

Experiences That Affect Participation of Women and Gender Diverse Athletes in Competitive Cycling

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Abstract

In general, cycling is a sport and recreational activity with far fewer women than men, particularly in racing. The purpose of this mixed methods investigation was to identify experiences that affect participation for women and gender diverse (WGD) athletes in competitive cycling. Findings suggest WGD cyclists are likely to continue competing when they prioritize their individual engagement in the sport. Findings also highlight the importance of creating an encouraging and supportive atmosphere with equitable field decisions and equal prize pools. However, the overarching culture of the sport may hinder continued involvement of WGD cyclists when they face constraints such as unsupportive environments, inequitable field decisions, and unequal prize pools. Race promoters are encouraged to provide equal prizes, multiple race options for women, women-only fields, and specific events for WGD cyclists who want to improve their skills or increase their exposure to the sport. Such decisions are likely to decrease attrition, increase participation, and foster a sense of feeling valued for WGD athletes in competitive cycling.

KEYWORDS: women; gender; cycling; participation; constraints

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Despite increased accessibility of sports for women over the past several decades, many sports are still male dominated (Chalabaev, Sarrazin, Fontayne, Boiché, & Clément-Guillotin, 2013; United Nations, 2007). Many women experience discrimination, harassment, and gender disparities as athletes, coaches, and leaders (Cooky & LaVoi, 2010; United Nations, 2007). Additional complexity emerges for gender diverse athletes, including transgender, nonbinary, and gender nonconforming athletes. For example, debates continue regarding noncisgender athletes and whether they have the right to compete in the fields that align with their gender identity (e.g., Chen, 2018).

The gender disparity is specifically great within cycling environments (Heesch, Sahlqvist, & Garrard, 2012), particularly bicycle racing (i.e., competitive cycling). In recent years, 15% to 17.5% of athletes in sanctioned racing were registered in women's fields in Australia, the United Kingdom, and the United States (Australian Human Rights Commission, 2006; British Cycling, n.d.; Larson, 2013). Some forms of racing see even lower numbers; in ultra-endurance mountain bike races throughout Europe, women make up approximately 2% to 4% of the fields (Gloor et al., 2013).

To increase the participation of athletes with underrepresented gender identities in competitive cycling, one must first identify the factors that affect their participation. The purpose of this investigation was to examine the experiences of competitive cyclists who do not identify as cisgender men. Such athletes are referred to as women and gender diverse (WGD) cyclists throughout this article.

Literature Review

Theoretical Framework

Because of the limited research on competitive cycling, the research team used the outdoor recreation literature on constraints and negotiations in sport dating back almost three decades to inform the investigation (Crawford, Jackson, & Godbey, 1991; Shores, Scott, & Floyd, 2007).

Constraints. To understand participation in sport and recreation, scholars over the past few decades have focused on restrictions to participation (e.g., Crawford et al., 1991). *Constraints* are barriers and challenges that hinder an individual's participation in leisure activities, including sport and outdoor recreation (Crawford et al., 1991). Scholars have posited that three primary types of restrictions exist: structural, interpersonal, and intrapersonal (Crawford et al., 1991; Jackson, Crawford, & Godbey, 1993). Structural constraints are environmental or societal factors that limit an individual's ability to choose to participate in leisure activities. Interpersonal constraints include social needs or preferences that hinder a person's choice to participate in a leisure activity. Intrapersonal constraints pertain to personal characteristics or motivations that inform a person's choice to participate in a leisure activity.

Negotiations. Although the aforementioned factors can affect participation in outdoor recreation and leisure, scholars now recognize that participation also depends on strategies that people use to work through such restrictions, commonly referred to as *negotiations* (Crawford et al., 1991; Jackson et al., 1993; Mueller, Landon, & Graefe, 2019). Individuals with a desire to participate typically respond to perceived restrictions in the form of negotiation. There are three commonly used negotiations (Jackson et al., 1993). First, individuals learn how to acquire information about limited opportunities. Second, stakeholders can schedule activities to accommodate underrepresented groups who may have time commitments that differ from the majority. Third, participants can further develop their skills to increase their participation in advanced levels of activities.

Though individuals may successfully negotiate some interpersonal and intrapersonal constraints, structural restrictions may undermine an individual's ability to participate in their

activities of interest (Shores et al., 2007). Restrictions can also change depending on the environment (Walker & Virden, 2005). For example, some recreational activities may have low accessibility because of a lack of publicly available information, equipment needs, costs, or lack of orientation to the activity (Shores et al., 2007; Walker & Virden, 2005).

Cultural Considerations

Empirical research and theoretical perspectives suggest that participation in outdoor recreation depends on several factors (Crawford et al., 1991; Jackson et al., 1993), including gender (Jackson & Henderson, 1995), body size (Newhouse, 2015), religion (Walseth & Fasting, 2003), disability status (United Nations, 2007), and racial background (Hall, 2001).

Gender. According to scholars, personal and situational circumstances interact with cultural identity (e.g., gender) to create constraints (Jackson & Henderson, 1995; Shaw, 1994). Such scholars have posited that women's restrictions to participation in recreational activities reflect a male-centric society and a person's understanding of gender and their role in society.

Scholars have found that women experience more restrictions than men with respect to perceived fitness, confidence, participation costs, and fear of getting hurt (Ceurvorst, Fuller, Childers, Dubois, & Steiger, 2018). Researchers have also identified differences in intrapersonal and interpersonal limitations between men and women (Jackson & Henderson, 1995). For example, women may have difficulty finding training partners, may be preoccupied with family responsibilities, have lower perceived physical abilities, or may not know where or how to participate. Other restrictions may include a lack of transportation, not knowing where to learn, feelings of unease in social situations, and feeling physically unable to participate (Jackson & Henderson, 1995). At a broader level, some women may not participate in sport because of societal assumptions that they are too weak for endurance sports or that engaging in sports will negatively affect their reproductive health (United Nations, 2007). Others may not be attracted to sports or outdoor recreation due to characteristics such as traditional gendered values or traits (e.g., self-reliance, individualism), sexism inherent in outdoor recreation language, a lack of representation of women, and gender-insensitive teaching practices (Warren, Mitten, D'Amore, & Lotz, 2019).

Other cultural identities. In addition to gender, scholars have recognized that people with underrepresented or underprivileged cultural identities face additional restrictions. For example, in a sample of women who were significantly overweight, constraints included "frustration about keeping up and slowing others down," "self-conscious about wearing outdoor gear," "finding clothes that are comfortable and functional," and "motivation" (Newhouse, 2015, p. 177). Religious beliefs and values may conflict with women's engagement in sport and physical activity in some areas of the world, particularly for those who practice Islam (Walseth & Fasting, 2003). Athletes with disabilities often face constraints pertaining to the accessibility of training facilities, resources for those who are blind (e.g., tandem bicycles), and adapted environments to support those with disabilities (Guthrie & Castelnuovo, 2001; International Paralympic Committee, 2001). Women of color are often treated as an exception to the norm when successful—particularly when compared to societal scripts that suggest Native American women are nonathletic, Asian women are fragile, and African American women are lazy, uneducated, or unsophisticated (Hall, 2001). Because of the intersectionality of cultural identities, women with nondominant identities arguably experience "double discrimination" when compared to those in dominant or majority cultures (United Nations, 2007, p. 21).

Gender Disparities in Cycling

Some studies have examined women's participation in cycling; however, most have focused on forms of noncompetitive cycling (e.g., commuting; Garrard, Rose, & Lo, 2008). Others have

focused on individual countries, such as Australia (Heesch et al., 2012), the United Kingdom (Beecham & Wood, 2014), and the United States (Emond, Tang, & Handy, 2009).

Thus far, scholars have found that personal factors, skill level, confidence, environmental conditions, and social networks affect participation rates for women (Garrard et al., 2008; Rowe, Shilbury, Ferkins, & Hinckson, 2015). Some researchers have suggested that countries have low rates of cycling for women because of the distance and nature of cycling trips (Krizek, Johnson, & Tilahun, 2006), gender roles (Garrard, Handy, & Dill, 2012; Krizek et al., 2006), and gender preferences regarding road and trail infrastructure (Beecham & Wood, 2014; Krizek et al., 2006).

Research has also suggested that women cyclists have a concern for safety (Emond et al., 2009; Garrard et al., 2012; Heesch et al., 2012; Lubitow, 2017), particularly when racing at fast speeds (Rowe et al., 2015). Safety also seems to be a concern for bicycle commuters. Heesch et al. (2012) found that many women no longer cycle because of safety concerns such as blatant threats, challenges maneuvering in public spaces, and fears or anxieties about biking in public.

In addition to the interpersonal and intrapersonal factors listed, several structural barriers and resources may reinforce the gender gap. For example, anecdotal evidence suggests WGD athletes have fewer options to race, are offered shorter race distances and durations, and receive smaller prizes than men after winning podium positions. To grow the presence of WGD athletes in competitive cycling, researchers need to identify sport-specific constraints and negotiations that are specific to WGD athletes. Race directors, race promoters, and local associations can use such information to expand the women's fields and prevent further attrition of women who enter the sport.

The purpose of this mixed methods investigation was to identify the factors that increase and decrease participation for WGD athletes in competitive cycling. More specifically, the research team assessed the extent to which previously identified factors in the literature apply to WGD athletes in competitive cycling. In addition to assessing constraints and negotiations, the research team used a qualitative approach by inviting WGD cyclists to identify general factors that increased or decreased their likelihood of continued participation in cycling. Finally, the research team identified experiences that prompted participants to feel valued in their communities, and that contributed to continued participation and engagement in the sport.

Method

Participants

Inclusion criteria for the survey were athletes who (1) participated in competitive cycling events in the past 5 years and (2) did not identify as cisgender men. Three hundred eighty-two WGD athletes responded to questions regarding constraints, negotiations, actions that have increased and decreased participation in cycling, and experiences of feeling strongly valued. Participants ranged in age from 16 to 79 ($M = 35.94$, $SD = 9.95$). The number of years of cycling experience ranged from 1 to 60 ($M = 12.61$, $SD = 10.66$), while the number of years of racing experience ranged from 0 to 40 ($M = 6.10$, $SD = 5.48$).

The researchers used open-ended responses for demographic questions (see Tables 1 and 2). Definitions were not provided for female, woman, or other gender identities. Participants identified as women ($n = 337$, 89.9%), female ($n = 20$, 5.3%), nonbinary ($n = 6$, 1.6%), gender-queer ($n = 4$, 1.0%), and agender ($n = 1$, 0.3%). Eighty-seven participants indicated cisgender in their open-ended response and 16 indicated transgender as a part of their gender identity in their open-ended response. Most participants (88.5%) identified as White or Caucasian (e.g., White British, White European), followed by Hispanic/Latinx ($n = 18$, 5.1%), Biracial/Multiracial ($n = 17$; 4.7%), Other (i.e., Arab, Australian, Christian, Eastern European Jew, Greek, Jewish Non-Western, Kootenai), and Asian/Pacific Islander ($n = 5$, 1.4%). Most participants held

a bachelor's degree or higher (85.6%). Countries represented included Australia ($n = 6$, 1.9%), Belgium ($n = 1$, 0.3%), Canada ($n = 10$, 3.2%), Germany ($n = 3$, 1.0%), the Netherlands ($n = 1$, 0.3%), New Zealand ($n = 2$, 0.6%), Poland ($n = 1$, 0.3%), South Africa ($n = 1$, 0.3%), Spain ($n = 1$, 0.3%), the United Kingdom of Great Britain ($n = 14$, 4.5%), and the United States ($n = 274$, 87.3%). Within the United States, 39 states and the District of Columbia were represented.

WGD participants represented all levels of cycling (beginner through professional). Participants reported competing in road ($n = 278$, 72.8%), track ($n = 94$, 24.6%), cyclocross ($n = 192$, 50.3%), mountain bike ($n = 169$, 44.2%), fat tire bike ($n = 41$, 10.7%), gravel ($n = 133$, 34.8%), and triathlon ($n = 102$, 26.7%) in the previous 5 years.

Table 1
Gender Identity of Participants

Identity	<i>n</i>	%
Woman	239	62.6
Cisgender woman	83	21.7
Female	17	4.5
Trans woman	11	2.9
Nonbinary	6	1.6
Genderqueer	4	1.0
Cis female	3	0.8
Trans male/man	2	0.6
Agender	1	0.3
CIS	1	0.3
Nonbinary trans woman	1	0.3
None of the above	1	0.3
Queer woman	1	0.3
Trans	1	0.3
Womxn	1	0.3

Table 2
Racial and Ethnic Identity of Participants

Racial and ethnic identity	<i>n</i>	%
White, Caucasian, White European	337	88.5
Hispanic, Latinx, Chicanx	18	4.7
Biracial, Multiracial	17	5.1
Other (Arab, Australian, Christian, Eastern European Jew, Greek, Jewish Non-Western, Kootenai)	9	2.6
Asian, Pacific Islander	5	1.4

Materials

The materials from this survey are from a large-scale investigation of WGD athletes in cycling. Three open-ended questions and two scales were used in this investigation.

Open-ended questions. The research team, which was led by a faculty member who is also a competitive cyclist, created the open-ended questions to capture experiences that may be associated with increased and decreased participation in the sport. The primary investigator created

survey questions that demonstrated high levels of face validity, though the instrument was not piloted before data collection.

Participants were asked, "What specific actions have race directors, coaches, teams, athletes, and/or spectators taken that decreased the likelihood of your continued participation in competitive cycling?" They were also asked, "What specific actions can race directors, coaches, teams, athletes, and/or spectators take to increase or support your continued participation in competitive cycling?" Finally, participants were invited to respond to the prompt, "Describe one specific situation (or more) where you felt strongly valued or included as an athlete in the cycling community?"

Constraints. To assess limitations to participation, the research team used items from a recent investigation about participation in gravel endurance cycling (Mueller et al., 2019). Participants responded to the prompt, "Please look at the list below and indicate how important these reasons have been in limiting your participation in competitive cycling in the past 5 years." The scale used in the original study included 29 constraints for women cyclists, which were scored on a Likert-type scale (1 = *not at all important*; 5 = *extremely important*). Twenty-three items were added to reflect constraints identified in the literature, including but not limited to finding clothes that fit properly (Newhouse, 2015) and child and family responsibilities. Internal consistency for the scale was strong ($\alpha = .916$).

Negotiations. A list of 25 negotiation strategies was also included for participants, following the prompt, "When thinking about your most active racing season over the past 5 years, please rate the extent to which each strategy was an important factor in increasing your cycling participation." The original 19 questions from Mueller et al.'s (2019) investigation were used, as well as strategies identified in Mueller et al.'s qualitative findings: changing one's mindset, managing nutrition, learning new strategies or skills, social support, family support, and training more often. Internal consistency for the scale was good ($\alpha = .882$).

Procedure

After receiving ethics approval from Saint Mary's University of Minnesota (protocol number 201876), the research team identified cycling teams in the USA Cycling database. Research team members e-mailed the point of contact for all cycling teams that provided contact information on their websites. The survey was also disseminated on social media platforms, including Facebook, Instagram, and Twitter. Snowball sampling allowed team members to invite others to distribute and share the survey. The response rate is unknown due to the sampling method.

Data collection took place between March and August 2018. Participants provided informed consent at the beginning of the study before gaining access to the rest of the survey. Participants responded to a survey about their experiences in competitive cycling, which included open-ended questions and Likert-type questions regarding constraints and negotiations for participation. Once the data were collected, the narratives to open-ended questions were separated based on unique experiences or ideas and each individual idea was coded.

Each research team member individually reviewed the qualitative data for experiences that affected participation in cycling and subsequently suggested themes for the data. The team reviewed the themes and reached consensus on the initial set of themes for each open-ended question: experiences that increased participation, experiences that decreased participation, and experiences of feeling valued. The research team then collectively reviewed the coding results and determined consensus. The team piloted the application of the initial themes via a closed coding system with 10% of the data. The individual coding results were compared and discussed regarding discrepancies in coding and adjustments needed for the coding system.

After adjustments were made to the initial coding system based on the piloted coding, one team member used the information from the team meetings to individually code according to the revised themes for each variable identified. Areas of ambiguity or uncertainty were brought

back to the team and were discussed as needed. Such discussions pertained to responses that seemed to fit into more than one theme, vague statements, or the meaning of cycling jargon.

Prior to the themes being finalized, two external auditors reviewed the data and themes. They provided feedback regarding the names and content of themes, and minor adjustments were made with team consensus. Finally, frequencies for the data were calculated. The percentages in the Results section below represent the number of participants who identified each of the underlying themes in their open-ended response to each question.

Results

Constraints and Negotiations

Tables 3 and 4 show the ratings for constraints and negotiations. Of the 52 constraints to participation in competitive cycling, those that were most likely to decrease participation for WGD cyclists included lack of time to train, unequal prizes for male and female categories, personal health, dislike racing in combined fields with juniors or men, and cost of races. The top five negotiations WGD engaged in during their most active year in competitive cycling included a set-aside time for riding, planned ahead to have time to train, improved cycling skills, trained close to home, and met people with similar riding interests or goals.

Table 3

Constraints to Participation

Constraint	M	SD
Lack of time to train	3.20	1.23
Unequal prizes for male and female categories	2.63	1.41
My own health	2.63	1.33
I do not like racing with juniors or male categories/fields	2.57	1.49
Races cost too much	2.53	1.23
Small field sizes limit ability to upgrade/progress as desired	2.48	1.40
Lack of equitable opportunities for women	2.46	1.31
Equipment costs too much	2.45	1.24
Fear of getting hit by a vehicle while riding	2.44	1.34
Lack of physical fitness	2.43	1.18
Fear of getting injured	2.40	1.22
Inaccurate assumptions about women and/or gender diverse cyclists	2.39	1.32
Fear of crashing	2.37	1.24
Family responsibilities	2.36	1.38
Races are too far away from home	2.33	1.18
It is difficult to find people to train with who are my speed	2.31	1.27
I have more important things to do	2.30	1.18
Feeling as though I don't belong	2.23	1.23

Table 3 (cont.)

Constraint	<i>M</i>	<i>SD</i>
Lack of safe roads to train where I live	2.23	1.28
Fear of training/racing with more experienced cyclists	2.19	1.15
I am not motivated to train	2.16	1.17
It is intimidating	2.14	1.19
Lack of training partners	2.14	1.18
Unequal duration of races for male and female categories	2.13	1.23
Unsolicited advice about body, training, or competing	2.09	1.21
Lack of equitable opportunities for gender diverse cyclists	2.05	1.35
Gyms or training studios cost too much	1.92	1.21
Lack of riding skills	1.91	0.99
Lack of means to travel to races	1.90	1.24
Fear of cyclist-directed harassment while training	1.88	1.14
I don't/didn't know how to get started	1.84	1.15
Lack of people to support me during races	1.81	1.25
It is difficult to find gear in my size	1.78	1.12
Health of my family	1.78	1.12
I am not mentally strong enough	1.70	1.00
Lack of proper equipment	1.69	0.99
Lack of knowledge about events	1.67	0.95
I do not feel welcome at events	1.65	0.92
Lack of bicycle repair knowledge	1.65	0.91
I do not like riding in big groups	1.64	0.97
Fear of sexual harassment while riding	1.59	0.94
Negative or stereotypical comments about cyclists from others	1.56	0.94
Lack of support from my family	1.49	0.94
Childcare needs	1.47	1.09
Lack of support from spouse	1.43	0.95
Fear of pain or discomfort	1.43	0.78
Fear of trying something new	1.41	0.78
Death in the family	1.36	0.91
Lack of support from my friends	1.33	0.69
Lack of navigational abilities	1.32	0.71
Lack of emergency first aid knowledge	1.20	0.50
I could not get into races/races were full	1.17	0.55

Table 4
Negotiations to Participation in Competitive Cycling

Negotiation	M	SD
I set aside time for riding	4.26	0.89
I planned ahead so I had time to train	4.12	1.01
I improved my cycling skills	3.94	1.13
I trained close to home	3.93	1.05
I met people with similar riding interests/goals	3.72	1.21
I rode with people who were more experienced than me	3.68	1.28
I joined a cycling club or team	3.61	1.45
I rode and trained regardless of the weather	3.60	1.21
I made sure my family knew that this was important to me	3.36	1.40
I re-prioritized my responsibilities and goals	3.29	1.36
I bought better equipment	3.27	1.31
I introduced myself to other women and gender diverse cyclists who were training or racing	3.18	1.42
I trained indoors	3.18	1.47
I improved my attitude	3.06	1.38
I participated in rides with people of my own gender	2.88	1.51
I found role models of my own gender to help me reach my goals	2.85	1.46
I learned about cycling by reading, watching events, or listening to podcasts	2.78	1.44
I worked with a coach to meet my goals	2.75	1.73
I treated an injury	2.67	1.57
I got a job with built-in flexibility for training	2.63	1.53
I saved or budgeted money so I could ride more	2.62	1.40
I attended community cycling clinics or events	2.55	1.37
I participated in less intimidating events to build confidence	2.39	1.33
I rode with people my own age	1.97	1.23
I traded off familial responsibilities with my partner	1.89	1.34

Experiences That Decreased Participation

Of the participants, 196 described experiences that decreased their participation in competitive cycling in response to an open-ended question. Seven main themes were identified: Inequitable Field Decisions ($n = 73$, 37.24%), Lack of Presence or Support ($n = 55$, 28.06%), Harassment and Unsafe Environments ($n = 51$, 26.02%), Unequal Prize Pools ($n = 36$, 18.37%), Reinforcement of Stereotypes Through Subtle Actions ($n = 27$, 13.78%), No Actions Decreased Participation ($n = 20$, 10.20%), and Limited Accessibility ($n = 16$, 8.16%).

Field decisions during races was the most commonly reported theme and was labeled Inequitable Field Decisions. This theme included combining women's fields with other fields, having too many people on course, lack of a master's women's field, or combining all skill levels for women. Inequitable Field Decisions also included a lack of races specific to age/gender/

ability, race directors removing races, race structures that contributed to negative experiences, shorter or unequal race duration, and unideal times of races. One participant stated that “combining all women’s races into one big race so beginners are lapped by the better racers” and “cramming us in with the kids as if we’re on the same level” were field decisions that decreased participation. Another participant noted scheduling decisions, stating, “If race directors put the women’s P12 race really early in the day when no spectators are there and the men’s P12 race in prime time, I am less likely to race.”

Lack of Presence or Support was the second most prominent theme that emerged and was identified by 28% of the sample. This theme included feelings of isolation and acts of exclusion, a general lack of value or consideration for WGD athletes, singling out diverse athletes because of different identities, and dismissing concerns. The theme also included a lack of participation, small team sizes, not enough races for specific levels, and lack of response or inadequate responses to complaints regarding sexism or inequity. One participant noted a decrease in participation caused by people “dismissing women when they have complaints or raise issues.” Another participant stated, “The only reason I’d stop racing is because the fields are so small that it’s not much fun (less than 10 people and there are no tactics, just attrition). I’ll likely always cycle competitively, even if it’s on a ‘recreational’ ride.”

Harassment and Unsafe Environments, the third most prominent theme, was described by 26% of the sample. This theme included feelings of being threatened, verbal threats, and being physically and sexually harassed or assaulted. This theme also included hearing negative comments or being mistreated, being patronized or ignored, being called “girls,” being stared or pointed at, and being publicly shamed in person or via social media. One participant described the following experience at a cyclocross race: “I had a frustrating incident last year at a big local race that occurs on Halloween each year. This race is known for being rowdy, people dress up in costumes, it’s really fun. There was one spectator who was slapping people on the butt with a big plastic hand during the women’s 5 [beginner] race, on a steep downhill. He slapped me so hard I almost fell off my bike.”

The fourth theme, Unequal Prize Pools, was reported by 18% of the sample. This theme included having unequal payouts and prize pools, having no prizes, or a reduction in prizes for small field sizes. One participant noted, “The fact that women’s races payouts are still lower than men’s or nonexistent sort of confirms those thoughts that my training wasn’t as hard.”

The fifth theme, identified by 14% of participants, was named Reinforcement of Stereotypes Through Subtle Actions. This theme included assumptions about skill level, speed, or strength based on one’s gender or size; judgments and comments made about one’s body; and unsolicited advice or “mansplaining.” One participant stated,

As a group, it is often ‘funny’ for people to say ‘oh you ride like a girl’ or other comments that imply my training is not as hard or I haven’t worked as hard and/or can’t deliver the same results or effort is frustrating. The feeling of constantly having to prove myself to get any sort of respect or credibility and make it so I’m not automatically discredited when I arrive at an event or to a ride is a lot. It makes it a lot less fun to show up to races.

The two final themes identified were No Actions That Decreased Participation (10%) and Limited Accessibility (8%). The theme regarding no decrease in participation included responses in which WGD cyclists said there had been no actions that decreased their participation. Others noted they use “negative” actions and behaviors to fuel their motivation and to keep showing up, so these actions do not decrease their participation. The final theme, Limited Accessibility, included limited options for racing in one’s geographical area, having few options to race, or the cost of races or gear being prohibitive.

Experiences That Increased Participation

Of the athletes, 196 described experiences that increased their participation in cycling. Eight themes were identified: Encouragement and Support ($n = 72$, 36.73%), Field Decisions ($n = 65$, 33.16%), Equal Prize Money and Race Quality ($n = 50$, 25.51%), Inclusive Atmosphere ($n = 45$, 22.96%), Events for WGD Cyclists ($n = 40$, 20.41%), Avenues of Accessibility ($n = 19$, 9.69%), Representation ($n = 17$, 8.67%), and No Tolerance for Wrongdoing ($n = 11$, 5.61%).

The most common theme, identified by over one third of the sample, was Encouragement and Support. This theme consisted of experiences in which WGD athletes felt supported, recognized, and acknowledged. One participant stated, "Spectators . . . may come to watch a male compete, but many often yell encouragement to the women in the race, or the juniors. It's nice to receive general enthusiasm directed your way." Another participant said,

I have had welcomed-hugs, high fives, encouragements, teams that pay for WTF [Women/Trans/Femme] race fees for a day (got me out to my first CX race). Knowing I had a big group of WTF support to cheer us on has made a big difference. The community just being there to support and cheer does a lot to keep me coming back to competitive cycling.

The second most common theme pertained to Field Decisions, which one third of the sample identified. This theme reflected specific decisions made by race promoters: having separate races for women (rather than combining women with juniors or men's fields), having equal duration of races and race distances, and having the same number of race options as men. One participant noted, "Some promoters are offering more women's categories and not complaining if they don't immediately fill up ('if you build it, they will come')."

Equal Prize Money and Race Quality was identified as the third most common theme. This theme represented the desire to have equal prize money, as well as other factors that may affect the quality of the race experience (e.g., billing, timing, options for race T-shirts that fit appropriately). One participant stated,

We have a race that specifically provides cash prizes to women racers only, and it's always a big draw. A commitment to equal payouts is nice, or to even providing extra prizes for women just to hook them is great.

The fourth theme was titled Inclusive Atmosphere and reflected environments that support diversity. Diversity in this context included gender diverse racers (e.g., nonbinary and transgender athletes), parents, children, families, beginner cyclists, and older individuals. One participant noted a desire for "more inclusive language when describing events, explicitly indicating that gender diverse athletes are welcome."

Events for WGD Cyclists was identified as the fifth theme, which included WGD-only events or clinics, introductory events, and fast-paced rides for more advanced individuals. This theme reflected the larger culture of cycling and the importance of creating an inclusive environment for all. One participant expressed the desire for "more women/gender diverse-specific events that encourage women to partake in the sport."

Additional themes included Avenues of Accessibility, Representation, and No Tolerance for Wrongdoing. Avenues of Accessibility included transportation, clothing, scholarships, sponsorships, and discounted race fees to support engagement in sport. Representation pertained to women being visible leaders within the field of racing. The final theme, No Tolerance for Wrongdoing, was described as speaking up and addressing any issue related to gendered heckling, sexual harassment, and the use of patronizing language.

Experiences of Feeling Valued

Of the participants, 202 described experiences of feeling valued. Six main themes were identified: Inclusion and Support ($n = 94, 46.77\%$), Representation and Community Leadership ($n = 46, 22.89\%$), Recognition ($n = 44, 21.89\%$), Respect ($n = 22, 10.95\%$), Equality ($n = 21, 10.45\%$), and Have Not Felt Valued ($n = 6, 2.99\%$). The most commonly reported theme was Inclusion and Support, which consisted of feeling valued as a team member, being included in conversations, and being encouraged by others. One participant reported feeling valued “when male teammates ask if I want to ride with them. This tells me they see me as an equal-ability rider as them and they enjoy my company and prefer it to a solo ride.”

The second most common theme was Representation and Community Leadership. This theme included situations in which community members supported and mentored other WGD athletes, led clinics, and hosted WGD events. The theme also included instances when community members asked WGD athletes for advice. WGD participants also noted that opportunities to volunteer in the community led to feeling valued. One participant shared that “participating in WTF (Women, Trans, Femme) rides” and “helping to lead WTF mechanic workshops” helped them feel valued. Another participant said,

The year after I came out as transgender, the director of the National Interscholastic Cycling Association [NICA] . . . called me to discuss/learn about issues related to gender diverse athletes. A number of points I emphasized, especially with regard to privacy, are now reflected in the contents and some of the wording of both the NICA and USAC transgender athlete policies.

Recognition was identified as the third theme. Recognition consisted of being acknowledged for one’s hard work and being congratulated for speed, ability, and effort. An example of a participant’s statement includes “In races with race announcers, it feels super legit to hear your name over the speakers when you’re at the front of the pack.” Another participant said,

Recently joined a local bike shop’s women’s cycling team. They are very eager to get more women into the sport and have taken the time to teach even the very basic skills needed to safely ride as a team. I recently competed in my first criterium and the men’s team made an effort to congratulate me afterwards and talk about upcoming races.

The fourth most commonly reported theme was Respect, which participants described in several ways. For example, athletes and community members using proper pronouns (e.g., she/her, they/them) and riders being open to feedback, requests, and advice from other riders were indicators of respect. Race directors and announcers taking the time to get to know the racers also led WGD individuals to feel respected. One participant reported feeling respected

when a local announcer introduced himself to me and made an effort to get to know me after he saw me turning up at a lot of local races. He cared to learn things about me to add to his race announcing.

Equality was identified as the fifth theme and endorsed having equal prize pockets for men’s and women’s fields, multiple categories for women’s races, and equal race structure. One participant stated she felt valued “when a local composite team put on a women-only road race and had full and separated categories for each age and category group under USAC guidelines.” Another participant said she felt valued

when women’s cycling is portrayed and valued as of equal quality and entertainment as men’s—through coverage and discussion of professional events, or support for local women’s racing—not just limited to offering equal prize money, but by not treating a women’s race as a ‘support’ event to a subsequent men’s race.

Finally, although participants were asked for specific experiences when they felt valued in competitive cycling, a small number of participants stated they have not felt valued in the community. One participant stated, "I've never felt valued in the cycling community. Ever. Even when I was on a team—I think they just like me because I was there paying them, and wearing their sponsor's logos."

Discussion

The purpose of this investigation was to explore experiences that affect the participation of WGD athletes in competitive cycling. When WGD athletes were asked to reflect on the year they were most engaged in cycling, the highest rated negotiations included personal factors, such as proactive planning, skills improvement, and training close to home with others who have similar riding goals. The negotiations that were least associated with engagement in racing pertained to family responsibilities, the age of cycling peers, building confidence at small-scale events, finances, and employer flexibility. Although participants in this study endorsed some intrapersonal constraints (e.g., not enough time to train), many constraints to participation were structural; such constraints were specific to race structure or decisions made by race directors (e.g., racing with juniors or in mixed fields).

Based on these findings, it seems WGD cyclists are using their agency to address intrapersonal and interpersonal constraints to participation. However, they may be held back by structural factors. To improve participation in women's fields, stakeholders in the community (rather than those who are racing) need to address structural restrictions. Race promoters can do the following to prioritize women's fields: provide multiple options for WGD athletes to race, ensure the women's fields are not combined with men's fields or juniors fields, schedule women's fields closer to "prime time," and equalize prize pools.

The qualitative findings revealed continued instances of inequity, perceived lack of support, harassment, and microaggressions. The findings also highlight how encouragement and support, equity, inclusion, and events specifically designed for WGD athletes can increase participation levels in cycling. Nearly half of the participants noted that acts of inclusion and support helped them feel valued in the sport, as did representation in their community, recognition for accomplishments, respect, and equality.

These findings also suggest that the willingness to prioritize individual engagement in cycling (e.g., prioritizing time for training) leads to continued racing, as does an encouraging and supportive atmosphere. The overarching culture of the sport, however, may hinder continued involvement via unsupportive environments with inequitable field decisions and unequal prize pools. Although research is limited regarding the participation of WGD athletes in competitive cycling, the findings coincide with prior research on constraints to participation for women in other outdoor recreation activities. Warren et al. (2019) referred to "the hidden curriculum" of adventure education, which often centralizes White men and reinforces gendered stereotypes surrounding recreation and sport. Aspects of this hidden curriculum also seem to be found in cycling communities, such as gendered stereotypes, sexist language, a lack of representation, and gender insensitivities.

Limitations

There were limitations to this investigation. The list of constraints and negotiations was based on outdoor recreation studies and has not yet been used with WGD athletes in competitive cycling. Internal reliability was high; however, some constraints may not be relevant to this sample and community. Additionally, the validity of the open-ended questions is limited because questions were not piloted prior to data collection. Open-ended responses can also differ based on mood, feelings about recent events, accuracy of memory, and other factors. Although the

sample was international, most participants were from the United States due to the sampling method. Within the U.S. sample, some states had limited representation or were not represented at all. Furthermore, most participants identified as White and cisgender. Other important aspects of cultural identity may not be adequately captured in these findings, as discussed in the Future Research section.

Finally, by including all participants who do not identify as cisgender men in this investigation, the research team worked under the assumption that cisgender women and those with other diverse gender identities have similar experiences. That is likely not the case, due to the differences in the marginalized status of transgender, nonbinary, and agender participants. Some agender people may also feel the term *gender diverse* is not inclusive because of the use of the word *gender*. Due to intersectionality and the constraints experienced by those with underrepresented cultural identities, there are likely important nuanced differences in factors that affect participation between cisgender women and those with other identities.

Future Research

Additional research is needed to understand the experiences of cyclists with diverse cultural identities, including but not limited to racial and ethnic diversity, religion, age, and sexual orientation. Other scholars have noted the importance of understanding the interplay between intersecting cultural identities and cycling (e.g., Lubitow, 2017). Recreation constraints grow exponentially for individuals with multiple minority cultural identities (Jackson, 2005; Shores et al., 2007). Such constraints were apparent in this investigation; some women over the age of 50 noted the absence of master's fields, which are typically available for men. Others reflected on difficulties associated with disability, class, and weight. Due to the predominantly White, cisgender, and able-bodied sample, these unique experiences did not emerge as themes in the data. Future research could identify the additional constraints faced by people with multiple underrepresented identities in sport and outdoor recreation, including but not limited to athletes of color, athletes with disabilities, members of LGBTQAI+ communities, people with different body sizes, and noncisgender athletes.

Implications and Conclusion

The quantitative and qualitative findings reflect similar content pertaining to the overall culture of cycling and illustrate how the actions and decisions of others ultimately influence the participation of WGD cyclists. Findings ultimately point to a greater need for a culture shift—one others in outdoor education, recreation, and sport have called for (Gray, 2016). Over the past 25 years, several international bodies have formed to address sport and recreation as a human right (United Nations, 2007). In 2002, the International Working Group on Women and Sport published a comprehensive tool kit (i.e., the Montreal Tool Kit) with resources designed to increase accessibility at local and community levels. Two years later, the General Assembly of the United Nations urged governments and agencies to use sport as a vehicle for solidarity, peace, and social equality (United Nations, 2007). The General Assembly addressed the importance of “sport for all” and supported several initiatives to promote accessibility and inclusivity in sport.

Despite the development of guidelines that promote equity in sport and recreation (e.g., McDowell, Deterding, Elmore, Morford, & Morris, 2016; United Nations, 2007), WGD cyclists face continued structural constraints. Participants in this investigation provided several suggestions that complement the strategies proffered by the Montreal Tool Kit (International Working Group on Women and Sport, 2002). Race promoters can help increase the engagement of WGD athletes in competitive cycling by investing in the women's fields by providing equitable opportunities to race, implementing specific strategies that foster supportive environments, explicitly addressing harassment when it occurs, and providing equal prize pools. Similar to Lubitow's

(2017) findings, themes from this study highlight the importance of creating group rides for WGD athletes and bystander intervention training in response to cycling-related harassment.

One must also recognize that the aforementioned efforts will not remove societal stereotypes or assumptions about WGD athletes. Without a substantial culture shift altogether, WGD athletes may continue to experience unsupportive environments, microaggressions, and harassment. In addition to addressing structural constraints to participation, stakeholders and policymakers must advocate for inclusivity to bring more WGD athletes into the sport. Without the efforts of such stakeholders, WGD leaders in competitive cycling may remain compliant and passively accept the biases inherent in the culture due to feminist fatigue or difficulty gaining traction (Gray, 2016). As stakeholders actively take steps to foster inclusivity and equality, the athletes may have more time and energy to actively support one another while training and racing. A two-pronged approach to equality and inclusion is most likely to foster growth in numbers.

References

- Australian Human Rights Commission. (2006). *What's the score? A survey of cultural diversity and racism in Australian sport*. Retrieved from https://www.humanrights.gov.au/sites/default/files/content/racial_discrimination/whats_the_score/pdf/cycling.pdf
- Beecham, R., & Wood, J. (2014). Exploring gendered cycling behaviours within a large-scale behavioural data-set. *Transportation Planning and Technology*, 37(1), 83–97. <https://doi.org/10.1080/03081060.2013.844903>
- British Cycling. (n.d.). British Cycling 2017: A year in review. Retrieved from December 2, 2019, from <http://www.ourstory.britishcycling.org.uk/>
- Ceurvorst, R. L., Fuller, R., Childers, D., Dubois, M., & Steiger, S. (2018). University outdoor recreation program participation: Comparing benefits, constraints, and willingness to pay between males and females. *Journal of Outdoor Recreation, Education, and Leadership*, 10(3), 263–266. <https://doi.org/10.18666/jorel-2018-v10-i3-9047>
- Chalabaev, A., Sarrazin, P., Fontayne, P., Boiché, J., & Clément-Guillotin, C. (2013). The influence of sex stereotypes and gender roles on participation and performance in sport and exercise: Review and future directions. *Psychology of Sport & Exercise*, 14(2), 136–144. <https://doi.org/10.1016/j.psychsport.2012.10.005>
- Chen, V. (2018). Ethical issues concerning transgender athletes. *Penn Bioethics Journal*, 14(1), 15–18.
- Cooky, C., & LaVoi, N. (2010). Playing but losing: Women's sports after Title IX. *Contexts*, 11(1), 42–46. <https://doi.org/10.1177/1536504212436495>
- Crawford, D. W., Jackson, E. L., & Godbey, G. (1991). A hierarchical model of leisure constraints. *Leisure Sciences*, 13(4), 309–320. <https://doi.org/10.1080/01490409109513147>
- Emond, C. R., & Tang, W., & Handy, S. L. (2009). Explaining gender differences in bicycling behavior. *Committee on Women's Issues in Transportation*, 2125(1), 16–25. <https://doi.org/10.3141/2125-03>
- Garrard, J., Handy, S., & Dill, J. (2012). Women and cycling. In J. Pucher & R. Buehler (Eds.), *City cycling* (pp. 211–234). Cambridge, MA: MIT Press.
- Garrard, J., Rose, G., & Lo, S. K. (2008). Promoting transportation cycling for women: The role of bicycle infrastructure. *Preventive Medicine*, 46(1), 55–59. <https://doi.org/10.1016/j.ypmed.2007.07.010>
- Gloor, R. U., Knechtle, B., Knechtle, P., Rust, C. A., Haupt, S., Rosemann, T., & Lepers, R. (2013). Sex-related trends in participation and performance in the 'Swiss Bike Masters' from 1994–2012. *Perceptual and Motor Skills*, 116(2), 640–654. <https://doi.org/10.2466/30.pms.116.2.640-654>

- Gray, T. (2016). The “F” word: Feminism in outdoor education. *Journal of Outdoor and Environmental Education*, 19(2), 25–41. <https://doi.org/10.1007/bf03400992>
- Guthrie, S. R., & Castelnovo, S. (2001). Disability management among women with physical impairments: The contribution of physical activity. *Sociology of Sport Journal*, 18(1), 5–20. <https://doi.org/10.1123/ssj.18.1.5>
- Hall, R. L. (2001). Shaking the foundation: Women of color in sport. *The Sport Psychologist*, 15(4), 386–400. <https://doi.org/10.1123/tsp.15.4.386>
- Heesch, K. C., Sahlqvist, S., & Garrard, J. (2012). Gender differences in recreational and transport cycling: A cross-sectional mixed-methods comparison of cycling patterns, motivators, and constraints. *International Journal of Behavioral Nutrition and Physical Activity*, 9, 1–12. <https://doi.org/10.1186/1479-5868-9-106>
- International Paralympic Committee. (2001). *Women and sport progress report*. Bonn, Germany: Author.
- International Working Group on Women and Sport. (2002). *The Montreal Tool Kit: A legacy of 2002 World Conference*. Canada: Author.
- Jackson, E. L. (2005). Leisure constraints research: Overview of a developing theme in leisure studies. In E. L. Jackson (Ed.), *Constraints to leisure* (pp. 3–19). State College, PA: Venture.
- Jackson, E. L., Crawford, D. W., & Godbey, G. (1993). Negotiation of leisure constraints. *Leisure Sciences*, 15(1), 1–11. <https://doi.org/10.1080/01490409309513182>
- Jackson, E. L., & Henderson, K. A. (1995). Gender-based analysis of leisure constraints. *Leisure Sciences*, 17(1), 31–51. <https://doi.org/10.1080/01490409509513241>
- Krizek, K. J., Johnson, P. J., & Tilahun, N. (2006). Gender differences in bicycling behavior and facility preferences. In *Research on women's issues in transportation: Report of a conference. Volume 2: Technical papers* (pp. 31–40). Washington, DC: Transportation Research Board.
- Larson, D. (2013). *2013 membership survey and analysis: Prepared for USA Cycling, Inc.* Retrieved from <https://s3.amazonaws.com/USACWeb/forms/encyc/2013-USAC-Membership-Survey-Report.pdf>
- Lubitow, A. (2017). *Barriers to biking for women and minorities* (Project Brief NITC-SS-994). Portland, OR: Transportation Research and Education Center.
- McDowell, J., Deterding, R., Elmore, T., Morford, E., & Morris, E. (2016). Title IX and campus recreation: Guidelines to increase gender equity in club and intramural sport programs. *Recreational Sports Journal*, 40(2), 133–151. <https://doi.org/10.1123/rsj.2016-0012>
- Mueller, J. T., Landon, A. C., & Graefe, A. R. (2019). Modeling the role of social identity in constraint negotiation for ultra-endurance gravel cycling. *Journal of Leisure Research*, 50(2), 81–106. <https://doi.org/10.1080/00222216.2018.1561167>
- Newhouse, G. (2015). Outdoor recreation for “every body”? An examination of constraints to outdoor recreation for individuals who are significantly overweight. *Journal of Outdoor Recreation, Education, and Leadership*, 7(2), 176–179. <https://doi.org/10.18666/jorel-2015-v7-i2-7014>
- Rowe, K., Shilbury, D., Ferkins, L., & Hinckson, E. (2015). Challenges for sport development: Women's entry level cycling participation. *Sport Management Review*, 19(4), 417–430. <https://doi.org/10.1016/j.smr.2015.11.001>
- Shaw, S. M. (1994). Gender, leisure, and constraint: Towards a framework for the analysis of women's leisure. *Journal of Applied Recreation Research*, 16(1), 349–367. <https://doi.org/10.1080/00222216.1994.11969941>
- Shores, K. A., Scott, D., & Floyd, M. F. (2007). Constraints to outdoor recreation: A multiple hierarchy stratification perspective. *Leisure Sciences*, 29(3), 227–246. <https://doi.org/10.1080/01490400701257948>

- United Nations. (2007). *Women 2000 and beyond: Women, gender equality, and sport*. Retrieved from <https://www.unwomen.org/-/media/headquarters/media/publications/un/en/womenandsport.pdf?la=en&vs=958>
- Walker, G. J., & Virden, R. J. (2005). Constraints on outdoor recreation. In E. L. Jackson (Ed.), *Constraints to leisure* (pp. 201–219). State College, PA: Venture.
- Walseth, K., & Fasting, K. (2003). Islam's view on physical activity and sport: Egyptian women interpreting Islam. *International Review for the Sociology of Sport*, 38(1), 45–60. <https://doi.org/10.1177/10126902030381003>
- Warren, K., Mitten, D., D'Amore, C., & Lotz, E. (2019). The gendered hidden curriculum of adventure education. *Journal of Experiential Education*, 42(2), 140–154. <https://doi.org/10.1177/1053825918813398>