that in Iraq or where I lived. There was never snow and hills and all of this is a new experience." (Participant 14)

Moving to a new country may offer migrants the opportunity to engage in a range of activities in which they were unable to participate in their countries of origin (Hurly & Walker, 2019; Stodolska & Alexandris, 2004). Engaging in new activities associated with the host country's culture is one way that migrants acculturate and familiarize themselves with their new home and community (Hurly & Walker, 2019; Rishbeth & Finney, 2006). Thus, engaging in activities associated with Canada could represent a way that participants were connecting with Canadian culture and recreational behaviours.

Thirteen participants continued to practice the same outdoor activities that they did in their countries of origin. Many noted that their outdoor experiences represented an opportunity to recreate and or maintain their traditions and routines. Some studies indicate that migrants participate in outdoor activities that help them reconnect with their home countries but, at the same time, give rise to feelings of nostalgia (Hurly & Walker, 2019; Lovelock et al., 2011; Rishbeth & Finney, 2006). For example, Brook (2003) argues that some migrants design gardens that remind them of home and also facilitate the establishment of a similar relationship to their new place. Similarly, this study's participants reported engaging in the same activities in which they had engaged in their home countries, such as weekly family picnics or daily gardening. Participants would assert that such practices evoked feelings of nostalgia but helped them continue to feel connected to cherished people, places and traditions from their home countries.

4.2.3 | Social dimensions of outdoor experiences

Twenty-four participants indicated that their routine visits to outdoor spaces were sociable. These findings align with existing research on migrant recreation patterns in outdoor spaces in various Western European countries and Turkey (Jay & Schraml, 2009; Kloek et al., 2013; Özgüner, 2011; Rishbeth & Finney, 2006). Twenty-two participants indicated that they most frequently spent

time in outdoor spaces with children as they felt outdoor recreation positively impacted their child's well-being. Hordyk et al.'s (2015) similarly noted that migrant families in Montreal viewed natural spaces as vital and affordable resources that supported both child and parental development, well-being and socialization. Stodolska et al. (2017) found that many migrants stated that natural environments felt like 'home', a space where they could spend time with family and feel comfortable. This study's participants seemed to associate natural environments in Canada with family time and values. Many participants stressed the cultural importance of families spending time together. From a relational values' perspective, these research participants seemed to associate Metro Vancouver's outdoor spaces with special family leisure time during which they could enjoy shared experiences and traditions in a new environmental and cultural setting.

4.3 | Canadian nature is Canada

Several participants equated Metro Vancouver's natural spaces to Canadian society, culture and Canada itself. For example, one sentiment expressed by a few participants was the view that Metro Vancouver's nature reflects Canadian people.

> "I see Canada as a beautiful nature, people are kind, they are not racist, so I love the nature of Canada and the way I see it, is that the outside nature reflects the nature." (Participant 27)

Furthermore, many participants viewed the exploration of new outdoor places as a way of coming to 'know' their host country and community. They also stressed that these outings made them feel more connected with their new country and society. One woman said,

> "Spending time in the park is important because it empowers me to go out, to continue to learn, to go have school, to go meet people, to live better. It supports me in succeeding and moving on and gaining knowledge and things." (Participant 9)

Statements like this suggest that these research participants viewed their engagement with some Canadian natural environments held a deeper metaphorical significance of representing their process of coming to understand Canada and their place in Canadian society.

In comparing Canadian outdoor experiences to those in their home country, some participants noted that outdoor recreation in Metro Vancouver revealed Canadian culture and social norms. This underscores that many participants value some Canadian natural environments in a relational way as they feel that their relationships with these spaces reflect and embody certain preferences, virtues and norms (Chan et al., 2016). Participants felt that their outdoor experiences and habits in Canada reflected what they perceived as

defining characteristics of the country such as safety from war, lack of pollution and limited sexism. This was best expressed by some participants from Middle Eastern nations who stated that the outdoors gave them a new sense of independence and freedom from a patriarchal social structure. One woman said,

> "When I go for walk, the first thing is it is clean and there are less people and I mentioned, there is blue sky. And the main thing that I usually think is that people are free. Yes, Freedom … We had a park in Iran, near to us, and my daughter used to go there, and I remember that one time I came back and she was crying. And she said she would never go again for bicycling because some people told her that, "Oh it's not good for a girl to bicycle in public." And here, when I see people are free to do anything that they want, anything logical… it's amazing." (Participant 11)

Pohl et al. (2000) suggest that outdoor recreation can provide women with opportunities to deconstruct proscribed gender roles that empower them in their everyday lives and environments. This participant's ability to engage in previously gender exclusive activities after moving to Canada demonstrates how the interlocking identities of gender and migrant may have shaped her perception, understanding and prescribed meaning of her outdoor experiences in Metro Vancouver.

Participants viewed Metro Vancouver's outdoor spaces as representing Canadian values of independence, freedom and gender equality. Hurly and Walker (2019) reported similar findings with one of their participants expressing that an organized camping retreat gave her a chance to exercise independence and freedom from her culture's strict familial oversight. Stodolska et al. (2017) found that visits to natural environments increased migrants' knowledge and understanding of their host country's sociocultural norms, practices, values and attitudes towards nature. Thus, engaging with outdoor spaces may help recent migrants understand and acculturate to perceived Canadian norms and values.

Multiple participants also stated that these Metro Vancouver's outdoor spaces facilitated socialization and relationship building with other Canadians. One participant, who was a member of a community gardening program, said that spending time in the garden helped her make friends and feel like she belonged in Canada. She said,

> "The community garden gives me a sense of belonging. It feels like we are a big family. I think going to the garden gives me a feeling that Canadians are united, because they will know each other better by working together. People will strive and fight for the same goal. Gardens make you build better relationships with your neighbors." (Participant 8)

Participants reported that their environmental and cross-cultural engagement with Metro Vancouver's nature gave them the opportunity

to generate social networks and learn about the landscape of their new home. But, these more practical acculturative services also contributed to the development of migrant identities and relationships to Canada. In essence, these experiences helped our participants feel Canadian.

These participants' shared conception of nature in Metro Vancouver as a representation of Canada itself helps frame the remainder of this study's findings. The participants expressed a shared conceptualization of Metro Vancouver's natural environments as a unique generalized embodiment and singular place that not only provided a range of services but also communicated sociocultural meanings and norms that contributed to their understanding of themselves in their new social, cultural and environmental context.

4.4 | Therapeutic and acculturative services

4.4.1 | Overview

Participants viewed natural environments as spaces that can provide therapeutic services that moderate migration-related stressors (Table 1). Metro Vancouver's natural environments were conceptualized as places that represented a respite and escape from the challenges and struggles migrants faced at home, work and school. These spaces contributed to positive emotional changes by generating feelings of happiness, relaxation, connection and empowerment. They also provided environments for recreational and social activities that contributed to participant's physical and social well-being. Furthermore, participants' interpersonal relationships, values and identities fundamentally changed their perception and experience of certain therapeutic and acculturative benefits from their time spent

in Metro Vancouver's natural environments. Individuals' gender and socio-economic identities were likely particularly co-influential in shaping the migrant participants' relationship to and experience of Metro Vancouver's natural spaces. This is highlighted through the experiences of mothers whose identities as caretakers shaped their relationship to and value about these spaces. Other studies mirror findings that time spent in natural spaces helps migrants reduce their acculturative stress by providing therapeutic and restorative psychological, mental and emotional services, and a safe space where migrants can go to forget their struggles (Hordyk et al., 2015; Main, 2013; Rishbeth & Finney, 2006; Stodolska et al., 2017).

4.4.2 | Motherhood

The gendered identity of being a mother may influence outdoor environment experiences. For example, Ho et al. (2005) indicated that women were more likely to engage in the stationary activity of child-minding in park environments, while men were more likely to be active. Approximately 89% (24 of 27) of the research participants were mothers. Seventeen participants specifically mentioned that the positive emotions they derived from their time spent outdoors were related to their children's experiences, stating that such experiences were essential to the health and well-being of their children in their new host country. In their study of refugees to Canada engaging in a winter camping retreat, Hurly and Walker (2019, pp. 269) argued that, 'For these mothers, their children's embrace of new outdoor activities appeared to represent acceptance and belongingness in their adopted home'. This suggests that mothers may not only link outdoor recreation to their child's health but also believe that engagement in new outdoor activities unique to their host country can

TABLE 1 Services that supported recent migrants' adaptation process and examples of participant quotes describing these benefits

Services	Example quotes
Offers a space for physical exercise	*"You can go outside for example run, swim, mountain climbing, all of them have positive effects on your mind, mood, and all of these things."* (Participant 11)
Contributes to positive emotions	*"When I am outside I feel warm, safe, I feel hugged. It feels like this is my real country. Everything we lose in my country; and when I am in the park it reminds me that we have found everything here."* (Participant 15)
Escape from stressful home environments	*"Because you know if I just stay in my home, I lose my mind. I just miss my mother. I'll sit and ask, "Why am I here?" I'll feel boring. So, when I go outside and I walk with my friend, everything is different. I am happy, I can speak everything that I need with my friends. I can breathe fresh air. I leave my house. I can be relaxed. I feel comfortable."* (Participant 25)
Mechanism for self-care	*"You know before going and spending time outside there is always something missing. You always want to go take a break. You always want to go sit there and have time for yourself. And after, you just feel like you've cleared your mind, you feel like you have time for yourself today."* (Participant 17)
Place for socializing	*"It has quite a critical role for me because park is not only a place, It's the place I can meet people and make friends with people."* (Participant 3)
Supports child well-being	*"Going outside is beneficial to the children. Their brains get to develop better. They also get to socialize more."* (Participant 13)
Increased sense of belonging	*"I am coming to love Canada and know Canada and fit in. Spending time outdoors is a way of coming to feel like I am part of this new country and new community."* (Participant 14)
Empowerment	*"Cause in Canada it is good to go outside, you know to see a lot of people, new things. When you go outdoors you know everything, you can take time for yourself. When you have time for yourself you can take care of your children, because if you don't take care of yourself how can your care for your children. So, it's important. When I give time to myself, I am happy."* (Participant 22)

support their child's transition and acculturation into a new national and sociocultural environment.

Many participants verbally linked their own happiness and well-being to that of their children, saying things like,

> "Mom enjoys the most when my kids are enjoying, because at home they are all locked in…. I am very happy and relieved that my kids are going out and going." (Participant 15)

and

> "I am always upset, always down, and worrying about my son and my daughter. During outdoor outings, I feel comfortable and relaxed, because if my daughter is comfortable and relaxed then so am I." (Participant 27)

This suggests that these participants' intersectional identities as mothers fundamentally shaped their understandings, relationships and identities tied to outdoor environments in the Metro Vancouver area. Many of these women's perceptions of their host country's outdoor spaces seem to be mediated by their children's experiences. This is highlighted by the connections between their own emotional experiences and those of their offspring; it speaks to their personal responsibilities and identities as mothers who must keep their children healthy, safe and active. These findings underscore a point implicit in the concept of relational values: not only are people's values often *about* relationships, they are also *derived from* relationships, such that these mothers' experiences of and attachment to natural environments derive from their identities as maternal caretakers. We are unaware of other literature that explores how maternal identity influences an individual's environmental relational values, cultural ecosystem services and place attachment.

4.5 | Access

Generally, participants frequently engaged with outdoor spaces in the Metro Vancouver area and accordingly had access to some nature. This finding largely negates the expected manifestation of participant's marginalized identities synergistically interacting to create barriers that hindered their ability to benefit from natural spaces. However, it must be noted that participants did face some obstacles to accessing *certain* outdoor spaces, particularly more remote and non-urban natural environments. Lack of transportation, limited financial resources, constraints on leisure time, a lack of knowledge of the area and language, and perceived ethnic exclusion were identified as barriers to access. These findings reflect those found in other studies (Aizlewood et al., 2006; Byrne, 2012; Rishbeth & Finney, 2006). These barriers indicate that this study's participants' social, political and/or economic situations prevented them from fully benefiting from certain natural spaces. Furthermore, the individual participant's other identities like their gender and socio-economic

class may have exacerbate some of these barriers, as past studies suggest that women and individuals of lower socio-economic status may face additional gendered and class-based obstacles that hinder their access to outdoor spaces (Byrne et al., 2009; Ho et al., 2005; Marne, 2001).

Three women in the study described experiencing racism, ethnic discrimination and segregation in certain Metro Vancouver parks that prevented them from returning to those particular spaces. For example, one respondent noted rules against music that made her family feel unwelcome.

> "Unfortunately, here if you are doing a BBQ in the park you cannot put the music out loud. They call the police for the music. It's horrible. There are young people smoking marijuana and there are kids in the park. And then if you play music, something that is actually healthy and the kids can dance, and they don't allow us to do that. It's like they don't want us there." (Participant 23)

This woman's experiences suggest that institutional structure and programming in Metro Vancouver's natural environments are not wholly representative of their diverse users' preferences. If outdoor environments are designed and managed in a way that makes migrant and minority communities feel unwelcome, they are less likely to benefit from these spaces. Not only does failing to accommodate diverse preferences prevent new migrants from using particular places, the meaning ascribed to this exclusion can define migrants' perceived identities in Canada. This study's participants expressed that the Metro Vancouver natural environments they used represented Canada as a whole. Thus, lack of access or marginalization from certain natural environments might also be perceived as exclusion from Canada itself. Although most of our research participants did not report similar experiences of racism, these three women's accounts suggest that to some migrants, nature may be a space of alienation rather than acculturation.

4.6 | Services, meanings, identities and values

This research finds that new migrants displayed significant place attachment and deep relational values to Metro Vancouver's natural environments, challenging previous research that links familiarity and duration of engagement with value and attachment strength (Hay, 1998; Hernández et al., 2007). All 27 research participants stated that it would be terrible if they were unable to spend time in nature in Canada. One woman stated,

> "Without this it is going to be a kind of disaster, as dramatic as this sounds, it's going to be a disaster. It's the place where I breathe. No parks, you just feel like your life is all about work and all indoors and you are not connecting with the nature … I need this." (Participant 17)

These statements suggest that Metro Vancouver's outdoor spaces were non-substitutable to these migrants, as they provided a space and service that no other place could supply. Furthermore, their reliance on outdoor spaces demonstrates an aspect of place attachment called place dependence, meaning functional attachment to a particular place and its related services (Stokols & Shumacker, 1981).

There is an interesting tension in some of these migrants' use of Metro Vancouver's natural environments and the meaning ascribed to those outdoor experiences. Participants differed in their use of outdoor environments with some using those experiences to explore new activities and others primarily recreating established practices from their countries of origin. Despite the fact that most participants largely continued familiar activities, many understood their outdoor experiences in Metro Vancouver to represent their relationship to Canada and the Canadian people. The participants in this study were recent immigrants, however, so participants conceptions of themselves and of what is 'Canadian' are likely both in flux.

Cultural ecosystem services research has generally moved away from making generalizing statements about how a single conceptual construct of nature benefits people. This field of research has instead emphasized the tangible and non-material benefits derived through an individual's experiences and capabilities relative to particular pieces of nature (Chan, Satterfield, et al., 2012; Fish et al., 2016). It might then be surprising that the generalized singular imagined concept of Canadian nature seems to be prevalent and meaningful in shaping the benefits our participants' expressed experiencing. This central idealized perception of 'Canadian nature' was a relational value shared by our participants that influenced their experiences with Metro Vancouver's natural environments and shaped the meanings and identities that they attached to those experiences. Thus, participant's idea of Canadian nature informed their interactions with proximate outdoor spaces which then influenced their perceived relationship to Canada, its nature and its people. Gould et al. (2019) identified a similar relational values process in analysing how specifically defined shared Native Hawaiian values like balance and care were embodied in their socio-ecological practices which also inform Hawaiian's relationships to their lands, their people and their heritage. The singular orienting conceptualization of Canadian nature aligns with emerging understandings in cognitive science of how analogical representations and frame shifts focus people's thinking and behaviour in a wide range of situations (Levine et al., 2015). Thus, it is unsurprising that overarching cognitive heuristics and existing pre-conceptions of Canadian nature substantially coloured how this study's participants experienced and benefited from their relationships with Metro Vancouver's natural environments.

In short, the benefits, relationships and values that respondents associated with Metro Vancouver's natural environments were shaped by their pre-existing identities and values such as those associated with family and the role of mother. Migrants' values about Metro Vancouver's nature were also fundamentally shaped by their imagination of outdoor places as a notion of Canada and Canadian identity, as indicated by their equation of the country and its outdoor spaces. Respondents' values regarding outdoor spaces not only linked Metro Vancouver's natural environments to larger sociocultural norms, values and meanings (Chan et al., 2018), but these spaces provided unique acculturative services that facilitated the development of their personal morals, values and identities.

4.7 | Implications for nature

Given the connection between stewardship inclinations towards nature and the kind of environmental relational values that seem to be building among new migrants (Chan et al., 2016), it is possible that migrants' experiences in outdoor natural spaces might be facilitating those migrants to take a variety of actions to care for nature. While this work did not analyse migrant engagement in ecological stewardship activities, understanding some recent migrants' relational values to their host country's natural spaces represent fertile ground upon which further analysis can be developed. Some studies have found evidence of this with some migrants participating in local environmental practices to protect shared outdoor spaces as a means of acculturation and socialization with their host communities (Carter et al., 2013; Hordyk et al., 2015). However, analysis into how to systematically or institutionally leverage and magnify migrants in pro-environmental behaviour at scale is still warranted. Furthermore, to encourage migrant ecological stewardship that significantly impacts biodiversity and regional ecosystem processes, newcomers may need to experience and develop relational values and care towards wilder places that many of them currently do not or cannot access.

4.8 | Future directions

This study does not provide a comprehensive or representative evaluation of a migrant experience of nature in Metro Vancouver. The study's 27 participants were likely influenced by a strong self-selection effect, resulting in a group of respondents that lacked male, fully employed and economically well-off migrants. This limits this study's results generalizability, but it also amplifies the voices of marginalized individuals within the migrant community who because of their overlapping vulnerable identities likely experience and use natural environments in unique ways different from a more general sample of Metro Vancouver's migrant population. Environmental values, meanings and preferences vary in accordance with an individual's socio-economic status, age and gender (Buijs et al., 2009; Fernandez & Stodolska, 2015). Accordingly, participants' responses likely reflect not just their migrant status but also demographic characteristics. However, some participant responses, including the widespread view of natural spaces as a pathway to acculturating and adapting to Canada, do seem linked to their immigration status.

Metro Vancouver is a unique metropolitan area with an abundance of available natural environments (Greenest City Action Plan, 2012) and a fairly moderate climate. This may have impacted the observed relationships that my participants had to outdoor

spaces in their new host communities. This could potentially limit the generalizability of this study's results as outdoor environments in other areas with large newcomer populations may have less hospitable and attractive nature spaces. For example, Aizlewood et al. (2006) found that immigrant outdoor recreation was higher in Canada than in the Netherlands. However, in a study of the role of outdoor recreation on immigrant adaptation to their host countries, Stodolska et al. (2017) indicated that immigrants to the United States, the Netherlands, Germany and Poland all experienced some acculturative services through the use of natural spaces in their new home communities. Accordingly, although Metro Vancouver's unique study environment may have augmented the immigrant use of outdoor spaces, the acculturative relationship and services provided by nature seem to arise in other municipal and national contexts.

Future research can use this study's findings to see if other migrant populations in other contexts benefit from nature in the process of acculturation and the evolution of identity. Such analyses would help establish such services as a more generalized benefit and demonstrate that newcomers around the world use their host country's natural spaces to help them adapt and acclimatize to their new sociocultural environments. Additional research about the causal factors influencing differences in outdoor space use and perception within migrant communities would also facilitate a better understanding of the heterogeneity of relationships that migrant individuals and communities have with nature in their host country. Another area for future inquiry is understanding how to better bridge the gap between migrant use and value about some outdoor spaces and engaging those populations in environmental protection initiatives. Existing research demonstrates that place attachment and relational values can encourage pro-environmental and ecological stewardship activities (Chan et al., 2016). A few studies indicate that migrants may participate in local environmental practices to protect shared outdoor spaces as a means of acculturation and socialization with their host community (Carter et al., 2013; Hordyk et al., 2015). However, analysis into systematically or institutionally leveraging and magnifying migrant participation in pro-environmental behaviour at scale is warranted.

5 | CONCLUSIONS

Urban-dwelling migrant mothers of low socio-economic status face a collection of overlapping and mutually influential discriminations and disadvantages. Thus, one might expect that the intersectionality of their marginalized identities might manifest in the creation of synergistic barriers to the benefits of nature. Our study's participants—27 recent migrant women living in Metro Vancouver—expressed a contrary idea. They reported that their near daily engagements with Canadian nature provided significant psychological and non-material benefits that were reinforced and shaped by their existing identities. This was particularly evident in the ways in which gender, motherhood and existing family values interacted with their experiences

in Metro Vancouver's natural environments. Furthermore, despite their varied backgrounds, these women expressed shared relational values of and benefits from their engagement with Canadian natural spaces suggesting that such experiences might be shared across broader migrant populations.

Cultural ecosystem services researchers have theorized that individuals' or communities' identities are sometimes shaped by relationships between people and places (as one factor), emphasizing longstanding and subconscious relationships. In contrast, this study suggests that individuals may consciously use activities in nature as a vehicle to take on a new desired identity, even over shorter time periods. Our participants expressed a shared essentialist conceptualization, appreciation and experience of Canadian nature as helping them develop and cultivate an attachment to Canada and grow into their evolving Canadian identity. Thus, intentional efforts to support migrant access to their host country's natural spaces might yield important non-material benefits to these marginalized populations, while also facilitating their adoption of new identities.

This work further revealed that some populations may hold generalized singular constructs of nature, which can structure their behaviours and perceptions of natural spaces. The cultural ecosystem services literature seems to have generally moved away from focusing on how people's experienced benefits from and values of natural environments are informed by more widespread essentialist conceptualizations of nature. Nevertheless, this study seems to highlight how a preconceived and potentially idealized understanding of Canadian nature functioned to frame and inform the uses, values and benefits that our participants experienced in engaging with Metro Vancouver's natural spaces. Thus, it seems that identifying essentialist and generalized conceptions of nature itself and the 'work' they do can be key to understanding individuals' and communities' relationships with nature.

CONFLICT OF INTERESTS

The authors affirm that they have no affiliations or involvement with any entity or organization with any interest, financial or otherwise, in the materials or subject matter contained in this manuscript. It must be acknowledged that Dr. Kai M.A. Chan, one of the authors, is a Lead Editor for *People and Nature*. However, he was not involved in the peer review and decision-making process.

AUTHOR CONTRIBUTIONS

A.J.O., K.M.A.C. and D.R.B. collaborated on the conception and design of the study's methodology and in the interpretation of the data; A.J.O. collected and analysed the data; A.J.O. led the writing of

the manuscript. All the authors gave substantive contributions to the paper's drafts and gave final approval for publication.

DATA AVAILABILITY STATEMENT

This manuscript's data are not publicly available in accordance with this study's Behavioural Ethical Review Board application for the purpose of protecting the identity and personal information of participants disclosed throughout the interview data collection process.

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ENDNOTE

[1] Due to a perceived lack of precision in the in-person translation of the Cantonese language interviews, bilingual translators aided in the transcription of these interviews' recordings to ensure linguistic accuracy.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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