Exercise Addiction : Unveiling the Prevalence and Reasons In Indian Context

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Abstract

Aim: The purpose of this research is to analyze Exercise Addiction (EA) in "female Amateur runners" from a different angle. These viewpoints include demographics (age, education, purchasing, and employment), education (play time, one week's work), and social work. (age, education level, marital situation, and professional pursuits), number of events participated, and Addiction characteristics) (increase in activity, stress, time, intention effect, lack of control tolerance)

Methodology: The Exercise Addiction Inventory (EAI) assessed prevalence of EA in amateur runners. 100 female amateur runners between 18 and 55 from the Delhi NCR were selected to fill out the EAI. Mixed method approach was carried out on respondents with EA using observation and interview techniques.

Conclusion: The data was analyzed using a statistical measure to identify explanatory variables of EA. 39% of the participant showed EA. Thematic analysis revealed cause of EA as motives related to stress release and social affiliation. The research leaves substantial implications for sports psychologists and sports persons.

Introduction

Evidence indicates that exercise can be used to protect against paralyzing depression and self-punishment, as well as to handle the negative emotions like stress, anger, and, melancholy. Physical activities have numerous health and well-being benefits (De Mello et al., 2013). The pandemic has also brought this to light (Lim & Pranata2020, Nogueira et al., 2019; Lin et al., 2015). As a result, medical and paramedical professionals began using any type of physical activity to treat mental and physiological problems. However, a larger population has not recognized the health concern due to excess exercise (Hespanhol Junior et al., 2015).

Numerous cross-sectional studies were conducted after the publication of these research papers (Colledge et al., 2019). These studies measured risk variables for the formation of addiction using questionnaires. These characteristics are similar to those mentioned in Brown's (1993) theory, which suggests a resistance exercise (EA) model to facilitate a more thorough comprehension of the phenomena. Brown's (1993) hypothesis was utilised by Sachs (1981) and Griffiths (1996, 1997, 2002, 2005, 2007) to establish six crucial elements of addiction. Clarity, emotion, tolerance, withholding, conflict, and healing are some of these components. Later, they expanded this hypothesis to include drug users' addictions.

In addition, Hausenblas and Downs (2002, 2004) utilised the DSM IV-TR to characterise the symptoms of drug misuse and to identify the warning indicators associated to exercise:

- Tolerance refers to the process in which an individual needs to put in ever more effort physically to get the same outcome, regardless of whether that result is a "buzz" or a sense of success.
- Withdrawal: When people don't exercise frequently for an extended period of time, they are more likely to have uncomfortable side effects such as anxiety, irritability, restlessness, and difficulty sleeping. This is because withdrawal is a form of exercise addiction.
- A lack of control, demonstrated by an inability to lessen the intensity of the workout or refrain from physical activity for a predetermined amount of time.
- Intention effects: the failure to stay to one's intended routine, demonstrated by going beyond the time given for exercise or continuously surpassing the allocated quantity. This can be observed by going beyond the time allotted for exercise or by consistently going over the allotted amount. This impact could be felt when a person exercises for a longer period of time than they had planned.
- Time: The procedures of preparation, physical activity, and recuperation take up a major percentage of the time that is available over the course of the seven days.
- A reduction in participation in other activities: Research has shown that regular physical activity leads people to participate in less additional activities overall, whether those activities are social, professional, or leisurely in nature.
- According to Hausenblas and Downs (2002), continuation is the act of engaging in behaviour despite wanting it to stop, being preoccupied with behaviour, and having negative feelings towards oneself (I am always tired), even though the behaviour is harmful to the body (regular injuries brought on by over-exercising), continuing to exercise despite the fact that it is bad for the body (regular injuries brought on by over-exercising), etc.

According to qualitative research in the field, some people experience mental distress as a result of their exercise habits. The distressing sense of deprivation experienced when unable to exercise has also been described. According to Szabo (1995) and Kurimay et al. (2013), addicted exercisers have more severe withdrawal symptoms than committed exercisers. Risk exercisers are those who suffer on three parameters, physical, medical, and interpersonal relationships, to exercise. To be affected by this disease, an individual must categorize at least three traits, tolerance, withdrawal and lack of control (American Psychiatric Association 1994). Symptoms resembling withdrawal are commonly used to make a diagnosis (Sachs and Pargman, 1984).

According to research conducted by Kumar Sharma et al. in 2019, just 3% of the general population that do some exercsie suffers from an addiction to physical activity. Runners have the highest prevalence rates of exercise addiction, whether they are short-distance runners (25 percent), long-distance runners or marathon runners (50 percent), triathletes (52 percent), or endurance runners (14.2 percent) (Megan & Vieira, 2020).

Growing popularity of isometrics as a recreational activity in masses in India could be seen in the mushrooming of marathon events. The Tata Mumbai Marathon attracted 55,000 runners, with a record 11,805 women competing in all race categories (HT Correspondents, 2023). However, it can take or might have taken a form of addiction in these individuals who could be silent suffers. The reason could be society's approval of exercise for health benefits.

There is an urgent need for research on the harmful effects of exercise, which should be conducted by professionals in the field of mental health, its maintenance, reasons behind and the origin of

dysfunctional patterns. That could be giving both physiological or psychological distress in the Indian context. The need for the gender difference is also essential as more females participate in a marathon or long-distance running from all spheres of life, be it housemakers, professionals, doctors, lawyers, etc. There are very few researches on the dysfunctional aspect of exercise in the Indian population that states females. Around 3.8% of female general exercisers in India have exercise addiction (Kumar Sharma et al., 2019).

This study will highlight the characteristics of EA among female amateur runners. The EA scores of female marathon runners were much higher than those of men marathon runners. (Alcaraz-Ibáez et al., 2022. Fritchley, Pierce, and Rohaly, 1997. This figure is even higher among endurance runners (Lassner et al., 2022). In a study of 72 endurance runners, 19.4 % of the females had EA (Lassner et al., 2022). As Most of the studies on exercise addiction are quantitative, qualitative studies help to understand the individual experience that supports the addictive aspect of exercise that could be harmful to the social, functional, and occupational aspects of individual life.

Methodology:

Aim: The purpose of this research is to investigate the features of exercise addiction among female amateur runners of Delhi and the National Capital Region.

Objective:

1 To find out the prevalence of EI among women.
2 To explore themes that support exercise as an addictive behavior using thematic analysis.

Inquiry method: Mixed method (Quantitative & Qualitative)

Participants

The data was collected at the start of February, just days before a long-distance event. Out of 110 female runners (sample size through the G-power approach). Using purposive sampling techniques, Participants were required to be female and between the ages of 18 and 55. to be considered four running groups from Delhi NCR (Faridabad, Noida, and Gurgaon). 100 female runners were selected as a participant in the study. Ten runners backed out after participation and had to be opted out. These groups were known and ready to participate. The questionnaires were distributed online and offline to 100 long-distance runners (5k. 10 km, 21 km, 42 km, or ultra) who had competed in at least two long-distance runs and could read, write, or speak English. Verbal permission was taken from the participants on the ground of complete confidentiality and anonymity.

Methods & Procedure

This research was carried under 3 sections, described as following-

1. The first session discussed their demographic details like age, education, marital and professional status, years of running, and weekly km.
2. The second session used the Exercise Addiction Inventory, often known as the EAI by, was utilised to determine exercise addiction present in the sample.
    - **Exercise Addiction Inventory (EAI)** - EAI by " Terry et al. (2004) was used. The EAI consists of six statements and is completely based on the various components of behaviour dependency. In response to the assertion, a response option based on a Likert scale with 5 points turned into supplied. According to the research that Griffiths (1996) conducted, a high score of 24 out of 30 on these statements indicated a significantly increased likelihood of

engaging in addictive behaviours. The EAI demonstrates a high degree of internal consistency, as shown by a Cronbach alpha value of 0.84. It has been exposed to check after check, and it continues to maintain a dependability of 0.85. The EAI makes it possible for primary care physicians to quickly and easily identify individuals who are suffering from exercise addiction or who are at risk of developing the condition. In addition to that, the native American population was assessed with the aid of this scale.

3. The third section contained five open-ended questions asked in a structured interview by phone to understand the component of exercise addiction on the line of increase in activity(tolerance), stress (mood modification), time (over other pleasurable activity), intention effect (withdrawal)), lack of control (relapse), the essential activity (Salience). As the focus of the study was exploratory, the questions so formed were *" What is the positive aspect of exercise?", "What is the negative aspect of exercise?", " What is your reason for exercise?", "Do you think exercise help to deal with some issues in your life that are otherwise difficult to deal with?"," Do you think you are dependent upon exercise?" If yes or no, explain?'* Systematic thematic analysis was conducted on the transcripts of the recorded responses, which were in the form of open-ended questions collected through a Google form. Some responses were short, and some responses were long. The first step was to read the answers carefully and then understand the statements. The second step was to search for themes in each answer from all responses. These themes were then given sub-themes regarding health behaviour, compulsion, and addiction.

Procedure:

The participants were approached in early February, two days before a renowned long-distance run in Delhi NCR through multistage sampling. Four groups through the purposive sampling method were selected. They were explained the purpose of the research. As the participants were approached in the morning while they were doing their practice. They were asked to share their number, and the questionnaire was shared online. Some participants were apprehensive about filling out the form online, so the researcher met them by appointment. After the questionnaire was filled, those participants who scored high on EAI were approached to understand the underlying themes that could fit well as addictive behavior. As the objective was to investigate the characteristics of EAI, nearly 29 respondents could be approached for interview based on five open-ended questions decided after taking opinions from the expert in the field. Due to unavailability and time constraints, nine were unavailable for various reasons, and one participant was also dropped at the time of analysis due to recording issues. Those who scored high were also observed before, during, and after the events for any pain. As participants were not ready to mention their phone numbers or email to be shared with anyone except the researcher. This is then waived off in the Google form. The collected data were shifted to Excel files, and quantitative variables were analyzed through SPSS 23 software.

Results:

a) Prevalence of Exercise Addiction

Out of 100 participants who regularly participate in long-distance events and run at an average of 35.61 km per week, 39% of the participant showed EA.

As per the items of EAI., those who scored more than 24 or more.

- 44.8% agree, and 55.2% strongly agree think engaging in physical activity regularly is the single most significant aspect of their existence.

- 60.7% agree, 24.1% neither agree nor disagree, and 13.8% disagree that conflict has arisen between them or their partner or within them about the amount of exercise they do.
- 60.7% agree, and 39.3% strongly agree that exercise as of changing mood.
- 92.9% agree they have increased the amount of exercise they used to do early, 3.6% strongly agree, and 3.6% not in agreement or disagreement.
- 78.6% agree, and 21.4% strongly feel that they have mood issues (withdrawal) if they have to miss exercise sections.
- 86.2% agree, and 13.8% strongly agree that for some reason, if they miss out on the exercise for a particular period, they come back again as before.

b) Socio-Demographic Correlates of EA

In the data, all the females were well educated; 44% were graduates, 49% were post-graduates, and 7% were Ph D. 63% were married, 27% were unmarried, and 10% were single. 70% were working, and 30% were non-working. Exercise behaviour: years in running(Mean =6.61, SD= 5.913), weekly milage in Kilometres (Mean= 35.61, SD= 8.884) number of events participated (Mean= 14.37 SD= 7.445). EAI score(Mean=23.05, SD= 3.906) the score ranges from 12-29). The results showed that 39% of runners participating in more than 3 marathons have dysfunctional exercise patterns.(Table:1) which means have scored 24 out of 30, which is the criteria for negative exercise behaviour.

c) Socio-Demographic Correlates of EA

Thematic analysis is performed in broad strokes on three major themes.

I. **Neurotics of Health:** These are the people whose participation in a sport causes much needed improvement in terms of the satisfaction in their lives. This improvement is typically manifested as a heightened sense of accomplishment and achievement.

II. **Obligatory or compulsory:** Is it the wrong thing for individuals to work out in order to give themselves a sense of control and moral superiority, as well as to feed rigid, obsessive appetites with their own regimen and violate structure?

III. **Addiction:** Activity has taken on an addictive form that has taken precedence over all other aspects of life. *What is the positive aspect of exercise?*

Q1) What is the positive aspect of exercise?

Central theme:

a) Salience (most important in one's life)

When asked to describe a high-quality workout experience, the most common replies provided were changes in weight and body shape, improvements in health and health due to weight loss, witnessed with the help of increased opportunities for social touch.

"Exercising has improved my general health and fitness levels. Feeling younger was one aspect of health and fitness." One respondent answered.

Sub -themes extracted are

Health and fitness	Appearance	Stress relief	Social affiliation and Recognition	Weight loss/ eating	Happiness/ confidence
"I am being less tired/ saving on health expenditure. I feel better about myself now. It improved my mobility, health and fitness happiness. I am fit." Frequency(23)	People say I look much younger." (7)	Stress relief from work and family. "It's me time. stress relief from work, it's like meditation for me. I forget everything." Having time to reflect on issues connected to business and personal relationships and to think things through is "quite beneficial. over whilst I run. It was also an opportunity to clear the mind" (15)	Recognized as being me. meet friends "People start recognizing you with your personal best time in the event". "I meet good people. My friends are from running fraternity" (19)	I have lost weight. I am thin and look good "And I can eat without guilt." weight loss confidence. "Free to eat and maintain a good body." (28(15+ 13)times)	it makes me happy. Gives confidence am confident due to weight loss and able to manage anger and distraction problem (12)

Q2) What is the negative aspect of exercise?

Central theme:

b) Conflict regarding exercise behaviour/time

The most common theme in this category is pain and injury and losing time due to injuries. The second theme is feeling tired due to lack of rest time, frustration due to manging hard between exercise routine and house, Poor performance and managing anger through exercise is another theme. Some participants also highlighted that they have no sex life as they sleep early and get up late. "If the

family is not supportive, it becomes difficult", was told by one of the female runners. Conflict within and between partners.

Sub-themes that arise out of this with joint statements

Injury and pain	Tiredness	Poor performance/ anger	Lack of time Neglecting other commitments, even rest.
I was frustrated that I had to suffer an injury that prevented me from exercising for a significant amount of time. My knee problem was the result of excessive exercise.^ (29)	I am crippy when I'm tired. Not understanding the capacity of one's body	"I used to feel discouraged since I had an injury that prevented me from working out for a considerable amount of time" "The knee pain started as a direct effect of excessive workout". People start recognizing you with your personal best time at the event. It became stressful (2)	"sometimes it is not easy to fit my exercise into my routine" Challenging to manage time. For a workout with housework. Sometimes feel exhausted relations suffer if my partner or family is not supportive "family want me home, and I have a bad sex life. Not interested in any late-night sleep early". (23)

Q3) The reasons for exercise

Intention effect

This category indicates all the positive aspects of exercise as fitness weight loss, stress relief, fitness and happiness, as well as getting time for self which is otherwise difficult to get in the Indian context.

The themes that arise out of these joint statements

Fitness and happiness	Stress relief	Weight loss and body shaping	Run away from difficulties
Feel good, meet people happy "it makes me happy, It gives a sense of accomplishment, releases toxins from the body, and makes one feel happy" (26)	Its stress buster It's a Stress buster. "My mind works better, and easy to control my anger" (27)	health and fitness maintained "I can eat without getting weight gain health and fitness maintained, I can eat without getting weight gain". "Fitness, weight loss, social gathering" freedom to eat. I am a foodie; it's good to exercise (24)	fitness, life is much more fulfilling. "I have my own time, and my friends are very cooperative" (5)

Q4) Do you think exercise help to destress?

Almost all replies that exercise helps them to destress

”Definitely. When I am angry and have no one to listen to me, I exercise as it is a stress buster.”

Q5) Do you think that exercise help to deal with some issues in your life which are otherwise difficult to deal with?

Central theme; Difficult area of life that could develop tolerance(runner's high)

The most important theme in this category is Weight management, and eating without guilt is another central theme that fulfils the desire to be fit; this is also attached to confidence and self-esteem second theme is stress relief, time alone with the self. As an indication of too much worked up both in professional and family set up, exercising to unwind and spend some time, can help you cope with stress”. The exercise worked as a coping mechanism for anger and improved mood.

Sub-themes that arise out of this question with frequency are

Mood and anger	Stress relief Anger/Anxiety	Weight loss	Confidence/self-esteem	Me time
"If I'm angry, upset, I do work outs." Exercise helps me bear any hard words from family members. (9)	"If I'feel burnt out, I go for a workout." I am no more lonely I run more on days when ji am low (18)	weight, free to eat. I am disease free “People look at me. I look much younger” lost weight and relax. (26)	frustrations are managed well, and “ I am self-assured because of how toned and fit my body”. (6)	I wanted to be an athlete, but my family didn't support now I can do that by getting a podium in these events I am a happy person and don't feel lonely. I talk to myself and get answers to my problems(11)

Q6) Do you think you are dependent upon exercise?

Central theme: addiction

Participants feel that it is a habit and are happy they do not want to admit that they are addicted. They believe that they are dependent. Very few who scored more than 26 on the EAI inventory said that they are addict.

”I don't know, but it is positive it might be I am addicted” “I can't live without it. I think I will be unfit if I dont”, “When I don't work out, I definitely lose my appetite and don't feel like eating anything.” Yes, for meeting good people. I am dependent. Addict, yes, I am.” Was the statement commonly said

Observation method: While observing the participants who scored high on the EAI score, It has

been found that 25% popped up pain relief medicine to avoid body pain and were looking at their watch to monitor their time. Some of them wear knee caps due to some pain in their knees. At the end of the race, it was found that the participant went to the medical rooms in pain as the injury they were having before the event had been aggravated. “I was supposed to go to a doctor for my knee injury but wanted to do this race, so I didn’t go. He might stop me for this race,” one runner said

Furthermore, the meta-theme that emerged is weight issues, body shaping and stress as the reason for exercise in females in India.

Discussion

The current study found that 39% of regular long-distance female runners out of 100 subjects between 18 and 55 years had an exercise addiction (Table 5). This supports the earlier finding in the research literature that in athletes, “the prevalence of exercise addiction is between 7% to 21.7% (Youngman & Simpson, 2014), whereas “43.3% reported for amateur triathletes” reported by Blaydon & Lindner,(2002). As per a study by Ruby (2008), 32.5% of Ironman triathletes had exercise addiction. Moreover, it holds up earlier finding that females have a 0.5 to 21.7% risk range for exercise addiction and 0.5 to 42% in endurance runners (Costa et al., 2015; Youngman & Simpson, 2014).

The participants who had a score of 24 or above on the EAI, strongly in agreement with the factor items, suggesting that exercise became the most important thing in their lives and a coping technique for the tough time of their lives. They used exercise mechanisms and improved their mood, particularly regarding stress management. These participants mentioned that they were engaging in more strenuous physical activity in order to recapture the experience of escapism or natural high that they had previously felt after engaging in much less strenuous physical activity for a shorter period of time. Members who scored 24 or higher on the survey mentioned that they experience withdrawal signs and symptoms when they are unable to exercise for an extended period of time. Some of these participants mentioned that their excessive exercise had resulted in disagreements with other members of their family, and that there was a inclinaton to go back to their former levels of activity whenever there was a gap in their schedule for any reason. According to Griffiths (1996, 1997, 2002), the major components of dependency, which are more typically associated with chemical addictions, obviously apply to activities in addition to exercise. This is the case even though chemical addictions are the most common type of addiction. These findings also shed light on the more well-known question of what exactly constitutes dependence and whether or not it is appropriate to use the term "addiction" to describe activity, which is pretty much universally seen in a positive light. Six of the participants acknowledged to having an addiction, but they also indicated that they were unable to stop exercising and that it had turn into a regular part of their lives for them (Warner & Griffiths, 2006). Raising the broader question of conflict that was there to add exercise as an addiction was the failure to recognize the difference between habit and addiction. This is not understood correctly because, in society, this type of behavioural addiction is taken positively and so not included in the DSM(DSM-V American Psychological Association)

The research also supported previous studies that highlighted that in females, the need for exercise is not primary but secondary. Though participants talked about weight loss or shape, there is no clear indication of an eating disorder. Nevertheless, this could not be ruled out as few participants mentioned that they do not feel guilty about eating anything because they exercise and can exercise to adjust. EAI reported that exercise improved their weight, body image, and self-esteem. Most responses are for weight maintenance and looking good or defying age. That is a possible reason for

over-exercising.

Also, female participants who exercised due to weight, body shape, eating disorders, and stress relief were not always negative. In those who scored 11-23. It is more of a habit than a negative behaviour. Due to this very reason, very few women succumb to death in long-distance events compared to men. But at the same time, for those who scored 24 and more on EAI, there was an unyielding commitment to exercise, which led runners to overdo it, which could be harmful to the goal of positive exercise effects (Parra-Camacho et al., 2020). Some responses emphasized that family should be supportive and issues regarding no sex life due to exercise schedule could lead to relationship issues, but the proper explanation could not be explored. It has been found in the literature that the reason for over doing exercise is for arousal purposes (Thompson & Blaton, 1987, Carr et al., 1981).

Because little research has been conducted in the Indian context, the Indian population is still unaware of dysfunctional exercise behaviour (Kumar,2019). Participants were hesitant to admit that they have issues with exercise excess. The Indian society should be made aware of the harmful consequences of over-do of exercise that could lead to physiological and psychological issues in already suffering Indian society. These findings are eye-opening in the context of female runners in India, where female long-distance participation is increasing. The 39% of exerciser who were considered to be at edge of developing an addiction to exercise reported using the activity as a way to vent negative feelings like anger, anxiety, and low self-esteem, as well as for a predisposing issue like obesity " I wanted to be an athlete, but the family didn't support, now I can do that by getting podiums in these events", in addition to coping with the stress of job and relationships. These findings point to the possibility that a person's struggles in other aspects of their life may be the cause of their exercise addiction. The identification of the individual's addiction as well as the challenges they are facing might be of assistance in the process of developing an effective treatment plan.

For the first time in India, female runners are being considered as subjects for dysfunctional exercise running. This could be a storm, as females in India already outnumber males in terms of psychiatric distress. (Kumar 2021). Apart from stress coping, another reason for females' exercise addiction is its association with eating disorders and body shaming. In addition, there is a possibility that this is due to social factors, such as the fact that women have a lower social acceptability of exercise, which results in a higher occurance among females who are able to defeat the social biases that are linked with physical activities. There is a need to educate the community regarding the compulsion to exercise for reasons other than exercise, as it could be compulsive or obligatory behaviour and could lead to more significant stress and anxiety, as happens in other psychological distress like OCD, body shaping, and an eating disorder. (ŽIVČIĆ TOMIĆ et al., 2022) (Dumitru et al., 2019, As well as there is a growing need to have a proper tool that studies exercise more for a secondary reason, as EAI is not enough to find out the secondary reasons behind exercising. (Davis et al., 1995).

Limitation

As the survey was before the event, it could be that the exercise addiction inventory was filled without proper understanding and could have been answered in haste and with a sports-specific feeling. Another limitation is that self-report questionnaire like EAI failed to pin point other secondary reasons behind exercise. There is no awareness in India regarding the harmful effect of exercise, so it is possible that exaggerated answers were made. Weight maintenance is not good or bad; it all depends upon the person who exercises or the amount of outside pressure. All females who participated in long distance in three or more times are included, which could have affected the way EAI answered.

Though the interview and observation methods were adopted, but it was before, during and after the event that only highlighted the physiological problems and the commitment towards the events, not indicative of psychological issues.

Recommendation

There is a need to study addiction in individual exercisers. There is also a need for an objective measure to find out dysfunctional exercise patterns, which could be gender-specific and sports-specific, as the current inventory only talks about exercise, not about a specific sport, as score parameters could differ for different sports. The present instrument only measures excess, which is a good starting tool for professionals and highlights the risk. More study is needed to find out how much the problem is due to exercise as the Indian population combined running with yoga that could subside the harmful effect.

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