

Cultural and Motivational Determinants of Exercise Adherence in Meranao Women

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Abstract

Understanding the individual characteristics of cultural barriers, physical activity motivation, and exercise adherence among Muslim women is essential in promoting inclusive physical activity programs. In culturally conservative settings, such as among Meranao women in the southern Philippines, these factors are influenced by deeply rooted social and religious norms that shape how physical activity is perceived and practiced. This study aimed to describe and assess the levels and patterns of cultural barriers, physical activity motivation, and exercise adherence among Meranao women students at a state university in Marawi City.

A descriptive cross-sectional design was employed, involving 369 Meranao women aged 18–24 years from Mindanao State University–Marawi City. Data were collected using three validated instruments: the Cultural Barriers Questionnaire (CBQ), the RM 4–FM Physical Activity Motivation Scale, and the Exercise Adherence Questionnaire. Frequency counts, percentages, and mean scores were used to analyze the distribution and characteristics of the three variables.

Results revealed that participants experienced a moderate level of cultural barriers ($M = 2.9766$), particularly in terms of environmental and access-related factors. Despite these challenges, participants demonstrated a high level of motivation to engage in physical activity ($M = 3.4138$), primarily driven by intrinsic factors such as enjoyment, health benefits, and personal improvement. Exercise adherence was rated as moderate ($M = 3.3561$), with stronger adherence observed in health-oriented and routine-based practices, and lower adherence associated with time constraints and limited knowledge about exercise.

The study highlights a population that is highly motivated yet only moderately adherent, facing both sociocultural and logistical challenges that influence their participation in physical activity. These findings emphasize the need for culturally appropriate, accessible, and empowering physical activity programs that respect the values, preferences, and lived experiences of Meranao women.

Keywords: *cultural barriers, exercise adherence, motivation, Meranao, Muslim women, physical activity, descriptive study*

INTRODUCTION

Physical activity plays a vital role in the promotion of health, disease prevention, and overall well-being. However, participation in regular physical activity remains low among women globally, particularly in conservative religious and cultural settings (Latifi et al., 2023; Shuval et al., 2008). Among Muslim women, cultural expectations, religious observance, family responsibilities, and concerns about modesty often influence attitudes toward exercise. In the Meranao community of Marawi City, southern Philippines, women navigate unique cultural and religious norms that can influence their ability and willingness to engage in physical activity (Hussain & Cunningham, 2023). These influences range from clothing expectations and lack of private exercise spaces to societal judgments and internalized beliefs about the role of women in public life (Seal et al., 2021; Cowley et al., 2021).

While the barriers to physical activity among Muslim women have been widely reported in international studies, limited research has been conducted to describe the specific characteristics of these barriers within the Meranao population (Apyadno Jose Al Freadman Koa et al., 2024). Furthermore, understanding physical activity motivation and actual adherence to exercise programs provides essential insight into how women view and prioritize movement and wellness within their cultural context (Huberty et al., 2008).

This study focuses on describing the characteristics of three key constructs: cultural barriers, physical activity motivation, and exercise adherence. Rather than examining causal or correlational relationships, the purpose is to profile these variables independently to provide a clearer picture of the challenges and facilitators that shape physical activity behaviors among Meranao women. The findings aim to inform the development of culturally appropriate programs that respect religious identity and social expectations while promoting health-enhancing physical activity.

MATERIALS AND METHODS

Participants and Procedure

This study employed a descriptive cross-sectional design to assess the individual characteristics and levels of cultural barriers, physical activity motivation, and exercise adherence among Meranao women. The research was conducted at Mindanao State University–Marawi City, located in Lanao del Sur, Philippines. As the only Islamic city in the country, Marawi is predominantly populated by Meranao Muslims, making it a culturally appropriate and contextually relevant setting for investigating sociocultural influences on women's health behaviors. The participants were Meranao women aged 18 to 24 years who were officially enrolled at the university during the Academic Year 2024–2025. Using purposive sampling, 369 respondents were selected to ensure that all participants met the study's demographic and cultural inclusion criteria.

After receiving ethical clearance and institutional permission, the researchers administered the questionnaires to eligible respondents. Participation was voluntary, and data collection occurred during scheduled times. Respondents were given clear instructions, and confidentiality was strictly maintained throughout the process.

Research Instruments

The study utilized three structured questionnaires to assess the characteristics of cultural barriers, physical activity motivation, and exercise adherence among Meranao women. These instruments were carefully selected or developed, validated, and pilot-tested to ensure cultural relevance, clarity, and psychometric reliability for use within a Muslim population.

The first instrument was the Cultural Barriers Questionnaire (CBQ), a researcher-developed tool composed of 15 items designed to capture the sociocultural and religious constraints that may influence women's participation in physical activity. These items were grouped into six domains: (1) cultural and

religious beliefs, which included perceptions related to modesty and prayer schedules; (2) family and social support, referring to how family responsibilities are prioritized over exercise; (3) clothing and gender norms, including difficulties associated with traditional clothing such as the hijab; (4) environmental and accessibility barriers, such as the lack of gender-segregated exercise facilities and female role models; (5) personal beliefs and motivation, focusing on women's internal attitudes toward culturally appropriate activity spaces; and (6) external perceptions, referring to concerns about being judged by others for exercising publicly. All items were rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), with higher scores indicating stronger perceived barriers. The questionnaire was reviewed by experts for face and content validity, and a pilot test conducted among a small sample of Meranao women yielded a Cronbach's alpha above 0.80, indicating good internal consistency.

The second instrument used was the RM 4-FM Physical Activity Motivation Scale, adapted from Deci and Ryan's Self-Determination Theory-based Behavioral Regulation in Exercise Questionnaire (2004). This 16-item tool measured a spectrum of motivational types, from intrinsic motivation (e.g., "because I enjoy physical activities") and identified regulation (e.g., "because it is important to me to be active"), to introjected regulation (e.g., "because I would feel guilty if I didn't"), external regulation (e.g., "because others would be angry at me if I did not"), and a motivation (e.g., "I feel as if I have no choice about being active; others make me do it"). Items were also scored using a 5-point Likert scale. An autonomy index was calculated to determine the extent to which motivation was internally versus externally regulated, with positive scores reflecting intrinsic motivation. The adapted instrument demonstrated high internal reliability in the pilot phase with a Cronbach's alpha exceeding 0.85.

The third instrument was the Exercise Adherence Questionnaire, a 17-item scale adapted from Newman-Beinart et al. (2017), which measured the extent to which respondents followed recommended physical activity routines and the reasons behind their adherence or non-adherence. Items included statements such as "I do my exercises as often as recommended," "I fit my exercises into my regular routine," "Other commitments prevent me from doing my exercises," and "My family and friends encourage me to do my exercises." Six of the items directly assessed exercise adherence behavior, while the remaining items explored contributing factors, such as social support, time management, and motivational influences. This instrument also employed a 5-point Likert scale format. The adapted version used in this study was found to be highly reliable, with a Cronbach's alpha of 0.87 in pilot testing.

Data Analysis

Data were analyzed using SPSS Version 20. Descriptive statistics such as frequency, percentage distribution, mean, and standard deviation were computed to assess the levels and distribution of responses for each variable. No inferential or predictive analysis was performed, as the study focused solely on profiling the variables independently.

Ethical Considerations

Ethical approval was obtained from the MSU-IIT Research Integrity and Compliance Office. Participants provided informed consent before taking part in the study. The principles of voluntary participation, confidentiality, and the right to withdraw at any point were strictly observed.

RESULTS AND DISCUSSION

Components of Cultural Barriers

Table 1. Cultural Barriers Level of the Meranao Women

Items	Mean	Description
1. Religious practices such as prayer schedules limit my time for physical activities.	2.837	Moderate

2. The belief that women should be modest in public affects my choice of physical activities.	3.201	Moderate
3. My cultural values discourage me from engaging in physical activities with men present.	2.978	Moderate
4. I believe that physical activity is less important for women in my community compared to men.	2.799	Moderate
14. I think that physical activity is not traditionally expected of women in my culture.	3.068	Moderate
Cultural and Religious Norms	2.9766	Moderate
5. I find it difficult to participate in physical activities because of the modest clothing I wear.	2.696	Moderate
6. Wearing hijab or traditional clothing restricts my ability to participate in physical activities.	2.949	Moderate
7. I feel that women in my community are judged when they engage in physical activities outside the home.	2.829	Moderate
13. I feel self-conscious about participating in physical activity because of how others perceive me.	3.152	Moderate
15. I avoid certain physical activities because I worry about being seen by others.	3.005	Moderate
Clothing and Gender Expectations	2.9262	Moderate
5. I avoid physical activity because my family prioritizes other responsibilities over exercise.	2.696	Moderate
12. I would participate in more physical activities if I had access to female-only spaces.	3.314	Moderate
Family and Social Support	3.005	Moderate
1. There is not enough gender-segregated spaces for me to feel comfortable engaging in physical activity	3.087	Moderate
2. I find it difficult to find women-only gyms or fitness centers in my area.	3.276	Moderate
3. The lack of female role models in physical activity influences my willingness to exercise	3.022	Moderate
Environmental and Access issues	3.1283	Moderate
Range of Means	Description	Interpretation

1.00 – 1.79	Very Low	Very Low levels of cultural barriers to physical activity are evident
1.80 – 2.59	Low	Low levels of cultural barriers to physical activity are evident
2.60 – 3.39	Moderate	Moderate levels of cultural barriers to physical activity are evident
3.40 – 4.19	High	High levels of cultural barriers to physical activity are evident
4.20 – 5.00	Very High	Very high levels of cultural barriers to physical activity are evident

The study revealed that Meranao women experience a moderate level of cultural barriers to physical activity, with an overall mean of 2.9766. Among the four domains, the highest mean was observed in Environmental and Access Issues ($M = 3.1283$), indicating that the lack of women-only spaces, gender-segregated facilities, and visible female role models poses a substantial limitation to their participation in physical activities. This result aligns with findings from Walseth and Fasting (2004), who emphasized that access to gender-exclusive facilities is critical for Muslim women's physical engagement in conservative societies.

The domain of Cultural and Religious Norms also registered a moderate score ($M = 2.9766$), reflecting how traditional beliefs surrounding modesty, gender roles, and religious obligations continue to influence behavior. For instance, the belief that physical activity is less important for women ($M = 2.799$) and that women should be modest in public ($M = 3.201$) illustrates how internalized cultural expectations may discourage participation. Prior studies affirm that conservative norms can significantly restrict women's physical mobility and access to sport and exercise opportunities (Dagkas & Benn, 2006; Lindsey et al., 2018).

In the domain of Clothing and Gender Expectations ($M = 2.9262$), concerns about modest clothing, hijab restrictions, and the fear of judgment surfaced. Participants expressed discomfort with being seen by others during physical activity ($M = 3.005$) and feeling self-conscious ($M = 3.152$). These findings are supported by Al-Hazzaa et al. (2011), who noted that dress codes and community perceptions contribute to reduced physical activity levels among Muslim women.

The domain of Family and Social Support ($M = 3.005$) revealed that, while participants are somewhat affected by family priorities and responsibilities, there is also a clear desire for supportive environments. Notably, the item stating, *"I would participate in more physical activities if I had access to female-only spaces"* had the highest mean in this domain ($M = 3.314$), suggesting that culturally sensitive modifications could significantly improve participation rates.

Hence, these results highlight that Meranao women encounter several intersecting cultural and structural barriers that affect their ability to engage in physical activity. Although these barriers are not extreme, their consistent presence across multiple domains indicates a need for strategic interventions that are both culturally respectful and community-driven. Promoting awareness, establishing women-friendly facilities, and involving family and community leaders in advocacy efforts may help reduce stigma and create a more enabling environment for active lifestyles (Thompson et al., 2002; Eyler et al., 2002; Abbasi, 2014).

Motivation to Physical Activity

Table 3. Level of Motivation to Physical Activity

Items	Mean	Description
I try, or would like to try, to be physically active regularly		
1. because I would feel bad about myself if I did not	3.401	High
2. because others would be angry at me if I did not	2.591	Moderate
3. because I enjoy physical activities	3.667	High
4. because I would feel like a failure if I did not	2.992	Moderate
5. because I feel as if it's the best way to help myself	3.743	High
6. because people would think I'm a weak person if I did not	3.087	Moderate
7. because I feel as if I have no choice about being active; others make me do it	2.962	Moderate
8. because it is a challenge to accomplish my goal	3.599	High
9. because I believe physical activity helps me feel better	3.818	High
10. because it's fun	3.829	High
11. because I worry that I would get into trouble with others if I did not	2.848	Moderate
12. because it feels important to me personally to accomplish this goal	3.629	High
13. because I feel guilty if I am not regularly active	3.304	Moderate
14. because I want others to acknowledge that I am doing what I have been told I should do	3.16	Moderate
15. because it is interesting to see my own improvement	3.949	High
16. because feeling healthier is an important value for me	4.041	High
TOTAL	3.4138	High

Range of Means	Description	Interpretation
1.00 – 1.79	Very Low	Not motivated to be physically active
1.80 – 2.59	Low	Slightly motivated to be physically active
2.60 – 3.39	Moderate	Somewhat motivated to be physically active
3.40 – 4.19	High	Strongly motivated to be physically active
4.20 – 5.00	Very High	Extremely motivated to be physically active

The results reveal that the participants demonstrated a high level of motivation to engage in physical activity, as indicated by the overall mean score of 3.4138. This suggests that, despite cultural and environmental barriers, the Meranao women retain a strong internal drive to pursue physical activity. Among the 16 items, several intrinsic motivators emerged as dominant, notably: engaging in physical activity because it is *interesting to see personal improvement* (mean = 3.949), *feeling healthier is an important value* (mean = 4.041), and because it is *fun* (mean = 3.829). These findings align with the principles of Self-Determination Theory (SDT), which posits that intrinsic motivation—engaging in an activity for inherent satisfaction—leads to more consistent and long-term behavior (Deci & Ryan, 2000).

Participants also reported high motivation linked to personal values and self-enhancement, such as believing that physical activity helps them feel better (mean = 3.818) and recognizing it as the best way to help themselves (mean = 3.743). This indicates a strong sense of autonomy and personal relevance, which are critical for maintaining sustained physical activity (Teixeira et al., 2012).

Meanwhile, items representing *introjected and external regulation*, such as exercising due to guilt (mean = 3.304) or to avoid being seen as weak (mean = 3.087), scored moderately. These types of motivation are less stable and can lead to inconsistent engagement, as they rely on perceived pressure or self-imposed guilt rather than personal enjoyment or value (Ryan & Deci, 2000). Notably, some items linked to amotivation or controlled motivation—such as “because others would be angry at me if I did not” (mean = 2.591)—received lower scores, indicating that most participants are not primarily driven by external coercion or fear of disapproval.

Taken together, these findings suggest that Meranao women possess a resilient and value-driven orientation toward physical activity, emphasizing enjoyment, health, and self-improvement. This high level of motivation could serve as a protective factor that mitigates the impact of cultural and environmental barriers. As such, intervention programs aimed at promoting physical activity in this population should reinforce intrinsic goals, such as self-care and enjoyment, while providing supportive environments that accommodate religious and cultural needs.

Exercise Adherence

Table 3. Exercise adherence level of the participants

Items	Mean	Description
1. I do my exercises as often as recommended*	3.304	Moderate
2. I adjust the way I do my exercises to suit myself	3.539	High
3. I don't get around to doing my exercises*	3.114	Moderate
4. Other commitments prevent me from doing my exercises	3.263	Moderate
5. I feel confident about doing my exercises	3.55	High
6. I don't have time to do my exercises	2.978	Moderate
7. I'm not sure how to do my exercises	2.93	

8. I do some, but not all, of my exercises*	3.447	Moderate
9. I do some, but not all, of my exercises*	3.493	High
10. I do less exercise than recommended by my healthcare professional*		
	3.117	Moderate
11. I fit my exercises into my regular routine*	3.404	High
12. I do my exercises because I enjoy them	3.602	High
13. My family and friends encourage me to do my exercises	3.35	Moderate
14. I stop doing my exercises when my pain is worse	3.447	High
15. I forget to do my exercises*	3.312	Moderate
16. I do my exercises to reduce my health problem	3.713	High
17. I continue doing my exercises when my pain is better	3.491	Moderate
TOTAL	3.3561	Moderate

Range of Means	Description	Interpretation
1.00 – 1.79	Very Low	Very Low level of exercise adherence was demonstrated by participants.
1.80 – 2.59	Low	Low level of exercise adherence was demonstrated by participants.
2.60 – 3.39	Moderate	Moderate level of exercise adherence was demonstrated by participants.
3.40 – 4.19	High	High level of exercise adherence was demonstrated by participants.
4.20 – 5.00	Very High	Very high level of exercise adherence was demonstrated by participants.

The results show that the participants demonstrated a moderate level of exercise adherence, as reflected by the overall mean score of 3.3561. This suggests that while Meranao women are generally capable of maintaining a regular physical activity routine, their adherence may fluctuate due to situational or environmental factors. Notably, several items scored in the high range, particularly those associated with routine integration and intrinsic motivation, such as *“I do my exercises to reduce my health problem”* (mean = 3.713), *“I do my exercises because I enjoy them”* (mean = 3.602), and *“I feel confident about doing my exercises”* (mean = 3.55). These findings support the importance of health-driven and enjoyment-based reasons for maintaining consistent exercise habits, consistent with findings from Marques et al. (2017) that intrinsic motivation is a significant predictor of adherence to physical activity programs.

High scores were also observed in statements reflecting autonomous self-regulation, such as *“I fit my exercises into my regular routine”* (mean = 3.404) and *“I continue doing my exercises when my pain is better”* (mean = 3.491), suggesting that many participants have successfully incorporated exercise into their daily lives. This aligns with evidence that habit formation and goal setting enhance adherence by promoting a sense of competence and control over one's health behavior (Kwasnicka et al., 2016).

Despite these positive indicators, several items received moderate scores that highlight ongoing barriers. For example, time constraints (*“I don't have time to do my exercises”*, mean = 2.978) and uncertainty about how to exercise (*“I'm not sure how to do my exercises”*, mean = 2.930) remain challenges. These suggest that logistical issues and a lack of structured guidance may hinder full adherence. Additionally, statements

such as *"I don't get around to doing my exercises"* (mean = 3.114) and *"I forget to do my exercises"* (mean = 3.312) further indicate that competing priorities or forgetfulness may disrupt consistency.

Moreover, social influence appears to have a moderate effect, with *"My family and friends encourage me to do my exercises"* scoring 3.35. While this reflects some level of support, it also suggests an opportunity to strengthen social reinforcement, particularly in culturally sensitive ways that align with community norms and family values.

Overall, the data underscore the importance of enhancing access to structured programs, time-efficient routines, and culturally appropriate support systems to improve exercise adherence. Tailored interventions that build on existing motivation and confidence while addressing environmental constraints may help move adherence levels from moderate to high.

Conclusion and Recommendations

The study concludes that Meranao women face moderate cultural barriers to physical activity, primarily shaped by traditional norms, religious practices, modesty expectations, and limited access to women-only exercise spaces. However, their high level of intrinsic motivation—driven by personal health values, enjoyment, and self-improvement—demonstrates their readiness to participate in physical activity when given appropriate and culturally sensitive opportunities. Despite motivational strengths, exercise adherence remains moderate, indicating that external constraints such as time, limited knowledge, and lack of facilities continue to hinder consistent participation. The interplay between strong internal motivation and external sociocultural barriers suggests that while Meranao women are willing to engage in physical activity, systemic changes and culturally appropriate support are crucial to enabling sustained participation.

In light of the findings, it is recommended that culturally responsive strategies be implemented to enhance physical activity participation among Meranao women. Establishing women-only gyms or safe community spaces can provide environments where women feel comfortable exercising while adhering to modesty norms and religious guidelines. Programs should be designed to build on the participants' existing intrinsic motivation by emphasizing the enjoyment, personal development, and health benefits of regular physical activity. In addition, offering home-based or community-level fitness options—guided either by female instructors or culturally sensitive, AI-assisted platforms—can address barriers related to modesty, privacy, and limited facility access. Integrating physical activity into family and community routines may also reinforce participation by strengthening social support structures. To further empower women, educational initiatives focusing on exercise literacy, time management, and self-efficacy should be prioritized, particularly to address concerns about how to begin or maintain activity routines. Finally, engaging respected local leaders and religious scholars in the advocacy of physical activity as a value aligned with Islamic teachings may help normalize participation and reduce the stigma often associated with women's involvement in exercise. These recommendations aim to bridge cultural sensitivities and public health goals by fostering an environment that supports long-term, meaningful engagement in physical activity.

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