WHAT'S HAPPENING WITH GYM CULTURE? EXPLORING EMERGING ADULTS' PERCEPTIONS OF PUBLIC FITNESS FACILITY USERS

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ABSTRACT

Within an emerging adult population (ages 18-25), a crucial phase for establishing enduring health behaviours, a decline in PA has been reported despite the well-documented benefits of regular exercise. Public fitness facilities (PFFs) serve as important spaces for exercise, where social dynamics, including the presence of other patrons, can shape perceptions and significantly influence one's exercise experience (e.g., psychological outcomes and behaviours). Guided by Social Cognitive Theory, the purpose of this study was to understand what factors contribute to the debilitative presence of others at the gym among emerging adult women. To be included in this study, individuals had to identify as women between the ages of 18 and 25, have exercised within a public fitness facility within the six months prior to recruitment and be fluent in English. All participants (n = 10) completed a brief eligibility survey before continuing to their own one-on-one semi-structured interview. During the interviews, participants were asked about their exercise habits, as well as their expectations, values, thoughts, and feelings related to experiences with others in a gym. AI-generated images of potential gym-goers were used to extend the conversation and help participants identify and explain factors they perceived to hinder their exercise experience. Through the lens of a critical realist, a thematic analysis of the interviews was conducted to inductively produce two key themes: (1) *Personal Insecurities Triggered by Gym Patrons* (sub-themes: *Low Confidence in My Exercise Abilities Around Others*, *Negative Feelings Occur When I Compare Myself to Others,* and *Social Fears), and (2) Contextual Contributors to a Negative Experience* (sub-themes: *Too Many People*, *The Negative Influence of Gender and Physique*, and *Undesirable Behaviours*). This study demonstrated that the debilitating presence of others in a gym environment is multifaceted, extending from one's own internal biases and emotional capacity to external impacts of the social world. Moreover, the implications of this study include proposed

adjustments to various aspects of the public gym environment (ex. gym staff, layout, resources, safety), potential personal strategies to support one's exercise experience, suggested ways for gym patrons to be facilitative and not debilitative to other's experiences, and future research directions.

ETHICS STATEMENT

Work described in this thesis received research ethics approval from the University of Alberta Research Ethics Board, Project Name “WHAT’S HAPPENING WITH GYM CULTURE? EXPLORING EMERGING ADULTS’ PERCEPTIONS OF PUBLIC FITNESS FACILITY USERS”, Pro00143263, August 20, 2024.

USE OF GENERATIVE AI

Images used during participant interviews were generated using DALL·E, a generative AI image creation tool developed by OpenAI. As the creator of these AI-generated images, I hold the rights to them, and there are no copyright infringements associated with their use. These images were created solely for the purpose of this research.

PREFACE

The work presented in this thesis is based on the research by Alex Engel and was conducted at the University of Lethbridge through the Psychology of Active Living and Sport (PALS) lab. Alex Engel was the principal investigator and main contributor to all elements of the research and writing presented in this thesis, bearing responsibility for revision of the literature, study design, recruitment, data collection and analysis, interpretation of results, and composition of the thesis. Dr. Paige Pope of the University of Lethbridge supervised this project, providing guidance throughout the entirety of the process and feedback on all aspects. Further, Dr. Scott Rathwell and Dr. Peter Kellett of the University of Lethbridge provided feedback on the methodological and theoretical components for this study to improve the strength of the project prior to data collection.

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List of Abbreviations

PA	Physical activity
PFF	Public fitness facility
SCT	Social Cognitive Theory

Chapter 1: General Introduction

This chapter includes a personal and academic backdrop to the current study, outlining my positionality as a researcher and an individual who is deeply invested in the intersection of exercise, health, and wellbeing. It opens with an account of my journey into the world of physical activity (PA) and exercise psychology, followed by anecdotal observations and an overview of relevant literature that shaped the formation of this study. The goal is to offer readers insight into the foundations upon which this research was built.

Personal Motivation and Researcher Positionality

I acquired a passion for exercise and health promotion from my experiences as a lifelong athlete. Having played competitive ice hockey for 15 years and coached youth sport for over five, I have long valued the physical benefits of movement and sport. However, it wasn't until my academic exploration of exercise psychology that I came to appreciate the mental health impacts of PA, such as reductions in anxiety, stress, and depressive symptoms. Over time, this awareness evolved into a broader recognition of the privilege inherent in my background: my comfort in gym environments, my confidence using equipment, and my familiarity with exercise routines were all shaped by years immersed in sport.

I began to reflect on how unfamiliar or even alienating gym spaces might feel for those without this background, particularly individuals who were not exposed to a fitness environment through during their youth and adolescence (e.g., youth sport, varsity sport, fitness classes). This realization marked the beginning of a growing interest in understanding gym participation from multiple perspectives, including those who feel marginalized or intimidated in these environments.

Informal Observations and Social Context

Before formally designing this study, I engaged in many informal conversations with peers, gym users, and fitness staff to better understand common experiences in public fitness facilities (PFFs). A consistent theme across these discussions was a sense of social discomfort or anxiety, especially among those who were new to exercise, returning after a break, or attending an unfamiliar facility. People described avoiding areas like the free weight zone, leaving early, skipping exercise altogether, and often mentioned feeling uneasy around some other gym patrons who they often described as "gym people". Such insights highlighted the emotional and social barriers that can undermine a person's willingness to engage in PA in a public setting like a gym and extended my interest in exploring the psychological dimensions of gym participation more systematically.

These patterns were not limited to personal anecdotes as I also observed similar expressions on social media platforms. Figures like Joey Swoll have amassed significant followings on social media by addressing toxic behaviours in gyms, particularly the act of filming and mocking others during their workouts. Thousands of users have responded to his content, sharing their own stories of being shamed, stared at, or harassed while exercising. These responses underscore the emotional toll that gym-based intimidation can take and highlight a widespread issue: gym environments are not always experienced as supportive or safe, especially for those without a strong sense of belonging or competence. Yet, these negative portrayals don't tell the whole story. I've also encountered countless acts of kindness and encouragement in gym settings such as people offering to spot a stranger, helping with equipment, or simply exchanging supportive words. These contrasting experiences led me to question the dominant narratives about "gym culture" and motivated me to explore how different individuals navigate and interpret these environments.

Extended Background Literature

Emerging adulthood, typically defined as the developmental stage between ages 18 and 25, represents a critical period for the adoption of long-term health behaviours, including PA and exercise participation (Gómez-López et al., 2011; Nelson et al., 2008). Research suggests that individuals in this age group experience considerable shifts in identity, autonomy, and lifestyle, making them particularly susceptible to both positive and negative behavioural trajectories (Arnett, 2000; Nelson et al., 2008). Despite the known benefits of PA, this group often faces multiple barriers to regular exercise. General barriers such as lack of time, motivation, financial resources, and access to facilities have been well-documented (Laddu et al., 2021; Peng et al., 2023; Ramey et al., 2016). However, less attention has been paid to the social barriers that arise specifically in the context of public gym environments.

While many studies have examined structural or logistical barriers to exercise (Laddu et al., 2021; Martin Ginis et al., 2003; Sharon-David et al., 2020; Stankowski et al., 2017), fewer have delved into the environmental and interpersonal challenges posed by PFFs. Gym users, particularly those new to fitness or those with marginalized identities, may feel self-conscious, intimidated, or hyper-aware of others' judgments (Prichard & Tiggemann, 2005; Turnock, 2021). Some of the unique barriers observed or reported in PFFs include: (1) Fear of judgment or embarrassment due to comparison to one's appearance, skill level, or perceived incompetence to others (Castonguay et al., 2013; Festinger, 1954; Pila et a., 2014; Sabiston et al., 2010), (2) gendered spaces or behaviors that lead some individuals, particularly women, to feel uncomfortable in male-dominated areas like weight sections (Kowalski et al., 2001; Miller et al., 2008; Rapport et al., 2018), (3) social physique anxiety, a term used to describe the anxiety one experiences from the perception that others are evaluating their physique (Hart et al., 1989), and

(4) low self-efficacy, especially task self-efficacy (i.e., one's confidence in completing specific exercises or tasks; see Bandura, 2006) which has been identified as a key determinant of exercise participation (Engel et al., 2025; McAuley & Blissmer, 2000).

As discussed in my undergraduate thesis (Engel et al., 2025), these barriers can significantly affect not only how individuals feel during their gym experiences but also their likelihood of returning or making exercise a consistent habit. The study underscored the emotional and psychological dimensions of gym participation and revealed that comfort in a gym is not just about knowledge or skill, it's also about perceiving the presence of other patrons within a gym environment. For example, women in this study reported that the presence of other individuals in a PFF who they perceived to be muscular, fit, lean, or of a different gender would make them less likely to workout or share the space with such people. In other words, the presence of others was debilitative to their exercise experience. In the context of the present study, debilitative is considered as anything that makes an individual in a PFF experience negative thoughts, feelings, emotions, or negatively impacts their gyms use.

Why This Study

Within my undergraduate thesis (Engel et al., 2025), we identified significant gender differences in the relationship between personal and environmental factors with campus fitness center use, highlighting the importance of addressing how perceptions of others in the gym space, particularly among women, can lead to reduced exercise engagement. Building on these findings and informed by the literature described above, I recognized a gap in our understanding of how social and emotional experiences shape gym participation, particularly among emerging adult women. While prior research has identified barriers to PA more broadly, fewer studies have

captured the nuanced, interpersonal, and psychological dimensions of gym-specific environments.

The primary question left unanswered from my earlier work was understanding why the presence of other individuals in a PFF contributed to a debilitative exercise experience? Therefore, this study explored the perspectives' of emerging adult women within PFFs, with a focus on the perceived barriers (e.g., the presence of other gym patrons), social interactions, and internal beliefs that shape their thoughts, feelings, and exercise participation. By adopting a qualitative approach, I sought to voice the lived experiences of PFF users and provide practical insight into how gym environments can be made more welcoming, psychologically safe, and a space where everyone can reap the benefits of regular physical activity.

Chapter 2: What's Happening with Gym Culture? Exploring Emerging Adults' Perceptions of Public Fitness Facility Users

Alexander Engel

University of Lethbridge

Introduction

Emerging adulthood (ages 18-25) has been identified as a specific stage of personal development where lasting health behaviour (e.g., physical activity) patterns are built (Arnett, 2000; Nelson et al., 2008). Within the literature, potential health benefits that may accompany regular engagement in physical activity (PA) and exercise include; decreased risk of chronic diseases, depression, anxiety, and stress, as well as increased lifespan, fitness levels, quality of life, and satisfaction with life (Choi et al., 2017; Gómez-López et al., 2011; Maher et al., 2013; Turrisi et al., 2024). Despite the posed benefits of regular PA or exercise engagement, a decline in PA is typically reported in emerging adult populations (Corder et al., 2019; Deforche et al., 2015; Kwan et al., 2012).

When compared to other guiding frameworks, such as the Theory of Planned Behaviour (Ajzen, 1991) and Physical Activity Maintenance Theory (Nigg et al., 2008), Social Cognitive Theory (SCT), (Bandura, 1986) has been identified as the strongest theory used to understand behaviour in an exercise context (Jekauc et al., 2015) and has served as a salient theory in PA and exercise research (Beauchamp et al., 2019; Oyibo et al., 2018; Wallace et al., 2000). Within SCT, Bandura (1986) states that a constant interplay between environmental, personal, and behavioural factors exists that influences individuals' thoughts, feelings, motivations, and behaviours. In the present study, this triadic reciprocal relationship is addressed with perceptions of other gym users representing the interplay between the environment (e.g., public fitness facilities) and personal factors (e.g., perceptions, beliefs, emotions) that shape the exercise behaviours (i.e., use of gym spaces) of emerging adult gym users.

A public fitness facility (PFF), the primary environment under investigation in this study, offers a space for individuals to engage in exercise practices for needs such as health (Choi et al.,

2017), social interaction (Turrisi et al., 2024), and relaxation (Cardone, 2019). Although there are multiple spaces where individuals can engage in exercise practices (ex. outdoors, at home, PFFs) that share common exercise barriers (e.g., time, cost, and accessibility), a unique impediment to exercise within PFFs revolves around the presence of other gym users (Engel et al., 2025; Rendall et al., 2024; Turnock, 2021). For example, within the literature, it has been shown that when people feel judged, uncomfortable, or intimidated by others in a gym, this often leads to a debilitative impact on their actions within a gym (Coulter, 2021; Rendall et al., 2024; Turnock, 2021). However, minimal attention has been given to understanding why such negative feelings are triggered by others in a gym setting. Therefore, the presence of other gym patrons sharing a PFF space (i.e., the social environment) was a main element of investigation for this study.

Understanding perceptions of others in a PFF environment is critical, as these perceptions can influence an individual's thoughts, feelings, and behaviour (McDonald, 2011). A perception is an individual's interpretation of the world, constructed from what they have been exposed to (i.e., past experiences, sociocultural influences, information gathered through their senses), as well as the foundational knowledge (i.e., beliefs, values, expectations) they possess about the world (Axelrod, 1973; McDonald, 2011). The extended literature has addressed the influence of perceptions, primarily outside of an exercise context, as what an individual perceives largely drives that person's decision making process, and in turn their actions (Axelrod, 1973; McDonald, 2011). Within a PFF, how individuals perceive the presence of others around them has been shown to have a debilitative impact on one's choice to use or not use specific areas within the gym. For example, Engel et al. (2025) found that when women university students perceived other gym users to be more fit or lean, or engaging in certain gym behaviours, such as

flexing or lifting heavy weights, they were less likely to use PFFs, especially the weight-lifting zones. It has also been reported within the literature that women are less inclined to use gym spaces they perceive as overcrowded (Engel et al., 2025; Wilson et al., 2023). Therefore, within the PFF environment, the actions one chooses to engage in (e.g., whether they go to the PFF, the equipment or areas of the gym they use, or the people and spaces they choose to avoid) are likely influenced by their perceptions of the environment and the people occupying that space.

To better understand how such perceptions are formed, it is essential to consider the underlying personal and social factors that shape them. Beliefs, values, and expectations (e.g., personal interests, stereotypes) are fundamental in shaping how individuals perceive others and their world (Balcetis & Dunning, 2006; de Lange et al., 2018; Spaulding, 2021). These foundational elements are influenced by an individual's exposure to various sources such as direct interactions, media content, and cultural narratives. Digital content (e.g., social media) represents a particularly salient source of exposure, capable of reinforcing existing beliefs or challenging them by broadening perspectives (Sawyer & Chen, 2012). Importantly, personal biases can influence how this information is interpreted, often leading individuals to form perceptions that align with their existing viewpoints (Balcetis & Dunning, 2006). These findings (Balcetis & Dunning, 2006; de Lange et al., 2018; Sawyer & Chen, 2012; Spaulding, 2021) highlight the nuanced role an individuals' beliefs, values, and expectations play in shaping perceptions of social media content. Furthermore, it is suggested (Stein et al., 2021) that such dynamics may influence how people form judgements in other contexts, such as interactions within PFFs.

While extensive literature concerning others within a gym environment has emphasized the role of social support, typically from close friends or family, in enhancing fitness behaviour

(Li et al., 2023; Turrisi et al., 2024), less is known about other gym patrons in general within a PFF. For example, when PFF staff are friendly and attentive, they are often perceived positively by users (MacIntosh & Law, 2015; Polyakova & Ramchandani, 2023), whereas negative feelings can arise when individuals perceive themselves as intruding on spaces typically dominated by certain groups (e.g., men's free weights area) (Turnock, 2021). The behaviour and actions of other patrons (e.g., lifting heavy weights) can significantly influence how individuals feel in the PFF environment and affect their engagement with the space (Coen et al., 2018; Engel et al., 2025; Sharon-David et al., 2020). Therefore, understanding the factors that contribute to these perceptions, including prior experiences and interactions with others, is essential in identifying the psychological dynamics that influence exercise behaviour in a public fitness setting.

Experience in a public gym setting allows for social comparisons to be made that play a critical role in shaping how individuals perceive themselves and others (Pila et al., 2016; Pila et al., 2014). The emotional outcomes of social comparisons vary by direction. Comparisons to those perceived to embody more desired traits (i.e., upward comparisons) tend to lead to negative emotions (e.g., shame, envy, social physique anxiety), while comparisons to those reflecting less desired traits (i.e., downward comparisons) often result in positive feelings (Castonguay et al., 2013; Festinger, 1954; Pila et a., 2014). Additionally, upward comparisons have also been reported to deter participation in certain activities or areas of the gym (Engel et al., 2025; Pila et al., 2014). Understanding what social comparisons are made in the presence of others that contribute to a debilitative gym experience is essential, as these perceptions may reflect underlying factors that influence how individuals interpret their environment and those within it.

Although it may be valuable to look at all individuals and how the presence of others impacts their exercise experience, women, in particular, have demonstrated that they are more

likely to perceive the presence of others to more negatively influence their exercise behaviour (Craig & Liberti, 2007; Engel et al., 2025; Turnock, 2021). While also considering the pivotal life stage emerging adults find themselves in, this study examines the perspectives of emerging adult women who hold negative perceptions of social environmental factors (i.e., the presence of others) within a public fitness environment.

Purpose of the Study

The purpose of this study was to understand what factors contribute to the debilitative presence of others at the PFF among emerging adult women. In pursuit of these aims, the following research question was investigated: What are the common experiences, beliefs, or values that shape the development of negative perceptions of PFF users among young women who use these facilities?

Methodology

Philosophical Assumptions

My philosophical assumptions align with those of a critical realist (Bhaskar, 2013; Ryba et al., 2022; Wiltshire, 2018). Critical realism pulls ontological and epistemological aspects from both positivism and constructivism respectably (Fletcher, 2017; Ryba et al., 2022). Ontology refers to the study of reality, which, through my critical realist lens, aligns with the positivist where it is assumed that the world is real within a single reality/truth outside of individual interpretation (Creswell & Poth, 2018; Fletcher, 2017; Wiltshire, 2018). Epistemology refers to the study of knowledge, which is what we believe to be knowledge, and how such knowledge is discovered (Creswell & Poth, 2018). Similar to the assumptions of a constructivist, as a critical realist, I assume that the production of knowledge is fallible because it can be influenced by non-visible and unknown constructs related to the individual (Fletcher, 2017; Ryba et al., 2022;

Wiltshire, 2018). Taken together, the critical realist perspective posits that while a single reality is true, one's interpretation of reality must also adhere to the subjectivity of humans.

Methodological Approach

A multiple-case study approach (Yin, 2018) was used for this study. Case studies consider single or multiple cases which work to explore a deep understanding of a particular problem utilizing real world experiences (Creswell & Poth, 2018). A multiple-case study approach was implemented in the current study as it allows for multiple in-depth perspectives to be made surrounding emerging adults' perceptions of a PFF environment (Creswell & Poth, 2018). It was advantageous to use a multiple-case study approach in conjunction with critical realism considerations as it permitted an understanding of what existed within non-visible constructs for each individual case (e.g., an individual's prior experience). Moreover, the multiple-case study approach allowed us to understand patterns in participants' reality related to their perceptions of other individuals sharing a PFF space by comparing cases and looking at the individual alone. Although each participant brought unique experiences that shaped each of them as their own case identified through a within-case analysis, the goal of the analysis was not to compare differences in bounded cases but to identify patterned meaning across the dataset though an inductive reflexive thematic analysis (Braun & Clarke, 2006).

Procedures

Ethical approval was gained from the University of Alberta Research Ethics Office (Pro00143263) prior to the commencement of data collection. Informed consent was obtained before participants completed the screening survey online using Qualtrics and then again before the interviews were conducted. Participants were recruited through email (i.e., previous list of individuals interesting in participating in future research, members at local PFFs, and the host

university's student population), public posters (Appendix A), social media, and snowballing via word of mouth. Those who were deemed eligible based on the aforementioned inclusion criteria were then invited via email to take part in a semi-structured interview.

The interview guide was pilot tested first with seven participants to build the first authors qualitative interviewing skills, verify the face and content validity of the AI images, and to ensure interview questions were ordered and worded in a manner that addressed the research question and that participants could follow while reducing redundancy. Throughout this process there were some changes made to the interview guide before the commencement of the interviews that were included in the thematic analysis. The changes included (1) adding a preamble that was read to each participant before getting into the questions to increase participant comfort, build rapport, and to provide context of the study (e.g., *whatever you say will carry no judgement from myself or my research team…I want you to know that you are in a safe space where you are free to speak your mind…The most important thing for you to know is that your honest answer is the best answer because it will help us accurately represent you and your true perspective*.), (2) three rapport building questions were deleted (e.g., *how many days per week on average do you exercise in a public gym?, When you do workout, what are your favourite areas of the gym to exercise?, and When were you first exposed to exercise?)* and replaced with a single rapport question (e.g., *when you do workout, what does a typical week look like at the public gym for you? Walk me through that., prob: why do you typically choose to those areas and not others?),* (3) one question (e.g., *what makes you notice people in the gym and what do you notice about them?*) was reworded for clarity (e.g., *What do you notice about people in the gym that may influence how you think, feel, or act? And how does that influence your thoughts, feelings, and actions in the gym?*), (4) another question was deleted due to pilot

participant answers consistently not addressing the research question (e.g., *when you think about exercising, what would you say you generally value? Or what is important to you in relation to exercise? Now thinking about exercising specifically in a public fitness facility, do your values change?*), (5) another question was removed due to the leading nature of it (e.g., *what about people makes you feel uncomfortable/intimidated?*), (6) one more question and three probing questions at the end of the interview were removed after the pilot interview stage as they were asked only to ensure the interview guide was not too taxing (e.g., *did you find the time taken to consider all of the pictures taxing? Were you able to stay focused throughout the interview? Do you still feel as though you have the mental energy to answer more questions? Do you feel like your mental battery changed from when we first started showing the pictures to after you had considered the all and if so, how?*), and (7) nine points in the interview guide were bolded to remind interviewer to transition the focus to a new questions and to ensure the interviewer did not forget about them if the semi-structured nature of the interview caused the conversation to stray from the linear fashion in which the interview guide was designed. Once the entirety of the interview guide was finalized (see Appendix X for final draft) through the extensive pilot testing, the first author conducted in person, semi-structured interviews with participants in a private room. Considering that the lead author was a man, a fourth-year undergraduate student, who identified as a woman, was also present during each interview to take interview notes and have another woman present to increase participant comfortability during the interview process (Velardo & Elliot, 2021). All individuals who were interviewed were assigned to their own participant identification number to protect their identity.

Participants

Eligible participants were 18-25 years old, had entered a PFF at least once in six months prior to being contacted, identified as a woman, were fluent in English, and perceived at least one characteristic of other gym patrons to be debilitative to their exercise behaviour. In total, 10 eligible participants (M_{age} = 20.4, SD_{age} = 2.2) were interviewed in this study. Participants indicated exercising a range of zero to five days per week (M = 3.3, SD = 1.9). Nine of the participants identified their sexual orientation as heterosexual (straight) with one identifying as pansexual. The majority identified their ethnicity as Caucasian (n = 6), while two identified as Black, one as Asian, and one as Hispanic/Latino.

Measures

Screening Survey

We developed a screening survey to identify participants who met the aforementioned inclusion criteria. To save time during the interview portion of this study, demographic questions were also included in the survey to describe participants (e.g., ethnicity, sexual orientation, and typical use of a PFF on a weekly basis). The seven characteristics of others that were identified in a previous study (Engel et al., 2025) to have the most negative influence on one's use of a PFF were the presence of others who were perceived to be (1) very lean, (2) very fit, (3) very muscular, (4) very knowledgeable, (5) lifting very heavy weights, (6) doing a very intense workout, and (7) a different gender than themselves. These items were scored on a 5-point Likert scale ranging from complete negative influence (-2) to complete positive influence (+2).

Interview Guide

In preparation for the interviews conducted in this study, a semi-structured interview guide (Appendix F) was developed by the lead author. After the guide was pilot tested, input from co-authors was considered before final revisions were made. First, a short preface was read

to each participant to set the tone for the interview followed by rapport-building questions to enhance participant comfortability (e.g., What does a typical week look like at the gym for you? Can you walk me through the areas you like to use or not use?). The interview guide then included open-ended and probing questions to gain an understanding of participants' beliefs and values related to other patrons within a PFF alongside understanding the 'why' behind each answer (e.g., How do you believe people should behave towards others in a public gym? Do you think your beliefs influence your decision to use or not use the area other users are in? Why or why not?), social media content related to exercise they encountered (e.g., What experiences do you have with seeing exercise content on social media? Does the content/information you see on social media influence how you think about actual people you might see in the gym? Why or why not?), and experiences related to the presence of other individuals in a PFF setting (e.g., Can you describe a situation at the gym that negatively impacted how you thought, felt, or acted? If you feel comfortable, please walk me through that situation. Why do you think you were impacted in that way?). Further questioning was centered around understanding any thoughts, feelings, and beliefs related to such experiences (e.g., What thoughts or feelings do you experience when exercising around other people in a gym? Why do you think you experience such thoughts and/or feelings?).

AI Pictures

In addition to the questions asked during participant interview, the researchers used the online platform Dall-E to develop a series of life-like AI images (see Figure 1 for example images) resembling individuals whose physical characteristics (i.e., muscular, fit, and lean body composition) have been previously shown to have a debilitative presence in a gym setting (Engel et al., 2025). To control for ethnic and gender diversity, we created images for one muscular, one

fit, and one lean individual for men and women of six different ethnicities that were representative of the population in the geographic area where this study took place for a total of 36 pictures (3 body types x 2 genders x 6 ethnicities = 36 images). To prevent participant response bias based on the pictures, participants were not shown these images until the end of the interview where they were asked to pick out any images of people whose presence would be debilitating to their exercise experience if they were in the same PFF. Participants were then asked why they selected the images they did. The purpose of this qualitative practice was to enhance the communication between the participants and the researcher to aid in the participant explanations of complex experiences, feelings, and beliefs that may be hard to convey (Trombeta & Cox, 2022).

Data Analysis

The average length of the interviews was just over 46 minutes (*range* = 35:42min – 57:31min), and they were all recorded using a secure, password protected device (i.e., iPhone), then securely downloaded directly onto a password protected computer and transcribed verbatim. A within-case approach was initially used to better understand the individual experiences that bounded each case (i.e., each case = an individual participant. Next, an inductive, data-driven approach, reflexive thematic analysis (TA) was used to identify patterns of meaning and generate themes that reflected shared experiences across the data (Braun & Clarke, 2006; Braun & Clarke, 2021). This method was selected for its flexibility and compatibility with a range of theoretical perspectives and data types. The analysis followed Braun and Clarke's (2006) six-phase process: familiarization with the data, generation of initial codes, theme development, theme review, definition and naming of themes, and final reporting. These stages were approached in a

recursive manner rather than strictly linear, allowing movement back and forth between phases as interpretations developed and deepened over time.

The first author led the data analysis by engaging in repeated readings of interview transcripts and listening to audio recordings to support familiarization. Inductive codes were developed and organized into potential themes using NVivo 15 and Microsoft Excel. Codes and themes were created and discussed collaboratively with the second (A.F.), third (A.H.), and supervising (J.P.P.) author to refine interpretations and ensure descriptive and interpretive validity. Discrepancies in coding and theme development were resolved through discussion and consensus, with final themes reviewed by the research team. Anonymized quotes from participants are presented in the results to illustrate each theme. Minor edits, such as the addition of punctuation or clarifying words and adding context in brackets, were made to enhance clarity while preserving the original meaning of participants' statements.

Trustworthiness

To ensure the trustworthiness of this study, the criteria of credibility, transferability, dependability, and confirmability were addressed throughout the research process (Creswell & Poth, 2018; Lincoln & Guba, 1985). Credibility was supported through prolonged engagement with the data and collaborative coding discussions among the first author, second author, and supervising author. Participant transcripts were sent back to interviewees for member checking, allowing them to verify the accuracy of their words and the content of the conversation (all participants confirmed their transcripts were accurate). Transferability was enhanced by providing rich descriptions of the research context, procedures, and participant characteristics to support future application to similar settings. Dependability and confirmability were strengthened through the maintenance of a detailed audit trail documenting analytic decisions,

theme development, and ongoing team discussions. The second author also served as a critical peer reviewer, offering feedback on interpretations and helping to mitigate potential researcher bias throughout the analysis process.

Results

Within Case Results

Case 1: Morgan

Morgan, an 18-year-old Hispanic heterosexual woman, attended a PFF five days per week, primarily focusing on exercising her legs, back and arms throughout separate days. Morgan selected seven AI images (1-1, 1-2, 1-5, 1-7, 3-6, 4-1, and 4-2: Appendix G) that represented both men and women who were either fit or muscular. Her debilitative experience stemmed from her own negative prior experiences with men (e.g., one time a man followed her around the gym, another time a man asked for her number and proceeded to follow her around the gym as well), typically in the free weight area which she tended to avoid, comparing herself to women she deemed to be fitter than her, and worrying about the judgement of others. Although she mentioned having adequate knowledge of completing a workout, she still expressed a feeling of not knowing what she was doing when surrounded by fit and muscular individuals.

Case 2: Jamie

Jamie, an 18-year-old Caucasian heterosexual woman, attended a PFF five days per week, primarily focusing on full body workouts. During our conversation, Jamie clarified that while she strives to make it to the gym five days per week, that it doesn't always happen. While she mentioned completing her workouts throughout various areas of the gym, Jamie did say that she would avoid the squat racks and busy areas because she "*[didn't] love being around people*"

and felt like "*[she'd] get judged for not doing the exercise completely right*". Jamie selected four AI images (1-5, 1-7, 2-9, and 3-8: Appendix G) which represented muscular men and one muscular woman. Her debilitative experience was her fear that muscular people would judge her negatively and acknowledged that nobody ever explicitly judged her but rather she assumed they would as she "*put all the big bulky people in the same circle*". When such people were present, she concluded that she would "*most likely just leave and not workout that day*". Jamie mentioned that the reason why she had such a fear was "*probably due to [here] perfectionist mindset…that [she] grew up with*" and her competitive nature wherein she indicated that if she couldn't do something perfectly, she felt that someone more experienced would judge her for that.

Case 3: Riley

Riley, a 20-year-old Caucasian heterosexual woman, attended a PFF zero days per week, and instead mentioned that she would do "*a lot of running outside or on the treadmill [at home]*". Notably, she had reported using a PFF at least once during the six months prior to contacting her for this study. Riley selected two AI images (2-5 and 3-8: Appendix G) which represented muscular men only. Her debilitative experience in a PFF was grounded in her previous experience where she was "*[self-conscious] to try new exercises…or machines*", "*[assumed] others were other fit or muscular individuals were judging [her]*" and would "*[avoid] big groups of people around machines*". Riley talked about the reason for such assumptions was mostly because she fed into the "*stereotypes of certain groups of people…mostly young me…[although she] hasn't experienced it at the gym, [she] just heard conversations and opinions that those people typically have of others at the gym*".

Case 4: Avery

Avery, a 21-year-old Caucasian heterosexual woman, attended a PFF three days per week, primarily focusing on arms or legs and always avoided going alone. She did this because she felt she was "*new to the gym and didn't know what [she was] doing*". Avery selected seven AI images (1-2, 1-5, 2-5, 3-2, 3-8, 4-6, and 4-8: Appendix G) that represented the six muscular men available to choose from and one fit man. Although she did not pick out any women in the AI pictures, her debilitative experience in a PFF stemmed from comparing herself to other "*fit and toned girls [that made her feel] insecure [because she] didn't look like them*". Additionally, Avery discussed how she would "*leave [the area] and go do something else if men [were] around…especially muscular men*" and often felt "*anxious when [she] felt that someone might be watching [her]*".

Case 5: Casey

Casey, a 19-year-old Caucasian heterosexual woman, attended a PFF five days per week, primarily focusing on cardio and lower body lifting, while pointing out that she never uses the squat rack because she finds it intimidating. She also clarified than she exercises five days per week "*intramurals twice a week and the gym on Wednesday, Saturday, and sometimes Friday*". Casey selected four AI images (1-5, 3-8, 4-1, and 4-8: Appendix G) that represented three muscular men and one muscular woman. Her debilitative experience in a PFF was related to other gym patrons staring and watching others or herself as she was used to the act of staring being associated with critical judgement or "*looking for something wrong*". This assumption that others were looking for something wrong came from her prior experience in sport where she was used to her peers (e.g., coaches and teammates) judging her skills. Casey also mentioned that it "*felt awkward to learn new exercises in front of other people*", again relating it back to "*not wanting to be judged*".

Case 6: Skyler

Skyler, a 21-year-old Caucasian heterosexual woman, attended a PFF five days per week, primarily focusing on incorporating "*lat pull downs, dumbbells, and mainly the squat rack*", while avoiding the bench press due her comparing herself to the intimidating men using it. Skyler selected four AI images (1-5, 2-5, 4-6, and 4-8: Appendix G) that all represented muscular men. Her debilitative experience in a PFF was a fear that other patrons would judge her for doing an exercise wrong and that "*anything that distracts [her] from her workout… [such as] loud young people or older men staring*" she felt was debilitative to her exercise experience. These thoughts stemmed from her prior experience seeing videos online where muscular men were "*judging others for doing weird exercises or doing them wrong*". Skyler also mentioned how she assumed people "*who know what they're doing are probably judging her*" if she were to try a new exercise or machine, again associating experienced people with their level of fitness and muscle.

Case 7: Sage

Sage, a 21-year-old Asian heterosexual woman, attended the PFF three days per week, primarily focusing on cardio and sometimes mixing in arms or legs when she had the time. She also mentioned avoiding the gym when "*there's a lot of people… [and would rather go] when it's a bit more quiet and people are keeping to themselves*". This was largely due to her not wanting people to come up to her and "*ask questions [or see] how many sets [she] has left. [She felt like she was] being rushed*" as she had experienced such "*intimidating*" instances in the past. Sage selected three AI images (1-5, 3-2, 4-8: Appendix G) that all represented muscular men. Her debilitative experience in a PFF stemmed from her prior experience with big groups of

people she found intimidating and from muscular men in the past "*coming up randomly and start saying really inappropriate, weird, and out of context things*".

Case 8: Jordan

Jordan, an 18-year-old Black heterosexual woman, attended a PFF five days per week, primarily focusing on legs, arms and back workouts. She also mentioned avoiding the squat racks because she felt "*intimidated and scared*" because of the people lifting a lot of weight and she would be "*scared of being judged [for not] lifting as much*". Jordan did not select any images at first, but when considering who might intimidate her "*especially if they were working out in a group*" she selected 15 AI images (1-2, 1-5, 1-7, 2-5, 2-6, 2-9, 3-2, 3-5, 3-8, 4-1, 4-2, 4-6, 4-7, 4-8, and 4-9: Appendix G) which represented men and women who were either fit or muscular. Her debilitative experience in a PFF came from her prior experience "*hearing stories of how men talk about girls or women [in negative ways in the gym] and [was] worried if that's how they would think of [her]*".

Case 9: Quinn

Quinn, a 23-year-old Black heterosexual woman, attended a PFF one day per week, primarily focusing on going when her friends would ask her to come with, although sometimes trying to go alone. She mentioned that she felt it was "*mentally hard just getting to the gym*" let alone working out because "*maybe [she is] just lazy… [but it feels like] a lot more work to get there*" than it is to exercise once she is in the gym. Quinn selected seven AI generated images (1-1, 1-5, 1-7, 3-7, 4-5, 4-8, and 4-9: Appendix G) that represented fit and muscular men, as well as lean, fit, and muscular women. Quinn highlighted that the reason she picked out two muscular women (1-7 and 4-9) was because they were who she assumed would be looking at her as though she was wasting her time in the gym. Quinn's debilitative experience in a PFF came from her

feeling "*self-conscious…around muscular or fit people*" and would avoid areas where others were present such as "*when fit girls are on the elliptical or treadmill [next to her, she] would just go somewhere else*". Quinn highlighted that she felt maybe that she was "*self-conscious because the guys and girls [in the gym] look physically different*" compared to herself, even going as far as saying this made her "*feel like [she doesn't] belong*". Her prior experience thinking her "*guy friends probably judge [her for not doing something right]…because why wouldn't they*" was also mentioned.

Case 10: Dakota

Dakota, a 25-year-old Caucasian pansexual woman, attended a PFF one day per week, primarily focusing on just getting there as regularly as possible. She communicated that she typically only uses the "*stair climber because [she feels] confident doing it*" and sometimes "*a tiny little corner [but doesn't] venture into the weights*" because she "*[didn't] know how to use them*". Dakota selected six AI images (1-1, 1-5, 2-5, 3-8, 4-4, and 4-6) which represented fit and muscular men and fit women. Her debilitative experience in a PFF stemmed from her prior experience outside of the gym that led to her "*assum[ing] that fit and lean women [are] mean and maybe bullies*" and she felt those are the "*type of people you typically see*" in the gym. She did however acknowledge that this was not fair of her to assume but that she sometimes "*couldn't help it*". Dakota also pointed out that she'd "*compare herself to others*" in a negative way and that it was "*probably [due to her] negative self-talk…and past experiences…[that] influenced how [she viewed her] current experiences [in the gym]*" even mentioning that "*it's not like people have done anything or said anything [harmful to her]*". She went on to say that her negative "*self-perception of [her] own body*" was also due to her time on the stair master in

"*noticing [someone beside her] at a high level…doing it so easily…while [she] was out of breath*".

Thematic Analysis Results

Two overarching themes were identified to aid our understanding of the factors that contribute to the debilitative presence of others at the gym among emerging adult women. These themes, driven by the data, were (1) *Personal Insecurities Triggered by Gym Patrons,* and (2) *Contextual Contributors to a Negative Experience*. Each theme, comprised of multiple sub-themes, reflects the nuanced and layered ways in which participants interpret and respond to their social exercise environment(s). While the results have been presented in separate sections, defined by themes, it is worthy to note that several themes and sub-themes overlap.

Personal Insecurities Triggered by Gym Patrons

Within the context of the presence of other gym patrons, a key theme that arose from our interviews involved the insecurities of participants due to their own self-reflection with other gym patrons present. Furthermore, three sub-themes were identified under the umbrella of insecurities: (1) *Low Confidence in my Exercise Abilities Around Others*, (2) *Negative Feelings Occur when I Compare Myself to Others*, and (3) *Social Fears.*

One important note regarding the discussions that shaped this theme is that only two participants mentioned another person, within the PFF environment, overtly saying something directly to them that triggered an insecurity. Whereas the remainder of the participants discussed not explicitly experiencing encounters with other gym patrons, such as judgement from others, that caused them to believe that such individuals were problematic. Instead, the majority of participants admitted to making assumptions that played a role in how they perceived other gym patrons such as these examples from Dakota:

Maybe that like loud, kind of in your face [behaviour would give me negative thoughts or feelings]. And again, that's another perception that I haven't seen [in real life], but it's kind of the stereotypical thought of like when you go to the gym, there's like bodybuilders and they're like wooaahh (gestured to being bulky). (Dakota)

Low Confidence in my Exercise Abilities Around Others. Throughout the interviews, four participants discussed how the presence of other gym users in a PFF, specifically those who were perceived to be knowledgeable within a gym context, prompted them to think negatively about their own general abilities to exercise in the gym. This sub-theme was labelled based on multiple participants sharing how their thoughts about other gym patrons led to why they felt insecure about their lack of knowledge to exercise in general. One example is provided by Skyler:

I feel like when I do see someone who like you can tell just knows what they're doing, I feel like because sometimes I feel like I don't know what I'm doing…and so I think, like that perception, not that it has me perceived them in a negative way, but I feel like it affects the way I perceive myself (Skyler).

While a few participants in this study spoke to their insecurities surrounding their general knowledge of exercising within a PFF, many other participants also mentioned similar thoughts and feelings in relation to engaging in specific exercises or using specific equipment. This sub-theme was labeled appropriately as such instances were reported due to a lack of familiarity and experience with such exercises and/or equipment. Participant insecurities surrounding their own abilities in the gym were discussed as debilitative to their PFF experience in the sense that they felt that as though their growth in the gym was limited as exemplified below:

I feel like the people who are at the gym, they've been going to the gym for a while, so they know what they're doing. So, I'm just like, "oh my gosh, what if someone's looking at me and I'm using this machine wrong? So, I think that definitely influences what I do. So, I don't really do any new things. I just stick to the same old things that I've been doing, but I don't think that's good for you? I think that's what my friend said, but I'm not sure. So, it just like hinders me from exploring new machines or workouts (Quinn).

Negative Feelings Occur when I Compare Myself to Others. During participant interviews, there were often instances where they would mention comparing their physical abilities to exercise with other gym patrons sharing the PFF space. This sub-theme came from the data as in many conversations, participants mentioned that such comparisons led them to experience negative thoughts, feelings, and/or emotions about themselves and their exercise experience (e.g., feeling like they shouldn't be in the gym). Furthermore, participants made it clear during the conversations that the feelings associated with these comparative encounters led them to think about leaving the gym or disrupt their workout (i.e., debilitative). One example of this was provided by Dakota:

I'm just like, that's awesome that [other gym users] can move their body in that way. That's really sweet that they have the agility or that muscle. But then there is also noticing that there's often comparison of like, "oh, well I can't do that" or "I don't do that", or again like "hmm, I don't know if I should be here because I can't do that" (Dakota).

Additionally, participants often evaluated their own bodies in relation to those around them, particularly when observing individuals who they perceived as more fit or toned. These comparisons prompted feelings of insecurity and inadequacy, with several participants

describing moments of diminished confidence or self-consciousness in the gym (i.e., debilitative to their experience in a PFF). While some acknowledged a mix of motivation and discouragement, the dominant response was one of internal critique and discomfort in their own bodies as discussed by Morgan:

> *When I see girls that are very strong and have, like the tone, I'm like dang, I wish I could look like them. Like I compare myself to them a lot. But overall, it's just mostly the girls I look at, and I'm like, oh dang, I wish. It's a little bit of both [negative and positive feelings]. It's like motivation to be like, maybe I should start going more and like try harder, but at the same time it's like, I look down at myself for it…just cause I've always been, like, comparing myself to others. So, it's just kind of a habit I have now (Morgan).*

Social Fears. The sub-theme of *Fearful Thoughts Triggered by Other Gym Patrons* provided further context and explanation of '*why'* participants had debilitative experiences in a PFF. This theme arose from the data because one of the more prominent patterns across the interviews resulted from many participants who expressed a persistent fear of being judged by others in the gym. Such fear was particularly related to their appearance, competence, or perceived experience level. This concern was viewed as debilitative to ones' exercise in a PFF as it often led to feelings of self-consciousness and, in some cases, the avoidance of certain gym spaces or activities. For example, Jamie told us about the negative feelings she experienced when she was fearful about the judgement from other patrons:

> *I feel like I'd get judged with my workout because I might not be doing the exercise completely right. So, I might be getting, like, judged and like it looks like I don't know how to do things... [This makes me feel] anxious and not really wanting to workout over there (Jamie).*

This fear was not always based on direct interactions but often stemmed from broader gym culture or secondhand experiences. The reason for the wording *triggered by other gym patrons* was used in this sub-theme, ensuring not to indicate that judgement was objectively happening, was because the majority of conversations surrounding a fear of judgement were due to participants' assumptions that others were judging them. However, these fearful thoughts still produced feelings that participants mentioned were disruptive to their exercise experience (e.g., prompting participants to avoid others or leave the gym in some instances) and clearly debilitative in nature. Such findings suggest that the perception of judgment, whether real or imagined, can impact on one's gym behaviour, reinforcing feelings of insecurity and limiting confidence in fitness environments. The concept of forming assumptions of what other patrons might be thinking (such as judgement) was depicted by Riley:

> *I haven't experienced it at the gym…where I felt like someone was like, like super judging me or anything, it's just I've heard conversations, and like opinions, and views that… typically people have about other people, so you never know like what they might be like thinking… or like talking about that sort of stuff (Riley).*

While not as salient, but very much a shared concern, a few participants expressed a heightened sense of vulnerability and discomfort in gym settings, especially when alone or during less supervised hours. The fear for ones' safety was particularly acute in the evening, when the presence of unfamiliar men and a lack of surveillance intensified feelings of being unsafe. Because participants discussed that these fears led them to leave the gym early, avoid attending a PFF during certain hours, and feel as though their safety was at risk, such conversations were without a doubt debilitative to their exercise experience. One example of a situation where personal safety was in question is described by Morgan:

I was kind of scared cause I was alone at that time [when I was scared for my safety at the gym due to the presence of a man who resembled someone I had previously had a negative experience with], I wasn't with anybody, I went to the gym alone that day, so I was like, what do I do, if he does follow me to [the] cars. So I just kind of got security walking [me] out to my car, but I was just kind of scared, and I kept trying to move away, but he kept lingering around me (Morgan).

These fears often stemmed from past experiences of harassment or discomfort outside of a PFF, which participants projected onto gym environments due to similar social dynamics (e.g., a person at the gym resembling someone they had previously had a negative encounter with). For some, even a single unsettling encounter could shape long-term avoidance strategies and hyper-awareness in shared gym spaces. Sage shared a debilitative interaction outside of a PFF that, when in the presence of a gym patron who reminded her of her of that experience, prompted similar negative thoughts and feelings:

This one thing I think about a lot…it was just like, [I was working] and was just like walking to my shift… and this random guy I've never seen in my life before, he just came up to me…he was so inappropriate…and I got so freaked out…and I ran. And yeah, that was one thing…like my experiences [outside the gym] I'm translating into the gym because it's...for the most part, the same population... Like the guy looked pretty fit so I could see him, or people like him at the gym… like if I saw a bunch of guys like that in one like area, maybe I wouldn't go to that area (Sage).

Contextual Contributors to a Negative Experience

While there were discussions from this study where participants approached the presence of others in relation to themselves, there were also conversations that surrounded participant

views' of other patrons within the PFF environment. The second theme of *Contextual Contributors to a Negative Experience* was drawn from interviews where the majority of participants identified various observable features and behaviours of others within the gym environment that lead to a negative experience within a PFF context. These observations were deemed to be debilitative because participants mentioned that they elicited negative thoughts, feelings, and emotions or behaviours such as ones' disengagement from exercise or spaces within the PFF. Three sub-themes were identified within this theme: (1) *The Gym has Too Many People* which represented the overcrowded nature of the gym, (2) the *Specific Gender and Physique of Others' Can be Debilitative*, and (3) *Certain Behaviours of Others Cause Discomfort*.

Too Many People. This sub-theme was labeled as such because emerging adult women within this study frequently referenced the overcrowded gym environments as overwhelming or anxiety inducing. These negative feelings were deemed to be debilitating due to the sheer number of people within the gym at a given time which often resulted in participants avoiding such spaces, or leaving the gym all together. Below are two example pieces of these conversations provided by Avery and Morgan:

> *I guess if it's more crowded, like if one area [of the gym] is more crowded, I won't go there just so I'm not being disrespectful either. But then I don't want them to come to me either, so I'm just avoiding both situations (Avery).*
>
> *Overall, I think I mostly avoid like big, crowded areas, not mostly on behaviour, just like the amount of people that there are (Morgan).*

Many participants also highlighted having a debilitative exercise experience when people worked out together or were grouped together in certain areas of the PFF, which was a different

context than just lots of other people present in general. As exemplified by Sage, these circumstances elicited negative thoughts, feelings, and emotions within participants such as intimidation, and discomfort:

> *I just feel like if there was a big group [of people in the gym], don't know. I always think when it's a group it just feels a bit more intimidating. Like if it's just one person, it's like whatever (Sage).*

While this sub-theme gave further context as to what was happening (e.g., lots of people in the gym or groups of people working out together), the 'why' behind these contextual circumstances being intimidating (i.e., debilitative) is connected to the prior reported theme of *Personal Insecurities Triggered by Gym Patrons.* This was interpreted that way because participants suggested that more people present exuberated the potential for judgement, social comparisons, and unwelcome encounters.

The Negative Influence of Gender and Physique. Within this sub-theme, certain physiological traits of other gym patrons (e.g., gender and ones' physique) were also discussed by many participants as factors that negatively impacted their experience within a gym. Specifically, when participants noticed people who they perceived as muscular or fit, they mentioned experiencing feelings of intimidation and thoughts provoking them to leave the shared space or the PFF entirely. Below are some examples from Jordan and Jamie from when they highlighted their responses to perceiving other gym patrons' physiques:

> *Just if I see someone really, really muscular, it can intimidate me (Jordan).*
>
> *I'll feel like I'll go when they're [muscular or fit people] not working out. I would most likely change my whole like workout routine that day (Jamie).*

Additionally, some participants also noted that they attached presumptions of arrogance to the gym patrons they perceived to be fit and muscular. In certain instances, such individuals were also presumed to be bullies even after acknowledging that it's not fair to assume such things. In this context, Dakota provided an example where both the perceived gender and physique together led to her making assumptions that contributed to her negative experience:

> *I just kind of assume that [fit women will] just be like a little bit mean and maybe bullies. But again, that is influenced from experiences with people where I have been bullied or like that kind of thing. And again, not fair to assume that's of all people, but it's hard to separate that (Dakota).*

After picking out AI images of muscular men, one participant (Riley) reiterated why her assumptions of the presence of such individuals led to such debilitative thoughts and feelings.

> *I think that like [I'm] intimidated… [and] more self-conscious...[Muscular men] always just kind of seemed like they'd be very like gym bro, like stereotypically just very, that like of this is my gym, I own it, kind of attitude (Riley).*

A pattern that was particularly salient throughout participant conversations was the debilitative presence of men in a PFF environment. While several discussions surrounding fit and muscular people were in relation to men, the presence of men in this context was considered to be separate from their muscularity. As far as 'why' men were singled out, this was quite contextual to each participant's prior individual experience as described in the within-case analysis. Below, Casey provides an example of her specific context as to why she felt the presence of men played a role in her discomfort in a PFF.

> *So my gym [back home] is a woman only gym. So, it's weird being at a co-ed gym here. I definitely prefer the women only gyms. I think I just feel more comfortable overall just*

because it's what I'm used to, and normally I'm like wearing a sports bra and spandex, which is a little more awkward around guys, I just find I'm more uncomfortable in it (Casey).

Undesirable Behaviours. While the appearance of others in a gym played a role in participants having a debilitative exercise experience, certain behavioural attributes of PFF patrons also elicited negative thoughts, feelings, and behaviours. There were a host of situations discussed by participants that followed a general trend of behaviours that they perceived as undesirable (e.g., disrespecting equipment, being distracting, and being inconsiderate towards themselves or others). Whether or not the behaviour was undesirable to each participant was typically based on their personal preferences and expectations (e.g., wanting personal space). Some examples of what behaviour prompted negative thoughts or feelings are provided below by Skyler and Casey:

It's that behaviour [such as being loud or grouping together that makes me uncomfortable]. Anything, like if again, just the disrespected equipment or the space (Skyler).

It didn't feel great. I didn't feel super comfortable [when someone asked for my number]. Like once or twice, me and my friend would just leave early because it's easier to just leave and not deal with it than have to confront it we find. So it wasn't like the worst thing ever, but it definitely didn't make us feel as comfortable to workout as we normally were (Casey).

Moreover, one specific behaviour that many participants mentioned to be debilitative to their experience within a PFF was when they believed others were staring at them or others in the gym. While the majority of participants discussed that when they noticed other gym patrons

staring in the gym they experienced negative thoughts and feelings the example below, provided from Jordan, represents feelings that were shared by participants in similar discussions:

> *When I saw them and I was stretching and noticed that they, one of them especially, was staring a lot. And that time I was with my friend too. And [the staring] made me feel uncomfortable and we didn't stay long (Jordan).*

Notably, one participant (Quinn) mentioned that the staring behaviour of others was not a problem in a sporting context but only felt it to be unwanted in a gym environment.

> *I just don't like it when guys look at me in like a working out aspect. Like I used to play rugby. I don't care about rugby. You guys could look at me all you want but like I feel like in a gym I'm just like "okay guys, calm down" (Quinn).*

Unique Results

Considering the majority of participant conversations were centered around negative experiences in the gym, it was not surprising to hear many of them mention their engagement in actions or thoughts that were not supportive to their gym behaviour (e.g., avoiding gym patrons or the gym altogether, negative self-talk) in response to debilitative triggers. It is also important to acknowledge that not all debilitative experiences were met with such maladaptive strategies. Although not included in our analysis as it came from a pilot interview, it is worth mentioning a powerful response of an adaptive strategy (e.g., positive reappraisal) that was voiced:

> *I think that [the presence of others] used to bother me more…like 3 or 4 years ago when I was working out in the gym, and kind of seeing people that were more muscular or more lean than I was. But as I continued working out and kind of came more comfortable in my own body, I kind of would realize like, "oh, so and so might have more muscle in this aspect, but that doesn't mean that I don't have qualities that are similar," same with "oh,*

this person can run on the treadmill for an hour long and I can't do that, but it doesn't mean that I don't have good qualities about myself". So, it's kind of like [what] I used to notice and it kind of bugged me, like, "oh, I don't have as much muscle", but I kind of look at that now [and] I'm like, ok, they have something that I don't, but I also have a lot of qualities about myself that I still like, and so it doesn't really bug me when somebody has more muscle or is more lean than me because I know that I still have good qualities about myself. (Pilot Study Participant)

Discussion

In the present study, we sought to understand the factors contributing to the debilitative presence of others in PFFs among emerging adult women. Two overarching themes were identified: characteristics of others (i.e., overcrowding, physical attributes, and behavioural characteristics) and personal insecurities (i.e., task self-efficacy, social comparisons, and fears and concerns). While these themes were reported and summarized separately, this discussion highlights the intersecting nature of the themes and sub-themes. Participants' debilitative exercise behaviours and emotional experiences were shaped not only by observable traits of others but also by their internalized perceptions, beliefs, and insecurities. These findings align with the SCT (Bandura, 1986) wherein the interplay between environmental (e.g., others' characteristics and behaviours) and personal (e.g., insecurity, self-efficacy, feelings of discomfort) factors were identified to work in conjunction to influence behavioural choices (e.g., avoidance of spaces or premature termination of a workout) within PFFs.

A core component of SCT is the concept of outcome expectations which refers to an individual's beliefs about the anticipated consequences of their actions (Bandura, 2004; Shell, 2023). These beliefs are subjective and shaped by prior experience, motivation, and social

learning (Bandura, 2004; Shell, 2023). In the context of the present study, many participants anticipated that exercising around others in a PFF would lead to judgement or negative evaluation from others, especially in the case of men or fit and muscular gym patrons. These concerns about what others were thinking, even when unverified, contributed to feelings of self-consciousness and discomfort, as well as avoiding certain people or spaces within the PFF. These expectations were often rooted in previous negative experiences, such as feeling stared at or ridiculed in fitness spaces (often on more than one occasion), which heightened their sensitivity to potential social evaluation in future PFF visits. Such findings confirmed previous reports which highlighted that feelings of being observed can elevate negative self-perceptions, especially among women in gym environments (Sabiston et al., 2009).

A salient subtheme within the present study was another fundamental component of SCT, self-efficacy. Defined as an individual's belief in their capacity to execute behaviours necessary to produce specific outcomes (Bandura, 2006), self-efficacy also plays a crucial role in exercise-based behaviour (Engel et al., 2025; Rothberger et al., 2015). Participants in the present study, who doubted their ability to use certain equipment or complete exercises within a PFF, often mentioned avoiding those situations, even when they valued the potential health benefits of the exercise. This aligns with prior research showing that low self-efficacy is associated with avoidance and reduced exercise adherence in public settings (Feltz et al., 2008; Rothberger et al., 2015). Our findings extend this established relationship by showing that individuals with perceived low task self-efficacy often experienced concerns about being observed or judged, suggesting that these people are particularly vulnerable to environmental pressures in highly visible and social fitness settings.

These aforementioned patterns, relating to outcome expectancy and self-efficacy, are also well explained through a self-presentation theory lens (Leary, 1992). According to self-presentation theory, individuals are motivated to maintain favorable perceptions from others and may experience anxiety when they believe they are failing to do so (Leary, 1992). For our participants, this was presented as concern over appearing inexperienced, unfit, or unattractive. When self-presentation concerns were present, participants frequently mentioned avoiding the PFF altogether or altering their behaviour (e.g., choosing different attire, avoiding certain areas, or working out at less busy times) to reduce perceived scrutiny. Importantly, these behaviours were often exacerbated by environmental factors such as overcrowding, groups of people, or the presence of intimidating individuals (e.g., others who appeared more physically dominant or confident) reinforcing similar findings in the literature (Engel et al., 2025; Turnock, 2021; Wilson et al., 2023). For example, participants reported avoiding busy zones or leaving the gym early when they felt others might be watching them. These actions reflect how self-presentational concerns, rooted in anticipated social judgment, can lead to behavioural avoidance and disrupt one's engagement in health-promoting behaviours (i.e., exercise).

While self-presentation concerns focused on managing impressions, understanding how individuals' perceptions of themselves were influenced by the presence of others in the gym can be explained with social comparison theory (Festinger, 1954). Social comparisons involve evaluating one's abilities or attributes in relation to others, often automatically and emotionally (Festinger, 1954). Participants consistently described making upward comparisons, such as seeing someone stronger, leaner, or more knowledgeable. For some, these comparisons served as motivation. However, for others, particularly those who demonstrated characteristics of low self-efficacy or negative body image, such comparisons heightened feelings of inadequacy and

fostered avoidance behaviors. Such findings are consistent within the literature (Feltz et al., 2008; Pila et al., 2016). Additionally, negative comparisons were especially potent in the presence of men or highly muscular individuals, which heightened perceptions of difference and reduced feelings of belonging. These findings are consistent with prior research which found that upward comparisons in fitness settings increased body dissatisfaction and decreased one's desire to exercise (Prichard & Tiggemann, 2008; Pila et al., 2016). Together, these cognitive and affective factors explain how personal beliefs and perceived social pressures can create psychological barriers to gym participation.

This research displayed that the presence of others has a debilitative impact on one's exercise behaviour such as heightening negative self-perceptions and social comparisons as well as concerns about one's self-efficacy and self-presentation. While these findings largely reinforced the exercise psychology and PFF literature, the major contribution of this study was that the majority of perceived experiences were based on assumptions made by the participants, ultimately contributing to an understanding of 'why' this pattern exists. As it was presented in the within-case results, several participants alluded to the fact that they had never experienced explicit judgement from others at the gym while only two participants mentioned other people overtly saying something negative to them that suggested that the person thought less of them. Such findings indicate that the individual making perceptions of other PFF users may have control, to an extent, as to whether that perception leads to a debilitative exercise experience or not. Therefore, it is important to understand why such debilitative experiences are taking place when these assumptions are being made. One explanation is understanding who, of the other gym patrons present, is the most problematic.

Perhaps the most novel findings from this study came from participants picking out AI photos (Appendix G) that they believed resembled individuals who, when sharing the PFF space with them, would be most debilitative to their exercise experience (e.g., prompt them to leave the gym, avoid those people, or elicit negative thoughts and feelings). From the within-case analysis, it was found that nine of the ten participants identified one specific picture (1-5) and six out of the ten participants picked out two other pictures (3-8 and 4-8) to be debilitative to their exercise experience if they were hypothetically in a PFF with them. Picture 1-5 was a muscular man with Hispanic/Latino ethnicity, 3-8 was a muscular man with East Indian ethnicity, and 4-8 was a muscular man with Black/African American ethnicity. While all pictures of muscular men were picked at some point by a participant, only these three ethnicities of muscular men were chosen by the majority of participants. While speculative in nature, this suggests that there may be a perceptual bias of culture and/or ethnicity at play from the perspectives of the participants in this study. Furthermore, it is important to address the pictures not chosen by any participant at any time (1-3, 1-4, 1-6, 1-8, 1-9, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 3-1, 3-3, 3-4, 3-9, and 4-3) as those 16 pictures included all six lean men, two fit men (who were smiling), four fit women, and four lean women. Such findings are in line with the discussions with participants where they primarily related individuals who were muscular and fit with their debilitative experiences. While these findings offer one perspective, another explanation for why the presence of other gym patrons was viewed as debilitative to the participants in this study may be the coping mechanisms that were practiced when they reacted to their perceptions of other PFF users.

In this study, when participants responded to the aforementioned social pressures and emotional challenges, many of them employed debilitative coping strategies to manage emotionally uncomfortable situations within a PFF. The most commonly reported responses,

which resembled maladaptive coping strategies, were avoidance (e.g., leaving the gym early, skipping exercises, or avoiding specific areas), rumination (dwelling on distressing experiences), self-blame (questioning their own inadequacies), or blaming others (subjective expectations of others), all of which have been associated with increased psychological distress and disengagement from PA (Garnefski & Kraaij, 2007; Gross, 2015). While such strategies provided temporary relief by removing the immediate stressor (e.g., social exposure in a PFF), they often came at the sustained consequence of reduced exercise adherence and personal frustration. Notably, within this study, we focused on negative and debilitative experiences of participants, so it was not surprising that such maladaptive responses were discussed.

In contrast to the maladaptive strategies employed, there were instances where our participants demonstrated more adaptive strategies, such as acceptance (acknowledging the experience without judgment), refocusing on planning (considering how to better manage similar situations in the future), cognitive reappraisal (exemplified by the pilot study participant), and attending a PFF with a friend to aid their fitness journey which have been reported as successful exercise engagement strategies (Li et al., 2023; Turrisi et al., 2024).

Taken together, these insights suggest that developing positive emotional regulation skills, that have previously been associated with better excise adherence and psychological resilience (e.g., cognitive reappraisal, positive self-talk, goal setting; see Sheng et al., 2024; Ylitalo et al., 2023), may buffer against the negative effects of social discomfort in PFF environments and support more sustainable engagement in PA and exercise.

Theoretical Implications

This study offers key contributions to three interrelated psychological frameworks. First, it reinforces the value of SCT (Bandura, 1986) in understanding how personal beliefs, shaped by

prior experiences and social environments, guide behaviour. Our findings illustrate that perceived social threats, such as judgment, can undermine both outcome expectations and SE, leading to avoidance. Second, the study supports the applications of Self-Presentation Theory (Leary, 1992) in exercise settings, showing how concerns about others' evaluations can drive behavioural modification (e.g., avoidance practices) and emotional discomfort (e.g., anxiety, intimidation, fear). Third, the results offer empirical support for Social Comparison Theory (Festinger, 1954) by illustrating how appearance-based and ability-based upward comparisons can foster insecurity and demotivation. Importantly, by considering these frameworks, this study highlights the value of a multidimensional theoretical approach that considers not only the intrapersonal (e.g., beliefs, emotions) but also the interpersonal and structural features (e.g., gym layout, patron density) that shape exercise experiences. This triangulated theoretical lens offers a richer understanding of how and why certain gym experiences become debilitative and identifies potential targets for intervention.

Practical Implications

The findings from this study suggest that enhancing task self-efficacy may play a critical role in promoting gym use and exercise engagement in public settings. Practical strategies that could support this include offering beginner-friendly orientations, skill-building programs, and approachable staff support to build confidence in task performance. Moreover, sharing peer success stories and providing timely, constructive feedback can further reinforce self-belief. By fostering an environment that supports competence and gradual mastery, emphasizing that fitness progress is a consistent journey rather than an overnight achievement, gyms can help individuals feel more capable and motivated to pursue realistic goals and sustain regular PA.

From an exercise psychology perspective, practical implications may include creating interventions that could be utilized to teach emerging adults adaptive coping strategies and emotion regulation techniques applicable to exercise settings. For example, brief interventions promoting cognitive reappraisal (e.g., viewing muscular individuals as inspiring rather than intimidating) or self-compassion practices (e.g., acceptance of imperfection during exercise) could empower patrons to better navigate negative emotions triggered by social comparison (Magnan et al., 2013). Gym-goers themselves, especially regular users and men, should be more aware of their role in creating a supportive environment (e.g., being mindful of their gaze and smiling if others notice their presence).

When considering modifications to PFF management and policy, gym administrators and staff could be more intentional in creating inclusive and emotionally safe environments, recognizing that overcrowding, observable groupings, and the presence of men may turn away some patrons. Strategies such as setting behavioural norms (e.g., "Respect Shared Spaces" campaigns) or offering peripheral zones for individuals who may be uncomfortable in the primary PFF environment could reduce social anxieties and enhance perceptions of safety (Coen et al., 2018). Moreover, a review of safety policies should be conducted to ensure they have measures in place to safeguard their patron's entry, workout, and exit of the PFF (e.g., providing an option to have a staff member walk them to their car, or encourage them to report inappropriate behaviour). Additionally, gym staff could be trained to recognize and mitigate environmental stressors by providing approachable support without reinforcing feelings of surveillance (e.g., ask me for help staff shirts or subtle check-ins with new PFF members). Proactive policies and staff engagement may help emerging adult women feel more competent and supported.

Limitations

While this study had several strengths, it was not without limitations. For one, we likely underrepresented people who have the most debilitative experiences (i.e., non-users) as participants reported using a PFF somewhat regularly (M = 3.3 days/week; Range = 0 – 5 days/week). While this may limit the generalizability of the results, it is worth noting that many participants reported cutting their workouts short or purposefully avoiding other individuals in a PFF. This suggests that even young adult women who frequently attend PFFs may still experience the presence others within that environment to be debilitative to their exercise routines.

Additionally, to reduce participant burden due to the density of the topic, we did not include questions in our interview guide that explicitly sought to understand the role cultural norms may have played in the debilitative presence of PFF users. Furthermore, while extensive efforts were made to remain reflexive and approach the data from a neutral perspective (e.g., member checking, peer debriefing, and secondary coding), it is important for us as researchers to acknowledge our potential bias during data collection and analysis. Our interpretations were shaped, in part, by our own backgrounds, beliefs, and experiences related to exercise and PFF environments, which may have influenced how certain responses were interpreted or emphasized. Recognizing this subjectivity is essential in qualitative research, and transparency around positionality contributes to the trustworthiness of the findings. Another potential limitation, although speculative in its nature, may have been that the physical characteristics of the interviewers (e.g., relatively fit and regular gym users) could have impacted how participants approached answering questions throughout the interviews. With that said, strategies were used

to mitigate this potential effect such as wearing clothing that was not activewear, had sleeves, and was baggy.

Future Directions

Given that we found the presence of others in PFFs, particularly men, visibly fit individuals, and those engaging in undesirable behaviours, often triggered self-presentation concerns, negative social comparisons, and avoidance behaviours among emerging adult women, this study highlights several promising areas for future research. First, there is a need for longitudinal studies exploring how emotional responses to gym environments evolve over time with exposure and/or intervention. For example, experimental studies might examine the effects of environmental modifications (e.g., staff presence, music, layout changes) on emotional experiences and gym behaviours, offering actionable insights for facility management. Second, future research should investigate the role of emotion regulation training within exercise interventions, particularly among emerging adult women. Studies could explore whether teaching strategies such as cognitive reappraisal or mindfulness enhances gym engagement and emotional wellbeing over time. Third, more attention could be given to intersectionality in gym experiences. While this study focused on emerging adult women because they were identified as a more vulnerable population, we also need to (1) identify other segments of the population that are more susceptible to the debilitative impact of others in a PFF, and (2) identify their relevant concerns and how to address them. Therefore, future research should explore how factors such as race, body size, fitness level, and sexuality intersect to shape perceptions of safety and belonging in PFFs.

Conclusion

Taken together, this study demonstrated that PFF environments are not merely spaces for PA and exercise, but that they are also deep social and emotional environments. For emerging adult women, the presence of others, particularly men and visibly muscular individuals, can activate negative beliefs, comparisons, and insecurities that influence their confidence, motivation, and behaviour. While previous research has shown that others' presence can negatively affect gym use (Engel et al., 2025), our study revealed that the psychological mechanisms behind this effect primarily stemmed from personal assumptions and negative stereotypes of other PFF patrons. Our findings also reinforced the literature that has acknowledged outcome expectations, low SE, and self-presentational and comparative anxieties also plays a role in debilitative exercise experiences in public settings. Addressing these dynamics is essential for creating more inclusive and supportive exercise environments. Encouraging adaptive coping strategies, reshaping how gym environments (including other PFF patrons) are viewed, and creating safe facilities will be essential to reducing barriers and supporting sustainable engagement in PA and exercise among this population.

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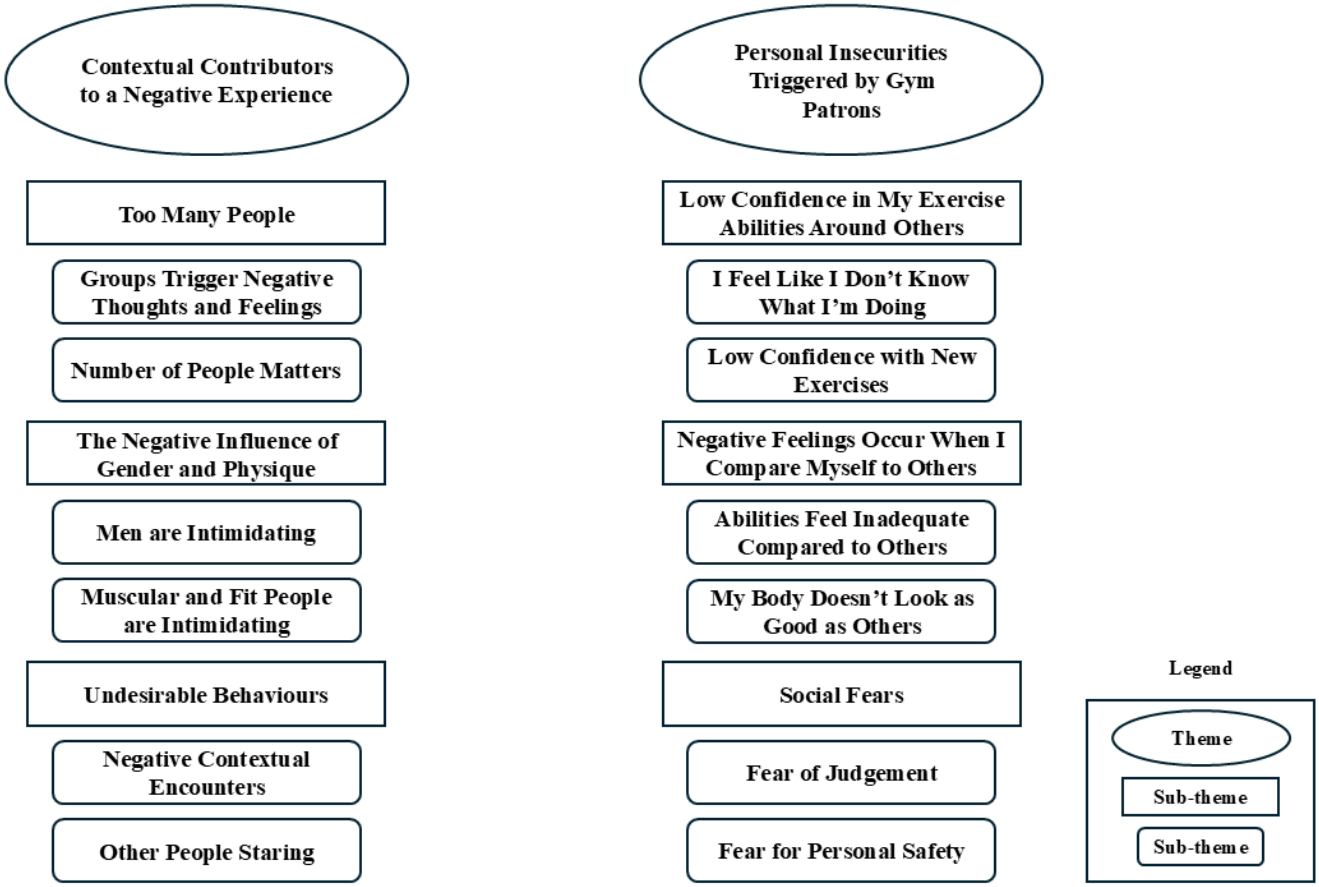
Figure 1

AI Picture Layout

Figure 2

Thematic Analysis Breakdown



CHAPTER 3: GENERAL DISCUSSION AND CONCLUSION

Within this final chapter, I have provided a summary of the outcomes from my study concluding with a personal reflection of my research experience including strengths of the study, what I have learned, and the impact of mya graduate education on personal growth and professional development.

Outcomes

The two core themes, Characteristics of Others and Personal Insecurities, were captured by participants' experiences of discomfort, avoidance, and psychological strain within gym environments. These themes reflect the dynamic interplay between the social environment and individual experiences and reactions (i.e., behaviour), a relationship well-theorized in Social Cognitive Theory (SCT; Bandura, 1986). The triadic reciprocity central to SCT was clearly observable in participants' descriptions of how the presence of others shaped their exercise choices, emotional states, and sense of safety. What this study uniquely contributed was represented in how participant perceptions', while based on a variety of experiences, were rooted in stereotypical assumptions of judgement, social norms, and acceptable behaviour. This lens supports a critical realist perspective wherein the participants operated within a shared reality (e.g., the gym space and its layout), but their interpretations of that reality were shaped by internal, sometimes invisible mechanisms (e.g., beliefs, expectations, emotional memories).

Reflection

Transitioning from a quantitative to a qualitative research approach was both a challenging and rewarding experience. Having previously worked with structured datasets and statistical analysis, shifting toward an open-ended, interpretive methodology required a reorientation in how I thought about knowledge, data, and the researcher's role. Initially, the lack

of predetermined variables and hypotheses felt disorienting, as qualitative research demands comfort with ambiguity, reflexivity, and depth rather than interpreting numbers and statistics. However, this transition ultimately deepened my understanding of the research process and the richness that comes from engaging directly with participants' lived experiences. Learning to conduct interviews, code data thematically, and grapple with subjectivity allowed me to explore complex human experiences, such as gym use, perceptions, and social influences, in a way that quantitative methods could not fully capture. This process expanded my skills as a researcher and helped me appreciate the value of methodological flexibility in answering different types of research questions.

This study offered several methodological and conceptual strengths. Through the lens of a critical realist, I was able to effectively capture the complexity of both real behaviour and the deeper meaning of individual interpretations of their reality. The use of semi-structured interviews accounted for rich, nuanced discussions with participants that provided depth and authenticity to the findings. The inductive thematic analysis was very complimentary to this approach as, through the process, the data "provided" rich insights that remained faithful to participants' lived experiences while uncovering patterns across cases. Additionally, the study was thoughtfully designed with the inclusion of AI-generated images as discussion prompts enhanced participant engagement and helped elicit more vivid, concrete responses to abstract questions. Together, this approach aligned well with the exploratory nature of the research question and reflected a commitment to understanding the lived experiences of emerging adult women in a way that respected both personal meaning and broader social, cultural, and environmental factors that influenced individual behaviour, factors that go beyond personal motivation or choice.

In reflecting on the procedural experience of conducting this research, I also observed additional strengths that supported this study. First, there was the creation of the AI images. Working through hundreds of prompts to produce the final product of images helped me, perhaps even a little subconsciously at first, reconsider my own communication style that I carried into each interview. I am not indicating that I attempted to prompt participants to respond in a certain way, but rather that I recognized the way my brain functions in making assumptions about the prior knowledge that someone I am talking to holds (i.e., people can't read your thoughts Alex, walk them through it). Second, I humbly recognize one of my biggest strengths as a researcher: recruitment. I was able to successfully collect 7 pilot study interviews (where I piloted the interview guide and the AI images) as well as the 10 interviews included in this study within a month and a half of commencing recruitment. This ultimately allowed ample time to follow a fluid analysis procedure and in-depth, highly pondered results. Third, working with a very bright undergraduate student (who was a woman) during the recording of interviews provided an immense benefit to not only the study design, but also to myself as a researcher. She was bold, often questioning my reflection of interviews and providing me with the perspective of a woman in response to how I asked questions as a man which led to a great deal of in-depth thinking and reflection. Her presence also seemed to immediately create a safe and comforting environment, where participants (often noticeably and sometimes surprisingly) felt comfortable sharing adverse experience without hesitation.

Finally, throughout the process of conducting this research, being a graduate student, building a lab culture, and engaging in the community I now call home (all while balancing the events of life) I have learned so much about myself. Through it all, I have grown to discover my likes and dislikes, my strengths and weaknesses, my humility and pride, and in doing so, I have

come to better understand the kind of person, and professional, I am becoming. Much like sport and exercise, graduate school is not just about performance or outcomes, but about showing up consistently, embracing discomfort, and adapting to new challenges. There were times when the process felt physically and mentally exhausting with moments of uncertainty, doubt, and self-questioning, but those were also the moments that built resilience and brought clarity. This journey, much like the experiences shared by the participants in my study, reminded me that growth takes time, progress is rarely linear, and confidence is often earned through repetition, reflection, and perseverance. In this sense, my time in graduate school has not only strengthened my academic and professional abilities but has also deepened the personal qualities, like self-awareness, discipline, and confidence that will carry me forward into the next phase of life, whatever that may be.

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Appendix A

Recruitment Poster

Appendix B

Recruitment Letter

Subject Line: Invitation to Participate in Research

Hello (Participant name),

My name is Alex Engel, and I am a Kinesiology Master's student at the University of Lethbridge under the supervision of Dr. Paige Pope. You are receiving this message today to tell you about a study we are currently conducting titled **"What's happening with gym culture? Exploring Emerging Adults' Perceptions of Public Fitness Facility Users"**. Here I have provided you with a brief overview of the study, as well as a survey to access eligibility that should take no more than 5 minutes.

This study aims to understand where debilitative perceptions of others within a public fitness facility stem from, and to identify similarities within young adults. A secondary purpose of this study will be to validate the AI images used during the interview process to understand perceptions of others within a shared gym environment. This study is open to adults who are 18-25 years of age, have exercised at a public fitness facility in the last 6 months, have the ability to read, speak, and understand English, and fall within a set boundary of measurement in how you perceive social environmental factors to influence your use of a public fitness facility. Once this screening is completed, if you are eligible to participate, I will be in touch to book a time for our initial meeting.

The study will include a single interview that is expected to take 40-60 minutes to complete, although it is not unusual for an interview to go longer. Participants in this study will be asked questions related to their perceptions of a public fitness facility environment. Participants will also be provided with a copy of their own interview transcript to ensure their voice was captured and recorded accurately. All interviews will be held in person in Lethbridge, Alberta at the University of Lethbridge.

Participation is voluntary and you are free to withdraw from the study at any time. Additionally, there will be no negative penalty if you choose to withdraw from the study. Participants' last chance to withdraw consent from the study will be the end of the seventh day following participants' indication that their recorded transcript is accurate. Participants will be thanked for their time with a maximum of $25 for participating in the study. We would appreciate participation in this study to help us further understand the debilitative perceptions individuals have on other gym users. This study is approved by the University of Alberta Research Ethics Board, #Pro00143263.

Participation is completely confidential and anonymous as all participants will be given a randomly generated gender-neutral name to protect your identify. I would be happy to discuss that with you in more detail if you request it. The data will be kept for a period of 5 years before they are destroyed. We intend to publish the findings in scholarly publications and presentations, as well as through media sources that release information to the general population, however, no participant names or identifiers will be revealed.

If you are still interested in participating in this study, please complete the following screening questionnaire to determine if you are eligible: (*Screening survey link was inserted here*).

If you have any questions at all, please do not hesitate to reach out.

Thank you for your time,

Alex Engel (*he/him),*BA. Kinesiology
Masters Student
Psychology for Active Living and Sport (PALS)
Department of Kinesiology & Physical Education
University of Lethbridge
E:alex.engel@uleth.ca

Appendix C

Eligibility Survey

Title: What's Happening with Gym Culture? Exploring Emerging Adults' Perceptions of Public Fitness Facility Users

Principle Investigator:
Alex Engel
Masters Student
Department of Kinesiology
University of Lethbridge
Lethbridge, AB
Email: alex.engel@uleth.ca

Invitation to Participate: You are invited to participate in this research study about perceptions of others within a public fitness facility.

Purpose of the Study: Within this research we will seek to answer two research questions. (1) What factors play a role in forming young adult women's perceptions of other patrons within a public fitness facility that are debilitative to their behaviour? (2) Do particular patterns of personal experiences, beliefs, or values shape the development of negative perceptions of public fitness facility users among young women who use these facilities?

Participation: To participate in this study you must be 18-25 years of age, have exercised at a public fitness facility within the last 6 months, identify as a woman, be able to read, understand, and speak English fluently, and fall within a set boundaries of measurement in how you perceive social environmental factors to influence your use of a public fitness facility. If you wish to participate in this study, please complete the following survey that should take no more than 5 minutes to complete. You do not have to answer any questions that you do not want to answer. Once you have completed the survey, please choose the 'submit survey' option at the end of the questionnaire.

Benefits: There are no direct personal benefits anticipated in this study.

Risks: You will be presented with questions that ask you to reflect on your personal self, self-efficacy, and motives. We do not expect that these questions will be of greater risk than what you experience in your day-to-day life. If you experience any feelings of emotional discomfort, we encourage you to reach out to the following resources:
https://www.ulethbridge.ca/counselling/
Email: counselling.services@uleth.ca
Phone: 403.317.2845

Confidentiality and Anonymity: The information that you will share will remain strictly confidential and will be used solely for the purposes of this research. The only people who will

have access to the research data are the principle investigator (Alex Engel) and research supervisor (Dr. Paige Pope). Your answers to open-ended questions may be used verbatim in presentations and publications but you will not be identified. In order to minimize the risk of security breaches and to help ensure your confidentiality we recommend that you use standard safety measures such as signing out of your account, closing your browser, and locking your screen or device when you are no longer using them / when you have completed the study. Results will be published in pooled (aggregate) format. Personal identifies that we will be collecting may include participant's names', email address' and age at the time of data collection. Several procedures will be implemented to ensure that personal identifiers are not released. First, only the primary investigator (Alex Engel) will have access to the email addresses of participants (via Qualtrics).

Second, emails of individuals who indicate they wish to be contacted regarding future studies will be stored on a secure research drive that only the Dr. Paige Pope has access to. Furthermore, due to the anonymous nature of the Qualtrics survey program, there will be no way of linking email responses from survey 2 (if you indicate you want to be contacted regarding future studies) with responses to the study questionnaire.

Data Storage: Electronic copies of the survey will be encrypted and stored on a password protected computer in a locked office at the University of Lethbridge.

Compensation: While your time spent filling out this survey is greatly appreciated, there is no compensation for completing this survey.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Should you choose to withdraw midway through the electronic survey simply chose the 'do not submit' option at the end of the questionnaire. If you wish to withdraw after submitting the survey, please sent an email notice of this decision to Alex Engel (alex.engel@uleth.ca). If you choose "do not submit", your data will be deleted and will not be used for our research.

Information about the Study Results: Once all data is collected and analyzed, the findings will be presented at an academic conference, and submitted for publication in scholarly journals. If you are interested in the results of the study, please contact Alex Engel (alex.engel@uleth.ca).

Contact Information: If you have any questions or require more information about the study itself, you may contact the researcher using the following e-mail address: alex.engel@uleth.ca.

The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta, reoffice@ualberta.ca, ethics ID#: Pro00143263. If you have any questions regarding your rights as a research participant or how the research is being conducted, you may contact the Research Ethics Office at 780-492-2615.

Please keep this form for your records. To do so, please print this page.

Do you consent to completing this survey

- ○ Yes (1)
- ○ No (2)

Page Break

Throughout this survey, we will ask questions related to yourself, and your usage of public fitness facilities. For the purposes of this survey, public fitness facilities are facilities outside a personal home that you exercise in and therefore include a variety of exercise equipment (e.g., weights, cardio equipment). We are not referring to facilities that ONLY have spaces used for sports, but not exercises (e.g., gymnasiums, squash courts).

Page Break

Are you 18 to 25 years of age?

- ○ Yes (1)
- ○ No (2)

Can you read, understand, and speak English fluently?

- ○ Yes (1)
- ○ No (2)

Have you exercised at a public fitness facility within the last 6 months?

- ○ Yes (1)
- ○ No (2)

Do you currently use a public fitness facility?

- ○ Yes (1)
- ○ No (2)

End of Block: Informed Consent

Start of Block: Demographics

What is your name? (First / Last)

_____

What is your email address?

_____

What is your age?

_____

What is your height? (Please indicate ft/in or cm)

_____

What is your weight (Please indicate kg or lbs)

_____

What is your gender? (Please check which you most identify with)

- ○ Man (1)
- ○ Woman (2)
- ○ Non-binary (3)
- ○ Prefer not to say (4)
- ○ Other (Please specify) (5)

_____

What ethnicity do you identify as? (Select all that apply)

- ○ Asian (1)
- ○ Black/African (2)
- ○ Caucasian (3)
- ○ Hispanic/Latino (4)
- ○ Indigenous (5)
- ○ Other (Please specify) (6)

_____

What is your sexual orientation (Please check the response option that you most identify with)

- ○ Asexual (1)
- ○ Bisexual (2)
- ○ Gay (3)
- ○ Heterosexual or straight (4)
- ○ Lesbian (5)
- ○ Pansexual (6)
- ○ Queer (7)
- ○ Not listed above (Please specify) (8)

End of Block: Demographics

Start of Block: Fitness Centre Use

What is your primary exercise location? (if any)

_____

In a typical week, how often do you exercise in a public fitness facility?

- ○ 0 days per week (1)
- ○ 1 day per week (2)
- ○ 2 days per week (3)
- ○ 3 days per week (4)
- ○ 4 days per week (5)
- ○ 5 days per week (6)
- ○ 6 days per week (7)
- ○ 7 days per week (8)

Factors that Influence Fitness Facility Use

In the next sequence of questions, we ask you the extent to which different factors within public fitness facilities influence your use of them. For the purposes of the question, "**negative influence**" implies the factor will make you **less likely to use the fitness facility**, while "**positive influence**" implies the factor will make more you **more likely to use the fitness facility**.

Consider each factor and indicate the degree to which each factor negatively or positively influences your use.

	-2 (Completely negative influence) (1)	-1 (Some negative influence) (2)	0 (neither negative or positive influence) (3)	1 (Some positive influence) (4)	2 (Completely positive influence (5)
The presence of individuals who are very lean (1)	○	○	○	○	○
The presence of individuals who are very fit (2)	○	○	○	○	○
The presence of individuals who are very muscular (3)	○	○	○	○	○
The presence of individuals who lift heavy weights (4)	○	○	○	○	○
The presence of individuals who appear to be very knowledgeable (5)	○	○	○	○	○
The presence of individuals who do very intense workouts (6)	○	○	○	○	○
The presence of individuals I perceive as a different gender than me (7)	○	○	○	○	○

End of Block: Fitness Centre Use

Start of Block: Social Desirability

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is True or False as it pertains to you personally.

	True	False
It is sometimes hard for me to go on with my work if I am not encouraged.	○	○
I sometimes feel resentful when I don't get my way.	○	○
On a few occasions, I have given up doing something because I thought too little of my ability.	○	○
There have been times when I felt like rebelling against people in authority even though I knew they were right.	○	○
No matter who I'm talking to, I'm always a good listener.	○	○
There have been occasions when I took advantage of someone.	○	○
I'm always willing to admit it when I make a mistake.	○	○
I sometimes try to get even rather than forgive and forget.	○	○
I am always courteous, even to people who are disagreeable.	○	○
I have never been irked when people expressed ideas very different from my own.	○	○
There have been times when I was quite jealous of the good fortune of others.	○	○
I am sometimes irritated by people who ask favors of me.	○	○
I have never deliberately said something that hurt someone's feelings.	○	○

End of Block: Social Desirability

Start of Block: Final Consent

Do you wish to submit your answers? (If you select no, your recorded response will be deleted by the researcher).

- ○ Yes - Submit survey (1)
- ○ No - Do not submit survey (2)

End of Block: Final Consent

Appendix D

Invitation to Participate in an Interview Letter

Subject Line: Eligible to Participate in Research Study

Hello (Participant's name),

I am pleased to inform you that you are eligible to participate in the study titled, **"What's happening with gym culture? Exploring emerging adults' perceptions of public fitness facility users***".* We are currently in the process of booking participants to meet with us and begin the interview portion of the study. With that said, please let me know which of the following dates and times work best for you to meet with us to begin your study. If none of the following dates/times work with your schedule, if you could please let me know a sense of your availability over the upcoming weeks/months that would be much appreciated.

(Example Date and Times) September 17th

- **10:00am**
- **11:00am**
- **12:00pm**
- **1:00pm**

If you have any questions at all please do not hesitate to reach out.

Have a wonderful day,

Alex Engel (*he/him)*,BA. Kinesiology
Masters Student
Psychology for Active Living and Sport (PALS)
Department of Kinesiology & Physical Education
University of Lethbridge
E:alex.engel@uleth.ca

Appendix E

Participant Informed Consent: Interview

Title: What's Happening with Gym Culture? Exploring Emerging Adults' Perceptions of Public Fitness Facility Users

Principle Investigator:
Alex Engel
Masters Student
Department of Kinesiology
University of Lethbridge
Lethbridge, AB
Email: alex.engel@uleth.ca

Co-Investigator(s) (Supervisor):

Dr. Paige Pope
Associate Professor
Department of Kinesiology
University of Lethbridge
Lethbridge, AB
403-332-4435
Email: paige.pope@uleth.ca

Invitation to Participate: You are invited to participate in this research study about perceptions of others within a public fitness facility.

Purpose of the Study: Within this research we will seek to answer two research questions. (1) What factors play a role in forming young adult women's perceptions of other patrons within a public fitness facility that are debilitative to their behaviour? (2) Do particular patterns of personal experiences, beliefs, or values shape the development of negative perceptions of public fitness facility users among young women who use these facilities?

Participation: Participation in this study will require you to (1) participate in a one-on-one semi-structured interview with the principal investigator (Alex Engel). During the interview, participants will be audio recorded. Interviews will take place at the University of Lethbridge (Lethbridge campus) and will take approximately 40-60 minutes. If needed, you will be able to ask questions during the interview to clarify what the principal investigator is asking in the questions to improve communication.

Benefits: There are no direct personal benefits anticipated in this study.

Risks: You will be presented with questions that ask you to reflect on your personal self, self-efficacy, and motives. We do not expect that these questions will be of greater risk than what you experience in your day-to-day life. If you experience any feelings of emotional discomfort, we encourage you to reach out to the following resources:
For University of Lethbridge students and staff:

https://www.ulethbridge.ca/counselling/
Email: counselling.services@uleth.ca
Phone: 403.317.2845

For public:

https://www.betterhelp.com/

Confidentiality and Anonymity: The information that you will share will remain strictly confidential and will be used solely for the purposes of this research. The only people who will have access to the research data are the principle investigator (Alex Engel) and research supervisor (Dr. Paige Pope). Your answers to open-ended questions may be used verbatim in presentations and publications but you will not be identified. In order to minimize the risk of security breaches and to help ensure your confidentiality we recommend that you use standard safety measures such as signing out of your account, closing your browser, and locking your screen or device when you are no longer using them / when you have completed the study. Results will be published in pooled (aggregate) format. Personal identifies that we will be collecting may include participant's names', email address' and age at the time of data collection. Several procedures will be implemented to ensure that personal identifiers are not released. First, only the primary investigator (Alex Engel) will have access to the email addresses of participants (via Qualtrics).

Second, emails of individuals who indicate they wish to be contacted regarding future studies will be stored on a secure research drive that only the Dr. Paige Pope has access to.

Data Storage: All data will be downloaded to a private University of Lethbridge research drive that can only be accessed by the research team, and to a private, password protected computer that can only be accessed by the research team. All data will be labelled with an anonymous participant identification number. Following completion of data collection, names and emails will be removed from the data.

Compensation: For the interview, you will be provided with a free parking pass for the location where the in-person interviews will take place. Following each interview, you will receive an online gift card valued at $25 to thank them for their time spent participating in this study.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Should you choose to withdraw midway through the interview, simply verbally indicate that to the interviewer and you will be free to go and all data collected will be deleted upon your request. If you wish to withdraw after the interview is conducted, please sent an email notice of this decision to Alex Engel (alex.engel@uleth.ca). If you choose to withdraw from the study you are still entitled to the incentive. Please note that after your interview, you will be sent (via email) a copy of your interview transcript for you to have the opportunity to review and ensure your voice was accurately captured. Once you have been sent a copy of your transcript, you will be given seven days to review the transcript, where after that point you will no longer be able to withdraw from the study.

Information about the Study Results: Once all data is collected and analyzed, the findings will

be presented at an academic conference, and submitted for publication in scholarly journals. If you are interested in the results of the study, please contact Alex Engel (alex.engel@uleth.ca).

Contact Information: If you have any questions or require more information about the study itself, you may contact the researcher using the following e-mail address: alex.engel@uleth.ca.

The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta, reoffice@ualberta.ca, ethics ID#: Pro00143263. If you have any questions regarding your rights as a research participant or how the research is being conducted, you may contact the Research Ethics Office at 780-492-2615.

Thank you for your consideration.

I have read (or have been read) the above information regarding this study.

I consent to participate in this study:

_____ (Printed Name of Participant)

_____ (Signature)

_____ (Researcher Signature)

_____ (Date: dd/mm/yyyy)

Please provide your contact information so that we can send reminders and arrange assessments for this study:

Email: _____

Telephone number: _____

- o I am aware that if I have any questions about the study including the expectations of me, assessments, or regarding the content of the messages, I can contact Alex Engel or Dr. Paige Pope.

Please answer the following question about future research opportunities:

- o I wish to be contacted regarding future research opportunities (please note, if you check this box you consent to your email being retained as a point of contact)

Participant Identification Number: _____

Appendix F

Interview Guide

Preface:

Already, so, before we get into the actual interview today, I just wanted to give you a little context. We want to really understand why people perceive other gym users the way they do. We are going to ask you very general questions as well as some more specific questions to make sure we are as thorough as possible. Some of our questions may be challenging to answer because we are asking you about negative thoughts and feelings either in relation to yourself or others. Also, some of the questions might make you feel like you are judging others, I want to be clear that whatever you say will carry no judgement from myself or my research team. Any quotes from you will never be connected to your name or your identity. Essentially, I just want you to know that you are in a safe space where you are free to speak your mind. The most important thing for you to know is that your honest answer is the best answer because it will help us to accurately represent you and your true perspective, and when combined with other participants responses, we will be able to have an accurate and thorough understanding of why people perceive other people in the gym the way they do. Finally, please don't be afraid to take your time with your answers, if you need to take a break just let me know.

Interview Questions:

1. When you do workout, what does a typical week look like at the gym for you? Walk me through that.
    a. (IF necessary) - Why do you typically choose those areas and not others?
2. What do you notice about people in the gym that may influence how you think, feel, or act?
    a. How does that influence your
        i. Thoughts?
        ii. Feelings?
        iii. Actions?
    b. Why do you think those characteristics/behaviours you notice influence your thoughts/feelings/behaviours?
    c. Why do you think you notice that about those people?
3. "I know this next question might be kind of vague, but just tell me what first comes to mind for you…"
    a. How do you believe others should behave or not behave in a public gym?
    b. How do you believe others should behave towards others in a public gym?
        i. Do your beliefs influence your decision to use or not use the area other users are in? Or the gym at all? If so, how?
4. **What thoughts and/or feelings do you experience when exercising around other people in a public fitness facility?**
    a. Why do you think you have those thoughts and feelings?
    b. How do you think those thoughts and/or feelings influence how you think about others in the gym?

5. (Transition into new focus) **Do you think your thoughts/feelings/views (ASK SEPARATELY) of others in the gym change based on their physical appearance?** Ex. Muscular people, or Fit/athletic people, or Lean people
    i. If so, how? Why is that?
6. (Transition) When you think about exercising, specifically in a public fitness facility, what would you say you generally value? Or what motivates you to go to the gym?
    a. Now can you tell me how the reasons for why you use the gym might influence your perceptions of others?
7. **Shifting now to social media** (remind them to speak their mind). Talk about what experience you have with seeing exercise content on social media?
    a. What are your opinions of those who post exercise content on social media? (content could be a picture(s) and no caption, could be picture(s) and a caption, or it could be informational posts, or even just a text rant with no pictures attached)
8. How do the images/information you see on social media influence how you think about actual people you might see in the gym? (SPECIFICALLY CONTENT)
    a. What about how you feel?
    b. What about how you act?
    c. Explain…Why do you think that is?
9. **(Transition their focus) You indicated on the screening survey that you are less likely to use the gym based on the people sharing the gym space with you. Please describe the type of person that would deter you from working out in a public gym if they were there at the same time as you.**
    a. Why do you think that is?
10. (Transition into talking about negative thoughts/feelings) **Can you describe a situation at the gym that negatively impacted how you think, feel, or act at the gym?**
    a. Walk me through that situation.
    b. How might that experience influences your thoughts/feelings/beliefs toward others you may see at the gym?
11. (*Interviewer presents picture of individuals resembling debilitative characteristics identified in Pope et al.'s (in preparation) cluster analysis*) Please take some time to consider these pictures as individuals who are present in a gym environment. I'd like you to pick out any images that may negatively influence your thoughts, feelings, or exercise practices if you saw them at the gym. (Ex. now that could mean, makes you not want to use that space, makes you have negative thoughts or feelings, makes you uncomfortable, makes you want to leave)
    a. When this type of person is present in the gym with you, specifically when you notice them, what would be the first thought(s) that might come to your head?
        i. (Dig at what specific negative thoughts, feelings, practices are present)
    b. Now that you have done that, can you explain why you believe the individuals in the pictures you selected would negatively influence your exercise experience?
        i. SUMMARIZE and confirm
        ii. Get them to unpack why they are worried? Who? What about them?
    c. Do you have any prior experience with similar individuals? Is there something that they have said or done to make you feel/think/act that way? Walk me through any situations you remember the presence of such people debilitating your exercise behaviour.
        i. What you witness at the gym is also an experience….

ii. Does how they look influence your perception of them?
iii. Does how they act influence your perception of them?
iv. Why do you think they've influenced your perception in this way?

12. Considering the pictures you selected, would the presence of those people impact you in a PFF setting if they were
    a. Lifting heavy weights?
    b. Doing an intense workout?
13. Please describe your general confidence exercising around others?
    a. Please describe your comfortability completing a workout with those people around?
14. We have talked a lot today about your perceptions of others within a public gym environment. Before we part today, is there anything that came to mind during the interview? Anything you would like to talk about further or expand on? Specifically, is there anything else that might play a role in how your perceptions of other people in the gym are formed? If so, let's get into it.
    a. [Once all done] Thank you very much for your time and for participating in this research study! It was very admirable of you to share your personal experiences with me. As a thank you for your time spent participating, we'd like to offer you $25.
    b. If anything at all comes to mind following our meeting today, please do not hesitate to reach out. In the event that you or I think of anything that would add to the discussion we have had today, there may be an opportunity for a second interview to take place if you are willing to meet again.

Appendix G

AI Pictures

1-1

1-2

1-3

1-4

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Appendix H

Debrief Letter

Subject Line: Research Participation Follow-Up

Hello (Participant's name),

I hope you are doing well today. I am following up regarding the study you participated in a little while ago titled "*What's happening with gym culture? Exploring emerging adults' perceptions of public fitness facility users*". In an effort to ensure that your voice was captured accurately, I have attached the transcript of our interview to this email. If you could please take some time to review it and let me know if it is accurate to your knowledge, or if there is something you believe is inaccurate and should be corrected, please let me know that as well.

Thank you again for your participation in this important research, it is greatly appreciated. If you have any questions or concerns, please don't hesitate to let me know.

Have a wonderful day,

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