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Presenting a Conceptual Model of Body Management among Male Bodybuilding Athletes: A Sociological Perspective on Sport

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A B S T R A C T

Purpose: This study aimed to present a sociologically grounded conceptual model of body management among male bodybuilding athletes in Iran by exploring the causal, contextual, and psychological factors influencing their practices.

Methods and Materials: The research employed a mixed-methods approach. In the qualitative phase, grounded theory methodology following Strauss and Corbin's paradigm was used. Data were gathered through semi-structured interviews with 33 experts, including bodybuilding coaches and sports specialists across different provinces of Iran. The interviews were analyzed through open, axial, and selective coding using MaxQDA software. In the quantitative phase, a structured questionnaire was developed based on the qualitative findings and distributed to 367 level-3 certified male bodybuilding coaches nationwide. Statistical analyses were performed using SPSS 25 and SmartPLS 3.2.7 to validate the model through structural equation modeling, assessing reliability, validity, R^2, Q^2, and the Goodness-of-Fit (GOF) index.

Findings: The qualitative phase revealed five major components: causal conditions (e.g., self-superiority, social comparison, and societal enthusiasm), intervening conditions (e.g., anxiety, fantasizing, and commercial influence), contextual conditions (e.g., family support, gym culture, and socioeconomic status), strategies (e.g., persistence or withdrawal based on satisfaction), and outcomes (ranging from discipline and social respect to injury and stereotyping). The quantitative phase confirmed high AVE and composite reliability for all constructs, with R^2 values indicating strong explanatory power for body management ($R^2 = 0.738$). The GOF index of 0.479 indicated excellent model fit, and Q^2 values confirmed strong predictive relevance for key constructs like familial encouragement and body idealization.

Conclusion: Body management among male bodybuilders is a multi-layered phenomenon influenced by psychological drives, cultural pressures, and social structures. The model developed provides a nuanced framework for understanding

how athletic identity, appearance norms, and sociocultural dynamics intersect in shaping bodily practices.

Keywords: *Body management, male athletes, bodybuilding, body image, sociological model, grounded theory, Iran, structural equation modeling..*

1. Introduction

Body image and the sociocultural factors that influence it have been the subject of increasing academic attention in sports research. The male athletic body, once viewed primarily in terms of function and performance, is now also evaluated aesthetically within both sporting and social contexts. According to Zaccagni and Gualdi-Russo, athletes are significantly more likely than non-athletes to experience distorted body image and appearance-related concerns due to their constant exposure to idealized body standards and performance expectations (Zaccagni & Gualdi-Russo, 2023). This is further complicated by the pervasiveness of visual media platforms, which facilitate the dissemination of curated muscular ideals and foster environments conducive to body comparison. As Santarossa et al. argue, platforms like Instagram contribute to gendered disparities in how athletic bodies are perceived and discussed, with male athletes increasingly adopting performative behaviors to align with hyper-masculine bodily ideals (Santarossa et al., 2019).

Within this mediated culture of appearance, athletes engage in what Pinto et al. describe as a constant negotiation between being a disciplined performer and a visually acceptable body (Pinto et al., 2019). The psychological toll of such dual demands is evident in studies exploring the relationship between body dissatisfaction and disordered eating behaviors in athletes. Perelman et al. demonstrate that male athletes, particularly those in appearance-sensitive sports, are at elevated risk for developing unhealthy behaviors as a result of internalizing unrealistic body ideals (Perelman et al., 2022). Similarly, Bacevičienė et al. show that pressure from coaches, peers, and media significantly contributes to disordered eating and negative body image across various sports disciplines (Bacevičienė et al., 2023). These findings underscore the role of sociocultural and institutional structures in shaping athletes' experiences with their bodies, further complicating the personal and social dimensions of body management.

The body management experience in male athletes is particularly acute in bodybuilding, a sport where the body itself becomes the primary medium of competition and validation. ŞEntürk and Göbel emphasize that for bodybuilders, body image is not just a peripheral concern but a central component of self-esteem and identity formation (ŞEntÜRk & Göbel, 2023). Their study links body composition directly with self-perception, suggesting that even minor deviations from the ideal form can result in significant psychological distress. This concern is echoed by Brown et al., who found that male athletes are especially vulnerable to social-evaluative threats concerning their bodies, which can impair emotional recovery and self-regulation (Brown et al., 2023). Consequently, body management in this group becomes a continuous process of surveillance, discipline, and negotiation—one that is shaped by internal motivations and external validations alike.

While much of the literature has examined the psychological consequences of body dissatisfaction, there is a growing recognition of the broader cultural scripts that inform body management practices. Voelker and Reel, in their thematic analysis of male figure skaters, found that athletes are often subjected to weight-related comments that reinforce narrow ideals of physical attractiveness and masculinity (Voelker & Reel, 2018). These experiences are not confined to traditionally aesthetic sports. Tao and Li show how even in disciplines like rhythmic gymnastics, male athletes develop heightened body awareness and become sensitive to the social meanings attached to physique (Tao & Li, 2023). Similarly, Selva and Ramos highlight that young male athletes, such as Fit Kid participants, form early perceptions of body image based on visual ideals propagated through both sport culture and mainstream media (Selva & Ramos, 2024). These cultural narratives form the backdrop against which body management is practiced, creating a normative framework of bodily success that is at once aspirational and exclusionary.

In the Iranian context, body management among male athletes is further shaped by localized values, cultural norms, and media trends, which intersect with global body ideals. Research by Firoozjah et al. underscores that during crises such as the COVID-19 pandemic, male athletes in both team and individual sports displayed heightened body image concerns and symptoms of disordered eating, reflecting the fragile equilibrium between sport, identity, and mental health (Firoozjah et al., 2022a, 2022b). This suggests that body management is not a static practice but a dynamic process influenced by environmental shifts, psychological resilience, and social context. The role of sociocultural pressure in shaping these practices is also evident in the work

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of Findasari et al., who note that body composition and nutritional awareness play a crucial role in shaping athletes' motivation and physical performance, especially in traditional martial arts like Pencak Silat (Findasari et al., 2025).

Furthermore, studies by Şentürk reveal that perceived stress significantly correlates with negative body image and unhealthy eating behaviors among athletes, reinforcing the idea that body management practices are closely tied to mental health outcomes (Şentürk, 2025). This is particularly relevant in bodybuilding, where the pursuit of perfection can lead to obsessive behaviors and exercise addiction. In a related study, ŞEntürk and Göbel examine the prevalence of muscle dysmorphia among power athletes and identify strong associations with body image concerns and excessive protein consumption (ŞEntÜRk & Göbel, 2024). These findings reflect a broader psychosocial reality in which the pursuit of an ideal physique becomes both a source of empowerment and vulnerability. Similarly, Hassan et al. document how sports media in South Asia reinforces narrow beauty ideals and contributes to female athletes' struggles with body image—an insight that, although focused on women, mirrors the pressures faced by men in highly visual sports like bodybuilding (Hassan et al., 2024).

It is also worth noting that the athlete's engagement with body management is not only influenced by psychological and cultural pressures but also by physiological and biomechanical factors. Research by Okada et al. highlights the importance of accurate body segment measurements for performance optimization in athletes, showing how precise understanding of the body can contribute to both physical development and self-perception (Okada et al., 2020). Meanwhile, Pinto et al. describe how elite male gymnasts, despite their athletic achievements, often experience internal conflict between being athletes and conforming to societal expectations of male appearance (Pinto et al., 2019). These tensions reflect a core paradox in male body management: the simultaneous empowerment and alienation that can result from using the body as both a personal and public project.

The intersection of gender, sport type, and perfectionism further compounds these challenges. According to Prnjak et al., male athletes often report higher levels of perfectionism and body dissatisfaction compared to their female counterparts in similar sports, especially those involving weight categories or aesthetic components (Prnjak et al., 2019). Such tendencies may increase vulnerability to disordered behaviors, particularly when combined with poor dietary practices or overtraining. Supporting this, Léger et al. found that athletes in weight-sensitive sports adopt restrictive dietary behaviors in an effort to maintain a specific physique, which can have long-term health implications (Léger et al., 2025). Likewise, Ghiasvand et al. observed that Iranian adolescent athletes in elite team sports demonstrated poor cardiometabolic markers despite high physical activity levels—suggesting that appearance-focused practices may at times compromise actual health outcomes (Ghiasvand et al., 2017).

Finally, concerns about injury, over-specialization, and long-term health are also relevant in the context of body management. Okoruwa et al. warn that early sport specialization, especially when tied to physical appearance goals, can significantly increase injury risk and psychological burnout among athletes (Okoruwa et al., 2022). This insight is crucial for understanding how body management, when excessively rigid or ideal-driven, may ultimately compromise both physical integrity and athletic longevity. As Terneus and Atkinson demonstrate in their exploration of "body dating" among college students, the social and emotional pressures surrounding physical appearance often extend into intimate and relational domains, making the stakes of body management deeply personal and far-reaching (Terneus & Atkinson, 2024).

In light of these interconnected findings, the present study seeks to develop a sociologically model for understanding body management among male bodybuilder athletes in Iran.

2. Methods and Materials

This study employs a qualitative research methodology with the overarching goal of formulating a conceptual model of body management among male bodybuilding athletes in Iran, focusing on causal, contextual, intervening conditions, strategies, and outcomes from a sociological perspective. The study is exploratory in nature and is structured around the grounded theory approach, particularly following the paradigmatic model proposed by Strauss and Corbin. The research design is case-oriented, enabling an in-depth analysis of specific instances of the phenomenon within their natural setting and from the standpoint of participants directly involved in it.

The qualitative phase of the research relied on purposive and theoretical sampling strategies. Participants were selected among expert bodybuilding coaches and sport professionals from various provinces in Iran. Two categories of experts were targeted: academic specialists in the field of

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sports science (holding at least a master's or doctoral degree) and bodybuilding coaches with a minimum of six years of professional experience. In order to achieve theoretical saturation—the point at which no new concepts emerge from the data—the research continued until 33 interviews were completed.

The sampling process included participation in national educational seminars in Tehran, establishing personal connections with coaches from diverse ethnic backgrounds, and conducting interviews either in person, by audio recording, or through virtual communication platforms such as Instagram. Additional interviews were conducted during national bodybuilding competitions. Overall, 20 interviews were gathered via seminar and virtual interactions, and 13 were completed during the competitions. Theoretical sampling in this research was not aimed at increasing the number of participants, but at refining concepts and reaching saturation through repeated engagement.

In the quantitative phase, a descriptive-survey approach was employed to validate the qualitative model. The population included all level-3 certified male bodybuilding coaches across Iran. A stratified random sampling method proportional to the size of the population in each province was used. The sample size was determined using a finite population sample size formula, resulting in the collection of 367 completed questionnaires. Data were gathered through in-person distribution of questionnaires in provinces such as Tehran, Alborz, Semnan, and Qazvin, as well as electronically through social networks and coaching seminars.

In the qualitative phase, the primary data collection tool was the semi-structured interview. This method allowed the researcher to explore participants' lived experiences regarding body management through open-ended questions. Interview sessions were designed to be flexible, encouraging participants to share deeply personal and contextually rich insights. The unstructured format facilitated the discussion of past, current, and even anticipated future experiences, enhancing the dynamic understanding of the phenomenon. Key incident-based questions were also used to help uncover underlying themes, relationships between categories, and nuanced interpretations of the athletes' perspectives.

To collect data for the quantitative phase, a structured questionnaire was developed based on the themes and subthemes identified during qualitative coding. This questionnaire consisted of two main sections: demographic variables (such as age, education level, and athletic experience) and items derived from the qualitative findings. Responses were measured using a five-point Likert scale, ranging from "very low" to "very high." The questionnaire underwent initial piloting and was revised for clarity and consistency before wide-scale distribution. This instrument aimed to test the hypothesized relationships within the conceptual model derived from the grounded theory analysis.

Qualitative data were analyzed using the Strauss and Corbin grounded theory coding procedure, which includes three phases: open coding, axial coding, and selective coding. The MaxQDA 2018 software was employed to facilitate the coding and organization of data. During open coding, textual data from transcribed interviews were broken down into discrete segments and assigned codes. Conceptually similar codes were then grouped to form axial codes, representing central themes. These themes were subsequently refined into selective codes that represent the core categories of the emerging theoretical model.

In the quantitative phase, descriptive statistics such as mean and standard deviation were used to summarize the data. Additionally, inferential statistics were conducted using SPSS version 25. For model validation, structural equation modeling (SEM) was performed using SmartPLS 3.2.7 software, a variance-based SEM tool suitable for exploratory model testing and theory development. This method was selected due to its robustness in handling small to medium sample sizes and its suitability for models with reflective and formative constructs. Confirmatory factor analysis (CFA) was also conducted to assess construct validity and the relationships between latent variables. The dual analysis—qualitative for model construction and quantitative for model validation—ensured both depth and rigor in developing a grounded, sociologically informed model of body management among Iranian male bodybuilding athletes.

3. Findings and Results

The findings of this study are the result of an in-depth qualitative exploration aimed at presenting a conceptual model of body management among male bodybuilding athletes in Iran from a sociological perspective. Using grounded theory methodology and drawing upon Strauss and Corbin's paradigmatic model, data were collected through semi-structured interviews with 33 experts, including bodybuilding coaches and sports professionals across different provinces. The interviews were analyzed through a three-stage coding process—open, axial, and selective—

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which allowed the extraction of key categories, subcategories, and the relationships between them. These findings provide a nuanced understanding of the sociocultural, psychological, and structural dimensions shaping the phenomenon of body management, ultimately contributing to the formulation of a comprehensive conceptual model grounded in the lived experiences of participants.

Table 1

Qualitative Results: Dimensions of Body Management Among Male Bodybuilder Athletes

Core Category	Main Categories	Subcategories
Causal Conditions	Self-superiority, self-sufficiency, and drive for body management	Feeling superior, striving for individual independence, sense of power, pursuit of dominance
	Societal enthusiasm toward performative body management	Popularity of bodybuilding, widespread enthusiasm for body display and management
	Social comparison and body judgment	Comparing one's body with others, modeling celebrities, desire to achieve an ideal state, evaluating the body, importance of self and others' judgments
	Desire for social influence	Efforts to increase social dominance, seeking prestige among peers and community
	Demand from the opposite sex	Seeking social approval from women, perception and expectations of women regarding male bodies, attractiveness as a motivator, increased family display norms
	Virtual space	Idealized virtual bodies, internet-based sports content, following Instagram figures
	Media-driven youth ideals	Admiration of Hollywood physiques, modeling foreign actors
	Body construction under supplement industry	Supplement mafia, consumerist approach to the body, fast-paced lifestyles
	Economic commodification of the body	Capitalized body, financial display through physical appearance
	Imaginary ideal of a refined body	Six-pack obsession, upper-lower body balance, muscularity as a symbol of power
	Islamic emphasis on sport	Importance of physical activity in Islam, obedience to religious leaders, prevention of moral corruption
Intervening Conditions	Anxiety about being negatively judged	Fear of being perceived poorly, efforts to overcome that fear, persistent anxiety in public perception
	Ideal body fantasizing	Desire for a perfect physique, striving to attain it, imagining the ideal body
	Positive bodily self-perception	Feeling good about one's body, continuity of that feeling, fitness contributing to well-being
	Role of commercial advertising	Commercialization of bodybuilding, monetization through programs and media, supplement and apparel sales, financial investment in fitness
	Cultural body construction	Epidemic of ideal bodies, expression of self through appearance, high societal value of bodily aesthetics, social pressure
	Body as social communication tool	Self-confidence in interactions, nonverbal communication, social empowerment through appearance, importance of body in initiating connections
Contextual Conditions	Consumption as display within family and society	Widespread body exhibition in families and public, consumerism in society
	Familial encouragement	Parental motivation, support for bodybuilding, family history in bodybuilding
	Peer influence and gym attendance	Imitation of athletic peers, encouragement by friends, shared gym routines
	Socioeconomic positioning	Individual's status, access to resources, social prestige
	Positive emotional experiences	Feeling superior, self-confidence, ideal self-image, sense of pride, popularity
	Societal culture	Social distinction, competitive superiority, public approval
	Gender and sexuality-related factors	Impact of testosterone, sexual expectations, experiences with opposite sex
	Self-image	Internal representations of self, personal definitions of success
	Social anxiety and psychological pressure	Fear of judgment, psychological tension, jealousy
	Occupational environment	Physical job demands, influence of work setting
Outcomes	Learning discipline in life	Engaging in regular physical activity, developing time management, adopting disciplined routines
	Vitality and happiness in daily life	Feeling joyful, improved interactions with others, being cheerful at work, energetic at home
	Avoidance of aggression and humility	Acting humbly, refraining from violent behaviors, maintaining respectful relationships
	Stability in social relationships	Forming lasting friendships, resolving interpersonal issues, easier social interaction, reduced social fragmentation
	Negative perception of muscular body	Being stereotyped as aggressive, large muscles viewed as threatening or violent by others
	Inclination toward healthy lifestyle	Better nutrition, avoidance of addiction, informed supplement use, weight control, prevention of obesity
	Physical injuries and strain	Dealing with chronic pain, joint deterioration, bodily wear and tear
	Increased social acceptance	Greater acceptance within family, peer circles, workplace, and society at large

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	Enhanced dignity and respect	Being treated with respect, developing moral stature, earning social prestige in various settings
	Formation of mental boundaries	Selecting friends carefully, developing a sense of differentiation, limiting social circles, perceiving oneself as distinct
	Self-differentiation and increased approval	Feeling uniquely accepted, gaining peer and family recognition, combining authority with social likability
Strategies	Social comparison and satisfaction with the body	Comparing oneself with ideal body standards, achieving ideal form, continuing the process, reaching satisfaction, practicing regularly, life acceleration
	Social comparison and dissatisfaction with the body	Comparing oneself with ideal standards, failure to achieve the ideal form, dissatisfaction, withdrawal from bodybuilding, reduced motivation to influence others

The qualitative phase of the study led to the identification of five major components influencing body management among male bodybuilding athletes: causal conditions, intervening conditions, contextual conditions, strategies, and outcomes. The causal conditions revealed that self-perception of superiority, the drive for individual control, societal enthusiasm toward body performance, and social comparison were among the key motivators. Additionally, factors such as demand from the opposite sex, media influence, virtual ideals, and religious-cultural norms shaped the athletes' motives. Intervening conditions included anxieties about public judgment, ideal body fantasies, commercial pressures, and the body's role in social communication. The contextual conditions pointed to the role of family encouragement, peer influence, socioeconomic positioning, societal culture, and occupational environment as significant background factors. Strategies adopted by the athletes varied between those satisfied with their bodily progress—who sustained bodybuilding practices—and those dissatisfied, who often disengaged. The outcomes were both constructive and adverse: discipline, increased vitality, and enhanced social acceptance were observed alongside physical injuries, psychological strain, and negative stereotyping. Altogether, the findings provide a multi-layered insight into how male bodybuilders in Iran navigate, internalize, and perform body management within their sociocultural contexts.

Table 2

Convergent Validity Indicators (AVE) of Constructs

Construct	AVE
Higher respect	0.819
Strategy	0.664
Anxiety about being negatively judged	0.805
Public acceptance	0.837
Self-differentiation	0.827
Tendency toward body management	0.854
Positive feeling about fitness	0.879
Self-superiority	0.831
Self-sufficiency	0.820
Friends and motivators	0.856
Ideal body fantasizing	0.833
Contextual conditions	0.734
Causal conditions	0.722
Intervening factors	0.724
Body management among male athletes	0.678
Gym attendance	0.883
Familial encouragement	0.848
Comparison with others	0.874
Comparison and satisfaction with the body	0.736
Comparison and dissatisfaction	0.752
Individual's social status	0.869
Social relationship stability	0.875
Social acceptance	0.883
Outcomes	0.636
Learning discipline	0.826

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Table 2 presents the Average Variance Extracted (AVE) values for all constructs measured in the model. All constructs reported AVE values above the threshold of 0.50, indicating acceptable convergent validity. Notably, constructs such as gym attendance (0.883), familial encouragement (0.848), and positive feeling about fitness (0.879) showed strong convergent validity, reflecting the degree to which indicators explain their respective latent variables. The overall results confirm the adequacy of the measurement model in capturing the constructs under investigation.

Table 3

Reliability Indicators (Cronbach's Alpha and Composite Reliability)

Construct	Cronbach's Alpha	Composite Reliability
Higher respect	0.779	0.900
Strategy	0.899	0.922
Anxiety about being negatively judged	0.762	0.892
Public acceptance	0.805	0.911
Self-differentiation	0.791	0.905
Tendency toward body management	0.830	0.921
Positive feeling about fitness	0.862	0.936
Self-superiority	0.796	0.908
Self-sufficiency	0.781	0.901
Friends and motivators	0.832	0.922
Ideal body fantasizing	0.801	0.909
Contextual conditions	0.948	0.957
Causal conditions	0.848	0.879
Intervening factors	0.904	0.929
Body management among male athletes	0.881	0.913
Gym attendance	0.868	0.938
Familial encouragement	0.820	0.918
Comparison with others	0.856	0.933
Comparison and satisfaction with the body	0.819	0.893
Comparison and dissatisfaction	0.835	0.901
Individual's social status	0.849	0.930
Social relationship stability	0.858	0.933
Social acceptance	0.868	0.938
Outcomes	0.948	0.954
Learning discipline	0.790	0.905

Table 3 reports the internal consistency reliability of the constructs. Both Cronbach's Alpha and Composite Reliability (CR) values were found to be above acceptable thresholds ($\alpha > 0.70$, $CR > 0.70$), indicating strong internal consistency across all constructs. The highest composite reliability was observed for contextual conditions (0.957) and outcomes (0.954), confirming that the items for these constructs are well-aligned and consistently measure the intended latent concepts. These findings reinforce the structural integrity of the proposed model and its components.

Table 4

R Square and Adjusted R Square Values of Endogenous Variables

Construct	R Square	R Square Adjusted
Higher respect	0.672	0.671
Strategy	0.378	0.375
Anxiety about being negatively judged	0.708	0.707
Public acceptance	0.524	0.522
Self-differentiation	0.821	0.820
Tendency toward body management	0.515	0.512
Positive feeling about fitness	0.860	0.859
Self-superiority	0.438	0.435

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Self-sufficiency	0.480	0.478
Friends and motivators	0.858	0.857
Ideal body fantasizing	0.835	0.835
Body management among male athletes	0.738	0.734
Gym attendance	0.871	0.870
Familial encouragement	0.814	0.813
Comparison with others	0.542	0.540
Comparison and satisfaction with the body	0.888	0.888
Comparison and dissatisfaction	0.898	0.897
Individual's social status	0.856	0.855
Social relationship stability	0.756	0.755
Social acceptance	0.737	0.736
Outcomes	0.478	0.475
Learning discipline	0.570	0.568

As shown in Table 4, the coefficient of determination (R^2) indicates the explanatory power of the model for each endogenous variable. The construct "comparison and dissatisfaction with the body" shows the highest R^2 value (0.898), followed closely by "comparison and satisfaction with the body" (0.888), "gym attendance" (0.871), and "positive feeling about fitness" (0.860), suggesting that the model explains a high proportion of variance in these variables. The overall R^2 value for the main outcome variable, "body management among male athletes," was 0.738, reflecting strong model fit and predictive capability. Adjusted R^2 values were also consistently high, confirming the model's stability.

Table 5

Q^2 Predictive Relevance Values of Endogenous Constructs

Construct	Q^2
Higher respect	0.363
Strategy	0.366
Anxiety about being negatively judged	0.434
Public acceptance	0.377
Self-differentiation	0.463
Tendency toward body management	0.335
Positive feeling about fitness	0.323
Self-superiority	0.352
Self-sufficiency	0.380
Friends and motivators	0.359
Ideal body fantasizing	0.474
Body management among male athletes	0.363
Gym attendance	0.418
Familial encouragement	0.536
Comparison with others	0.325
Comparison and satisfaction with the body	0.463
Comparison and dissatisfaction	0.335
Individual's social status	0.402
Social relationship stability	0.352
Social acceptance	0.380
Outcomes	0.369
Learning discipline	0.474

The Q^2 values presented in Table 5 demonstrate the predictive relevance of the model using the blindfolding technique. All constructs achieved Q^2 values well above the acceptable threshold of 0.15, confirming that the model has significant predictive accuracy. Notably, "familial encouragement" (0.536), "ideal body fantasizing" (0.474), and "learning discipline" (0.474) showed the highest predictive relevance, highlighting their central role in the dynamics of body management. The Q^2 value for the overall construct of "body management among male athletes" was 0.363, reinforcing the strong predictive performance of the conceptual model developed.

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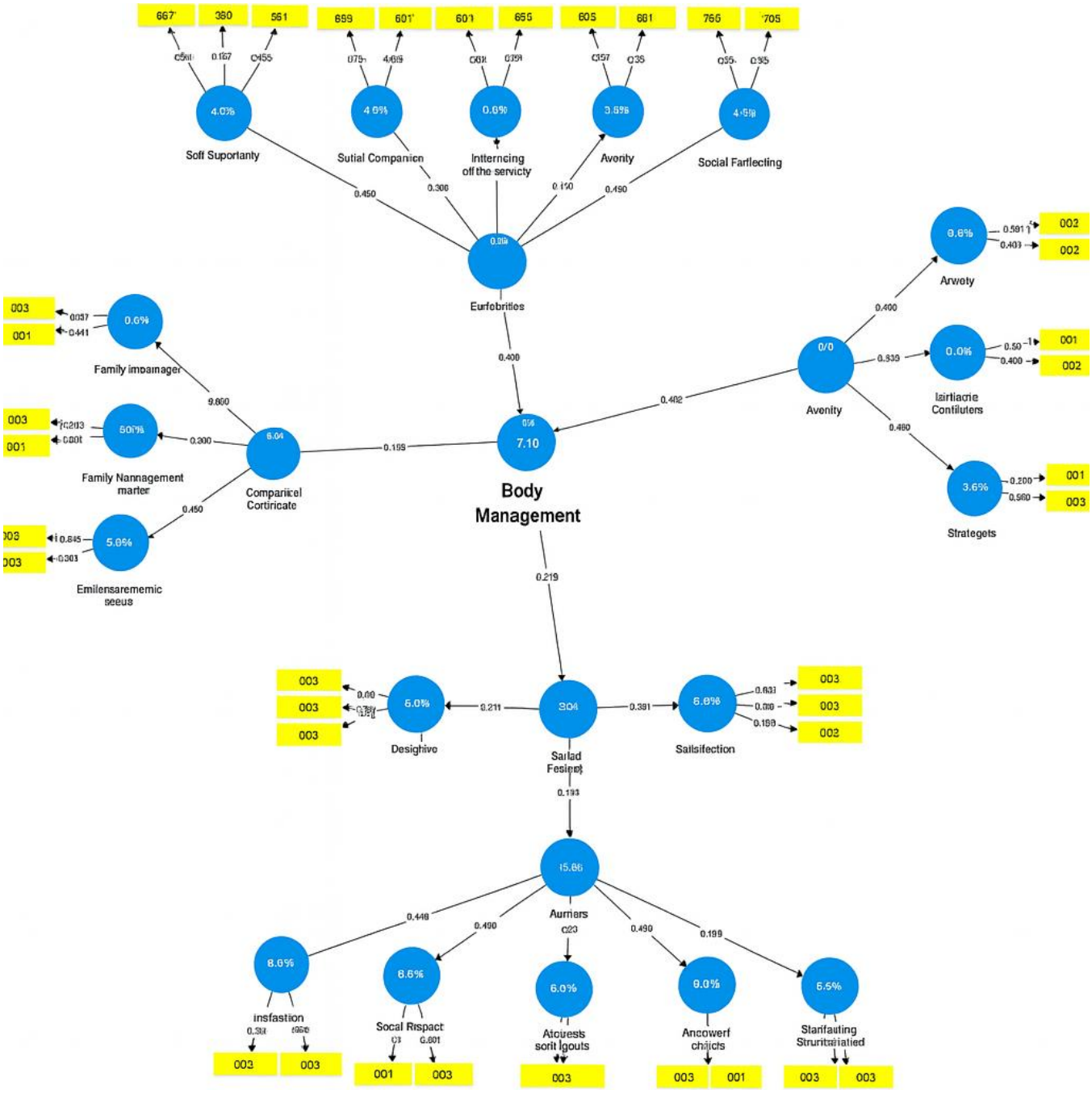
The Goodness of Fit (GOF) index simultaneously evaluates both the measurement and structural models and serves as a comprehensive criterion for assessing the overall performance of the model. The value of this index ranges from 0 to 1, with higher values indicating better path model estimation. According to Wetzels et al. (2009), GOF values can be interpreted as follows: weak fit (0.10 to 0.25), moderate fit (0.25 to 0.36), and strong fit (above 0.36). In this study, the GOF value for the overall model was calculated to be 0.479, which suggests that the model demonstrates a strong and acceptable overall fit.

Figure 1

Model with Factor Loadings



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4. Discussion and Conclusion

The aim of this study was to explore and conceptualize the process of body management among male bodybuilding athletes in Iran from a sociological perspective. The findings emerged through qualitative analysis using grounded theory, leading to the development of a model that integrates causal conditions, contextual and intervening variables, strategies, and outcomes. The subsequent quantitative phase supported the theoretical constructs through structural equation modeling and provided strong validity and reliability indices across measurement scales. These findings offer rich insight into how athletic, cultural, social, and psychological dynamics converge to shape body management practices among male bodybuilders.

The qualitative phase of the study revealed that causal conditions such as self-superiority, striving for control over the body, societal enthusiasm toward performative fitness, and social comparison are among the strongest motivators for body management. These findings align with studies suggesting that athletes, especially in appearance-based sports, internalize idealized body images due to heightened exposure to social evaluation and aesthetic norms (Brown et al., 2023; Pinto et al., 2019). As athletes are routinely placed in evaluative contexts, their identity becomes inseparable from the appearance and performance of their bodies. This dynamic is particularly intense in bodybuilding, where muscularity is not only a performance metric but also a symbol of masculinity and discipline (ŞEntÜRk & Göbel, 2023; Voelker & Reel, 2018).

Intervening conditions such as anxiety about negative evaluation, ideal body fantasizing, and the commercial nature of fitness culture further intensify the desire for body management. Athletes often experience tension between their real bodies and the idealized images perpetuated by media and peer comparison (Santarossa et al., 2019; Zaccagni & Gualdi-Russo, 2023). These internal conflicts manifest as chronic dissatisfaction, performance pressure, and mental strain, supporting prior research indicating high vulnerability to body image disturbances and eating disorders among male athletes (Firoozjah et al., 2022a; Perelman et al., 2022). Moreover, the impact of commercial pressures, such as supplement marketing and influencer culture, resonates with studies on the monetization of the fitness body (Selva & Ramos, 2024; ŞEntÜRk & Göbel, 2024).

The contextual conditions in the study—such as familial encouragement, socioeconomic status, peer gym culture, and broader societal values—served as a fertile backdrop for body-centered practices. Prior literature emphasizes that body image does not develop in isolation but is significantly shaped by familial modeling, cultural definitions of success, and the micro-environments of sport (Findasari et al., 2025; Ghiasvand et al., 2017). This is particularly evident in Iranian society, where emerging consumerist tendencies intersect with traditional values, reinforcing a hybrid model of masculinity that centers on bodily control and appearance. The findings suggest that the family's role extends beyond moral support to symbolic endorsement of the muscular body as a marker of status and discipline.

In terms of strategies, athletes were found to follow two dominant paths: one characterized by satisfaction and persistence, and the other by dissatisfaction and withdrawal. Those who reached their ideal physique continued training with greater motivation, while those who failed to meet expectations often disengaged from bodybuilding. This duality reflects the findings of Pinto et al., who observed that elite gymnasts struggle to reconcile human vulnerability with athletic perfectionism, resulting in either psychological resilience or withdrawal (Pinto et al., 2019). The sense of bodily dissatisfaction is compounded by perfectionist tendencies, as seen in the work of Prnjak et al., who argue that body dissatisfaction and dieting behaviors are more intense among male athletes engaged in aesthetic or strength-based sports (Prnjak et al., 2019).

The outcome dimension of the model highlighted both positive and negative consequences of body management. On the positive end, athletes reported increased discipline, happiness, social connection, and respect—consistent with previous studies identifying sport as a medium for self-regulation and social empowerment (Huang & McNesby, 2021; Tao & Li, 2023). On the other hand, adverse outcomes such as physical injuries, psychological stress, and stereotyping of muscular men as aggressive were also observed. These negative consequences resonate with the findings of Brown et al., who documented the psychobiological strain that arises from social-evaluative threats related to body image (Brown et al., 2023). Similarly, Şentürk's research underscores the role of perceived stress and its link to unhealthy behaviors in athletes striving to meet rigid appearance ideals (Şentürk, 2025).

Quantitative analysis further confirmed the validity of the conceptual model. The Average Variance Extracted (AVE) and composite reliability values for all constructs were

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above acceptable thresholds, confirming convergent validity and internal consistency. The R^2 values indicated that over 70% of the variance in the key variable—body management—was explained by the model's predictors, such as social comparison, self-differentiation, and body image perception. Additionally, the Goodness of Fit (GOF) index of 0.479 indicated a strong model fit, consistent with Wetzels et al.'s benchmarks. The predictive relevance (Q^2) scores were also substantial for constructs like familial encouragement (0.536), ideal body fantasizing (0.474), and learning discipline (0.474), reinforcing the centrality of these dimensions in the body management process.

The results echo the findings of researchers such as Léger et al., who report that athletes in weight-sensitive sports often adopt extreme strategies to align with performance and aesthetic expectations (Léger et al., 2025). Similarly, Okoruwa et al. discuss how specialization and identity investment in a single sport increases injury risk and body-related stress (Okoruwa et al., 2022). Within this framework, male bodybuilding appears as a microcosm where societal, psychological, and institutional forces collide, creating a space that is both empowering and burdensome.

Importantly, the study offers insight into how the male body is culturally coded in Iran. While much literature focuses on Western contexts, this research extends the discourse to a non-Western setting, illustrating how globalized fitness ideologies merge with local values. This supports the argument made by Hassan et al. regarding the cultural construction of body image and the role of media in shaping athlete identity in different sociopolitical contexts (Hassan et al., 2024). Moreover, the role of religion—especially Islamic perspectives on bodily discipline—offers a unique dimension that is often absent in Western-centric models of body image and athletic performance.

In summary, this study demonstrates that body management among male bodybuilding athletes is not a unidimensional phenomenon but a complex, multidimensional process shaped by personal ambitions, social structures, cultural ideals, and media narratives. While it offers pathways for self-expression and discipline, it also opens the door to psychological vulnerability, physical strain, and social labeling. The findings strongly advocate for a more critical and culturally contextualized understanding of body image in sports, particularly in strength-oriented disciplines where appearance and performance are tightly interwoven.

Despite its valuable contributions, this study is not without limitations. First, while the qualitative phase offered rich data, it relied heavily on self-reported interviews, which may be subject to social desirability bias, particularly given the sensitive nature of body image among men. Second, the sample in the quantitative phase, although drawn from diverse provinces, was limited to male athletes holding level-3 coaching certifications, which may restrict the generalizability of the findings to all male bodybuilders or other athletic populations. Third, the study focused solely on the Iranian cultural context; therefore, cross-cultural comparisons or global generalizations must be approached with caution. Additionally, the complex nature of body image and identity warrants longitudinal analysis, which was not feasible within the design of this research.

Future research could benefit from a comparative cross-cultural design, examining body management practices among male athletes in other Middle Eastern or non-Western countries to identify cultural divergences and commonalities. It is also recommended that future studies include female bodybuilders to explore gendered variations in body management processes. Further, longitudinal studies tracking changes in body image perception and management strategies over time would help illuminate the evolving nature of these constructs. Finally, incorporating physiological, psychological, and sociological assessments together in an interdisciplinary framework may offer a more holistic understanding of the embodied athlete experience.

To address the psychological and physical risks identified in this study, sports institutions, gyms, and coaching bodies should develop educational programs that foster healthy body image and mental resilience among athletes. Coaches and trainers should be trained to recognize signs of body dissatisfaction and refer athletes to appropriate support services when needed. Social media literacy campaigns targeted at athletes can help deconstruct unrealistic body standards and reduce the harmful effects of appearance-based comparison. Most importantly, bodybuilding communities should cultivate inclusive and supportive cultures that value health, performance, and self-acceptance over rigid appearance ideals.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

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Transparency Statement

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Ethical Considerations

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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