

## PAPER DETAILS

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## Understanding Psychosocial and Socio-Cultural Processes Towards Fitness Doping: A Meta-Synthesis Study \*

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### Abstract

Research indicates that the unregulated and excessive utilisation of Performance Enhancing Substances (PES) is also prevalent in physical exercise contexts beyond the domain of competitive sports, thereby raising concerns about the potential for doping to permeate broader society. The objective of this study is to gain insight into and elucidate the psycho-social and socio-cultural context surrounding the utilisation of Performance Enhancing Substances (PES) in physical exercise settings, within the framework of existing literature. In this context, nine qualitative articles were selected based on predetermined exclusion and inclusion criteria from the Web of Science, Scopus and SportDiscus databases. Subsequently, the articles were subjected to qualitative data analysis using the Nvivo research statistics programme, and the findings were synthesised. The following themes were identified from the articles examined: "Demographic change", "gendered resistance", "hegemonic masculinity", "appearance", "encouragement", "exit point", "performance", "self-enhancement", "social approval", "the body of man", "homosexuality", "limitations" and "transformation". It is recommended that the use of all substances and methods that may have negative effects on human and public health should be reduced or prevented in these environments with appropriate measures.

**Keywords:** Performance enhancement, Public health, Recreational sport

\*This study is not included in the study group that requires TR Index Ethics Committee Approval.

## 1. Introduction

In a society characterized by a persistent pursuit of perfection, various methods are employed to enhance physical performance in both recreational and professional sports. The phenomenon of doping, once confined to elite athletes, has now begun to impact athletes at lower levels and even recreational athletes of all ages (Mazzoni, Barroso, & Rabin, 2017). Current literature suggests the emergence of a new trend of substance use within fitness environments (Mooney et al., 2017; Sandvik, Bakken, & Loland, 2018; Wazaify et al., 2014). This category of substances, referred to as PES, encompasses any substance used in non-pharmacological doses to enhance sports performance and physical conditioning (Gomez, 2005). All substances and methods listed in the Prohibited List of the World Anti-Doping Agency (WADA) fall under the umbrella of PES (WADA Code, 2023). Doping is recognized as a consciously controlled and targeted behaviour (Connor, Woolf, & Mazanov, 2013). It is noteworthy that WADA does not provide any exemption or sanction for the use of doping or other harmful substances within the gym, fitness, or recreational sports environments. However, the literature refers to the utilization of substances and methods falling within the scope of doping in fitness and similar amateur sports environments, using terms such as Fitness Doping, PESs, IPEDs (Image and Performance Enhancing Drugs), PEIDS (Performance and Image Enhancing Drugs), APEDs (Appearance and Performance Enhancing Drugs), or PIEDs (Performance and Image Enhancing Drugs) (Andreasson, 2015; Sverkersson et al., 2020; Macho et al., 2021; Sverkersson, 2022). While fitness doping specifically denotes the use of substances and methods defined as doping within fitness or gym settings, terms such as PESs, IPEDs, APEDs, PEIDS, or PIEDs encompass substances categorized as doping as well as supplements and other substances altering appearance or image. For instance, although certain weight loss medications may not fall under the category of doping, they are recognized to be utilized in exercise environments as enhancers of performance and image. In summary, doping and PIEDs (Performance and Image Enhancing Drugs) cannot be distinctly separated; rather, PIEDs represent a broader concept encompassing doping substances and methods.

## 2. Literature Review

Individuals who engage in exercise at fitness centers may turn to PESs for various reasons, including increasing muscle mass or sculpting their physique, enhancing physical condition, boosting performance, accelerating recovery from injuries, or increasing the frequency of training (Tavares et al., 2022). Since the 1980s, it has been documented that young people have been using Anabolic Androgenic Steroids (AAS) for aesthetic purposes and to augment lean body mass (Johnson et al., 1989). A systematic review revealed that AAS is the most frequently used PES among practitioners at gyms and fitness centres, with prevalence rates reported in the analyzed studies ranging from 4.7% to 70%. Moreover, the same review indicates that AAS users predominantly consist of young men with a low level of education (Tavares et al., 2019). According to Johnson et al. (1989), some male adolescents use anabolic steroids without fully comprehending the risks associated with PES use. In another study, it is noted that most women do not aspire to achieve extreme muscularity, and the utilization of PES is associated with the development of masculine characteristics (de Siqueira Nogueira et al., 2014). Moreover, research indicates that peer influence and media exert a significant impact on the misuse of PESs (Tavares et al., 2020).

In another study, it was noted that the number of investigations into the prevalence of PES use and the analysis of social indicators and cultural patterns within gym and fitness environments is relatively low (Tavares et al., 2020).

### 2.1. Research Question

Given the importance of protecting exercising individuals from any doping substance that could cause physical or mental harm the objective of this study is to scrutinize and assess existing qualitative data concerning the use of PESs in gyms, fitness centers, and recreational sports environments, focusing on demographic, psycho-social, and socio-cultural perception dimensions. Qualitative research contributes

to deeper comprehension and interpretation of psycho-social processes in human behaviour. It is anticipated that the significance of the study will be enhanced through the compilation of qualitative findings within the scope of this meta-synthesis objectives. When the literature on fitness doping is examined, it is seen that articles collecting quantitative data or qualitative data have been compiled (Tavares et al., 2019; Sagoe, et al., 2014). It is thought that this study will consolidate the literature in terms of compiling the data obtained from the latest qualitative articles on fitness doping. It is also envisioned that by addressing the strengths and limitations of previous studies in the field, it can serve as an interim report to help encourage future research on doping substance use in gym/fitness/recreational sports environments. The research endeavours to address the following questions:

1. Is there a difference in the demographic distribution of doping behaviour in gym/fitness centre/recreational sports environments?
2. What are the psycho-social causes of doping behaviour in gym/fitness centre/recreational sports environments?
3. What is the ethnographic structure of doping behaviour in gym/fitness centre/recreational sports environments?

### **3. Metodology**

This research uses a meta-synthesis which is a qualitative research method. Meta-synthesis is defined as the process of interpreting and making sense of qualitative findings of qualitative and/or mixed methods research within a qualitative understanding. (Güneş & Erdem, 2022). This study was conducted within the scope of the stages mentioned below (Aspfors & Fransson, 2015).

1. Determining the research topic and questions.
2. Determining the inclusion and exclusion criteria of the studies to be analyzed in the context of key concepts.
3. Identifying the studies according to the inclusion and exclusion criteria and tabulating brief information about the studies.
4. Accessing the relevant studies, reading the studies within the scope of the research questions and taking the necessary notes.
5. Analyzing the data/formulating themes.
6. Synthesizing the findings obtained in the context of themes and making new inferences.

#### **3.1. Literature Review**

Relevant articles were identified through searches in Web of Science, Scopus and SportDiscuss databases. The following keywords were used in the search: “(sport\* or exercise or gym or “physical activity\*” or “recreational sport”) and doping and fitness.”

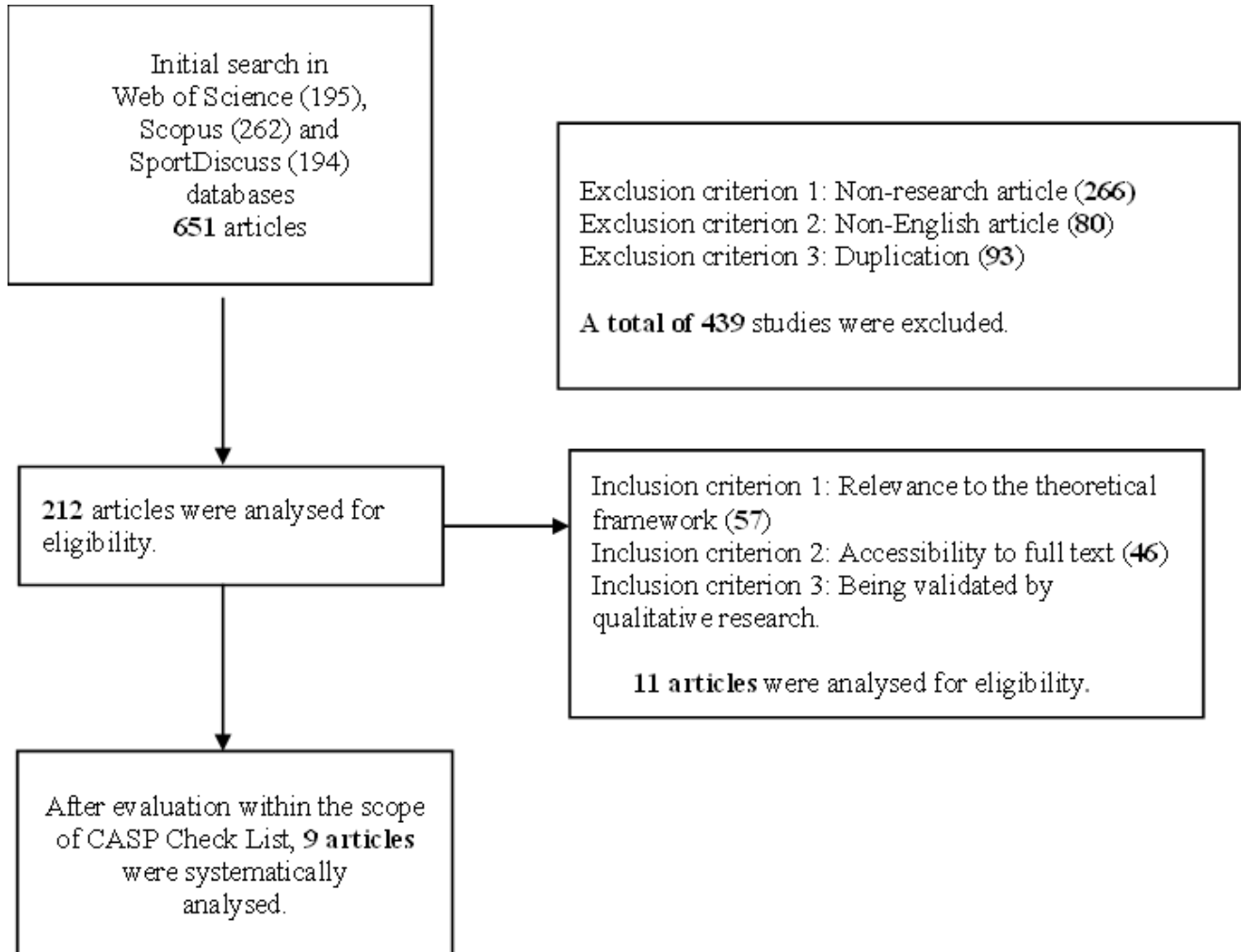
#### **3.2. Inclusion and Exclusion Criteria**

Only empirical studies published in English and as peer-reviewed journal articles with a qualitative design were considered for inclusion in this study. Exclusion criteria encompassed duplications, irrelevant articles, inaccessible full texts, and quantitative studies. To ensure maximum inclusivity, articles up to September 2023 were included, with no restrictions imposed based on publication year.

#### **3.3. Data Reduction and Quality Assessment**

The data were derived from studies deemed suitable for the purpose of the study. Findings unrelated to the psychological and sociological aspects of doping in recreational sports were filtered out. Data obtained, research design, sample size, data collection method, and results were coded in a tally table. Furthermore, the quality of articles included in the data pool was assessed using the Critical Appraisal Skills Programme (CASP, 2016) checklist. Articles that met at least 9 of the criteria questions and were deemed acceptable by the researchers were included in the analysis.

Within the scope of this research, a total of 651 articles matching the search terms were identified on September 26, 2023, through the initial search across three databases. Following the exclusion of non-empirical (review, note to the editor, etc.) and non-English articles, as well as duplicates, 212 articles remained for manual screening based on the inclusion/exclusion criteria. Among these, 201 articles did not meet the inclusion criteria, and 2 articles were ineligible for CASP assessment. Consequently, 9 articles were deemed suitable for inclusion within the scope of this research. The flow diagram illustrating the literature search and data generation process is presented in Figure 1.



**Figure 1.** Flow Diagram of The Data Creation Procedure

The 9 articles analysed comprise qualitative studies designed with netnographic, phenomenological, and ethnographic study designs. These studies involve data collection through observation, interviews, or document analysis techniques, aiming at understanding and interpretation. In the following sections, the research findings will be reviewed and discussed in terms of theoretical knowledge and practical applications.

### 3.4. Data Analysis

All articles were read in detail by both researchers. The data obtained were thematized in the qualitative research statistical program Nvivo and direct quotations were shown in the text with descriptive analysis. The reliability of the themes was ensured by Kappa Analysis (Kappa value: .83) (Landis & Koch, 1977). Finally, the findings obtained as a result of theme and descriptive analysis were synthesized.

## 4. Findings

A summary of the qualitative articles included in this study is given in Table 1.

**Table 1.** Summary of The Studies Reviewed

Authors	Code (C)	Study design	Data collect	Samples	Theoretical framework
Sverkersson, (2022)	(S1)	Qualitative netnographic study	Document analyse	Comments shared by 45 women (20-46 years old) on an online forum page	Perceptions of female doping users
Macho, et al. (2021)	(S2)	Qualitative phenomenological study	Semi-structured interviews	6 amateur bodybuilders male (20-30 years)	Multiple selves and signification
Henning & Andreasson, (2021)	(S3)	Qualitative ethnographic and netnographic study	Document analyse	Comments posted by doping-prone women on an online forum page	A social constructionist approach
Andreasson & Johansson, (2021)	(S4)	Qualitative ethnographic study	Interviews and document analyse	6 women with bodybuilding or fitness doping experience (21-46 years) and comments on the online forum page	The post-structural feminism
Sverkersson, et al. (2020)	(S5)	Qualitative ethnographic and netnographic study	Document analyse	Comments posted by doping-prone women on an online forum page	Contesting the male hegemony
Andreasson & Johansson, (2020)	(S6)	Qualitative ethnographic study	Interviews	26 people with bodybuilding or fitness doping experience (20 men, 6 women, 19-64 years)	A cultural and sociological perspective
Coquet, et al. (2018)	(S7)	Qualitative	Semi-directive interviews and observation	The gym and 30 people (23 men, 7 women), (21-59 years) who exercise	Sociological and cultural perspective.
Andreasson, (2015)	(S8)	Ethnographic qualitative study	Semi-structured Interview	19 men using banned substances (19-62 years)	Male hegemony
Peters Jr, et al. (2005)	(S9)	Qualitative	Focus group interview	43 student-athletes (13 males and 30 females) self-identified as past Ephedra users	the social norms and beliefs

#### 4.1. Demographic Structure

The sub-themes related to the demographic structure of doping in gym, fitness and recreational sports environments are presented in the table below.

**Table 2.** Demographic Structure of Doping

1.Demographic Structure	(a) demographic change	(b) gendered resistance	(c) hegemonic masculinity
S1		✓	✓
S3	✓	✓	✓
S4	✓		✓
S5	✓		✓
S8			✓

Direct quotations related to Table 2 are presented below;

"That women engaged with one another and with men on this forum indicates a change in the fitness doping demography and how this practice is conceptualized." (S3,1,a)

"Although PIED use in the context of gym and fitness culture remains primarily a masculine domain, the results point towards a development in which women are increasingly becoming more integrated into a fitness community of PIED users" (S4,1,a)

"...women have gained ground in the context of online fitness doping, heralding a changing doping demography and a movement towards a 'sis science' ethnopharmacology..." (S5,1,a)

"...challenging the heteronormative and masculine hegemony. (S1,1,b)

"These gendered patterns do not always go unnoticed, as there were examples of women challenging such a narrative structure." (S3,1,b)

"...as their aspirations and experience are often downgraded, made invisible or ridiculed." (S1,1,c)

"Symbolically, men are effectively engaging in a sort of cultural manspreading by encroaching on women's forum space and causing the women's voices to shrink in response." (S3,1,c)

"PIED use in the context of gym and fitness culture remains primarily a masculine domain." (S4,1,c)

"The results show that although fitness doping can be largely understood in terms of hegemonic patterns." (S5,1,c)

"Although expressed differently, the overall perspective on masculinity and fitness doping put forward through this position rests heavily on a binary understanding of gendered bodies, doping, and competences, in which the female body is viewed as weak and the male body strong and competent." (S8,1,c)

In one study, it was noted that doping practices within gym, fitness, and recreational sports environments have historically been under male hegemony (Sverkersson, 2022). However, recent research suggests a shift in this demographic structure. It indicates that the perception of muscularity by gender is evolving, with idealized notions of female muscularity becoming more acceptable and challenging traditional forms of femininity (Andreasson & Johansson, 2021). Another study aimed to examine and analyse the construction of masculinity and doping practices within gym and fitness culture. Consequently, the primary objective of the study was to identify policies related to masculinity and gender, contributing to the comprehension of fitness doping and exploring strategies to address them. Hence, the aim of the paper was twofold: to explore how users of Performance or Image Enhancing Substances (PIES) present themselves and to understand the motivational trajectory leading to doping use. The study concludes that it is feasible to discern and formulate alternative constructions of masculinity in the realm of fitness doping, potentially altering the understanding of hegemonic masculinity (Andreasson, 2015).

## 4.2. Psycho-Social Aspects

The sub-themes related to the psycho-social aspects of doping in gym, fitness and recreational sports environments are presented in the table below.

**Table 3.** Psycho-social Aspects of Doping

2.Psycho-Social Aspects	(a) Appearance	(b) Encouragement	(c) Exit Point	(d) Performance	(e) Self Enhancement	(f) Social approval
S2			✓			
S9	✓	✓		✓	✓	✓

Direct quotations related to Table 3 are presented below;

"females' most frequent response was weight loss." (S9,2,a)

"Male participants stated they personally used ephedra for athletic performance enhancement and encouragement from the high school coaches and friends," (S9,2,b)

“Within such sense making, a potential “exit point” emerged from a tension between the “extraordinary self” and “ordinary self,” i.e., our participants thought about stopping using APEDs predominantly in the context of losing in subjectively important domains, such as subjective well-being, relationships or work, as they constructed what they considered a normal, ordinary life.” (S2,2,c)

“why athletes use ephedra products was that its use increases athletic performance.” (S9,2,d)

“These findings show that males may be more apt to view ephedra as a less social event and use for self-enhancement,” (S9,2,e)

“females may use ephedra for social reinforcement and social approval.” (S9,2,f)

In a study delving into the subjective experiences of participants in gym, fitness, and recreational sport environments from a phenomenological perspective, it is posited that doping users in these contexts can be distinguished along two dimensions: those who prioritize the effectiveness of PESs and those who accept the risks associated with them. According to the research, participants generally perceive PESs as a pathway to self-actualization rather than as a means to address deficiencies. Consequently, they utilize PESs not only to enhance their bodies but also to enrich their sense of meaning, well-being, and quality of life, as well as to acquire knowledge and expertise (Macho et al., 2021). As a result, the study underscores the importance of the concept of physical labor in comprehending the lives and practices of the participants. Additionally, it is asserted in the study that physical labor can serve as a source of enhanced physical, mental, and social well-being, emphasizing the necessity of pursuing such outcomes.

### 4.3. Socio-Cultural Aspects

The sub-themes related to the socio-cultural aspects of doping in gym, fitness and recreational sports environments are presented in the table below.

**Table 4.** Socio-cultural Aspects of Doping

3. Socio-Cultural Aspects	(a) Body of Man	(b) Homosexuality	(c) Limitations	(d) Transformation
S6			✓	
S7				✓
S8	✓	✓		

Direct quotations related to Table 4 are presented below;

“Such a masculinity, constructed in the realm of performance, could clearly be related to a normative masculine stereotype, shaped by traditionalism.” (S8,3,a)

“This approach and position therefore amount to a contestation of hegemonic gender values, in which masculinity and fitness doping have become detached from a solidly heterosexist understanding and turned into inclusiveness and perhaps also a homoerotic pleasure, at least on a symbolic level.” (S8,3,b)

“...pro- cesses of (un)becoming a fitness doper are anything but linear and thus needs to be understood in relation to national context and legislation, sociocultural belonging, and ongoing negotiation of the individual’s sense of self, gender, health, and family responsibilities.” (S6,3,c)

“Associated with social vulnerabilities, the progressive normalization of APED use is concomitant with the “conversion” to bodybuilding.” (S7,3,d)

From the studies examined in this research, it is evident that doping practices in gym, fitness, and recreational sport environments are perceived as an idealized phenomenon irrespective of gender (Sverkersson, 2022). The findings of a study exploring the process of becoming or not becoming a fitness doper reveal that the use of doping substances in fitness settings is normalized. The study also characterizes fitness doping as a subculture within the broader fitness culture. According to the research, the processes of fitness doping or non-doping are non-linear and thus necessitate understanding within the context of sociocultural affiliation, individual identity, gender, health, familial



obligations, national context, and ongoing discussions surrounding legislation (Andreasson & Johansson, 2020). Studies analyzing the comments of Performance Enhancing Substance (PES) users on doping-related online forums indicate that both men and women feel comfortable sharing their personal doping experiences and offering advice to other users (Sverkersson, 2022; Sverkersson et al., 2020; Henning & Andreasson, 2021; Andreasson & Johansson, 2021). These studies are considered highly valuable in comprehending and interpreting the social and cultural dynamics of doping in gym, fitness, and recreational sport environments. Various internet forum pages and social media platforms are perceived as potential tools for disseminating ethnopharmacological information to a broader audience (Sverkersson et al., 2020). Within gym and fitness settings, ethnopharmacology is defined as “dealing with and experimenting with supplements and drugs to achieve the desired body” (Monaghan, 2002). Despite the idealization of PES use in society, research indicates that men tend to underestimate and criticize the knowledge and experience of female dopers (Sverkersson, 2022; Sverkersson et al., 2020). Doping is enshrouded by hegemonic patterns of masculinity within gym, fitness, and recreational sports settings. Some women, either individually or with mutual support, continually strive to express themselves and resist this hegemony and harsh criticism. In doing so, they aim to reshape the demographic structure in the gym, fitness, and recreational sports environments in their favour (Sverkersson, 2022). Furthermore, it is apparent that men heavily utilize digital women’s platforms related to doping, suggesting a form of cultural diffusion among males (Henning & Andreasson, 2021). In another study, it was noted that while women are cognizant of the risks associated with doping, they are consistently assessing risks and attempting to mitigate side effects (Sverkersson et al., 2020). In a qualitative study on the social beliefs and norms surrounding ephedra use, the perspectives of both men and women were examined. Men indicated that ephedra use primarily aimed at enhancing athletic performance, while women reported using ephedra mainly for weight loss. These findings are valuable for understanding gender-specific norms and social factors influencing behaviour. Additionally, men expressed the belief that ephedra use was more driven by individual preferences, whereas women perceived it as more influenced by norms prevalent among athletes (Peters Jr. et al., 2005). A field study investigating the increasing normalization of doping use revealed that social and psychological determinants influence individuals’ gym attendance. Furthermore, these influences intertwine and evolve over time, potentially leading to the normalization of doping use (Coquet et al., 2018).

## 5. Discussion and Conclusion

In this section, the findings of this study, which aimed to understand and interpret the psycho-social and socio-cultural processes towards fitness doping, were interpreted by the researchers and some suggestions were made. According to the sub-themes obtained under the previously identified overarching theme of 'Demographic structure'; In terms of gender distribution, fitness doping has historically played a role in men's health risks, but it is now predicted to pose a significant risk to women's health due to changing body perception and the desire to be liked. In conclusion, fitness doping is seen as a growing public health problem, especially among young men and women. When the results of the 'psycho-social aspects' meta-theme, which is another research problem, are analysed; Fitness dopers appear to attach significant meaning to these practices, ignoring the potential risks of doping substances and methods, intense exercise and nutritional supplementation. The need to change these subjective norms of fitness doping is vital in the context of public health. In addition, the psychological and sociological processes of fitness doping should be investigated in depth with qualitative and mixed research methods. Thus, more theoretical and practical contributions can be made to the field. Examining the issues analysed under the title 'Socio-cultural aspects', another top theme; Today, the spread of exercise and fitness culture has led to the spread of fitness doping, a subculture of fitness. It is thought that this spread is progressing even faster, especially through internet platforms. As long as this spread continues, it is inevitable that female dopers will be an active part of the doping culture.

This study, which compiles the psycho-social processes related to fitness doping, shows that qualitative studies on the subject have been published mainly in the last five years with a chronological evaluation. In recent times, there has been a noticeable increase in both the number and content of qualitative studies focusing on doping behaviour in gym, fitness, and recreational sports environments. Furthermore, from the examined studies, it is evident that while doping behaviour in these settings is more prevalent among men, women also exhibit a tendency towards these substances and methods, driven by changing body perceptions. Consequently, the demographic structure of fitness doping, traditionally under male hegemony, is undergoing transformation. Irrespective of gender, individuals tend to overlook the risks associated with doping substances and methods, perceiving them not merely as a means of support toward a goal, but as avenues for self-realization. Furthermore, the practice of fitness doping is becoming increasingly prevalent within the subculture of fitness and gym culture. The pervasive use of the internet and social media is believed to be a significant contributing factor to this phenomenon. Furthermore, the acceleration of information sharing through the internet also affects athletes who refrain from doping (Dresen, Klaber, & Dietz, 2014). In the context of protecting public health, doping and its derivative practices should be avoided in exercise environments, and the necessity of creating a new subculture related to regular and healthy nutrition should be emphasized by policy makers. Consequently, it is imperative to implement necessary measures sub-organization, regarding the use of all substances and methods posing a risk to human health in gym, fitness, and recreational sports environments. This issue is considered a crucial factor threatening public health. Additionally, the subcultural context of athletes' environments should be considered in prevention models designed to counter the misuse of PES (Dresen, Klaber, & Dietz, 2014).

### **Strengths and limitations**

This meta-synthesis is limited to the 9 qualitative research articles analyzed. The results are discussed in this context.

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Ethics Committee Approval: This study is not included in the study group that requires TR Index Ethics Committee Approval.

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Contribution Rate of Researchers: The study was prepared with the contribution of two authors. Contribution rates; 1. Author = % 70, 2. Author = % 30.

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