

RESEARCH ARTICLE

WILEY

Psychological empowerment and exercising: The relationships between exercising, self-stereotyping, agency, autonomy and physical self-efficacy in non-Western women

Magdalena Mosanya  | Seada Kassie 

Middlesex University Dubai, Dubai, United Arab Emirates

Correspondence

Magdalena Mosanya. Click here to enter text.
Middlesex University Dubai, 500697, Block
16, Room 311 Dubai, United Arab Emirates.
Email: m.mosanya@mdx.ac.ae

Abstract

Despite recent efforts towards equality, there are still gender disparities in Middle Eastern societies, where women are often discouraged from viewing themselves as autonomous, competent and self-determining individuals due to the internalization of traditional gender norms. Research on women's empowerment in multicultural and non-Western societies is scarce. In the absence of other interventions, exercising has been effective in increasing women's psychological and physical strength. The present study focused on women ($N = 250$) living in a non-Western and multicultural environment, aiming to assess whether (a) self-stereotyping negatively correlates with factors of empowerment (operationalized as a sense of autonomy, agency and self-efficacy) and exercising, (b) exercising is positively associated with factors of empowerment and (c) if exercising would mediate the hypothesized relationship of self-stereotyping on empowerment. Secondly, the study also qualitatively explored the subjectively reported exercising motives and outcomes. The results of quantitative analyses confirmed that self-stereotyping was negatively correlated with autonomy and agency, but not with physical self-efficacy.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2024 The Authors. Journal of Community & Applied Social Psychology published by John Wiley & Sons Ltd.

Exercising was positively correlated with all the factors of empowerment and negatively with self-stereotyping. The structural equation modelling supported the intermediary role of exercising in the associations between self-stereotyping and autonomy and agency. The qualitative analysis revealed that although the participants principally exercised for health-related motives, the reported outcome was primarily reflective of experiences of empowerment. The findings could be used to inform current policies and interventions geared towards women to support and promote their physical and psychological well-being.

KEYWORDS

agency, autonomy, exercising, gender stereotypes, self-efficacy

1 | INTRODUCTION

1.1 | Background

Despite recent gains in gender equality, women and men are still facing disparities in economic, health and social domains. Women's health status and well-being suffer in comparison to men's in areas where cultural norms, practices and socioeconomic systems limit their autonomy (Bloom et al., 2001; Caldwell, 1986; O'Neil, Russell, Thompson, Martinson, & Peters, 2020). As a result of gender-role socialization, which causes the internalization of traditional gender norms, women are often discouraged from viewing themselves as autonomous, self-determining and competent (Cantor & Bernay, 1992; Organization for Economic Cooperation and Development, 2018). When exposed to unmasked gender stereotypes, women are found to lack three empowering qualities, namely self-government (autonomy), a proactive approach to life (agency) and perceptions of a competent self (self-efficacy) (Berkery, Morley, & Tiernan, 2013; Blinde, Taub, & Han, 1993; Dickerson & Taylor, 2000). In countries with lower gender equality indexes, such as those within the Middle East and Asia, societal expectations and pressures are associated with self-stereotyping among women (Elsadda, 2004). Such occurrences may be explained by double standards related to cultural gender pressures and expectations associated with gender role stereotyping. Empowerment is one way of enabling women to increase their self-reliance, assert their independent right to make choices and manage resources to reduce their subordination (Chen & Tanaka, 2014; Keller & Mbwewe, 1991).

In the Middle East and Asia, significant social factors (patriarchal values, social norms) decrease access to institutionalized support for gender inequality. According to UNICEF (2021), despite considerable progress (especially regarding education and health), critical gender gaps persist in the South Asian region. In addition, it is worth noting that, according to Berry (1993), further stressors exist in a multicultural society like the one in the United Arab Emirates (UAE). Those stressors may include the language barrier, exposure to contradictory values and inability to access policies due to a lack of knowledge about the host country's laws. These factors may further impair women's benefits. Likewise, sole reliance on masculine family members in a host country may lead to a decrease in women's sense of autonomy and self-efficacy (Steffens & Viladot, 2015). Hence, even if the country's policy (as is the case in the UAE) promotes gender equality, this may not be reflected in the casual experience of all its multicultural residents, as they may follow their home country's traditions and customs or lack access to such benefits.

In situations where institutionalized interventions are unavailable, or access to them is limited, personal involvement in exercising is considered to be a highly effective mechanism to inculcate empowerment and improve women

functioning (Rasciute & Downward, 2010; Staples, 1990). These may include advancements in self-confidence, perceived self-efficacy and control over life (Boehm & Staples, 2004; Rasciute & Downward, 2010). Exercising and fitness level have been shown as substantial mediators in the negative effect of multiple sociocultural factors (i.e., obesity, discrimination, loneliness, lack of resources) on cognitive skills and mental health (Bridle, Spanjers, Patel, Atherton, & Lamb, 2012; Gomez-Pinilla & Hillman, 2013; Hernández-Jaña et al., 2021). In a study by Cristi-Montero and team (2021), the association between obesity and cognitive impairments was partially decreased with improvements in fitness levels. Yet, studies on the importance of exercising to women's empowerment are scarce, with non-Western populations being particularly under-researched. Hence, drawing from established research, the present study proposes that by engaging in exercising, women may develop qualities and skills (e.g., levels of self-efficacy) that could strengthen various dimensions of a sense of empowerment, which would, in turn, mitigate adverse socio-cultural effects, self-stereotyping in particular.

1.2 | Women in the United Arab Emirates (UAE)

The UAE's fast socioeconomic transformation within the last few decades has attracted many emigrants to settle within its borders, leading to prosperity and an unusual demographic structure (World Bank, 2021). According to recent statistics, the ratio of expatriates to Emirati citizens is 9 to 1 (Global Media Insight, 2021), with South Asians and Middle Eastern emigrants making up the majority. While multiculturalism has its advantages, studies have found that, psychological challenges might be greater for individuals experiencing cultural diversity (Berry, 1993). Women living in the UAE are exposed to various social norms and standards that are often contradictory; most of them are from collectivist origins but are simultaneously exposed to Western standards, and may feel obliged to fit into conflicting expectations (Mosanya & Petkari, 2018). On the one hand, this may lead to more equality via the spillover of norms. On the other, pressures related to the diversity of gender norms might impact women in the UAE and adversely affect their functioning (Abou-Saleh, Ghubash, & Daradkeh, 2001; Aftab, 2019). Furthermore, gender issues may become obscured in the diversity discourse, leading to a noticeable disadvantage for women in minority groups (Aftab, 2019; Ben-Galim, Campbell, & Lewis, 2007; Laufer, 2009). Scholars have long recognized the possibilities of conflict between multiculturalism and gender equality (Song, 2005). Different cultural accommodations are necessary for multicultural societies, which may interact with general gender policies. While a country's policies may strive for equality, some cultural groups might continue patriarchal practices or even have them strengthened by maintaining the status quo (Aftab, 2019; Song, 2005). Consequently, the inclusive practices at the policy level (e.g., measures used in the Global Gender Gap Report) may not reflect the individual-level experiences of multicultural populations in countries such as the UAE.

According to the Global Gender Gap Report (World Economic Forum, 2021), the Middle East and African regions have considerable gender disparity. Nevertheless, the UAE is ranked 72 globally and second regionally on the index (World Economic Forum, 2021) and has been recognized as one of the leading nations working towards improving women's empowerment. Having improved 48 points in its global ranking since 2006, the UAE has made significant advances in creating and promoting women's economic, educational and political participation opportunities. Currently, women occupy 50% of the UAE parliamentary seats and 27.3% of ministerial positions. Moreover, the parity score for educational attainment is between .949 and 1 across different sub-areas, where women surpass men in overall literacy rate and enrollment in primary education. While such advancements in recent decades are evident, the UAE could still benefit from additional forms of opportunities supporting women's empowerment.

1.3 | Benefits of exercising to functioning and empowerment

Exercising encompasses engagement in competitive, self-developmental or recreational sports activities, and its health benefits are indisputable (Pedersen & Saltin, 2015; Rasciute & Downward, 2010; Warburton, Nicol, &

Bredin, 2006). In particular, the positive effects of exercising on mental health have been vastly evidenced (Ekkekakis, Parfitt, & Petruzzello, 2011; Reed & Buck, 2009; Reed & Ones, 2006). Exercising is recognized as a healthy way to improve mood (Brown et al., 2005; Checkrout et al., 2018) and benefits self-evaluations (Martin Ginis, Jung, & Gauvin, 2003). Conversely, depression and anxiety are directly linked to a lack of physical activity (Brown et al., 2005; Goodwin, 2003). Although various studies have reported the general effects of exercising, some studies also note that the impact may vary at the individual level and may depend on personal perceptions of the activity and the individual's level of self-efficacy (Bailey, 2005). This argument is further explored using Bandura's Social Cognitive Theory (Bandura, 2001). According to this theory, understanding human behaviour—and, by extension, understanding personal perceptions—entails examining the complex interaction between individual behaviour, the environment and personal factors—such as life skills, personal values and interpersonal skills (Bailey et al., 2015). In this context, an individual is said to cultivate benefits when they possess and display positive behaviours and thrive in social and supportive environments. Understandably, individual perceptions about the magnitude of cultivated benefits may vary based on these dynamic factors that are at play as well as others such as self-efficacy.

Furthermore, exercising has been found to improve one's physical and mental abilities (Cantor & Bernay, 1992; Sebire, Standage, & Vansteenkiste, 2009). Such enhancing effect occurs through multiple processes, that is, an increase in the understanding of one's bodily potential (MacKinnon et al., 1987; Puente & Anshel, 2010), improvement of physical self-perceptions (Salci & Ginis, 2017), development of self-confidence (Talbot, 2001) and advancements in persistence and self-efficacy (Dickerson & Taylor, 2000; Mosanya & Petkari, 2018; Puente & Anshel, 2010). Consequently, exercising can boost control over one's life (Boehm & Staples, 2004; Kwan, Caldwell Hooper, Magnan, & Bryan, 2011; Staples, 1990). Through exercising, women may develop qualities and skills that can be applied to various life situations. Reports from the United Nations highlight evidence that participation in sports can help break down gender stereotypes, improve women's self-esteem and contribute to the development of leadership skills (Puri, 2016). Moreover, Ginis et al. (2014) highlighted the potential of strength training to improve self-esteem and body image in women. Therefore, exercising is considered to be highly effective in improving various issues related to health, socialization, social integration and equality (Council of Europe, 1995, 2001; Donnelly & Coakley, 2002). Subjectively experienced gains from physical exercising have been reported by personal coaches across different training styles. Weight training, for example, seems to boost confidence and security (International Sports Sciences Association, 2022; Richardson, Kanel, Rellinger, Ramlo, & Fister, 2023). Being physically strong leads to self-sufficiency and a further sense of empowerment. Another outcome reported by women who physically exercised outdoors, particularly in traditional societies, is self-assurance and self-reliability (Laar, Perveen, & Ashraf, 2022). Richardson et al. (2023) studied the subjective effects of strength training on women and described further its positive outcome on motivation and self-belief. Such empowering-enabling effects of exercising may be particularly beneficial to women if other ways related to emancipation and equality are not available. Yet, more explorative studies on the subjective experience of the motives and outcomes of physical exercising in women are needed.

Reports of physical activity in the United Arab Emirates are significantly lower than in other developed countries (Henry, Lightowler, & Al-Hourani, 2004). Furthermore, opportunities for practising sports are relatively limited due to a generally hot climate, but also cultural restrictions inducing low energy expenditure (Maghelal, Alawadi, Arlikatti, & Wahdain, 2022). In a recent meta-analysis, the level of inactivity among Arab nations was very high, particularly for women (Sharara, Akik, Ghattas, & Obermeyer, 2018). Lack of physical activity may also trigger eating disorders and low moods among women in the UAE, leading to a high incidence of health issues and limitations in perceived agency, autonomy and self-efficacy (McIlvenny, 2002; Trainer, 2010).

1.4 | Women empowerment—Theoretical background

Existing research on relationships between empowerment and personal attributes primarily reflects only Western experiences (Henrich, Heine, & Norenzayan, 2010). Such perspectives may omit important differences in

understanding what empowerment means to women coming from a diverse frame of cultural references (Kurtiş & Adams, 2015). Psychological empowerment needs to look at the interplay between individuals and their cultural context (Carter, 2002; Narayan, 2005). In order to account for social and cultural factors, Huis, Hansen, Otten, and Lensink (2017) proposed the Three-Dimensional Women's Empowerment Model (DWEM), in which empowerment is defined as a multifaceted concept including three different components, ranging from (1) individual agency, autonomy, competence and self-efficacy, (2) relational empowerment in the form of collaborating as a group towards social change and (3) societal dimensions assessed with indices that map gender gaps in human development across nations, such as the ones used in the Global Gender Gap Report (World Economic Forum, 2021). The model of Huis et al. (2017) is built upon the ecological systems theory (Bronfenbrenner, 1994), which highlights the impact cultural and social environments have on human behaviours and psychological states that seem to constitute the most relevant theoretical background to the present study. While there are studies that have explored the second and third components of the DWEM (Al-Jenaibi, 2015) underlining great efforts towards equality in the UAE, the present study aimed to explore the psychological attributes that constitute the first component of empowerment.

1.5 | Agency and autonomy

Agency is a feature of empowerment gaining increasing attention within the psychological literature (Kabeer, 2001). While empowerment is typically associated with improvements in well-being across health, education and economic opportunities (Donald, Koolwal, Annan, Falb, & Goldstein, 2017), for the purpose of this study, agency is defined as the ability to express one's goals and act on them (Kabeer, 1999, 2001). Agency further corresponds to the capacity to take ownership of one's action and its consequences and is regarded as a central point in conscious development (Hurault, Broc, Crône, Tedesco, & Brunel, 2020). This understanding of agency stems from Sen's (1985) capabilities approach and is in line with global organization's perspectives, which define agency as (i) the ability to make effective choices and to transform those choices into desired goals (World Bank, 2012) and (ii) the capacity to make decisions about one's own life and act on them to achieve the desired outcome that is free of violence, retribution or fear (World Bank Group, 2014). Furthermore, agency can also be conceptualized as a multidimensional construct comprising goal-setting, perceived control, ability and acting on goals (Donald et al., 2017). Overall, agency appears to have an instrumental value for other features of empowerment, including the ability to transform resources into well-being outcomes (Fernandez, Della Giusta, & Kambhampati, 2015).

In psychology and the social sciences, agency is often associated with autonomy, understood as being a causal agent over one's life; both factors are essential aspects of empowerment (Kabeer, 2001). While the former generally refers to the innate ability to make informed choices and decisions and take actions to govern one's own life in such a way that personal values and aspirations are reflected, the latter more commonly refers to the right or freedom to do those same things, but more precisely, without coercion or subjugation from external sources (Rubel, Castro, & Pham, 2021). According to the Self-Determination Theory (SDT), autonomy, together with competence and relatedness needs, is regarded as a crucial motive in driving behaviours (Deci & Ryan, 1985; Halvary, Ulstad, & Skjesol, 2009). Within the SDT perspective, the motivation behind one's actions is determined by the power of the autonomous self (Deci & Ryan, 1985). When a person's autonomy is limited, it can severely negatively affect functioning and well-being. In some cultures, societal beliefs might define men as more agentic and powerful than women, so activating autonomy among women through tested practices might lead to their empowerment (Glick et al., 2000).

1.6 | Physical self-efficacy

Self-efficacy constitutes the core of Social Cognitive Theory (SCT) and is defined as a context-specific judgement of one's ability (Bandura, 2001). An individual's sense of self-efficacy determines whether one decides to set goals and

act on them; as such, self-efficacy is reflective of one's confidence in completing specific actions. Self-efficacy contributes to success as it influences specific behaviours and motivations that can encourage or discourage performance (Sharma & Nasa, 2014). Generally, individualistic cultures demonstrate a higher level of self-efficacy even though it is regarded as a universal feature (Schunk & DiBenedetto, 2016). Additionally, studies within the Middle East have evidenced that self-efficacy promotes achievement (Abulibdeh & Syed Hassan, 2011; Al-Qahtani et al., 2021) and self-esteem (Afari, Ward, & Khine, 2012; Al-Qahtani et al., 2021).

Self-efficacy is further regarded as a complex construct with specific beliefs reflecting different human abilities as its constituents. Physical self-efficacy reflects the beliefs about one's physical abilities and has been found to positively impact performance (McAuley, Mihalko, & Bane, 1997) and is linked to determination and high frequency of physical activity (Pan et al., 2009). The relationship between physical self-efficacy and exercising can be described as reciprocal since an increased level of personal beliefs about physical abilities to perform is caused by a higher level of exercising, which in turn improves physical self-efficacy. It has been shown that exercising is correlated with physical self-efficacy and that engagement in sports can be significantly enhanced through stimulation of physical self-efficacy (Strauss, Rodzilsky, Burack, & Colin, 2001). Additionally, a study on women in the UAE revealed that the enhancing effect of exercising on mood is partially mediated by the changes in physical self-efficacy (Mosanya & Petkari, 2018). On the other hand, exposure to certain cultural gender pressures and expectations may negatively predict women's self-efficacy, which might be partially explained by the activation of gender-related stereotypes (Kuchynka et al., 2018).

1.7 | Self-stereotyping

Stereotypes are understood as generalized beliefs about members of a particular group (Martin, Cunningham, Hutchison, Slessor, & Smith, 2017). Contrary to sex, which reflects biological attributes, gender is a social construct that could differ from one society to another and change over time (World Health Organization, 2022). Gender-related stereotypes are acquired very early via the process of socialization and are fundamental to identity formation (Saygan & Uludağlı, 2021). Mostly implicit, gender-related stereotypes often dictate the path one takes throughout life (Mesman & Groeneveld, 2018) and also attribute polarized features to women and men. Men's attributes often centre on agency and autonomy, while women focus on communality and subjugation (Guimond, Chatard, & Lorenzi-Cioldi, 2013; Wood & Eagly, 2010). Stereotyping also has an effect on how individuals approach their lives; for example, while facing challenging life circumstances, men are expected to act in a dominant, confident, strong and autonomous manner, while women are expected to display subdued temperaments (Clarke-Stewart & Parke, 2014).

Further, gender stereotypes greatly affect the development of capabilities (Steffens & Viladot, 2015). Success in a particular task may depend on the stereotypes attached; where sports are regarded as a typical male activity, women's performance and competence might be suppressed. Therefore, exposure to stereotypes might naturally decrease women's agency, autonomy and efficacy in cultures where such polarization is fixed, and where sanctions in forms of sexism are imposed on those who do not adhere to certain social rules. Therefore, improving women's agency, autonomy and self-efficacy is crucial for advancing gender equality, reducing gender disparities and empowering women.

1.8 | Aim and hypotheses

The present study relied on existing theories and empirical evidence pointing to the direct and indirect mediational effects of physical fitness and exercise on psychological outcomes (Cristi-Montero et al., 2021; Hernández-Jaña et al., 2021). We aimed to explore the associations between exercising, self-stereotyping and psychological factors

related to women's empowerment with multiple objectives: a) assess the association between self-stereotyping, exercising, agency, autonomy and physical self-efficacy; b) investigate the mediating role exercising plays in the relationship between self-stereotyping with the agency, autonomy and physical self-efficacy; and c) explore women's subjective motives and outcomes related to exercising.

The following hypotheses were formulated. H1: Self-stereotyping is negatively associated with exercising, agency, autonomy and physical self-efficacy (Glick et al., 2000; Steffens & Viladot, 2015). H2: Exercising positively correlates with agency, autonomy and physical self-efficacy (Boehm & Staples, 2004; Mosanya & Petkari, 2018; Kwan et al., 2011). H3: Exercising mediates the self-stereotyping relationship with agency, autonomy and physical self-efficacy (Mosanya & Petkari, 2018).

The study also populated a research question to address the third objective (RQ1): *How did women describe their motives for exercising and their perceptions of the outcomes of exercising?*

2 | METHOD

2.1 | Study design

The study used a nonexperimental and cross-sectional design. Mixed method research was utilized to test the hypotheses and address the research question. Ethics approval was obtained from the Research Ethics Committee at Middlesex University Dubai, UAE. Data was collected using Qualtrics, an online software platform. Respondents were first informed about the study's objectives, as well as anonymity, confidentiality, the non-compensatory and voluntary nature of participation and their withdrawal rights prior to soliciting consent for participation. Participants were requested to provide their consent (before advancing) and provided a debriefing sheet at the end. The question items were presented as an electronic survey using the Qualtrics platform, and their appearance was as per their introduction in the Method section, that is, items on each questionnaire were entered chronologically.

2.2 | Participants

The sample consisted of women ($N = 250$), age ($M = 30.07$, $SD = 11.39$) varying between ages 18 and 52 with the majority (47%) falling in the 18 to 22 years category. Participants were recruited via convenience and snowballing sampling techniques. They were from diverse cultural backgrounds, with the majority of South Asians (49%) and Arabs (33%) residing in the United Arab Emirates for varying degrees of time (in years) ($M = 14.26$, $SD = 9.64$). Supplementary demographic characteristics of the participants (i.e., number of children and religious affiliations) are presented in Appendix A (Table A1).

2.3 | Measures

The demographic details of the participants, including gender, marital status, nationality, number of years living in the UAE, Emirate of residence, religion and exercise frequency, were recorded using a socio-demographic questionnaire.

Exercising was determined through the Goding Leisure-Time Exercise Questionnaire designed by Godin and Shepard (1985). The final score was computed by adding weekly frequencies of strenuous, moderate and mild exercising activities multiplied by factors of nine, five and three, respectively. The instruction asked: *Considering a 7-day period (a week), how many times on average do you do the following kinds of exercise for more than 15 minutes during your free time (write the appropriate number on each line)?*

The self-stereotyping was measured with the Self-Stereotyping Scale ($\alpha = 0.73$; 9 items; Prasad & Baron, 1996). The level of self-stereotyping was assessed on a 5-point Likert scale, from 1 (strongly agree) and 5 (strongly disagree). The total score was computed by adding all items up. Item sample: 'Boys should be encouraged to do things that boys usually do, and girls should be encouraged to do things that girls usually do'. McDonald's omega (ML) = 0.80.

The autonomy was assessed with Ryff's Autonomy Scale ($\alpha = 0.74$; 3 items; Ryff & Keyes, 1995). It was scored on a 7-point Likert scale from 1 (strongly agree) to 7 (strongly disagree). The total score was obtained from the sum of all items. Item sample: 'I have confidence in my own opinions, even if they are different from the way most other people think'. McDonald's omega (ML) = 0.70.

The agency was evaluated using the Sense of Agency Scale ($\alpha = 0.83$; 13 items; Tapal, Oren, Dar, & Eitam, 2017). The level of agency was scored on a 7-point Likert scale, 1 (strongly disagree) to 7 (strongly agree). The total score was computed by adding all items up. Item sample: 'I am the author of my actions'. McDonald's omega (ML) = 0.81.

The physical self-efficacy was measured with the Physical Self-Efficacy Scale ($\alpha = 0.78$; 22 items; Ryckman, Robbins, Thornton, & Cantrell, 1982). The level of physical self-efficacy was assessed on a 6-point Likert scale of 1 (strongly agree) to 6 (strongly disagree). The total score was obtained by adding the items up. Item sample: 'My physique is rather strong'. McDonald's omega (ML) = 0.80.

2.4 | Analytical approach

For the quantitative part of the investigation, the study employed Pearson's correlation coefficient and regression path analyses. The method for estimation and testing in structural equation modelling (SEM) was the normal theory-based maximum likelihood (ML). Statistical analyses were conducted using SPSS v.25 and Amos. Reliability testing was done by employing Cronbach's alpha and McDonald's omega ML using Hayes Omega Macro for SPSS (Hayes & Coutts, 2020). To evaluate the mediation effect, bootstrapping with 5,000 samples, linear regression analysis was performed. The indirect effect was considered significant if zero was outside the 95% confidence interval. For all analyses, the significance level was set at $p < .05$.

For the qualitative portion, participants were asked to complete two phrases: 'I exercise because...' and 'exercising makes me...'. These phrases were presented at the beginning of the questionnaire to avoid participants' priming. Using content thematic analysis, the responses were coded and categorized into themes of health/fitness, leisure/fun and empowerment (see Table 2). Thematic analysis is a commonly used qualitative research method for analysing data that requires recognizing and interpreting repeated patterns (Braun & Clarke, 2006). To ensure the rigour of the content analysis, the authors cross-checked their interpretational classification at each stage of the process (Stemler, 2000). According to Weber (1990), consistent coding and interpretation can infer content analysis reliability. The frequencies of particular motives or sub-motives are reported in the Results section.

3 | RESULTS

3.1 | Correlational analyses (H1, H2)

All variables were normally distributed with skewness coefficients and kurtosis between +1 and -1. Descriptive statistics of all scales are presented in Table 1. The study's first two hypotheses were partially supported, with Pearson's correlation coefficient analyses (Table 1) revealing significant pairwise associations between the variables. A significant negative correlation was observed between self-stereotyping and exercising. Similarly, self-stereotyping showed significant negative associations with both agency and autonomy. While there was no significant correlation between self-stereotyping and physical self-efficacy, the analysis confirmed significant positive associations between exercising and all measures of empowerment, including autonomy, agency and physical self-efficacy.

TABLE 1 Descriptive statistics and correlational analyses of exercising, self-stereotyping, autonomy, agency and physical self-efficacy.

Variables (N = 250)	M (SD)	1	2	3	4	5
1.Self-stereotyping	1.69 (.80)	-				
2.Agency	67.98 (11.21)	-0.16*	-			
3.Autonomy	9.38 (3.33)	-0.19*	0.55**	-		
4.Physical self-efficacy	78.57 (11.58)	-0.05	0.49**	0.46**	-	
5. Exercising	22.02 (9.02)	-0.12*	0.29**	0.25**	0.36**	-

* $p < .05$; ** $p < .001$.

Out of demographic characteristics, the age of participants was positively associated with decreased autonomy ($r = -.29, p < .001$) but increased self-stereotyping ($r = .16, p = .01$). The number of children was associated positively with self-stereotyping ($r = .21, p < .001$), physical self-efficacy ($r = .22, p < .001$) and sense of agency ($r = .21, p < .001$), but negatively with autonomy ($r = -.17, p < .001$). Exercising was not significantly associated with the demographic variables.

3.2 | Path model analysis (H3)

The a-priori sample size analysis of power revealed that for regression analyses with five predictors, desired power = 0.80, anticipated medium effect size of $f^2 = 0.15$ and probability level $p < .05$, the minimum required sample size was 91 participants, making the current study's sample of 250 participants sufficient to detect statistically meaningful results.

The path model SEM (ML method for estimation) presented in Figure 1 tested sequential direct and indirect effects of variables that appeared to be significantly correlated. The initial model was identified by trimming the non-significant paths from the initial theoretical model, including self-stereotyping, exercising, autonomy, agency and physical self-efficacy. Model fit was determined by chi-square statistics ($\chi^2 = 0.30, p = .86$) to inspect the proposition that the matrix of the model parameters fit the observed covariance matrix. Consequently, the goodness of model fit was ascertained by using CFI = 0.99, RMSEA = 0.00, [CI 0.00, 0.09]; PCLOSE = 0.89, CMIN/df = 0.03), SRMR = 0.003. The fit indices suggest acceptance of the model (Hu & Bentler, 1999).

All significant direct effects are presented in Figure 1. It can be inferred that exercising was a positive and direct predictor of autonomy ($B = 0.38; \beta = 0.25, p < .001; 95\% \text{ CI } [0.547, 0.246]$), agency ($B = 1.5; \beta = 0.27, p < .001; 95\% \text{ CI } [1.030, 2.103]$) and physical self-efficacy ($B = 2.1; \beta = 0.36, p < .001; 95\% \text{ CI } [1.486, 2.731]$), while self-stereotyping stood as a negative predictor of exercising ($B = -0.30; \beta = -0.12, p = .02; 95\% \text{ CI } [-0.085, -0.011]$), agency ($B = -2.2; \beta = -0.12, p = .03; 95\% \text{ CI } [-3.165, -0.296]$) and autonomy ($B = -0.66; \beta = -0.16, p = .002; 95\% \text{ CI } [-0.119, -0.964]$). The indirect effect of exercising was statistically significant for the path involving self-stereotyping \rightarrow autonomy, IE = 0.03 ($p < .001; 95\% \text{ CI } [0.071, 0.002]$), and also for the path involving self-stereotyping \rightarrow agency, IE = 0.08 ($p < .001; 95\% \text{ CI } [0.003, 0.021]$). Sobel effect size for the agency was $f^2 = 0.15$; for autonomy was $f^2 = 0.11$; for self-efficacy was $f^2 = 0.10$.

3.3 | Qualitative analysis

RQ1: *How did women describe their motives for exercising and their perceptions of the outcomes of exercising?*

The qualitative analysis revealed that most participants exercised for health benefits (weight management, fitness and de-stressing). Remarkably, the reported outcome from exercising was mainly related to experiences of empowerment (feeling free, independent and powerful) (Table 2).

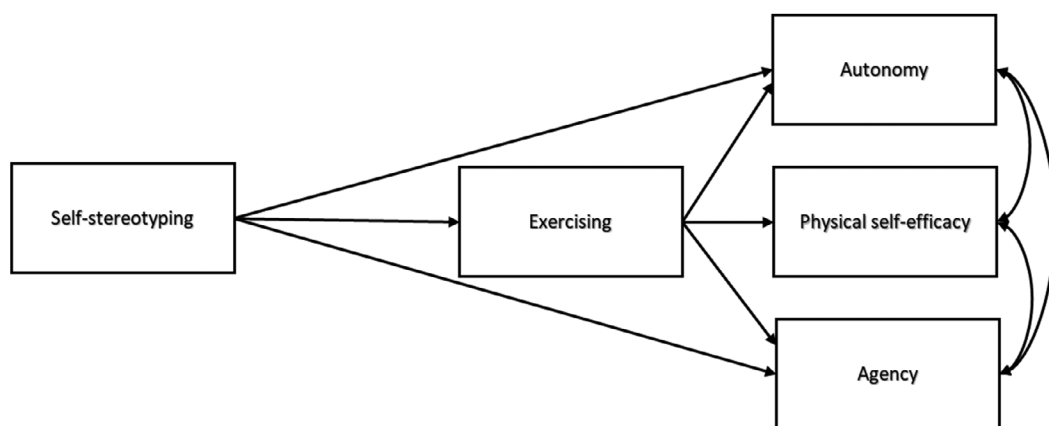


FIGURE 1 Path model of direct and indirect effects of exercising and self-stereotyping on agency, autonomy and physical self-efficacy. Only significant paths have been included. * $p < .05$; ** $p < .001$.

TABLE 2 Frequencies of the reported exercising related motives and outcomes based on participants' subjective experiences.

	N = 239 (%)	I exercise because
Health/fitness	160 (64%)	<i>I need to lose weight; it helps me de-stress; I want to stay fit</i>
Empowerment	56 (22%)	<i>I feel free; it makes me stronger; I am more motivated; it builds my strength</i>
Leisure/fun	23 (9%)	<i>It is fun; I love it; I enjoy it; I like to move</i>
	N = 240 (%)	Exercising makes me
Empowerment	146 (57%)	<i>Feel free; responsible; powerful; strong and resilient; confident; feel like an empowered woman who takes care of herself; feel like I am the owner of my body</i>
Health/fitness	98 (39%)	<i>Fit; healthy; young; beautiful</i>

4 | DISCUSSION

4.1 | Hypotheses and research question verification

The present study aimed to investigate the associations between exercising and measures of women empowerment among women living in non-Western, multicultural country. Furthermore, it analysed the role of exercising in mediating the relationship between stereotyping and measures of women's empowerment. The findings showing significant negative associations between self-stereotyping and exercising on the one hand, and between self-stereotyping, agency and autonomy on the other, corroborate previous findings in the literature and support our first two hypotheses (Cristi-Montero et al., 2021; Dickerson & Taylor, 2000; Martin Ginis et al., 2003; Salci & Ginis, 2017; Sebire et al., 2009). Self-stereotyping impairs the sense of empowerment, and females who exercise less may be more vulnerable to such a process. Furthermore, the results confirming positive associations between exercising, agency, autonomy and physical self-efficacy lend credence to previous findings surrounding the topic of psychological benefits of exercising (Halvary et al., 2009; Kwan et al., 2011; Puente & Anshel, 2010). We hence validated the existing knowledge in a non-Western, multicultural sample.

Additionally, the path model analysis that yielded significant results highlighted the indirect role exercising plays in mitigating the effects of self-stereotyping against the psychological features of empowerment, that is, agency and

autonomy. Such findings also validate the suggested earlier mediational role of fitness activity in the negative effect of socio-demographic factors on an individual's capabilities (Cristi-Montero et al., 2021). Suppose the negative impact of self-stereotyping on aspects of women's empowerment, like autonomy and agency, can be partially decreased with improvements to fitness levels thanks to exercising engagement; our findings could contribute to public health and promote additional (to policies) interventions supportive of women's empowerment. This outcome extends the existing body of literature that has so far looked separately into the broader topic area of exercise self-efficacy and negative exercise stereotypes (Gray et al., 2018). For a multicultural society like that in the United Arab Emirates, interventions focused on sports engagement may support the country's gender-equalizing policies.

The study also explored the subjective meaning women attach to exercising, their motives for exercising and their perceptions of the outcomes of exercising. The findings provided an insightful exploration into the role of exercising in influencing psychological factors that characterize women's empowerment. Using qualitative analysis, it was revealed that though the participants engaged in exercising primarily for health-related reasons, the outcome they reported was mainly linked to empowerment. The results corroborated existing studies pointing to sports engagement as an essential factor of one's fitness (Pedersen & Saltin, 2015; Rasciute & Downward, 2010) and mental health (Ekkekakis et al., 2011; Reed & Buck, 2009); many participants pointed to mood improvement as particularly significant (Brown et al., 2005; Checkrout et al., 2018). What is more, exercising was reported to assist women to feel stronger, more potent, able and efficacious, supporting previous studies that conclude that exercising stimulates enhancement in physical and mental abilities (Cantor & Bernay, 1992; MacKinnon et al., 1987; Sebire et al., 2009). The participants in the current study further highlighted gaining a sense of freedom, responsibility and empowerment that exercising brings to them, in line with Talbot's (2001) conclusions on positive effect of exercising on self-confidence and Dickerson and Taylor's (2000) on self-efficacy. Overall, the findings add evidence to the existing body of literature by highlighting the complex and multifold benefits of exercising for women in enhancing feelings of empowerment, particularly in contexts where traditional and cultural norms are perceived to facilitate self-stereotyping among women. Interestingly, some demographic characteristics were associated with self-stereotyping, namely the number of children and age. Older women with more children seemed to be more prone to adhere to traditional gender roles. Moreover, the social role of being a mother may have additionally evoked extra pressure on women to self-stereotype. It aligns with the existing literature proposing that self-stereotyping ensures social inclusion and might decrease interpersonal pressures, which mothers might want to avoid (Li et al., 2023). In contrast, low levels of self-stereotyping might be related to the violation of social roles and hence explain why fewer children are possessed by women with lower levels of self-stereotyping. Mothers and older women might also be at risk of losing a sense of autonomy due to extended social responsibilities. Our results point to them as the most vulnerable group that potential empowering intervention should target.

In summary, the study utilized a number of psychological theories and models to demonstrate the relationships between self-stereotyping, exercising and measures of women's psychological empowerment. Such exploratory research could have the power to inform policies, both at the national and individual levels. Promotion of exercising could help women achieve a sense of autonomy and efficacy, particularly in social environments where women are subject to a variety of cultural gender pressures and expectations. Studies in the Middle East region have explored psychological factors such as stereotyping, self-efficacy, agency and autonomy, investigating their collective role in women's empowerment (Al-Qahtani et al., 2021). The current study extends the existing literature by showing how exercising plays a mediating role in mitigating the effects of self-stereotyping against women's agency, autonomy and physical self-efficacy.

4.2 | Strengths, limitations and future directions

The study has a number of strengths. The sample comprised of participants from diverse cultural backgrounds, predominantly of non-Western origin, residing in one country, which is a decent representation of the

United Arab Emirates's multicultural social environment. The participants' age range and other demographic features are also relatively varied, allowing for improved generalization of the results to the wider population. Nonetheless, the study is not without limitations. Firstly, the analysis did not control for additional factors that may have played a role in the predictive relationships between exercising, features of empowerment and self-stereotyping. Further, our statistical model did not control for age or other demographic variables, mostly because exercising was not significantly associated with any. Hence, our research invites future exploration, which would account for the demographic factors of women residing in the United Arab Emirates. Secondly, cautionary steps are advised when interpreting the findings, as no causal relationships were established among the studied variables. Finally, although the discussion touched upon topics involving culture and gender equality, it did so without including them as validated constructs in the empirical investigation. Future researchers are encouraged to investigate intersectional factors such as culture, gender-based stereotypes and gender equality to examine their collective impact on women's empowerment.

4.3 | Implications and conclusions

Exercising has various physical and mental health benefits. This study highlighted the prominent role exercising might also play in predicting, directly and indirectly, women's autonomy, sense of agency and physical self-efficacy, which are crucial for promoting gender equality and empowerment. The findings suggest that exercising may indirectly mediate the negative relationships between self-stereotyping on women's autonomy, agency and self-efficacy in social and cultural contexts where interventions targeting women's empowerment are not readily available or may be met with resistance. Furthermore, the study sample consisted of an under-researched non-Western and multicultural population, which allows for extending knowledge outside the conventional frame. The findings bear consequences in informing the development of interventions using physical activity to empower women psychologically. They could also be used to inform policies that promote physical and psychological well-being among women in the United Arab Emirates.

AUTHOR CONTRIBUTIONS

Magdalena Mosanya: Conceptualization, Methodology, Formal analysis, Investigation, Resources, Writing—original draft, Writing—review and editing, Project administration. Seada Kassie: Investigation, Resources, Writing—original draft, Writing—review and editing, Project administration.

FUNDING INFORMATION

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors. Data is available from the corresponding author (M.M.) upon request

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Magdalena Mosanya  <https://orcid.org/0000-0002-1131-3956>

Seada Kassie  <https://orcid.org/0000-0001-6546-6168>

REFERENCES

- Abou-Saleh, M., Ghubash, R., & Daradkeh, T. (2001). Al Ain community psychiatric survey I: Prevalence and socio-demographic correlates. *Social Psychiatry and Psychiatric Epidemiology*, 36, 20–28. <https://doi.org/10.1007/s001270050286>
- Abulibdeh, E. S., & Syed Hassan, S. S. (2011). E-learning interactions, information technology self-efficacy and student achievement at the university of Sharjah, UAE. *Austral J Educ Technol*, 27(6), 1014–1025. <https://doi.org/10.14742/ajet.926>
- Afari, E., Ward, G., & Khine, M. S. (2012). Global self-esteem and self-efficacy correlates: Relation of academic achievement and self-esteem among Emirati students. *International Education Studies*, 5(2), 49–57. <https://doi.org/10.5539/ies.v5n2p49>
- Aftab, A. (2019). Religious freedom and gender equality: The sharia debates and gendered institutions in Australia and Britain. *Australian Journal of Human Rights*, 25(2), 281–298. <https://doi.org/10.1080/1323238X.2019.1622245>
- Al-Jenaibi, B. (2015). The needs and priorities of women in the UAE: Identifying struggles and enhancing satisfaction of employment, education, health care, and rights. *Contemporary Review of the Middle East*, 2(3), 238–268. <https://doi.org/10.1177/2347798915601590>
- Al-Qahtani, A. M., Ibrahim, H. A., Elgzar, W. T., El Sayed, H. A., Essa, R. M., & Abdelghaffar, T. A. (2021). The role of self-esteem and self-efficacy in women empowerment in the Kingdom of Saudi Arabia: A cross-sectional study. *African Journal of Reproductive Health*, 25, 69–78. <https://doi.org/10.29063/ajrh2021/v25i1s.7>
- Bailey, R. (2005). Evaluating the relationship between physical education, sport and social inclusion. *Educational Review*, 57(1), 71–90. <https://doi.org/10.1080/0013191042000274196>
- Bailey, R., Cope, E., & Parnell, D. (2015). Realizing the benefits of sports and physical activity: The human capital model. *Retos*, 28, 147–154.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.
- Ben-Galim, D., Campbell, M., & Lewis, J. (2007). Equality and diversity: A new approach to gender equality policy in the UK. *International Journal of Law in Context*, 3(1), 19–33. <https://doi.org/10.1017/S1744552307001024>
- Berkery, E., Morley, M., & Tiernan, S. (2013). Beyond gender role stereotypes and requisite managerial characteristics. *Gender in Management: An International Journal*, 28(5), 278–298. <https://doi.org/10.1108/GM-12-2012-0098>
- Berry, J. (1993). Ethnic identity in plural societies. In M. Bernal & G. Knight (Eds.), *Ethnic identity: New formation and transmission among Hispanics and other minorities*. New York: State University of New York Press.
- Blinde, E., Taub, D., & Han, L. (1993). Sports participation and women's personal empowerment: Experiences of the college athlete. *Journal of Sports and Social Issues*, 17(1), 47–60. <https://doi.org/10.1177/019372359301700107>
- Bloom, S. S., Wypij, D., & Das Gupta, M. (2001). Dimensions of women's autonomy and the influence on maternal health care utilization in a north Indian city. *Demography*, 38(1), 67–78. <https://doi.org/10.1353/dem.2001.0001>
- Boehm, A., & Staples, L. (2004). Empowerment: The point of view of consumers. *Families in Society: The Journal of Contemporary Social Services*, 85, 270–280. <https://doi.org/10.1606/1044-3894.314>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Bridle, C., Spanjers, K., Patel, S., Atherton, N. M., & Lamb, S. E. (2012). Effect of exercise on depression severity in older people: Systematic review and meta-analysis of randomized controlled trials. *British Journal of Psychiatry*, 201, 180–185. <https://doi.org/10.1192/bjp.bp.111.095174>
- Bronfenbrenner, U. (1994). Ecological models of human development. In *International encyclopedia of education* (2nd ed., Vol. 3). Oxford: Elsevier.
- Brown, W., Ford, J., Burton, N., Marshall, A., & Dobson, A. (2005). Prospective study of physical activity and depressive symptoms in idled-aged women. *American Journal of Preventive Medicine*, 29, 265–272. <https://doi.org/10.1016/j.amepre.2005.06.009>
- Caldwell, J. (1986). Routes to low mortality in poor countries. *Population and Development Review*, 12(2), 171–220. <https://doi.org/10.2307/1973108>
- Cantor, D. W., & Bernay, T. (1992). *Women in power*. Houghton Mifflin: The secrets of leadership.
- Carter, M. W. (2002). 'Because he loves me': husbands' involvement in maternal health in Guatemala. *Culture, Health and Sexuality*, 4, 259–279. <https://doi.org/10.1080/13691050110112784>
- Checkrout, S. R., Guerguieva, R., Zheutlin, A. B., Paulus, M., Krumholz, H. M., Krystal, J. H., & Checkrout, A. M. (2018). Association between physical exercise and mental health in 1.2 million individuals in the USA between 2011 and 2015: A cross-sectional study. *The Lancet Psychiatry*, 5(9), 739–746. [https://doi.org/10.1016/S2215-0366\(18\)30227-X](https://doi.org/10.1016/S2215-0366(18)30227-X)
- Chen, Y. Z., & Tanaka, H. (2014). Women's empowerment. In A. C. Michalos (Ed.), *Encyclopedia of quality of life and well-being research*. Dordrecht: Springer. https://doi.org/10.1007/978-94-007-0753-5_3252
- Clarke-Stewart, A., & Parke, R. (2014). *Social development* (2nd ed.). Hoboken, NJ: Wiley.

- Council of Europe. (1995). *The significance of sport for society, health, socialization, economy*. Strasbourg, France: Committee for the Development of Sport. Council of Europe Press.
- Council of Europe. (2001). *Recommendation No. R. (92) 13 REV of the Committee of Ministers of members states on the revised European sports charter*. Strasbourg, France: Council of Europe Press.
- Cristi-Montero, C., Courel-Ibáñez, J., Ortega, F. B., Castro-Piñero, J., Santaliestra-Pasías, A., Polito, A., ... HELENA study group. (2021). Mediation role of cardiorespiratory fitness on the association between fatness and cardiometabolic risk in European adolescents: The HELENA study. *Journal of Sport and Health Science*, 10(3), 360–367. <https://doi.org/10.1016/j.jshs.2019.08.003>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Dickerson, A., & Taylor, M. A. (2000). Self-limiting behaviour in women self-esteem and self-efficacy as predictors. *Group and Organization Management*, 25(2), 191–210. <https://doi.org/10.1177/1059601100252006>
- Donald, A., Koolwal, G., Annan, J., Falb, K., & Goldstein, M. (2017). *Measuring women's agency (English)*. Policy research working paper no. WPS 8148. Washington, D.C.: World BankGroup. Retrieved from <http://documents.worldbank.org/curated/en/3333481500385677886/Measuring-womens-agency>
- Donnelly, P., & Coakley, J. (2002) *The role of recreation in promoting social inclusion*. Toronto: Laidlaw Foundation. Retrieved from www.ccsd.ca/subsites/inclusion/bp/pd.htm
- Ekkekakis, P., Parfitt, G., & Petruzzello, S. (2011). The pleasure and displeasure people feel when they exercise at different intensities: Decennial update and progress towards a tripartite rationale for exercise intensity prescription. *Sports Medicine*, 1, 641–671. <https://doi.org/10.2165/11590680-000000000-00000>
- Elsadda, H. (2004). Women in the Arab world: Reading against the grain of culturalism. *International Politics and Society*, 4, 41–53.
- Fernandez, A., Della Giusta, M., & Kambhampati, U. (2015). The intrinsic value of agency: The case of Indonesia. *World Development*, 70, 92–107. <https://doi.org/10.1016/j.worlddev.2014.12.020>
- Ginis, M., Strong, K., Arent, S. M., Bray, S. R., & Bassett-Gunter, R. L. (2014). The effects of aerobic- versus strength-training on body image among young women with pre-existing body image concerns. *Body Image*, 11(3), 219–227. <https://doi.org/10.1016/j.bodyim.2014.02.004>
- Glick, P., Fiske, S. T., Mladinic, A., Saiz, J. L., Abrams, D., Masser, B., ... López López, W. (2000). Beyond prejudice as simple antipathy: Hostile and benevolent sexism across cultures. *Journal of Personality and Social Psychology*, 79(5), 763–775. <https://doi.org/10.1037/0022-3514.79.5.763>
- Global Media Insight. (2021). *United Arab Emirates population statistics 2019*. Dubai: UAE. Retrieved from <https://www.globalmediainsight.com/blog/uae-population-statistics>.
- Godin, G., & Shephard, R. (1985). A simple method to assess exercise behavior in the community. *Canadian Journal of Applied Sport Sciences*, 10, 141–146.
- Gomez-Pinilla, F., & Hillman, C. (2013). The influence of exercise on cognitive abilities. *Comprehensive Physiology*, 3, 403–428. <https://doi.org/10.1002/cphy.c110063>
- Goodwin, R. D. (2003). Association between physical activity and mental disorders among adults in the United States. *Preventive Medicine*, 36(6), 698–703. [https://doi.org/10.1016/s0091-7435\(03\)00042-2](https://doi.org/10.1016/s0091-7435(03)00042-2)
- Gray, L., Chalabaev, A., Durant, J., Rosenthal, E., Pradier, C., Duracinsky, M., ... d'Arripe-Longueville, F. (2018). Exercise stereotypes and fatigue in people living with HIV: Does self-efficacy play a mediating or a moderating role? *Archives of Public Health*, 76, 23. <https://doi.org/10.1186/s13690-018-0269-1>
- Guimond, S., Chatard, A., & Lorenzi-Cioldi, F. (2013). The social psychology of gender across cultures. <https://doi.org/10.4135/9781446269930.n14>
- Halvary, H., Ulstad, S.A., Bagoien, T.E, & Skjesol, K. (2009). Autonomy support and its links to physical activity and competitive performance: Mediations through motivation, competence, action orientation and harmonious passion, and the moderator role of autonomy support by perceived competence. *Scandinavian Journal of Educational Research*, 53, 533–555. <https://doi.org/10.1080/00313830903302059>
- Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. *But. Communication Methods and Measures*, 14, 1–24.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behaviour and Brain Science*, 33, 61–83. <https://doi.org/10.1017/S0140525X0999152X>
- Henry, C. J., Lightowler, H. J., & Al-Hourani, H. M. (2004). Physical activity and levels of inactivity in adolescent females ages 11-16 years in The United Arab Emirates. *American Journal of Human Biology: The Official Journal of the Human Biology Council*, 16(3), 346–353. <https://doi.org/10.1002/ajhb.20022>
- Hernández-Jaña, S., Sanchez-Martinez, J., Solís-Urra, P., Esteban-Cornejo, I., Castro-Piñero, J., Sadarangani, K. P., ... Cristi-Montero, C. (2021). Mediation role of physical fitness and its components on the association between distribution-related fat indicators and Adolescents' cognitive performance: Exploring the influence of school vulnerability. The Cogni-action project. *Frontiers in Behavioral Neuroscience*, 15, 746197. <https://doi.org/10.3389/fnbeh.2021.746197>

- Hu, L.-T., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Huis, M. A., Hansen, N., Otten, S., & Lensink, R. (2017). A three-dimensional model of Women's empowerment: Implications in the field of microfinance and future directions. *Frontiers in Psychology*, 8, 1678. <https://doi.org/10.3389/fpsyg.2017.01678>
- Hurault, J.-C., Broc, G., Crône, L., Tedesco, A., & Brunel, L. (2020). Measuring the sense of agency: A French adaptation and validation of the sense of agency scale (F-SoAS). *Frontiers in Psychology*, 11, 2650. <https://doi.org/10.3389/fpsyg.2020.584145>
- International Sports Sciences Association (2022). *5 ways exercise builds self-confidence—Plus real inspiration*. Phoenix, Arizona: ISSA. Retrieved from <https://www.issaonline.com/blog/post/jessenia-gallegos-breaking-free-and-finding-sanctuary-in-fitness>
- Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change*, 30(3), 435–464. <https://doi.org/10.1111/1467-7660.00125>
- Kabeer, N. (2001). *Reflections on the measurement of women's empowerment. Discussing Women's empowerment—Theory and practice*. Stockholm, Sweden: Sida Studies No. 3. Novum Grafiska AB.
- Keller, B., & Mbwewe, D. (1991). Policy and planning for the empowerment of Zambia's women farmers. *Canadian Journal of Development Studies*, 12(1), 75–88. <https://doi.org/10.1080/02255189.1991.9669421>
- Kuchynka, S., Salomon, K., Bosson, J., El-Hout, M., Kiebel, E., Cooperman, C., & Toomey, R. (2018). Hostile and benevolent sexism and college women's STEM outcomes. *Psychology of Women Quarterly*, 42, 036168431774188. <https://doi.org/10.1177/0361684317741889>, 72–87
- Kurtiş, T., & Adams, G. (2015). Decolonizing liberation: Toward transnational feminist psychology. *Journal of Social and Political Psychology*, 3, 388–413. <https://doi.org/10.5964/jspp.v3i1.326>
- Kwan, B. M., Caldwell Hooper, A. E., Magnan, R. E., & Bryan, A. D. (2011). A longitudinal diary study of the effects of causality orientations on exercise-related affect. *Self and Identity*, 10, 363–374. <https://doi.org/10.1080/15298868.2010.534238>
- Laar, R., Perveen, S., & Ashraf, M. (2022). Young women as change agents in sports and physical activities in the Punjab (southern) province of Pakistan. *Frontiers in Psychology*, 13, 1–10. <https://doi.org/10.3389/fpsyg.2022.857189>
- Laufer, J. (2009). Is diversity the answer to gender equality? L'égalité professionnelle entre les hommes et les femmes est-elle soluble dans la diversité? *Travail, Genre et Sociétés*, 21, 29–54. <https://doi.org/10.3917/tgs.021.0029>
- Li, J., Xiao, M., Huang, H., & Liu, H. (2023). A latent profile analysis of subjective exercise experiences among physically vulnerable college students and psychiatric symptoms correlates during three phases of the COVID-19 pandemic in Wuhan, China. *Frontiers in Psychology*, 14, 1–8. <https://doi.org/10.3389/fpsyg.2023.1118489>
- Mackinnon, L., Chick, T., Van As, A., & Tomasi, T. (1987). The effect of exercise on secretory and natural immunity. *Advances in Experimental Medicine and Biology*, 216A, 869–876. https://doi.org/10.1007/978-1-4684-5344-7_102
- Maghelal, P., Alawadi, K., Arlikatti, S., & Wahdain, A. (2022). Influence of the built environment on physical activity choices among Emirati male and female adolescents: An examination of parents' and students' perceptions. *Sustainability*, 14(1), 444. <https://doi.org/10.3390/su14010444>
- Martin Ginis, K., Jung, M., & Gauvin, L. (2003). To see or not to see: Effects of exercising in mirrored environments on sedentary women's feelings states and self-efficacy. *Health Psychology*, 22, 354–361. <https://doi.org/10.1037/0278-6133.22.4.354>
- Martin, D., Cunningham, S. J., Hutchison, J., Slessor, G., & Smith, K. (2017). How societal stereotypes might form and evolve via cumulative cultural evolution. *Social and Personality Psychology Compass*, 11(9), 1–13. <https://doi.org/10.1111/spc3.12338>
- McAuley, E., Mihalko, S. L., & Bane, S. (1997). Exercise and self-esteem in middle aged adults: Multidimensional relationships and physical fitness and self-efficacy influences. *Journal of Behavioral Medicine*, 20, 67–83. <https://doi.org/10.1023/A:1025591214100>
- McIlvenny, P. (Ed.). (2002). *Talking gender and sexuality*. Amsterdam, Netherlands: John Benjamins Publishing.
- Mesman, J., & Groeneveld, M. G. (2018). Gendered parenting in early childhood: Subtle but unmistakable if you know where to look. *Child Development Perspectives*, 12(1), 22–27. <https://doi.org/10.1111/cdep.12250>
- Mosanya, M., & Petkari, E. (2018). Being fit and feeling pleased: The mediational role of physical self-efficacy in UAE women residents. *International Journal of Sport and Exercise Psychology*, 16(4), 343–353. <https://doi.org/10.1080/1612197X.2016.1256340>
- Narayan, D. (2005). *Measuring empowerment: Cross-disciplinary perspectives*. Washington, D.C.: World Bank Group.
- O'Neil, A., Russell, J. D., Thompson, K., Martinson, M. L., & Peters, S. (2020). The impact of socio-economic position (SEP) on women's health over the lifetime. *Maturitas*, 140, 1–7. <https://doi.org/10.1016/j.maturitas.2020.06.001>
- Organization for Economic Cooperation and Development. (2018). *Women's economic empowerment*. France. <https://www.oecd.org/social/genderdevelopment/womenseconomicempowerment.htm>

- Pan, S. Y., Cameron, C., Desmeules, M., Morrison, H., Craig, C. L., & Jiang, X. (2009). Individual, social, environmental, and physical environmental correlates with physical activity among Canadians: A cross-sectional study. *BMC Public Health*, 9, 21. <https://doi.org/10.1186/1471-2458-9-21>
- Pedersen, B., & Saltin, B. (2015). Exercise as medicine - evidence for prescribing exercise as therapy in 26 different chronic diseases. *Scandinavian Journal of Medical Sciences in Sports*, 25(3), 1–72. <https://doi.org/10.1111/sms.12581>
- Prasad, P., & Baron, J. (1996). *Measurement of gender-role attitudes, beliefs, and principles*. University of Pennsylvania. <https://www.sas.upenn.edu/~baron/papers.htm/pp.htm#23>
- Puente, R., & Anshel, M. H. (2010). Exercisers' perceptions of their fitness instructor's interacting style, perceived competence, and autonomy as a function of self-determined regulation to exercise, enjoyment, affect, and exercise frequency. *Scandinavian Journal of Psychology*, 51, 38–45. <https://doi.org/10.1111/j.1467-9450.2009.00723.x>
- Puri, L. (2016). Sport has huge potential to empower women and girls. Remarks by UN assistant secretary-general and UN women deputy executive director Lakshmi Puri at “the value of hosting mega sport events as a social”. In *Economic and environmental sustainable development tool*. New York: United Nation Women. Retrieved from <https://www.unwomen.org/en/news/stories/2016/2/lakshmi-puri-speech>
- Rasciute, S., & Downward, P. (2010). Health or happiness? What is the impact of physical activity on the individual? *Kyklos*, 63, 256–270. <https://doi.org/10.1111/j.1467-6435.2010.00472.x>
- Reed, J., & Buck, S. (2009). The effect of regular aerobic exercises on positive-activated affect: A meta-analysis. *Psychology of Sport and Exercise*, 1, 581–594. <https://doi.org/10.1016/j.psychsport.2009.05.009>
- Reed, J., & Ones, D. (2006). The effect of acute aerobic exercise on positive activated affect: A meta-analysis. *Psychology of Sport and Exercise*, 7, 477–514. <https://doi.org/10.1016/j.psychsport.2005.11.003>
- Richardson, L., Kanel, V., Rellinger, A., Ramlo, S., & Fister, C. (2023). Strength training: An inquiry of females perceptions. *Topics in Exercise Science and Kinesiology*, 4(1), 1–12. <http://www.teskjournal.com>
- Rubel, A., Castro, C., & Pham, A. (2021). Autonomy, agency, and responsibility. In *Algorithms and autonomy: The ethics of automated decision systems* (pp. 21–42). Cambridge: Cambridge University Press.
- Ryckman, R., Robbins, M., Thornton, B., & Cantrell, P. (1982). Development and validation of a physical self-efficacy scale. *Journal of Personality and Social Psychology*, 42, 891–900. <https://doi.org/10.1037/0022-3514.42.5.891>
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719–727. <https://doi.org/10.1037/0022-3514.69.4.719>
- Salci, L.E. & Ginis, K.A.M. (2017). Acute effects of exercise on women with pre-existing body image concerns: A test of potential mediators. *Psychology of Sport and Exercise*, 31, 113–122. Retrieved from <https://doi.org/10.1016/j.psychsport.2017.04.001>.
- Saygan, B. B., & Uludağlı, N. P. (2021). Lifespan development of gender roles. *Current Approaches in Psychiatry*, 13(2), 354–382. <https://doi.org/10.18863/pgy.789615>
- Schunk, D. H., & DiBenedetto, M. K. (2016). Self-efficacy theory in education. In K. R. Wentzel & D. B. Miele (Eds.), *Handbook of motivation at school* (2nd ed., pp. 34–54). London, UK: Routledge.
- Sebire, S., Standage, M., & Vansteenkiste, M. (2009). Examining goal content in the exercise domain: Intrinsic versus extrinsic goals and cognitive, affective, and behavioural outcomes, and psychological need satisfaction. *Journal of Sport and Exercise Psychology*, 31, 189–210. [10.1123/jsep.31.2.189](https://doi.org/10.1123/jsep.31.2.189).
- Sen, A. (1985). *Commodities and capabilities*. Oxford University Press India.
- Sharara, E., Akik, C., Ghattas, H., & Obermeyer, C. (2018). Physical inactivity, gender and culture in Arab countries: A systematic assessment of the literature. *BMC Public Health*, 18, 639. <https://doi.org/10.1186/s12889-018-5472-z>
- Sharma, H., & Nasa, G. (2014). Academic self-efficacy: A reliable predictor of educational performance. *British Journal of Education*, 2(3), 57–64. Retrieved from www.ea-journals.org
- Song, S. (2005). Majority norms, multiculturalism, and gender equality. *The American Political Science Review*, 99(4), 473–489. Retrieved from <https://www.jstor.org/stable/30038959>
- Staples, L. (1990). Powerful ideas about empowerment. *Administration in Social Work*, 14(2), 29–42. https://doi.org/10.1300/J147v14n02_03
- Steffens, M., & Viladot, M. (2015). *Gender at work: A social psychological perspective*. Peter Lang.
- Stemler, S. (2000). An overview of content analysis. *Practical Assessment, Research, and Evaluation*, 7(17), 1–6. <https://doi.org/10.7275/z6fm-2e34>
- Strauss, R., Rodzilsky, D., Burack, G., & Colin, M. (2001). Psychological correlates of physical activities among healthy children. *Archives of Pediatric Adolescents Medicine*, 155, 807–902. <https://doi.org/10.1001/archpedi.155.8.897>
- Talbot, M. (2001). The case for physical education. In G. Doll-Teppep & D. Scoretz (Eds.), *World summit on physical education*. Berlin, Germany: ICSSPE.
- Tapal, A., Oren, E., Dar, R., & Eitam, B. (2017). The sense of agency scale: A measure of consciously perceived control over one's mind, body, and the immediate environment. *Frontiers in Psychology*, 8, 1552. <https://doi.org/10.3389/fpsyg.2017.01552>

- Trainer, S. (2010). Body image, health, and modernity: Women's perspectives and experiences in the United Arab Emirates. *Asia Pacific Journal of Public Health*, 22, 60–67. <https://doi.org/10.1177/1010539510373127>
- UNICEF. (2021). *South Asia report on gender equality*. New York City: UNICEF. Retrieved from <https://www.unicef.org/rosa/what-we-do/gender-equality>.
- Warburton, D., Nicol, C., & Bredin, S. (2006). Health benefits of physical activity: The evidence. *Canadian Medical Association Journal*, 174, 801–809. <https://doi.org/10.1503/cmaj.051351>
- Weber, R. P. (1990). *Basic content analysis* (2nd ed.). Newbury Park, CA: Sage.
- Wood, W., & Eagly, A. H. (2010). Gender. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 629–667). Hoboken, NJ: John Wiley & Sons, Inc. <https://doi.org/10.1002/9780470561119.socpsy001017>
- World Bank (2012). *World development report 2012*. Gender equality and development. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/492221468136792185/Main-report>
- World Bank. (2021). *United Arab Emirates data*. Washington, D.C.: World Bank Press. Retrieved from <https://data.worldbank.org/country/AE>
- World Bank Group. (2014). Voice and agency. *Empowering Women and Girls for Shared Prosperity*. www.worldbank.org/gender/agency
- World Economic Forum. (2021). *Global Gender Gap Report*. Geneva, Switzerland: WE Forum. Retrieved from <http://reports.weforum.org/globalgender-gap-report-2021/dataexplorer>
- World Health Organization. (2022). *Gender and health*. Geneva, Switzerland: United Nations Press. Retrieved from https://www.who.int/health-topics/gender#tab=tab_1

How to cite this article: Mosanya, M., & Kassie, S. (2024). Psychological empowerment and exercising: The relationships between exercising, self-stereotyping, agency, autonomy and physical self-efficacy in non-Western women. *Journal of Community & Applied Social Psychology*, 34(3), e2791. <https://doi.org/10.1002/casp.2791>

APPENDIX A A

TABLE A1 Demographic characteristics of the participants.

Variable (N = 250)	Percentage (%)
Marital status	
Single	51
Married	36
Divorced	4
Others	8
Parenthood status	
Mothers	35
Children	
One child	8
Two children	18
Three or more children	9
Emirate of residence	
Abu Dhabi	11
Dubai	75
Northern Emirates	13
Religious affiliations	
Christianity	32
Hinduism	12
Islam	41
Spiritual/No religious affiliation	15
Exercising frequency	
Regularly	32
Sometimes	32
Rarely	20
Never	16