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Middle Aged Women and their Physical Activity Leisure Selves

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Abstract

Exercise participation can be difficult for women during the transitional stage of middle age, due to physiological, psychological and social changes. This study explored the perceptions of women aged 40–54 in London UK, to leisure exercise from within their whole life contexts. Using a lifecourse framework, nine women, self-reported exercisers and non-exercisers were interviewed using semi-structured interviews. Thematic Analysis surfaced three inductive themes: (1) being middle aged, (2) perceptions of physical activity levels, (3) being an exerciser and one deductive theme (4) on health messaging. Novel findings suggest that perceptions of personal physical activity are relative to the participants historically perceived levels and suggest a discrete 'closed system of fitness improvement'. The significance of this is that it may uncover determinants that cannot be seen by traditional objective measures for improvement and adherence. Also, participants found it difficult to find appropriate age and fitness level classes and all participants thought targeted health campaigns were not meant for them but for others. Organisations and fitness professionals, tasked to encourage participation, might consider these findings when designing facilities, classes and messaging to encourage participation.

Keywords Physical activity · Middle age · Qualitative · Women · Leisure · Lifecourse

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1 Introduction

The Health Survey for England (NHS England, 2023) showed that 30% of women aged 45–54 were meeting the government guidelines for aerobic and muscle strengthening physical activity and a further 2% meeting muscle strengthening guidelines only, which is a modest improvement since 2012 and gym membership has increased in this age group to 25% of total client base (Geweise et al., 2024). Middle age can be viewed as a pivotal moment in the lifecourse to engage or re-engage with physical activity through leisure for healthier outcomes in later life (Hirvensalo & Lintunen, 2011; Li et al., 2009). Physical activity is found to have significant physical and mental health benefits (Rebelo-Marques et al., 2018) and exercise is demonstrated to be preventative to non-communicable diseases (NCD) as it can reduce symptoms and can be part of a health management strategy (Public Health England, 2020). However, reporting of these improvements also showed how socio-economic status, available facilities, underlying health and ethnicity have an impact on participation success. (Department of Culture Media & Sport, 2023; Philips, 2014; The Kings Fund, 2017; Why Sports, 2023) and for less physically active women engagement can be difficult or impossible.

The Office for National Statistics (2022) detailed 54% of 45–54 year old women and 64% of 55–64 year old women in the UK self-reported as sedentary. Further to this, the NHS Health Survey for England (2023) found women living in the most deprived areas spent the last 26.4 year of their life in poor health and even those in the least deprived suffered the last 15.6 years in poor health. This extended period of ill health can include suffering from a number of NCD's, including: 64% of women are overweight/obese (NHS, 2022), 29.9% have osteoporosis (International Osteoporosis Foundation, 2022), 10% have cardio vascular disease (BHF, 2023), 8% have Type 2 Diabetes (NHS England, 2023) and 35% have Musculo-skeletal conditions such as Arthritis (Versus Arthritis, 2023).

Midlife can be a life phase of changes for women incorporating physiology, mental health and social status (Nicholson, 2021), with 75% of UK women reporting symptoms of perimenopause/menopause of which 25% are severe (British Menopause Society, 2021). Changes in body composition through increased fat mass, together with a lowering of libido (Montemurro & Siefken, 2014) can challenge an individual's sense of their identity and negatively affect mental health (Furnham et al., 2002; Mernone et al., 2023). Such physical and psychological obstacles can be reinforced or challenged by social role changes such as preparing to transition from work to retirement, 'mothering' or caring roles (Bainbridge, 2012). Although some women may have a positive experience of this life phase, for those that don't, these tensions can affect physical activity participation in those who have previously been physically active and be a reinforcing barrier to those who have been exercise averse (McAndrew et al., 2009; Sabik & Cole, 2017). These changes, in a relatively short period of time of 10 to 15 years, can exacerbate the likelihood and prevalence of NCD's in this population and reduce health outcomes in older age.

The leisure industry is well placed to affect improved health outcomes in this population and together with a wide array of governmental health messaging (Atkin et al., 2022; Beland et al., 2020; Chavez et al., 2021; Momma et al., 2022; Pub-

lic Health England, 2020) offers substantial scope for participation. Interventions to encourage this population into participation have ranged from a consideration of socio-cultural factors i.e., where societal norms and expectations influence women's sense of 'body' (Bergland et al., 2018; Burkitt, 2012; Jackson, 2002; Zamperoni et al., 2019), which in turn can influence where, how much, and what type of exercise they might engage in (Jackson & Henderson, 1995; Theriault et al., 2010) to policy measures that include multi-level power-based social influences (Sallis et al., 2006; Such, 2012). This might include gendered viewpoints centring on inclusivity in exercise environments, accommodating female needs and concerns such as embarrassment (Aitchison, 2005; Coulter, 2013). Addressing such singular concerns in this way may go some way to aid participation and adherence. Examples of this being a reported value judgement that certain locations such as gyms and fitness environments are intimidating places to this population, a phenomenon called 'Gymtimidation' (Furnham et al., 2002; O'Donovan et al., 2010) that can be counteracted by creating 'women only' areas or sessions. Or, if a woman suffering with stress incontinence knows there is easy access to toilet facilities at an exercise facility, she may be more likely to participate (Matthews et al., 2010). Other, less 'functional' drivers such as fun and enjoyment can be powerful enablers to action (Cerin et al., 2010) but are often overlooked in the earnestness to find credible answers (Nesti, 2016).

Successful 'Casual leisure' as opposed to 'Serious leisure' (Stebbings, 2004) can hinge on location. If the activity is held within a leisure setting in which the participant feels at ease, be it in community, local council or private sector settings, numerous mental health benefits including, improved mental health and cognitive function are observed (Bouchard et al., 2007; Craft & Perna; Lauwers et al., 2021; Warburton et al., 2006). Organised group leisure activities can also influence group or community cohesion through shared experiences and friendship building (Lum & Simpson, 2021). This intersection of leisure, physical activity and interpersonal connection can offer motivating opportunities for individuals through encountering a wider, more diverse community than they might normally (Dancourt et al., 2021). It also underpins community social prescribing initiatives (Chatterjee et al., 2018) that have the ability to reach the least physically active in the community. Despite such significant efforts being put in place by relevant organisations to offer a variety of leisure settings for participation, middle aged women are continually reported to be less physically active than men (Audickas, 2017; Mann et al., 2011; The Health Foundation, 2022). Therefore, if location options are not at issue, then implementation strategies might need consideration. Participation is not a single factor issue. It is an interplay of internal and external drivers. Therefore, by exploring the motivational requirements and complexities of individuals through their previous experiences of physical activity, environments can be modified to meet such needs and encourage participation (Roberts & Marvin, 2011).

Middle age can be perceived as either a discrete phase of life, which is the model for most work done in this area, or as part of a continuum where previous experiences inform present actions and in turn affect future outcomes. Alwin's (2012) Life-course theory offers a framework in which to consider such life phases. It considers an individual's lived life through key principles within constituent components. The five key principles of action are human agency (people make their own lives and

choices), linked lives (interdependence), time and place (history and geography shaping experiences), lifespan development (predictive element of past actions on future) and timing (an individual's temporality perspective is particular to the life stage they are in and involves reflecting on the past). These principles sit within components that denominate points of change: 'events', which signal 'transitions' (changing from one state to another), that happen abruptly and are stages on 'trajectories' (charting a course) and turning points (transitions of significant change that mark a before and after) (Alwin, 2012; Li et al., 2009).

When seen beyond the confines of a discrete age phase, key themes can be mapped to previous events and decisions. The framework also acknowledges that life is dynamic and although there is human agency, timing of events may be out of an individual's control and have a profound influence on that individual's trajectories and pathway (Dannefer, 2012; Hendricks, 2012). A more nuance view of this temporal interaction comes with Heikkinen's (2011) 'Accumulation model' of experience in which present actions are seen as the result of multiple accumulated decisions and Floyd's (2012) concepts of historical events influencing later decision making. The framework follows the European school that acknowledges the importance on the constructed social reality of social structures, institutions, and governmental influences. Therefore, the frame of reference used is that lives themselves are socially constructed realities and are formed and modified by those organisations.

1.1 Study Purpose

Research convention beyond lifecourse research looks at 'life' as separate distinct phases such as 'adolescence' or 'elderly' in which research confines itself to that distinct phase with no regard for how previous life phases might have affected the one under consideration. Year on year, such epidemiological, quantitative work regularly reports barriers to exercise in the general female population as fatigue, lack of time, cost, health status, weather, and access to facilities (Audickas, 2017; Biedenweg et al., 2014; Koh et al., 2022). However, a parallel, more recent theoretical shift has expanded the comprehension of determinants to a broader more esoteric understanding such as socioeconomic status, minority groups, age or gender as drivers (Buck, 2014; Department for Culture Media & Sport, 2023; Public Health England, 2020). Other quantitative middle-aged female specific studies identify poor self-body image (Santos et al., 2015), low esteem and depression (Lee & Kim, 2008), menopausal symptoms (SAMH, 2023) and chronic condition symptoms as key determinants (NHS England, 2023).

Qualitative work in this field also focuses largely on middle age as a discrete time period and looks for answers inclusively within that stage from individual or institution/organization perspectives (O'Regan et al., 2020; Wallbank et al., 2022). On the other hand lifecourse literature that looks for solutions across the lifespan is again predominantly quantitative, focusing on middle age and: deprivation (Amuzu et al., 2009), mental health (Astell-Burt et al., 2014), birth weight and weight in old age (Bann et al., 2014), traumatic childhood experiences (Bellis Ma Fau - Lowey et al., 2013), predictors of later physical activity (Mann et al., 2013), and television viewing (Wennberg et al., 2014) amongst others. This study identified the paucity

of lifecourse-qualitative work done in this area as a gap in research, acknowledged the complexity of determinants and aimed to explore intrinsic factors from across the individuals' lived-life experiences that might help to encourage exercise uptake investigating middle-aged women's' perspectives of physical activity from within their personal life-course contexts.

1.2 Methods

The study was qualitative, congruous with McArthur et al.'s (2014) view of the relevance to take a narrative approach to discovering factors that influence exercise adherence and located it within a lifecourse framework (Alwin, 2012) where narratives are surfaced through the 'essence of experiences' (Guest et al., 2016; Morse, 1994; Patton, 2015; Sandelowski, 1995). The ontological stance is constructionist and the epistemology interpretivist. It was given ethical approval by Middlesex University, Health studies ethics sub-committee UK. Information was disseminated and informed consent was obtained from all participants prior to interview. Robustness followed Lincoln, Guba and Egon's (1986) parallel perspective and was checked against Tong et al.'s (2007) Consolidated Criteria for Reporting Qualitative Research (COREQ) reporting checklist.

1.3 Participants

The study recruited nine women, middle-aged 40–54 years old, living within the 'Transport for London' system, UK. The sample size was determined using Malterud's (2016) high Power Information model in which sample size is determined as sufficient by the amount of relevant information the data contains in order to interpret the study's aims. As data and analysis were undertaken concurrently, recruitment was halted when researchers agreed this had been achieved. The sample was purposive, convenience, and self-selecting (Bryman, 2008; Gilbert, 2008; Gray, 2004). An initial recruit came from within the researchers' network and further participants were introduced through snowball sampling. The sample included women from a diverse range of backgrounds, educational, socio economic, and career attainment. They reported having common health conditions for this population such as overweight, arthritis, diabetes or heart disease, but not all were clinically diagnosed. Five were self-reported exercisers and four were self-reported non-exercisers (Table 1). One woman was a housewife whilst the remainder had full-time 'white collar' jobs including managerial and non-managerial roles. They were all British citizens although three were born outside of the UK, migrating in youth and early adulthood. One was unmarried whilst eight were married. Five were childless and four had one to three children. Participant were allotted pseudonyms at data transcription.

1.4 Data Collection

Data was collected through semi-structured interviews at the participant's home or work place and interviews lasted between 30 and 60 min (Flick, 2014). Participants were asked to consider their previous history of exercise and their memories about

Table 1 Participant descriptions

Pseudonym	Age	Occupation	PA history
Fiona Self-reported Exerciser	40	Housewife	Married with 3 children. Has participated in sport on and off throughout life. Does challenges with husband like London Marathon. Part of running community
Diane Self-reported non-exerciser	43	Senior Local Authority executive	Married with 1 child. Has initiated several health promotions and education schemes in her authority. Feels she can influence health behaviours. Extended family is important to her.
Geraldine Self-reported non-exerciser	46	Lawyer	Married. Raised in Africa. Naturally active and slim as a child. Gained weight after marriage. Active in church community.
Tina Self-reported Exerciser	46	Civil Servant	Married with children. Born in Philippines. Father a professional Baseball player. Continuous exerciser throughout life. Religious faith plays a big part in her life
Sophie Self-reported Exerciser	49	TV executive	Married. Played competitive sport in youth and continued throughout life. Her appearance is important to her.
Laura Self-reported Exerciser	51	Global Localization consultant	Married. Reports a poor work-life balance. Has had weight concerns which has driven to to exercise on and off through life. Looking for a suitable class to attend.
Jane Self-reported Exerciser	52	Civil Servant	Married with older children. Had 'sporty' childhood. Continued to exercise till aged 43 because of serious illness. Plays Badminton gently with friends.
Dorothy Self-reported non-exerciser	52	Occupational Therapist	Recently left job due to illness. Retraining as a Health coach. Health issues have always affected her ability to exercise. Finds local amenities helpful.
Elena Self-reported non-exerciser	54	Translator	Married. Sport childhood. Successful competitive international ice skater. Became International Judge. Husband's illness curtailed her exercise regime but still swims regularly

behaviours and beliefs around exercise at different points in their life. Participants reported a temporality of 'stories' that were prioritised by personal importance rather than in chronological order (Floyd, 2012). This was noted in an interview journal contemporaneously in preparation for analysis. A final prompt asked about their awareness of any local or national health promotion or health messaging. The data collection and initial coding occurred simultaneously (Dye et al., 2000; Saldaña, 2009). During each interview, sensitive topics such as 'body image' were acknowledged as being highly personnel elements of the psyche (Lee, 1993; Zamperoni et al., 2019) and were discussed by researchers before interviews were undertaken to agree an outline of responses to be followed in order to avoid offence or distress for participants.

1.5 Data Analysis

Data collection and Analysis happened concurrently in groups of 3 interviews at a time which informed specific areas of questioning in following interviews. Thematic analysis employed both content and emergent analysis processes following Bingham's (2023) five-phase process of qualitative data analysis in which adaptability for both deductive and inductive approaches is incorporated and was thought a 'best fit' for data that is constructed through phenomenological responses and memories. The

researchers were mindful that 'data are narrative constructions, not reconstructions of experience' nor were they the original experience itself (Denzin & Lincoln, 2000, p. 514). Initially, instigated by the study's aim to identify determinants, deductive 'top down' coding, categories and themes were imposed on the data followed by an inductive round of analysis in which codes, categories and themes were allowed to emerge from the data in order to capture the more subtle and complex reasons for actions.

Being both in the sample's age range, the two female researchers considered themselves 'insider researchers' and so the reflexivity of being both data co-constructors and interpreters of data was acknowledged and mitigated through discussion at each stage (Costley et al., 2011), including reaching consensus on initial coding, categories and final themes. The discussion on clarification and classification enhanced a triangulated validity 'of whether the researcher(s) sees what he or she thinks he or she sees'(Thomas & Nelson, 1985, p. 338).

1.6 Findings

Categories were initially organised deductively into barriers and enablers to exercise to enable an overview of the data (Table 2).

Data showed agreement with the larger epidemiological studies where key determinants were fatigue, lack of time, cost, health status, weather (Audickas, 2017; Biedenweg et al., 2014; Koh et al., 2022). However, it showed a range of more personal and lifestyle determinants as well, such as religious belief and locus of control as positives and anxiety or failure as negatives. It is suggested here that the analytic methods used in larger scale quantitative studies require a reductive process that removes individual determinants that might be useful when considering discrete populations. Certain determinants found here appear in smaller group based studies such as Caperchoine (2009) who found groups of mothers, older, career women and immigrants had lifestyle barriers such as time, family responsibilities, fear of dark at night, whereas Cerin's (2010) walkers found weather an adverse determinant, Der Ananian's (2006) arthritis sufferers found mobility, lack of specific arthritis classes and pain to be barriers and Slade's (2009) lower back pain sufferers found gyms intimidating.

Some determinants such a 'significant others influence', 'time' and 'formal organized exercise' appeared as either negative for non-exercisers or positive for exercisers. The only universally reported determinant was health, with poor health either viewed as a reason for inactivity or fear of ill health as a driver to participate. 'Formal organized exercise' appeared more amongst non-exercisers as did cost.

The range of determinants surfaced gave a snapshot of the non-homogeneous population with reasons for determinants unknown. Thus, the search for motives focused on the inductive themes where, to a greater or lesser extent, individual drivers appeared but were not the key determinants. They gave the thematic analysis a 'backdrop' or picture in which to locate reasons for these regulators of behaviours, which were located in an intrinsic model of self, modified by lifecourse events, experiences and agency of which various enablers and drivers played a part. Three emergent themes were identified inductively: 'Being middle-aged', 'being an exerciser',

Table 2 Initial analysis of enablers and barriers across all participants with sample quotes

Enablers	Example Quote
Significant others influence	on Tower Bridge I saw Paula Radcliffe go past and I thought blimey she's quick and then several hours later my mate went past, and I thought I'd really quite like to do this
Health scare or death	I don't want to die in middle age
Motivation	We would just get comfortable and fatter and watching TV and the fact this London marathon came up was, this is our opportunity to change things now
Time	There's just more time for me to think about what I need to be doing for myself
Weight loss, Dieting	I love food but for me it was the thinking about food, thinking differently about exercise and motivating, being motivated
Good experience	And after doing exercise I can go to the steam and spa which is relaxing and it's refreshing my head
Friendship	If I had a group of friends that were into exercise I think, I think yes'.
Formal organised exercise	There's a lot of different things under one roof. It's relatively straight forward to use (gym)
Success	I definitely feel fantastic fitter and even though I'm aching it feels like a safe ache as opposed to, oh my God you're damaging my back
Improve self-image	And I think it's just knowing that I am, yeah fit and people knowing that oh yes she is fit. So it's a little bit of me knowing I can do it and other people acknowledging it
Fun/enjoyment	I wouldn't mind like dance class, it would be a laugh as well as getting the exercise
Active childhood	Ever since I was a little girl I've always been very active. I always do lots of exercise at school, um, I was a volleyball player, basketball player, everything athletic wise I always join in
Health	I'm going to be active at 60, 70.
Inclusion	It wasn't about the sport then it was about the taking part for me
Mental space	When I was trying to figure out how to do something work related and I couldn't I just couldn't think how to design this piece of paper and I went out for a run and it came to me
Improving health	So I've got more energy now than when I was younger
Fitness	Wanting to be flexible and wanting to be toned has always been very important to me. I want to keep moving whatever
Locus of control	Well at the moment I'm feeling really good about it. I'm managing really well but you see I'm my own boss at the moment. I'm ruling how I do my day
Positive outcome	I decided to go at least once a week which was a kind of me time
Role model	You want to be around people who are better than you that you can aspire to better yourself
Religious belief	I believe in God and I think with faith it helps me to understand that life goes on whatever, whatever is thrown at you
Missing exercise, Anticipation, Selfishness	Well I mean I had a four month break of not doing anything it made me realize that I need to go back and do it again
Significant others influence	My mum and dad were very sedentary, they were cerebral
Health	Because I was so tired, so worn out, mentally and physically worn out there is no quality-of-life
Lack of motivation	When I got to my 20's I was working, swimming lost its appeal a bit, getting wet, shrivelling up you know you know you've got blond highlights your hair can go green in you get into chlorine, make up, all of those things, swimming became more of a chore
Time	I could go to the gym on the way back from the meeting but actually I've got a lot of stuff to do

Table 2 (continued)

Enablers	Example Quote
Weight	I'd like to be slimmer, I'd like to go into a shop and know that a size 10 would fit me
Family commitments	I got a family to look after and I just do it when I've got spare time
Formal organised exercise	I joined an aerobics class which I absolutely hated, absolutely hated and it was so bad I used to count the days I had to go for aerobics
Failure	I've always been very scared that it's going to happen again. It's happened to me twice so I was always very scared that if I did anything strenuous it might happen again
Bad advice	And in those days they told you to rest and I think that was the beginning of setting me off in a bad way
Not fun	I didn't like PE no.
Inactive childhood	When I see young people hanging around, I simply think that their families have not had the chance or the facilities or the intelligence to introduce their children to sport
Cost	And also to money because thinking about it, like gym membership in particular and having to pay for gym membership…I know that was one of the reasons, why I thought I'm wasting it, I'm not using it enough
Exclusion	I think your written off so if you're not under 40 or in your 30s and in your shiny leotard you can't possibly be to wanting to do anything serious
Anxiety, Embarrassment, Laziness, Apathy, Guilt, Nervousness	I still go to the gym, sometimes I get really embarrassed because its so horrible, like you have stains and things like that. Its bad'. (Tina) 'I think I've had a kind of love hate relationship with it because it's been a bit nervous sometimes
Travel	At the end of the day and think of going to that particular club which is in xxx and from xxx to xxx is not a journey but going on public transport in the end it becomes late
Weather	I think in the winter particularly, you don't want to be outside

'perceptions of physical activity' and one theme deductively, 'on health messaging' in response to prompts towards the end of each interview.

1.6.1 Theme 1. Being Middle-Aged

Participants were relatively financially stable and had the air of being the strong, emotionally anchored centres of their world. They all had and were aware of their wider familial responsibilities, "Well I think you get to 40 you should know yourself and understand yourself as well" (Fiona).

Participants saw their own middle age as being/feeling younger than their mothers – they thought their mothers were 'old' at the same age. This response was universal and resolute, *"*When my mother was my age, she was what we consider middle aged. I'm not" (Sophie). This perspective of their mothers was grounded in their memories of childhood and mixed with beliefs of how difficult life used to be a generation ago, "just before I turned 43, I was thinking my God I'm going to be the same age as my Mum was when she died you know that just made me, it spurred me on to keep more healthy" (Diane). They reflected their own social perception of 'being old' against that of their mother's era and thought they themselves were, "just staying younger longer" (Fiona). No-one felt 'middle aged', although the women were at a life stage of change, sure in some areas of life and unsure of others. This was mainly due to

preoccupations in flux, not being the same as they had been whilst forging careers or bringing up families. The perceptions of their own 'worth' were shifting, reflecting changes in their social roles of retirement, babysitting grandchildren and care responsibility for ailing spouse or parents. There was a sense of instability in the participants, predominantly made up of thoughts of ageing and menopausal symptoms. Their uncertainty was reinforced by reports of deaths of family or friends that would be appropriate for this age group, "Also you hear of friends dying and so on. All those things that become close to you, they become more real" (Elena). Such events acted as a powerful catalyst to physical activity action in some.

Health as a 'barrier' to physical activity was reported with conditions ranging from the minimal aches and pains to major conditions and medical interventions. Health as an 'enabler' was viewed as seeing physical activity as a pathway to gaining good or better health. However, when a positive decision to exercise was acted upon, inactive participants looked for a fitness class in the right age group and at the appropriate ability level but could not find anything suitable:

Commercial gyms, "They had daytime classes and they were for people who were not as fit as me. They were more sort of retired people. I couldn't find something between the 25–30-year-olds and the 70-year-olds" (Laura).

Council amenities, "And you know what they meant by 'the over 50's'. They meant my parents who are in their 80's" (Sophie).

1.6.2 Theme 2. Being an Exerciser

Coming from a physically active nurturing environment/family was shown to have a strong bearing on whether participants were exercisers in later life, "I was brought up as a very sporty person, which is not just doing physical exercise but also adopting a discipline in life" (Elena). Exercisers had 'significant others' encouraging them. As well as having close family encouraging them, they tended to ally themselves to friendship circles of like-minded friends. It was also common for extended family members to have an influence.

Exercisers had a greater sense of self-efficacy than non-exercisers to achieve goals in physical activity. It was the emphasis on self-efficacy that was noteworthy, "Sometimes you got to go through the pain to get yourself out the other side and recognise what that is and what you've learned from it" (Fiona), "I'm telling myself to keep going, keep going, keep going, and I thought I done that and then another day I did it a bit more" (Dorothy).

Exercisers 'saw' opportunities to participate in physical activity, whereas non-exercisers did not. Participants' capacity to 'see' opportunities transcended living conditions and amenities but pointed to something much more ephemeral and grounded in their own value systems and gave them a negative view of those they thought sedentary, "I feel that's more for people who are sitting on their backsides watching tele and not doing anything" (Sophie).

1.6.3 Theme 3. Perception of Physical Activity Levels

The participant's self-reported perception of whether they were an exerciser or not was assumed to be an assessment of how much exercise the participant was undertaking at the time of the interview. However, what was found in all participants was that their present activity descriptor of exerciser or non-exerciser was based on an intrinsic, integral comparison of what they had done in the past. Some participants linked their present inactivity to their dislike of physical education at school whilst others linked their consistent levels of activity today to their love of being active or doing sport as children. School Physical Education loomed largest as a pivotal point in life when physical activity played a significant role. Positive or negative events from their school careers reflected their present values. Memories of childhood and exercise practices of their parents and to a lesser extent, their participation as young adults were also significant. "As I grew up sport was not part of our home life at all" (Geraldine), "I've always enjoyed doing some form of physical activity, from school throughout my life. And my view's always been that it's important to do it" (Fiona).

This internal lifecourse comparison was marked more succinctly by two participants, one, who had been involved in competitive ice skating at an international level earlier in life considered herself now, a non-exerciser even though she swam regularly because her activity level was presently so much lower than she had done in the past. Another participant, who had been sedentary in the past, now considered herself an exerciser because she had recently taken up regular but very light walking. This positional, temporal comparison had a direct bearing on the participant's view of the intensity of their present activity, and had a positive motivational effect, " I think the fitter I get the more motivated I am" (Dorothy).

1.6.4 Theme 4. On Health Messaging

Towards the end of the interview, participants were asked about their knowledge of any health messaging and its relevance to their physical activity participation. There was a tacit awareness of health messaging in general, but when asked if they knew any specific campaigns, eight women said no with only one person aware of 'change4life' because she had signed up years before. Comments included, "those on the side of a cigarette box", "there's the one where people look like jelly babies but I can't remember what its called", "I can't remember much, the first thing that comes to my mind is consuming less salt". Interviewees were somewhat dismissive and quite vague. The earlier connection shown in the conversation when talking about their own experiences became distanced. The women struggled to respond with anything personally meaningful to them. An interesting observation was that participants believed that the messaging was not meant for them but for others. The 'irrelevance' participants felt of this was noted.

2 Discussion

This study aimed to uncover determinants for exercise participation and adherence in middle aged women through a prism of lifecourse experiences using a qualitative methodology.

The key novel finding was that the women's self-reported status of exerciser or non-exerciser was not an isolated expression of how much exercise they were undertaking at the time of the interview as was expected but was an expression of a relative value to that of their own historical sense of their physical activity, underpinned by narratives of memorable positive or negative experiences. Most participants demonstrated linear responses, where negative historical experiences were indicative of 'non-exercisers' and positive experiences indicative of 'exercisers', which parallels lifecourse work looking at connections between early life and adulthood; Flores and Wolfe (2023) link early and later life health conditions, Kroenke (2008) found early psychosocial influences affect health and economic trajectories and Bellis Ma Fau – Lowey et al. (2013) found negative early experiences affect later adult and social health. Kelly and Sullivan (2023) propose a Differential Susceptibility theory where an individual's characteristics will make them susceptible to particular directional trajectories through the lifecourse which may also explain behaviour decisions. However, without further empirical evidence it would be difficult to ascertain through memories alone to what extent characteristics or experiences played pivotal roles here. However, the ramification of having an internal dialogue about physical activity in this lifecourse context is novel.

Of further interest was that two participants evidenced a more nuanced perspective. One, who had been an internationally competitive athlete in adolescence and young adulthood, considered herself a non-exerciser now as her present level of physical activity, which met the UK Chief Medical Officer's (2023) guidelines for physical activity, was so much lower than she did in her young adulthood. However, another woman, who had previously been inactive was now taking gentle walks around her park and called herself an exerciser, even though she did not meet the weekly physical activity guidelines criteria. This suggested a surprising paradox that a self-reported exerciser might therefore be doing less activity than a self-reported non-exerciser. These linear and non-linear observations of self-reporting as active or inactive suggested there is an individual closed system of fitness improvement at play, internally reflexive and linked to a sense of self (Price et al., 2024) that may have been developed through the accumulation theory (Heikkinen, 2011) of experience. The link between their physical activity persona and intensity of their present activity is relative rather than actual and cannot be compared to others and the observation incorporates all 5 of Alwin's (2012) principles and occurs through all of his lifecourse components. By working within this framework and focusing on a present day 'turning point', a positive significant change for exercise adherence might be encouraged.

It is suggested that this finding might have ramifications for existing methods of measuring participation physical activity levels. It suggests that issues known about quantitative self-reported data (Brenner & DeLamater, 2014; Metzger et al., 2002) might have to add another dimension to existing uncertainties. Studies that employ

objective methods such as using accelerometers to measure participation (Rowlands et al., 2018) might be missing a key facet. For example, if the two participants exampled were measured purely by this method, their objective outcomes of exerciser or non-exerciser would be the opposite to their internal perspectives. This closed system of fitness improvement suggests it utilises an intrinsic validation and internal locus of ability becoming incorporated into the individual's identity (Phares, 1976; Price et al., 2024). This is exemplified in the participant who had started a walking regime to proudly say, 'I am an exerciser'. This finding highlights the importance of considering an individual's personal history of physical activity experiences and including it in any participation adherence initiatives or measurements.

Further inductive analysis to help contextualize womens' closed system of fitness improvement found the women universally believed themselves to be younger than their mothers at the same age. Their childhood memories were of their mothers' lives being restrictive, labour intensive in the home, with lack of career opportunities outside the home. Their sense was of a structurally repressive social environment which together made their mothers age prematurely. They thought they now had more freedoms and were therefore 'younger' and had wider 'leisure' opportunities. This generational perspective demonstrates three of Alwin's (2012) five principles; linked lives being the interconnection and comparison they make between themselves and their mothers, time and place where their present-day perspectives were overlaid on a previous social norm and lifespan development where death is a predictive event of the lifecourse. The instabilitly they felt suggested they were in a 'transition' component. Although existing literature had explored mother-daughter relationships in a number of aspects including generation cohabitation, histories of migration and war, and power relationships (Kobayashi et al., 2015; Milton, 2022; Pickering et al., 2015) amongst others, none considered the relational perspective through the temporal comparative lens found here. Their sense of their worth as being the emotional centre of their sphere of influence broadly agreed with Neugarten and Gutmann (1958) who established the importance of the matriarchal figure within the family as far back as 1958. It is interesting to note that some 60 years later, in a different geo-cultural context it is still evidenced. However, there was also a sense of 'unsureness' which is reflected in Zhang et al.'s (2018) work on 'empty nesting', although it is suggested here that there may be an interplay of competing transitions occurring simultaneously, including menopausal changes (De Salis et al., 2018), retirement (Sherry et al., 2017), familial responsibilities (Oh et al., 2020) and significant others illness or deaths (Stroebe et al., 2007). The perceived forces leading to an instability of sense of self and secondary motivational drivers (Cottrell et al., 1968; Hull, 1943), suggest transition pressures that might undermine potential participation in physical activity that should be taken into account and counteracted when developing or encouraging exercise programmes or events.

Deductive analysis surfaced enablers and barriers from the full body of data. Barriers and enablers to exercise agreed with existing large survey literature (Audickas, 2017; Biedenweg et al., 2014; Koh et al., 2022) regarding key determinants such as cost and time and reinforced smaller study's findings that the more defined a population is, the more specific will be their determinants.

Of the 'enablers'; good experience, religious belief, anticipation, missing doing exercise, be a role model, dieting, mental space, locus of control, positive outcome, selfishness and active childhood did not appear in the existing literature. From the 'barriers' list; bad experience, guilt, nervousness, failure, laziness, stress and anxiety, did not appear in the existing literature. Furthermore, evidence that certain determinants were seen to be either enablers or barriers dependent on the individual's perspective may mean that such nuances may be becoming subsumed in existing policy development. It is suggested that positivist reductive approaches to determinants may preclude individuals' deeper life-course motivational factors (Frost & McClean, 2014). This may be why the sample thought that health messaging 'was not for them but meant for others.' When non-exercisers had decided to act and seek out exercise opportunities (Prochaska & Di Clemente, 1983) they could not find appropriately targeted classes for their age and ability. This sense of age bias in organisations resonates with the Centre for better aging Report (2018) where 50 year olds describe similar instances of discriminatory practice in social life. They felt they fell between two camps where organisations catered specifically for young people or the elderly. This agrees with Sheill et al. (2022) who outlined that adults with chronic conditions found it difficult to find suitable facilities to exercise, although here the specificity of age as a barrier in different types of fitness environments is adding to this understanding. Sheill et al. suggest developing community gyms that are focused on particular populations needs. Here we suggest this idea might be extended to the private gym sector. Gym chains are in a strong position to offer such classes in their product range to the middle-aged sections of their client bases, especially new members. Exercisers on the other hand had a keen sense of self efficacy (Bandura, 1977) that was reflected in their values. Exercisers could not understand the attitudes of non-exercisers who did not enjoy exercise and related 'us and them' narratives (Philips & Drummond, 2001). These findings further illuminate the complexity of determinants that contribute to an individual's decision to be more physically active. Both extrinsic, intrinsic and lifecourse experiences play a role in women's decisions to lead a healthier more physically active life.

Limitations of this study include a small sample size and although suitable for a study of this type (Guest et al., 2016; Patton, 2015; Sandelowski, 1995), it is not extensive, but suggests themes and findings that may be developed in future larger scale research. Qualitative analysis is not exhaustive, and any importance or priority of narrated stories may become lost when all topics are equally weighted through coding. Further reductive processing into themes moves rich data to a reductionist state, thereby losing nuance and complexity wherein solutions might lie and be overlooked. The qualitative nature of the study means it is un-replicable.

3 Conclusion

This qualitative study explored individual perceptions of exercise participation and adherence in middle-aged women through a lifecourse perspective and findings suggest a closed, reflexive system of fitness in which women compared their existing levels of activity to a personal phase of significance in their earlier life. This exclusive understanding was dissonant with objective measures. It is recommended that future research should look to see if the phenomena can be found in a wider population, and to consider this finding when taking empirical and absolute measures of physical activity as they may be capturing only a partial picture. Gyms, leisure class/event organisers and fitness professionals who must gauge a client's ability to prescribe or organise exercise might also explore the client's physical activity history so they can personalise effective measures for the client to succeed. Organisations involved in the implementation of physical activity leisure programmes should consider organising discrete classes/events focused on this population and their concerns. Finally, organisations involved in health information dissemination should target messages that incorporate the specific concerns of the particular population to elicit a sense that the message was meant for them.

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