Journal of Community & Applied Social Psychology

WILEY

RESEARCH ARTICLE OPEN ACCESS

Bucking Mid-Life Inactivity: How Social Identity Processes Facilitate Zwift Participation for Mid-Life Adults

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Received: 29 July 2024 | **Revised:** 12 November 2024 | **Accepted:** 13 November 2024

Funding: The authors received no specific funding for this work.

Keywords: mid-life | online exercise | SIMIC | social identity | social identity facilitators

ABSTRACT

While physical activity generally declines in middle-aged adults, group exercise participation among 40-64-year-old is increasing. This rise may be due to the accessibility of online group exercise formats and their ability to reflect members' identities. This research explores how social identification processes facilitate participation in Zwift, an online group exercise platform. Seventeen Zwift participants aged 40–64 were recruited for three data collection stages: (1) an initial semi-structured interview on exercise history and Zwift usage; (2) a two-week post-exercise diary capturing social identification experiences; and (3) a follow-up interview to discuss topics from the first two stages. Data were analysed using abductive thematic analysis. Zwift supports three levels of social identity abstraction: (1) Identity Continuity, maintaining a cyclist identity through online cycling; (2) A Compatible New Identity as a Zwifter, formed through group interaction and social support; and (3) New Group Membership, developed through in-team belonging, recognition, and social status. Mid-life is a period of transition and identity change. Findings in this study suggest four ways that online platforms could facilitate social identification within online exercise platforms, namely (a) empower selection via perceived life-stage similarity and age, (b) enable 'digital proximity' via text chat and participant on-screen avatars, (c) enable the common fate of shared real-time exercise experiences, and (d) facilitate interaction and belonging via a pre and post-exercise 'digital clubhouse' via a social media page.

1 | Introduction

Despite the known physical and psychological benefits of being physically active, one in four adults globally are still insufficiently active (Bull et al. 2020), and this figure becomes more concerning when broken down by age groups (Chaput et al. 2020). The percentage of physically inactive people increases from 35 years old onwards in men (Ekkekakis, Parfitt, and Petruzzello 2011) and women (NHS 2017). To put this increase of inactivity in context, mid-life represents a period of personal and life-stage-related changes and challenges, ranging from developmental changes in mental and physical health and family composition to the experience of financial vulnerabilities and increasing life-stage responsibilities (Infurna, Gerstorf, and Lachman 2020). Together, these demands make it challenging for individuals to find the time to be physically active despite the increasing physical health-based needs and potential desire to do so. Alongside this, people in mid-life begin to experience more health-based issues (e.g., injuries take longer to heal) that can also create a barrier or challenge to being physically active (Aldwin and Levenson 2001). This can hold grave consequences for those in mid-life because

Data was collected when the 1st author was based at the University of Chichester.

being physically inactive is linked with physical (e.g., increased prevalence of chronic diseases) and psychological (e.g., mental health conditions) issues (Cunningham et al. 2020). One of the primary ways for individuals to be more active is through structured and planned exercise. Consequently, understanding how to encourage mid-life adults to exercise is important for individuals (e.g., longevity and quality of life), society (e.g., reducing the burden on health services), and the economy (e.g., keeping people in work).

Mid-life is regarded as a pivotal period in the life course, as those in mid-life bridge their own transition from young to old whilst often being central to the lives of younger and older people at home, at work and in society (Lachman, Teshale, and Agrigoroaei 2015). Although regarded as the life course intersection between growth and decline, mid-life is still underrepresented in life-stage research (Lachman 2015). The research that does exist, however, is compelling; for instance, a 20-year tracking study has shown that being physically active in mid-life increases the odds of being active in old age, and impacts cognitive function and physical mobility in older age (Aggio et al. 2017; Chang et al. 2010; Patel et al. 2006). The case of promoting exercise to those in mid-life extends beyond those already active, showing that it is not too late to make a positive impact. Research has shown that being inactive but then increasing physical activity during midlife was associated with a 32% to 35% lower risk of mortality (Saint-Maurice et al. 2019).

When considering how to encourage mid-life adults to exercise, it is important to consider potential barriers to exercise. Research shows that perceived benefits and barriers to PA change over the life course (Shin, Lee, and Belyea 2018). In mid-life these exercise barriers range from practical barriers (e.g., high cost, access to facilities, and a lack of time), to safety concerns (e.g., fear of injury) and psychological barriers (e.g., motivation, lack of role models, and social support; Spiteri et al. 2019). Recent research suggests that interventions for mid-life should centre around a person's goals, social influences, and environmental contexts (Pang et al. 2024). In line with this suggestion, evidence indicates that mid-life adults (45–64 years old) are increasingly looking to group exercise to meet their physical activity, enjoyment, and social needs. Consumer survey GWI (2021) shows that participation in group exercise of mid-life adults grew between 2018 to 2021 in the UK (increasing by 12%) and the rest of the world (increasing by 13%). One reason group-based exercise might be increasing is that people can now exercise at home online. The Covid-19-related lockdowns saw exercisers join online exercise platforms such as Peloton (McGee 2020). Therefore, understanding why online group-based exercise is appealing to those in mid-life as they experience age-related personal changes and life-stage challenges is an important avenue of research.

There is some evidence that there may be an increased preference in older adults for exercising at home, especially if age and gender-specific formats are offered (van Uffelen, Khan, and Burton 2017). However, research on online exercise contexts is limited. A content analysis of journals, articles, books and newspapers undertaken Supriyanto and Liu (2021) suggests that participation in online platforms such as Peloton and Zwift can facilitate behaviour change, improve well-being, and sustain physical activity. Extending this line of inquiry, Davies et al. (2024) explored how Peloton's fostering of a sense of community impacted user engagement. Davies et al. recruited 663 Peloton users from Peloton's social media pages and reported that a strong sense of community on the platform was associated with increased motivation to exercise, greater consistency in physical activity, and engagement with the community. Peloton users with a strong sense of community were more engaged on brand-related social media and used their Peloton more frequently. This suggests that social processes are important in facilitating and maintaining participation in online exercise groups.

One approach that offers a relevant theoretical framework to explore mid-life as a moment of life transition and related social processes is the social identity approach (Stevens et al. 2017). The social identity approach comprises two theories, social identity theory (Tajfel et al. 1979) and self-categorisation theory (Turner et al. 1987). A key tenet of social identity theory is that individuals can define themselves in both their personal identity (i.e., 'I'; and 'me') *and* their social identities (i.e., 'us exercisers'). In self-categorisation theory, it is predicted that when individuals identify with a group they adopt the behaviours, language, and values of that ingroup. In other words, identifying themselves collectively as 'we' or 'us' rather than 'I' leads to collective behaviours and adoption of norms (Tajfel et al. 1979). Social identity-informed studies suggest that group memberships (e.g., via the Social Identity Model of Identity Change—SIMIC) and group identification (via Social Identification) positively contribute to life-stage transitions and exercise adherence (Haslam et al. 2019; Rowe and Slater 2021).

1.1 | The Social Identity Approach to Life Stage Transitions

The Social Identity Model of Identity Change (SIMIC) focuses on how group memberships affect individuals' responses to significant life changes (such as transitions) and their subsequent impacts on health and well-being (Haslam et al. 2021). The SIMIC model has been used to understand broader social changes, suggesting that maintaining or gaining group memberships can reduce the negative effects of life changes, supporting resilience and well-being during transitions. A study looking into the relationship between social connectedness, stress, and wellbeing, showed that the loss of a social identity predicted the reduction of wellbeing following a stressful life event (Praharso, Tear, and Cruwys 2017). A separate SIMIC study exploring how people adjust to retirement found that having access to multiple crucial group memberships (and the associated psychological resources) while maintaining current groups and forming new, compatible ones resulted in a more positive life stage transition (Haslam et al. 2019). Therefore, understanding the role group memberships play for those experiencing the life challenges and changes in mid-life is a relevant research consideration.

1.2 | The Social Identity Approach to Physical Activity

In exercise contexts, a growing body of evidence within the social identity paradigm suggests that people join, participate, and stay involved in exercise groups that reflect who they are

(Stevens et al. 2017, 2018). Researchers have found that when participants strongly identify with their exercise groups, they put in more effort (Stevens, Rees, Steffens, Polman et al. 2019), attend more regularly (Stevens et al. 2022), and are more likely to attend future sessions (Rowe and Slater 2021). To date, social identity research has predominantly focussed on in-person exercise groups. however, some recent studies have explored social identity effects within online exercise. In a randomised controlled trial, Beauchamp et al. (2021) found that individuals participating in a group-based online exercise program aimed at building shared social identity experienced improved mental and physical health from pre- to post-test. In addition, research has also identified potential mechanisms to explain how groups influence our physical activity. For instance, Stevens et al. (2022) explored how in-group norm formation (i.e., the shared expectations and rules that guide behaviour within social groups) through instructors' messages, can be used to improve participants' exercise output and exertion. This study found that participants' exercise levels and effort were higher when they closely identified with the reference group, which was supported by increased task motivation.

A study into online group settings shows that social interaction and knowledge sharing foster social identification, membership (Cheng and Guo 2015), trust, and empathy among participants (Zhao et al. 2013). Evidence also suggests that participant categorisation in online forums enhances identification with the group, building morale around the shared group task (Michinov, Michinov, and Toczek-Capelle 2004). Thus, online groups can provide opportunities for social identity development, but research is yet to explore this in online exercise contexts.

While these new virtual exercise groups offer the convenience of access, they raise questions related to potential social identification and whether participants feel part of a group and, if so, what role this plays as they experience the changes and challenges of mid-life. The 'entitativity effect,' coined two decades before social identity theory, describes the sense of group belonging through perceived similarity, proximity to others, and shared fate (Campbell 1958). The shared fate of the mid-life transition of changes, responsibilities and challenges may pose a barrier to in-person exercise group attendance therefore exploring mid-life participants' experiences of online exercise through a social identity lens, would help us better understand if and how participants identify with a group or activity that they have no physical proximity to.

1.3 | The Present Study

Zwift is an online exercise software application that enables an individual to cycle, as a personalised digital avatar, with others in real-time. To do this a participant can connect their bicycle to the platform using a turbo trainer that converts their cycling effort into a metric based on the participant's body weight and exercise power output (i.e., watts per kilo). This metric is used to classify the rider into output categories so riders can ride with others of the same ability. In other words, Zwift categorises individuals (e.g., based on their watts per kilo), and this is how participants 'qualify' to enter races and join teams. At the same time, community events are organised based on distance and output categories, while the platform also allows riders to communicate in two ways: (1) Using a text chat function while riding via a keyboard placed over their bicycle handlebars or via the Zwift companion app on a mobile phone; (2) giving a visual thumbs-up emoji while riding called a ride-on; (3) By joining Zwift dedicated social media pages. Accordingly, we sought to explore Zwift participation through a social identity lens in mid-life adults. Specifically, this study had two aims:

1. To explore the experience of social identification in Zwift in mid-life.
2. To understand the facilitators of social identification in Zwift in mid-life.

2 | Method

2.1 | Participants

Purposeful sampling was used to recruit middle-aged adults currently participating and socially identifying with Zwift (n.b. This paper is part of a larger project exploring social identity processes in three online exercise contexts. Hence the term 'exerciser' was used for consistency across all contexts for recruitment purposes only). Participants were recruited via social media posts placed on online Zwift forums. In order to participate individuals needed to: (1) be between 40 and 64 years old; (2) currently participating in Zwift sessions; and (3) agree to the following statement that was adapted from existing exercise identity literature (Anderson and Cychosz 1994) and group identification scales (Cruwys et al. 2020):

> I consider myself an exerciser and use it when I describe myself to others. For me, being an exerciser means more than just exercising as I need to exercise to feel good about myself and feel a togetherness with other exercisers.

Following ethical approval from the first author's institution, 17 participants were recruited (13 male and 4 female, *M*age = 49.94 years, *SD* = 5.05).

2.2 | Procedure

This research is underpinned by ontological relativism (i.e., that there are multiple realities) and epistemological constructivism (i.e., that knowledge is subjective and constructed between people). The study used multiple methods of data collection (diaries and interviews) to understand participants' experiences of Zwift participation.

Interview One: Participants were invited to take part in an online semi-structured interview. The purpose of this interview was to explore participants' exercise history and story prior to participation on Zwift (e.g., what exercise did you engage in before Zwift, have you ever exercised with others, what made you look for a product like Zwift?). Questions also explored participant experiences of the online context (e.g., What led you to get involved in online exercise?), community-directed and gamified elements of

their participation (e.g., How do you interact with others during a session?). The length of the first interview ranged from 29 to 64 min ($M = 46$ min, $SD = 10.11$).

Two-week exercise diary: Following the first interview, participants were asked to complete a post-Zwift session diary for 2 weeks. This two-week time frame was used to avoid participant interest burnout whilst also ensuring a range of Zwift sessions were captured within the diary timeframe. Diaries were chosen for the proximal method of data collection as participation in Zwift occurs at home, thus data could be collected in the context of the participation environment. This enabled data to be collected on the 'event' nature of each ride exploring group identification as it happened.

The diary included questions to complete after each session. These questions aimed to explore experiences related to that Zwift session (e.g., What for you, were your key moments and why?) and their identification with the activity/group (e.g., Taking part in today's exercise session reflects who I am because...). To increase the rates of diary completion and address previously raised challenges of using diaries (Day 2016) participants were given the choice to record their diaries in video or computer-typed formats. Participants returned the diary to the first author either after each complete diary entry or after all entries for the complete two-week period. The diaries ranged from 5 entries to 22 ($M = 9.5$ entries) and from a total of 585 to 3663 words in length ($M = 1587$ words) creating 142 entries with 15 participants (88%) completing this stage. Two participants who completed the first interview were sent the research diary briefing email but did not respond to four follow-up emails and were therefore not included in this stage of analysis.

Interview Two: The purpose of the second interview was to further explore the themes shared in the first interview and diaries. Prior to each interview, the researcher reviewed each participant's initial interview and diary entries, to create a participant-specific set of questions to further explore what facilitates their identification, whether it changes over time and participation and to explore any ambiguities from the diary entries. Each interview started with a review of their diary experience (e.g., *How did you find the diary process? Did it reveal anything to you? If someone was to have read those diaries what kind of story do you feel it tells?*). Then moving onto exploring their participation over time (e.g., *What contributes to your identification with Zwift? How has that changed evolved over time?*) finishing with a future-facing question (e.g., *5 years from now, what do you think your participation in Zwift looks like for you?*). The second interview ranged from 33 to 61 min ($M = 49$ min, $SD = 11.36$) in length, with 14 participants (83%) completing this stage. In addition to the two participants that dropped out after the first interview, one more participant dropped out having completed and sent their diary to the researcher. Four follow-up emails were sent but not responded to.

2.3 | Data Analysis

In total, 14 participants completed all three stages of data collection, 15 completed the first two stages, and 17 completed the first interview. For this study all data was analysed. This data comprised 23 h and 47 min of audio data were merged with the diary data creating 611 pages of font 12 single-lined spaced transcribed data. Abductive thematic analysis was undertaken following eight constantly interacting steps (not a sequence) as set out by Thompson (2022). This analytical approach was chosen as the interaction between the social identification literature and the data was central to the aims of this study. Core to abductive thematic analysis is to be fully transparent with the analytical steps taken which we will now highlight (Thompson 2022).

First, the data were transcribed and familiarisation began. This occurred both as data were collected (to provide questions for interview two) and at the end of data collection. This approach enabled the researcher to build both bottom-up and top-down awareness of the data and the experiences being shared. Second, handwritten notes were extracted, then refined and expanded using qualitative coding software (https://delvetool.com). Continuous adjustments were made to these codes, culminating in the creation of an online, secure code repository for collaborative data oversight. Third, a codebook was created, assigning labels and potential meanings to each code, which facilitated reflection on the data. As per Thompson (2022), the use of a codebook in the context of abductive thematic analysis enabled a bridge between codes, themes and theorising later in the process. Fourth, themes were developed by nesting and merging codes together by examining the relationships between codes in an iterative and evolving process of finding, grouping, and refining themes and subthemes. Fifth, we looked to theoretically explore the relationship between the themes (Thompson 2022). This step involved highlighting where existing social identity/self-categorisation theory may explain findings while identifying challenges, gaps or additions to theory. Sixth, data were compared to explore the themes considering contextual differences shared in data collection (e.g., exploring the theme differences in those who join Zwift teams from those who did not). Seventh, the relationship of the codes, to the themes and their theoretical contribution was then displayed in a results draft to aid comprehension and discussion as part of the critical friends' process (Sparkes and Smith 2014). The final stage of the analysis was writing up the themes.

2.4 | Methodological Rigour

Multiple methods were used to enhance rigour. A critical friend process facilitated reflective dialogue and constructive feedback, which in turn prompted the re-evaluation and subsequent modification of the initial themes (Smith and McGannon 2018). Specifically, further data analysis enabled a deeper exploration of social identification facilitators that were more context and life-stage specific. In addition, following the presentation of the findings at an international conference, the results were discussed with conference delegates who have published social identity research in exercise contexts. These discussions highlighted that the results were at the intersection of current research around levels of social identity abstraction (Haslam, Boen, and Fransen 2020) and the Social Identity Model of Identity Change SIMIC, (Jetten et al. 2010).

Throughout this study it was also important to maintain self-reflexivity and gain an understanding of the Zwift community.

In particular, the first author maintained a reflexive stance which was important given his primary involvement in the study and similarities to the demographic of the participants (e.g., a lifelong fitness participant, former fitness and group exercise instructor, and exercise referral professional, and mid-life adult). Prior to data collection, the first author immersed himself in Zwift (e.g., by participating in Zwift sessions) to understand its technology, platform, language, avatar personalization and interactions. This combination of mid-life experiences and familiarity with Zwift helped establish rapport with participants, fostering openness and relatedness in discussions that echo previous community-based research (i.e., Le Dantec and Fox 2015). Throughout this process, a reflexive diary was maintained to reflect on subjectivities and emerging patterns in the data.

3 | Results and Discussion

Three distinct levels of identification related to Zwift involvement are presented below (See Figure 1). The following section details three themes: (1) Zwift provides a platform for continuity as an exerciser/cyclist; (2) the transition from cyclist to Zwifter; and (3) becoming a Zwift team member. These themes centre on how Zwift facilitates identity continuity and identity gain via these three different identities, as well as the processes and mechanisms through which Zwift facilitates these identities (see Figure 1 for a visual representation of the themes).

3.1 | Zwift Provides a Platform for Continuity as an Exerciser/Cyclist

This first theme highlights the role that Zwift participation played in enabling the mid-life participants' identity continuity. Participants felt that through Zwift participation they could still be an exerciser/cyclist, with many citing mid-life health-related issues that led to them seeking out Zwift. When discussing their involvement in Zwift, participants shared how it maintains exercise in mid-life, while experiencing the social support of riding with others at the same life stage. Previous studies have highlighted that people in mid-life can experience a range of developmental changes in mental and physical health, family composition, financial vulnerabilities and life-stage responsibilities, making it challenging to find the time to exercise (Freund and Ritter 2009).

In discussing exercising in mid-life, participants shared their increasing concerns over road safety and their experiences of loneliness when cycling alone, which challenged their existing identity as a cyclist. Being a part of the Zwift virtual cycling community allowed participants to maintain their cyclist identity, stay safe, and avoid feeling lonely. They were able to connect with others who are also experiencing the challenges and changes of mid-life, while being able to continue cycling—creating an opportunity for continuity of their cyclist identity.

We're in mid-life together: When discussing their initial reasons for engaging with Zwift, participants described how the demands of midlife (family and work) became incompatible with their exerciser identities and how they struggled to fit exercise into their schedules in the way that they used to (i.e., road cycling with friends):

> It's [maintaining outdoor cycling] a lot of stress. So you're rearranging your day to make sure that you can fit those workouts in [...] rearranging your family [...] to fit those workouts in [...] I'm not saying that's your number one priority, but you are shifting things around so that you can fit everything in (Participant 8—interview 2).

Alongside the need for exercise convenience, participants also cited mid-life health issues that contributed to them engaging in Zwift in the hope of continuing exercising. One participant shared how cycling became their identity following surgery:

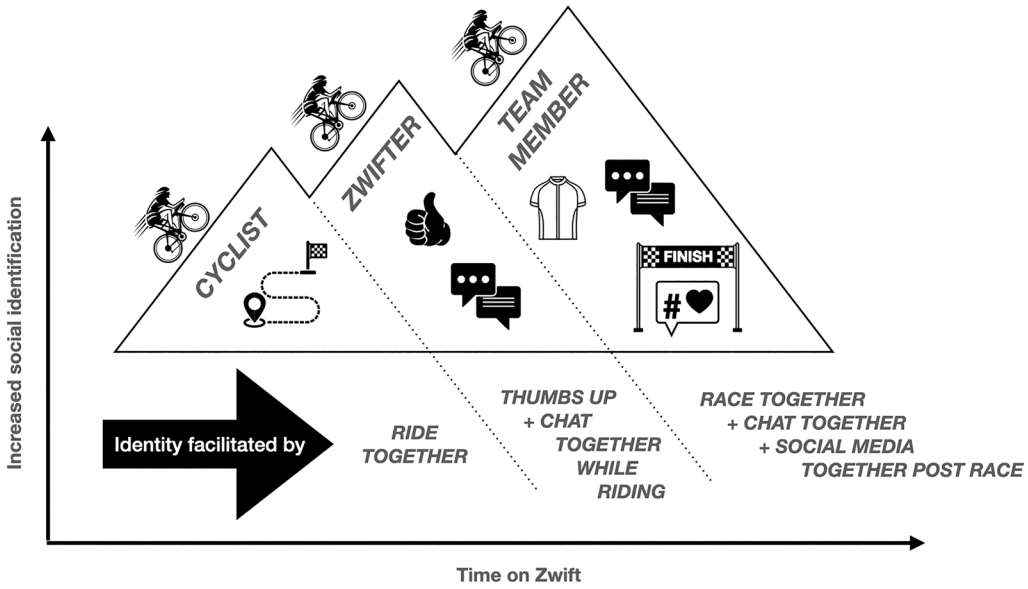

FIGURE 1 | Phases and facilitators of social identification on Zwift.

> I had three operations on my knee, the ACL ruptures and all that. So it defines me maybe in terms of what sports I can do really, I can't run, I can't do football or anything that is impact through my knee anymore. So it's all about cycling for me, so I am defined by how much I love cycling. (Participant 9—interview 1).

Another participant, having shared their injury history, highlighted the hope they had to keep cycling into the future, preserving their cyclist identity: 'I've got buddies that are 65, and they're still doing this, and they're not bad. I mean, they're about my speed. I mean, you know, you can do this for a very long time, you know, injury-free, hopefully'. (Participant 8—interview 2).

Participants shared how they first turned to Zwift to seek a practical and convenient way to cycle at home, maintain their identity, and meet others wanting to cycle in mid-life. They acknowledged that experiencing this community contributed to their motivation to participate. As a participant shared in their diary, 'For me, taking part in today's exercise session means that I have engaged meaningfully with other people. I had some interesting chats with other (name), and I reconnected with (name) and (name)' (Participant 17—diary). Exploring this in the second interview, this participant elaborated on the motivations behind this.

> That kind of just tickles me in terms of actually we're, we're all in this together that, you know, we've all kind of got our separate journeys, our separate pain, caves, bike rooms, all, all manner of setups, you know, from the, from the super elite people to, you know, people like how I started off–doing it with a towel underneath them in, in their living room, just trying to fit in fitness around family and other com competing demands and stuff. So, yeah, I think it was that element of, of community. And I suppose a recognition that actually participating in, in eSports [...] who have got similar background to me. (Participant 17—interview 2)

The perceived similarity of wanting to cycle whilst navigating mid-life, shared here contributed to their feelings of being part of a 'virtual' community–potentially marking the beginning of the entitativity affect for the individual, that is, the perception of seeing a social unit as a group and the self as a group member (Beauchamp 2019; Beauchamp and O'Rourke 2020). Previous research suggests that perceived similarity contributes to the identification with, and perception of the self, as a group member (Jans, Postmes, and Van der Zee 2012) as does the sense of shared fate (Drury 2018) experienced in facing mid-life challenges together in a virtual exercise community.

Together we're safer and not alone: The incompatibility of cyclist identities with the demands of mid-life was more than just an issue of convenience and time. Participants shared concerns for their safety, referring to their perception of the changing physical dangers of the roads and the feelings of being alone on rides. Zwift was referred to as a way of maintaining their cyclist identity as one participant shared, 'I just don't feel comfortable going out and about on my own. So, for me, Zwifting offered something where I could keep fit [stay cycling] and stay safe. And very convenient all at the same time' (Participant 10). This sense of desire for physical and psychological safety unintentionally contributed to the perceived creation of a group. Having originally been individually motivated to get off the roads, participants unexpectedly found that they enjoyed being a member of the Zwift group, as one participant highlighted 'the roads [are] getting unsafe [...] we'll do it on Zwift and you know, there'll be six of us out there, on Zwift together in a big pack'. (Participant 8—interview 1). This participant then went onto share a related note in their diary 'I love the fact that my two friends are both around 50 years old as well and here we are, riding' (Participant 8—diary).

The shift in participant language from individual references of 'I' in the context of feeling unsafe to the use of 'we' when referring to the safety of the group, indicates the role that social support in mid-life plays in their Zwift participation. By socially identifying with others and becoming a 'we in mid-life' over an 'I', online participants seem to be offsetting concerns of loneliness, isolation and personal safety by identifying with others as a group (Beauchamp 2019; Tajfel 1974) as one participant shared, '[being noticed by others on Zwift] feels good that you're not one invisible character just riding there and nobody knows you exist. So it feels nice that you, that there are people who keep track of each other' (Participant 3—interview 1). For this participant, the personal safety concerns played out later in their diary: 'Had a [bike] crash in real life [this week] so legs were feeling like jelly no strength at all barely made it over the finish line of the workout today' (Participant 3—diary).

Whilst the abating of mid-life concerns came as a discovery from their participation for some, others actively sought a solution as they were consciously aware of their challenges, as one participant shared:

> I think for me, as I age, I see myself getting far more involved. I mean, I will definitely join a team. I will definitely start doing more of the group rides. [...] that type of stuff, and [...] building those relationships [...] the roads are getting more difficult [...] more cars are on the roads [...] it's just much harder now to get outside and actually do the outdoor rides, but Zwift, and especially in the newly finished pain cave [cyclists' name for their dedicated indoor Zwift space] (Participant 8 – interview 1)

This growing sense of identification with both the platform and the associated online community motivated people to form group-based bonds and looked out for each other. One participant reflected in their diary, 'Taking part in today's session reflects who I am because I was riding a normal, Zwift, non-workout ride. I love doing non-workout rides because I feel like I am out riding with friends'. (Participant 6–diary). By riding

with others, participants were actively looking to prevent other riders from experiencing feelings of isolation and loneliness or languishing on their own on Zwift:

> I don't want people to have that feeling of being left and languishing on their own. So if I can give people that feeling [being with them], even if it's just riding with me, that they're looking at somebody else on the screen with them rather than an empty [road] [...] which is what you see if nobody else is around you. (Participant 10–interview 2)

The onscreen moral support of having someone riding next to them is a visual demonstration of exercising together, albeit virtually, in mid-life, whilst being physically on their own. Cycling in this online fitness community provided participants with a 'virtual' social cure to potential mid-life loneliness and isolation, whilst providing exercise continuity by being a mid-life cyclist on Zwift (Haslam et al. 2018, 2022). This theme highlights that being together, even just on a screen, enabled participants to make virtual acquaintances, gain peer recognition, and feel part of a community with a group of similar others as they navigated mid-life.

3.2 | The Transition From Cyclist to Zwifter

This theme highlights the transition for participants from cyclist to Zwifter. By listening and watching others on rides, they gained understanding of Zwift-specific norms, behaviours and comparisons. In adopting these group behaviours themselves participants began to see themselves as Zwifters, gaining an additional new identity (Zwifter) alongside their existing cyclist identity. SIMIC suggests that the degree to which new identities are compatible with existing identities is positively related to identification with the new group and thus the benefits associated with group memberships (Jetten et al. 2018). Learning the Zwift-specific norms enabled participants to experience the benefits of social support and inclusion.

Learning how to Zwift: All participants shared that they began their Zwift participation riding around the routes, quickly learning about the range of routes available and that with each route completion comes a digital, collectable route badge. Participants discussed how these initial rides enabled them to familiarise themselves with and learn about Zwift participation. Here a participant discussed how these rides enabled them to build confidence in their ability to participate in Zwift:

> Initially, you cycle around routes [...] Just to get a feel of how things work and how the bike works [...] the icons and what they all mean. That's a gradual process. You pick up things as you go. (Participant 12—interview 1)

As participants feelings of competence in their Zwift capabilities increased so did their understanding of the language and phrases used by other Zwifters, which they witnessed through the live chat function on the online platform. Prior to this learning, participants expressed the feelings of loneliness and exclusion when they did not understand this Zwift language. As they developed an understanding of the language, they could also engage in the group norm. For instance, one participant discussed the process of learning the Zwift language:

> They [Zwifters] have their own, we have our own cyclist lingo [...] it's not like the normal language that everyone talks [...] it was like completely Greek and I felt so lonely [...] slowly, bit by bit, I got to know things better and I can really understand now. It is a much livelier place since I know how things work. (Participant 3—interview 1)

As highlighted in the quote above, learning the language of the group had a positive impact on participants experience making the environment feel more social. This evolving listening process contributed to participants feeling part of the group. However, although no longer feeling isolated, participants still implied that, without communicating back, they still felt anonymous. As one participant shared:

> I would just choose a group ride, not with people I knew [...] and just listened to them [to] be part of the group, although, I don't join in the conversations. That's [joining a conversation] something that is on my list of things to do. And I'm sure I start to do that shortly, that'll be my third phase when I'm [chatting] with the people that I ride with on Zwift. I'm still just kind of a bit anonymous, I suppose. (Participant 9—interview 1)

While, initially, increased competence appeared to strengthen identification with the group, participants responses suggested that the relationship between competence and identity was bidirectional. That is, as participants' sense of identification increased, they also engaged in more group-related norms. For example, having not felt confident enough to join in conversations in interview 1, one-week later in a diary entry, participant 9 shared that they had now conversed with other group members during a ride:

> I like to ride with this group because there is a very positive tone to the conversation exchanged between the ride leader and other cyclists and between the cyclists themselves. Because of this I felt more inclined to join in the conversation and show my gratitude for the organisers. (Participant 9–diary)

It has been suggested previously that social identification is based on levels of abstraction from broader notions of identification, to more specific forms (Haslam, Boen, and Fransen 2020). The data here highlight the interconnected role of learning the group norms, behaviours, and language plays in identification processes. The differences shown here indicate a change in the levels of abstraction from cyclist to Zwifter. Specifically, the sense of togetherness and similarity (in both their life stage and their desire to exercise) shared from the first theme developed

into a feeling of connection to the group as they became more familiar with the group's norms.

However, it's important to set this in the context of the potential role this online community plays in their mid-stage identity transition. The feelings of isolation and loneliness from the first theme reduced with participants suggesting they felt slightly anonymous but were starting to make a connection to other riders and wanted to communicate with others but did not have the confidence to do so yet. Previous research has demonstrated that receiving information online from similar others contributes to group identification and that this influences information readers' motivation to contribute back to the group (Flanagin, Hocevar, and Samahito 2014).

Group interaction leads to social support: Through listening and learning the norms, behaviours, and language of the group, participants began to develop friendships and the experience of social support from other riders. The impact of perceived social support and group memberships in adjusting to life changes via identification with others is an area of ongoing research (Haslam et al. 2021). Relevant to this study is that through group memberships participants were able to identify with others experiencing the same life stage challenges and changes and gain their support.

Through their interactions within this online exercise community, participants got to experience the giving and receiving of social support that, without Zwift, they feel they would have never experienced. However, the meaning of this support evoked a sense of caring for and being cared for by other mid-life Zwifters—forming a sense of bond and collective interest in helping others 'perform' in this life-stage, as one participant shared:

> That's why it [chatting whilst riding on Zwift] matters the most [...] it evolves [...] you get a group of people, virtual friends being on zwift [...] people kind of like encourage each other and look out for like, 'Hey, I didn't see you riding this week. What's going on with you?' So, you [...] end up having a good amount of virtual friends that you might never have talked to, but that [you're] checking up on making sure that you are actually staying on top of your game (Participant 5—interview 1).

A feature that participants can use on Zwift is to give and receive a thumbs up known as a 'ride-on', the meaning of which is determined by the sender and receiver, but forms part of the group communications 'code' of this in-game social support, as one participant shared, 'I think if you're going up a really steep hill and those around you are giving ride-ons, I think that's a word of encouragement' (Participant 4—interview 1). The positive interpretation of shared group behaviours and their meaning, echoes previous research that highlighted how shared social identity can transform social relations in a virtual group (Neville et al. 2022). The group etiquette and implications of not responding to a ride-on was also highlighted by one participant who shared, 'I do feel bad that somebody gave me a ride on and I didn't give 'em one right back. Cause I do know there's certain, there's a kudos and a cache' (Participant 7—interview 2).

Having developed an understanding of the reciprocal impact of giving a ride-on, participants then used this feature as a means of demonstrating ingroup care to make others feel good and the daisy-chain effect this spreads across to other Zwifters:

> It's [giving someone a 'ride on'], sharing a bond. People are passing on a feeling. [...] it makes you feel nice. So, if you can pass it on to somebody and make them also feel nice, why not? [...] if somebody's giving me [a ride-on] I can also [...] pass it on to the next person. So, I do it for somebody, they might also feel nice (Participant 3—interview 1).

As participants experienced the interactions and group norms of support, they highlighted how this contributed to creating a safe, supportive space that started to change their initial intentions on Zwift, from just wanting to ride (e.g., continuing an exercise identity), to becoming a Zwifter and/or team member. Joining a Zwift team allows participants to ride in the teams colours, enter races with that team and join in team chats.

> I've done a complete 360 of, of being a, quite an introverted person, um, to actually really coming out of myself and in this format, both, you know, via Facebook messaging. Facebook chatting and the groups and things like that. Um, and you know, whilst online, chatting away to people, I think I found it a really safe place to kind of come out of my shell. I've gone from being, say very introverted to. Safely being able to, well, let's try a few messages here. Oh, actually they're laughing. I was like, that's going down well, so okay–you explore this a bit more and getting my confidence in me as a person to take me forward and that's yeah, that's kind of where I'm at, with it now that I, I do feel more confident person and then I enjoy the interactions that I make. (Participant 6—interview 1).

This extract highlights how by receiving social support and understanding Zwift norms enabled people to act on their intention (mentioned in the above theme) and feel safe to communicate with others and in doing so gained increased enjoyment in their participation. The importance that communication on Zwift also highlights is the role that online community engagement may play in mid-life identity transitions—in that more interaction in an environment perceived as being safe leads to stronger intentions to be more involved. This aligns with previous findings that communication in online groups fosters social identification and enhances group members motivation to communicate with other in-group members.

3.3 | Becoming a Zwift Team Member

Participants shared how continued engagement in Zwift led to some gaining a more specific Zwift team member identity. This theme highlights how this new identity was facilitated by their experiences of team belonging, ingroup recognition, social status and having a role or purpose within the team.

Team belonging: The benefit of the ability to communicate with others on Zwift enabled participants to get social benefits, alongside physical ones, leading to them joining a team. Becoming a team member helped them address social challenges associated with mid-life (e.g., isolation and loneliness). As one participant shared, 'I feel like I belong to the [team name] more. Because I ride with them more. I chat with them more' (Participant 7—interview 2).

The compatibility of being able to fit in exercise while being part of a team provides social connection with others, forming meaningful, new relationships. Several identity markers were highlighted as participants shared what for them made this an entitative group fostering social identification, from the wearing of the team colours to the engagement in the team banter. One participant highlighted this when discussing why they ride as part of a team:

> Because of the sense of camaraderie [...] we are doing it to enjoy each other's company [...] it reinforces that team stuff, when I'm racing with that team, because you've got the time to have a little bit more banter, you just get a feel for people more when you are racing with them, know them more, and it's that whole relationship (Participant 6—Interview 1).

The sense of team spirit described in the initial interview were further illustrated later in Participant 6's diary, highlighting how the shared humour and supportive actions during a group ride contributed to their feelings of being in a team.

> Medium effort ride with a lovely group, mainly from Australia and New Zealand. Key moment when the sweeper at the back asked for some help, I dropped to assist along with about 4 others. We all did a fast ride in and caught back to the yellow beacon. Much laughter with some silly jokes 'What did the dung beetle say when he walked into a bar? ... is this stool taken!!!'–I didn't say the jokes were good. (Participant 6 diary).

This quote illustrates through participation in a Zwift team, participants get to know fellow team members that increases their sense of similarity and proximity to others making them feel part of a group (Brown and Pehrson 2019). Cycling as part of an online team enabled participants to experience group belonging whilst living out their cyclist identity because it provided opportunities to communicate and develop personal relationships. Related to SIMIC, rather than having two separate pathways of social identity transition in mid-life (identity continuity or identity gain) the evidence presented here implies that social identity transition in this online community is a sequential process. Participants begin participation as cyclists (i.e., identity continuity), before identifying as Zwifters (i.e., identity gain) or more strongly identifying by joining other riders as a team member (Jetten et al. 2010).

Within team recognition: As part of joining teams, participants signed up to virtual spaces for dedicated team members only, social media groups that act as the virtual team clubhouse for social connection with other team members, ride leaders and ride sweepers. Here the members interact with each other demonstrating the group norms, which included giving and receiving social support. Central to this was the importance team members placed on the post-ride report written by the ride leader. Ride reports enabled participants to get confirmation of their identity as cyclists. However, being publicly acknowledged in recognition of their cycling in the team race reports contributing to feelings of belonging, being included in an entitative team and team identification. As evidenced by one participant highlighted the role that recognition played in creating a team bond:

> Because it's [race report] a recognition that we're doing something together [...] It's a bond that we're making, we're doing this effort [...] I was doing my first races and I put a post up in the [team] Facebook forum (Participant 16—interview 1).

This recognition was also reflected in their diary. 'It's a nice feeling (perhaps slight superiority) to be one of the group of stronger riders there to help others. As the ride comes to an end, the sweeps are all thanked for keeping the group together'. (Participant 16—diary).

In contrast to the earlier levels of identity abstraction shared in the 'transition from cyclist to Zwifter' theme where the participants did not yet want to talk or felt social pressure to talk, being in a team encouraged them to talk and live out the group norms of providing support and recognition of others to help build their self-esteem. As a participant team member shared:

> The guy always does a report afterwards. And I find it very hard not to put a little comment of like, 'it was a great ride today. Special kudos to [team member]' I find it quite hard not to take part in that conversation now [...] I want to be part of the discussion [...] I just felt like if I wasn't taking part, when they were all chatting about this [...] after a ride, I felt I was missing out. (Participant 14—interview 2)

This highlights the role that recognition by and of other team members plays in building a sense of belonging to the team. The quality of bond between team members increased in response to the recognition from and interactions with other team members. This provides further evidence suggesting that the quality of the group bond contributes to subsequent feelings of belonging (Easterbrook and Vignoles 2013).

Within Team Social Status: Having become active members of the team, as indicated through the exchanging of recognition with other team members, participants shared the meaning and status derived from a single achievement: earning a Concept Z1 bike more commonly known as the 'Tron Bike' (which has visually distinctive glowing wheels and is awarded once a rider has completed a 50,000 m climbing ride that includes a virtual Mount Everest). The Tron Bike represented an achievement and symbol of identification on and off the platform as Participant 4 highlighted in their 1st interview, 'It's like a rite of passage. In fact, even at work, I told them [my work team] I'm going to get my Tron bike on Thursday'. Self-categorisation theory suggests that people categorise themselves based on comparable parameters they observe in others within a group (Turner 2010). Having observed the glowing wheels of others on the platform and the social media conversations about it (as not everyone has achieved it) the Tron bike acts as a salient symbol of social identification as a Zwifter (Beauchamp 2019). It is equally a symbol of in-game and within-team distinction or social status consistent with satisfying the distinctiveness identity motive (Vignoles 2011). For one participant it was an earned symbol of their belonging to the team and provided something to share with the group:

> I got my Tron bike [...] it was absolutely thrilling. Everybody was following [...] I'd made it a bit humorous [...] I purposely saved it for a group ride where I knew they were all gonna be there, so I could make this big fuss. [...] it was something that I really wanted. It was a challenge. I achieved and everybody was supporting me to get it. I got so many congratulations, it was a real thrill [...] now I stick with my Tron bike and all I ever use are my team colours [on the bike] (Participant 11—interview 1).

As an example of the interwoven nature of the ingroup norms and identity motives, achieving the Tron Bike was used by one participant as a point of evoking social support from the team, turning the achievement into an all-team event and at the same time a means for personal in-group distinctiveness. Having earned this symbol of achievement, they set their Tron Bike wheels to their team colors cementing their new identity as a team member and demonstrating prototypicality as a team member (Slater et al. 2014). In the context of the other identities (see earlier themes) and the team identification of this theme, the references to mid-life exercise challenges were absent. What was shared were experiences of belonging, friendship and in-group support, and team-defining actions (i.e., our team has tron bike riders meaning tough riders) who were, as a team, very visible on Zwift.

4 | General Discussion

This study explored the role of social identity processes in mid-life adults Zwift participation. Interview and diary data collected using a longitudinal qualitative design highlighted that Zwift allowed participants to potentially experience three different levels of social identity abstraction (i.e., cyclist, Zwifter and team member). We also identified the facilitators that lead to these identities (e.g., riding with others, communicating with others, racing together) and aid the transition between these identities (see Figure 1). The study offers novel contributions to knowledge surrounding the role of social identity processes in exercise participation in online contexts.

4.1 | Contributions to Theory and Research

This study makes three contributions to the social identity literature. First, this is the first study to investigate the facilitators of social identity in online contexts and shows that social identity plays an important role in Zwift participation. Thus, our findings support and extend existing research on in-person exercise—for example, group identification in park runners is linked to greater participation, exercise-specific satisfaction, group cohesion, and life satisfaction (Stevens, Reem, and Polam 2019)—by showing that social identity plays a role in engagement, effort, and enjoyment of exercise in an online exercise format. Additionally, the findings provide support for existing social identity theorising on entitativity (Neville et al. 2022) by highlighting that common fate (i.e., we are cycling in mid-life together), perceived similarity (i.e., we are all in mid-life), and 'digital' proximity (i.e., brought together digitally via the avatars, chat and social media) are facilitators of social identification in Zwift.

The 'groupness' experienced in this online community context creates the case for a digital or online entitativity model as a direct evolution of Campbell's (1958) entitativity model, comprised of perceived similarity, proximity, and common fate. The present findings show that online proximity (where participants are physically alone, yet digitally together) experiencing similarity (through age and ability categorisation) creates actual, rather than perceived similarity, and real-time live, yet online, events create a common and shared fate. In enabling participants to ride together at the same time and communicate with each other, online platforms are creating a shared fate that fuels participant identification and develops social and emotional support both during and post-rides.

Second, through participation in Zwift, participants can facilitate three social identities that enable participants to maintain exercise engagement whilst navigating the challenges and transitions of mid-life (e.g., safety concerns, family commitments, ageing body, injuries that impact exercise). Specifically, in line with research on identity transitions in older populations (Haslam et al. 2019), Zwift provided a platform for participants to maintain (i.e., continue as an exerciser/cyclist) or gain (i.e., become a Zwifter or a Zwift team member). In contrast to the dual pathway model of SIMIC (Jetten et al. 2010) our findings suggest that this identity continuity and identity gain occurs sequentially in Zwift, facilitated by the specific design features of the platform. To explain, participants in this study all initially discussed how the Zwift platform enabled them to continue to first identify as an exerciser/cyclist (i.e., experiencing identity continuity). Then, as participants experienced increased communication with others and learned Zwift norms, some came to identify as a Zwifter (i.e., first

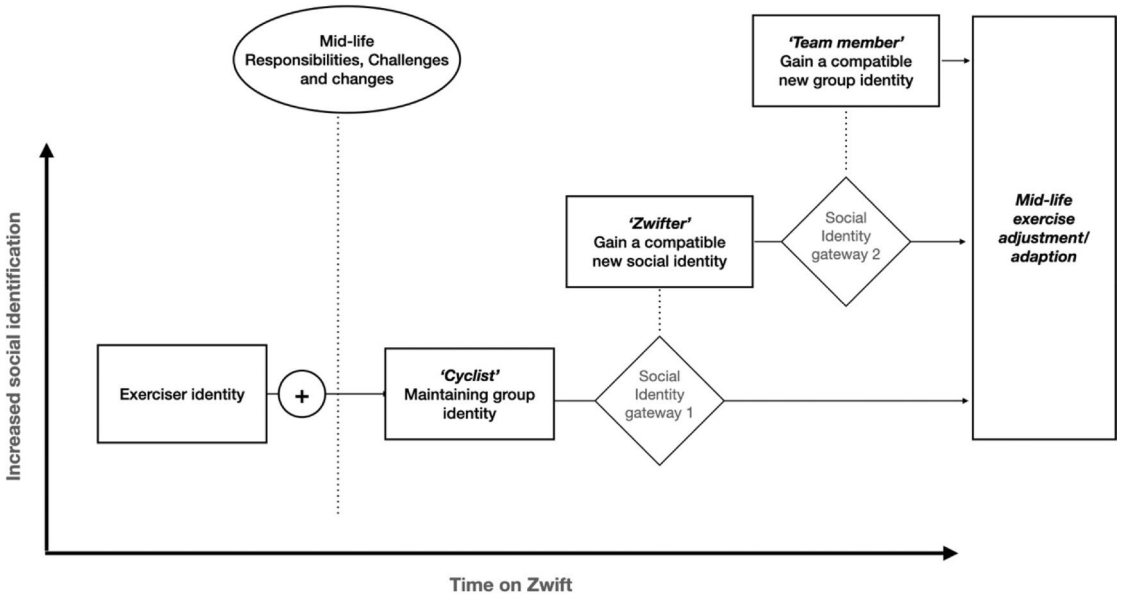

FIGURE 2 | Zwift and the Social identity model of identity change.

identity gain). Finally, some participants then progressed to a higher level of identification by joining a Zwift team (i.e., second identity gain) which was facilitated through racing with others, engaging in team-specific social media communication, and changing their avatar to team colours to display team belonging. While different participants identified with at least one of the three levels of abstraction highlighted in this study, the transitions of identification progressed through a sequence of cyclist, to Zwifter, and then to a team member Figure 2.

A model showing how Zwift can provide identity continuity and identity gain sequentially that enables mid-life participants to navigate mid-life challenges that threaten exercise participation. Adapted from the SIMIC (Jetten et al. 2010).

Third, in highlighting these different identities, this study builds on previous theory and research suggesting digital interventions based on SIMIC principles could address isolation in older ages (Stuart et al. 2022). Extending previous evidence that online opinion expression can foster group identification (O'Reilly et al. 2022), our findings suggest that receiving and providing social support on Zwift-related social media groups can facilitate social identification and, thus, reduce loneliness resulting from mid-life transition. The process of identification transition highlighted above, as participants went from listening to, then interacting with, other riders (and for some, making the decision to join a team), suggests a process of social scaffolding whereby existing group memberships enable new ones (Haslam et al. 2016). We contend therefore that 'digital community' interventions such as Zwift provide a convenient and sustainable platform that have potential to address mid-life inactivity *and* provide a social cure for thriving in mid-life (Haslam et al. 2019). Thus, online exercise platforms could be socially prescribed to mid-life adults to tackle inactivity and loneliness as they provide pre-existing social infrastructure (e.g., the activity, ability to communicate, and events to socialise; Haslam et al. 2024). The evidence here suggests that interventions like Groups4Health which reduce loneliness and social anxiety while improving mental health could benefit from a shared online exercise activity as a potential group identification catalyst (Haslam et al. 2016).

4.2 | Applied Implications

Findings in this study suggest four practical ways that online platforms could facilitate and increase social identification with online exercise platforms, by targeting the three factors of entitavity (i.e., perceived similarity, proximity, and sharing a common fate; Brown and Pehrson 2019). First, platforms could enable participants to select rides that include people of similar age and life-stage and ability to create an immediate feeling of perceived similarity between Zwift riders. Second, platforms could include functions that enable participants to 'see' (e.g., avatars on a screen) and communicate with each other (e.g., the ability to have text conversations), which might create a feeling of digital proximity, akin to riding next to someone in a real-life spin studio. Third, creating real-time exercise experiences that drive group collaboration, communication and camaraderie, orchestrates a participant common fate that fuels both team belonging and post-exercise digital clubhouse conversational content. Fourth, online exercise platforms could facilitate a 'digital clubhouse' in the form of an exclusive online social media channel to enable social support and communication outside of the platforms.

4.3 | Limitations and Future Directions

While this study has several strengths including the interview-diary sandwich approach that enabled us to collect longitudinal retrospective and real-time experiences, there are limitations that highlight potential future research directions. First, the study included those who were currently participating in Zwift and, therefore, did not consider the experiences of those who

had tried Zwift, but no longer use it. Future researchers could examine all three levels of abstraction highlighted in this study and explore why cyclists did not identify with it (did it not provide continuity?), why those with experience of Zwift events no longer ride Zwift races (was being a Zwifter no longer a compatible identity?), and why former Zwift team riders may have left the platform and potentially their Zwift teams. While not within the scope of this study, future research could also explore the social facilitation effects on exercise output and race performance (e.g., examining the differences in output by level of identification—do team members perform better when riding in virtual groups compared to non-team rides).

A broader limitation of this study is related to the wider context of online exercise. To exercise online, you need physical space to exercise, an internet connection, a device to watch the exercise on (e.g., TV, smartphone and so forth), the necessary money to subscribe to the exercise service, and enough technological know-how to connect it all. Collectively, these elements create a range of potential barriers to participation and may be prohibitive for many disadvantaged groups. Specific to this study to cycle online adds the cost of a turbo trainer and a bike to cycle on to the above barriers. A final point is that cycling online, especially in teams, requires a significant time commitment—something highlighted as a mid-life barrier (Kelly et al. 2016). Exploring social identification facilitators and processes in online exercise contexts that are cost-effective, require minimal time commitment, and demand little technological expertise presents a promising avenue for future research.

5 | Conclusion

Mid-life represents a multi-factored and, arguably, forced period of identity change (Infurna, Gerstorf, and Lachman 2020). Platforms like Zwift offer mid-lifers a way to continue their exerciser identity by offering a safe and time-efficient way to exercise. We provide the first evidence that the features of Zwift allow users to also gain new identities, first as a Zwifter as they become familiar and engaged with the platform norms, and then as a member of a specific team. These identity processes provide physical, psychological, and social benefits that enable Zwifters to continue to exercise and benefit from increased social support and well-being.

Ethics Statement

This study was approved by the University of Chichester Research Ethics Committee Approval Number 2122_26, and adheres to the APA Code of Conduct and British Psychology Association ethics guidelines.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

For ethical privacy reasons, the anonymized transcript data are not publicly available, but are securely stored and available at reasonable request from the corresponding author.

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Supporting Information

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