

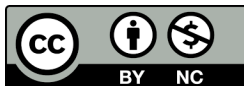
Qualitative study of effective biomedical factors in tendency of retired elite wrestlers to drug abuse; A grounded theory study

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Article Info	Abstract
<p>Original Article</p> <p>Article history:</p> <p>Received: 1 January 2020</p> <p>Revised: 20 January 2020</p> <p>Accepted 1 February 2022</p> <p>Published online: 1 July 2020</p> <p>Keywords:</p> <p>biomedical approaches, drug abuse, grounded theory, retired elite wrestlers.</p>	<p>Introduction: Retirement is one of the difficult events. Athletes should adapt to the difficult experiences and heighten a sense of worth. Drug abuse as a negative coping behavior is a painful reaction to retirement. The aim is to identify the factors influencing the tendency of retired elite wrestlers to drug abuse. With a biomedical approach, this phenomenon was investigated.</p> <p>Materials and Methods: Using the method of contextual theory and semi-structured in-depth qualitative interview technique, factors influencing the tendency of retired elite wrestlers to drug abuse were studied. The data analysis method was coding, done in three stages of open, selective and axial coding. The data are in a paradigm model.</p> <p>Results: Factors such as sexual needs, strenuous exercise and injury were taken as causal conditions; physical pain was taken as a mediating condition; and retirement age and first experience of drug abuse were taken as an intervening condition and physiological need and doping as contextual conditions. These factors created a paradigm model. Athletes' strategies for drug abuse are: leisure purposes, wider variety of drugs, continuity of drug use and finally compulsive drug use.</p> <p>Conclusion: The consequences of drug abuse were initially pleasant and positive, but with continued drug use, it had harmful consequences physically, psychologically and socially.</p>

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1. Introduction

The end of professional athletic career is one of the most difficult and upsetting events that athletes face [1]. Athletes need to adapt to difficult experiences of this period and fulfill a sense of worth in the post-professional period [2, 3]. Findings of the study indicated that 20% of athletes suffered from severe mental problems in response to their retirement. Chae Jin-Seok (2019) stated that because athletes retire much earlier, they face retirement challenges much sooner [4]. Retirement in professional sports is a unique transition that has a significant impact on identity, body and lifestyle changes [5].

Athletes retire for different reasons. Some athletes choose to leave their team unintentionally due to an unexpected removal from the team, injury, or financial problem, which can be a shocking event for the athlete and his family [4]; Other athletes choose voluntary and planned retirement [6]. Involuntary and unplanned retirement in which the athlete has no other choice, leads to problems like emotional stress and increasing states of anger, failure, and non-fulfillment [6]. Psychological conditions of retirement period include doubts about sports, feelings of betrayal of the team, dizziness, dissatisfaction, frustration and anxiety about future jobs [4].

Athletes will probably have their own special problems when their professional life is over. Greater gap in the social status of athletes, during and after their professional period, leads to a more challenging post-professional experience [3]. Buckley et al. (2019) showed that retirement affects three issues: body dissatisfaction and grief, disorders of eating and compensatory behaviors, and also sports culture [5]. A Psychological research

shows that athletes who are about to end their athletic activity or have recently retired, are highly predisposed to addictive behavior [7]. Drug abuse as a negative coping behavior is often a painful reaction to retirement which is probably seen in athletes [1, 8, 9].

Withdrawal from exercise and physical activity decreases endorphin levels and dopamine secretion. When beta-endorphin levels are not secreted normally, they cause symptoms of low mood. Therefore, the person may try to insert, artificially, beta-endorphin to the body. As a result, any method that can increase the serum level of endorphins probably will be able to affect the brain reward system [10]. Investigating the causes of some athletes' tendency to drug abuse during retirement helps design and implements deterrent measures in order to stop drug abuse.

The present study focused on retired elite wrestlers who suffered from drug abuse and examined the understanding of bio-medical factors influencing the tendency of retired elite wrestlers to drug abuse through narrating their experience. Findings were based on those experiences.

2. Materials and Methods

Based on the subject and purpose of this study, the present study was conducted within the framework of a qualitative method and with a grounded theory approach. The study population was retired elite wrestlers with experience of drug abuse. The snowball method was used for sampling. The interview method was deeply semi-structured. After each interview, data analysis was performed by open, axial and selective coding methods. After interviewing 12 subjects, we reached theoretical saturation and the sampling process was stopped. At the beginning of

the interviews, all interviewees were given a consent form stating that they had voluntarily participated in the study, in which the purpose of the study was stated and the researcher promised that all information provided by them would be kept confidential.

Reliability criteria in the qualitative research method of credibility, confirmability, verifiability and transferability proposed by Goba and Lincoln were used. In this study, to improve the reliability of the research, we checked with two interviewees all findings, analyses

and procedures. Another measure of reliability is verifiability [11].

In this study, an attempt was made to consider the diversity of sample dimensions in terms of demographic variables (age, social class and level of education, etc.). It may be possible to claim, with great caution, that the results of this study can be sampled (if interviewees were similar) to some extent. In fact, although this study does not claim to be generalized, it has tried to approach transferability criteria in qualitative methodology.

Table 1. Frequency of interviewees based on age, doping, duration of sports and championship level

Cumulative percentage	Frequency percentage	Frequency	Age	Doping experience	The highest level of championship
16	16	2	20-30		
58	42	5	31-40		
92	34	4	41-50		
100	8	1	50 and more		
Total	100	12			
34	34	4		Yes	
100	66	8		No	
Total	100	12			
17	17	2		<10 years	
83	66	8		10-15 years	
100	17	2		16 years and older	
Total	100	12			
50	50	3			Country champion
67	17	4			International tournaments
75	8	2			Asia
100	25	3			The world
Total	100	12			

3. Findings

We describe the research findings based on the paradigm model of Strauss and Corbin. According to this model, by categorizing the concepts and categories obtained in the coding stages, we have reached an expression of causal conditions, mediating conditions, phenomena, contexts, intervening conditions, action/ interaction

strategies, and consequences.

3.1. Causal conditions in the bio-paradigm of medicine drug abuse in retired elite athletes

Motivation of sexual need. Numerous studies have shown that opiates play a role in enhancing sexual desire. It has been found that men think a lot about sex, want more sex and sexual partners, masturbate more, and perform a range of sexual acts [12]. A positive association between sexual

orientation (i.e. being sexually active, engaging in high-risk sexual behaviors), and drug use has been widely reported in the scientific literature [13, 14]. The subjects also repeatedly referred to the use of drugs to increase libido and prolong sexual intercourse.

Subject 12 said: "I myself in my city had too many dates because I was a good-looking boy and many people knew me. Being a sexually strong man was so much important to me because I wanted to show off my sexual strength in front of my dates. To do so, I mostly used drugs before sex."

Intense training and injury. Another important factor in the biomedical paradigm is the issue of strenuous exercise and injury. Numerous studies have shown that strenuous exercise increases the risk of injury. At the same time, specific exercise events, such as severe sports injuries, cause stress in athletes, which may turn into post-traumatic stress disorder (PTSD). Subica et al. (2012) stated that drug and alcohol use is common in PTSD patients to reduce the symptoms of post-traumatic stress [15]. However, the participants in this study cited that the reasons for their abuse were to improve athletic performance and to reduce the physical pain of the injury. They did not mention the stress feeling of injury. Subject 7 said: "I was doing intense exercises that had the same effect on my injury. My meniscus was torn. And I gave up wrestling. One of the reasons that professional athletes and wrestlers tend to use drugs in elderly is a sport injury."

3.2. Mediating conditions in the bio-medical paradigm of drug abuse in retired elite athletes

Physical pain. Physical pain from strenuous exercise and injury leads athletes to substance abuse. The pain-reducing effect of opioids is a reason for injured

athletes to use drugs. Subject 6 said: "My foot was injured in the wrestling. Later, when I used opium, my pain eased. After a while, we realized that literally it was a painkiller."

3.3. Interventional conditions in the bio-paradigm of medicine Drug abuse in retired elite athletes

Lack of follow-up for sports injuries by relevant organizations. There is a poor management and negligence of the country's sports institutions toward sports heroes. They have no plan for retired athletes and no support for both kinds of retired athletes and retired athletes due to injury. The following solutions such as planning of sports organizations and institutions, support of official personalities, advice from psychologists and professional doctors and team members and players, are considered as a source of adaptation of athletes [16]. Research has shown that the program of implementing institutions is effective in the adaptation and mental transition of athletes to the retirement period [17]. This support can prevent retired athletes from becoming addicted. Subject 9 said: "When my shoulder was injured, I went to the Sports Medicine Federation and they said that they would pay 50% of the cost of the operation. They did not introduce a good doctor. When I was operated on in Akhtar Hospital, I realized that Akhtar Hospital is a teaching hospital. After the operation my shoulder became injured much worse than before and I was wondering why it was so. Finally, it turned out that it was because of the poor performance of the doctors who operated on me. When an athlete is injured, there is no follow-up plan for them."

Improper role models in sports. Improper role models in sports refer to the

non-professional coaches, athletes and the champions who have been around them. Some athletes emulate those role models who use energizers and doping drugs and some athletes imitate those who use drugs. Those athletes who continue using drugs have alibi for their consumption. They say that prominent personalities and celebrities consume drugs too. Subject 11 said: "I was very curious to see what cocaine was. Many people said it was a strong substance. I say that Maradona snorted it; Let me see what it is. I realized it was not everyone's hobby because the price was too high."

Retirement age. North and Lavallee (2004) stated that a sudden withdrawal from the sport for reasons such as not being selected for the team and injury has a negative effect on the morale of athletes and then they are not willing to be in the crowd for a long time [17]. This withdrawal, if it occurs at a younger age, increases the likelihood of high-risk behaviors in the athlete. Hawkins et al. (1992) stated that adolescents who started using drugs before the age of 15 were more likely to become addicted to drugs in adulthood than those who experienced such effects after the age of 19 [18]. Of course, there are people who retire at an older age and despite having more experience, still tend to abuse drugs. They take into account two effective factors: the environment and group of friends. When drug use by friends and peer groups are taken as acceptable and enjoyable, there is a possibility of continued drug use [19]. Subject 8 said: "Look, they say that if one does not use drugs until the age of twenty-two, as they say after youth, then they hardly turn into addiction. But I disagree. At the age of 32, when my youth and sports life were over, I started using drugs."

3.4. Contextual conditions in the bio-medical paradigm of drug abuse in retired elite athletes

Physiological needs. Studies have shown that lack of physical activity in professional post-championship athletes who have previously exercised heavily leads to a change (decrease) in the secretion of certain opioid hormones (dopamine and endorphins) which in turn brings a feeling of lethargy. Drug use increases the transfer of dopamine in the mesolimbic pathway. Drug use, ethanol, cannabinoids, nicotine, and other psychotropic substances increase dopamine in the limbic nuclei [20]. Drugs activated this system are potentially addictive and evoke emotions and compulsion, and do not let athlete see the negative consequences of drug use [21]. This can be one of the most important and motivating factors for athletes to abuse drugs compared to non-athletes. Subject 1 said: "I always felt happy after my workouts. Once I stopped exercising completely, I really did not have this feeling of happiness anymore. When I took the drug, I was refreshed and had fun just like when I would exercise."

Frequent and intense weight loss in exercise. Another factor in this paradigm is frequent and intense weight loss, which is an integral part of weight training, including wrestling. Athletes' excessive attention to weight management leads to obsession and disruption of their diet. While drug abuse (such as diet pills, stimulants, or laxatives) is expected to lead to eating disorders, some athletes may simultaneously experience disorders when using drugs [22]. Activists also said that sometimes when they did not succeed, they became very discouraged and tended to use drugs to escape that mental pressure. Subject 5 said: "I would lose an average of 7 kg. In some tournaments, I lost 10 kg with the help of drugs. I remember an

occasion when I lost 12 kg."

Doping. Doping was one of the factors that many subjects reported as effective factors in the tendency to drug abuse. Two issues can be considered in relation to the doping issue. One issue is energy drugs (anabolic steroids) that have an effect on their tendency to abuse drugs after exercise, and the other is drugs as a means to increase physical strength and or to be freed from the anxiety of competition and the pressure of training. Subject 3 said: "Before the competition, I used drug and went to the field. After the game, I reused opium too."

Weight Loss. One of the negative consequences of drug abuse in the biomedical paradigm is weight loss. Nearly all subjects experienced significant weight loss compared to when playing professional sports. Subject 3 said: "Before I started using Crack cocaine, I weighed 74 kg. Because there was no more training anymore, then my weight became 74, 75 kg. The opium was fine to me. It worked well on my body. After using Crack cocaine, I weighed about 50 kg, which means I lost many things."

Digestive disorders. Another secondary consequence of drug abuse is mentioned as the gastrointestinal disorders. Subject 2 said: "I Used Crack for about a month. My digestive system was not working, which means I had no stools at all."

3.5. Implications for the bio-paradigm of drug abuse in retired elite athletes

The consequences of drug abuse are divided into two general categories, primary and secondary, while primary consequences are being considered usually positive and secondary consequences are negative. Here, we report first the positive consequences and then the negative consequences of

substance abuse.

Primary consequences. Primary consequences of drug abuse are considered: relieve physical pain, enhance sexual desire, improve athletic performance.

Secondary consequences. Secondary consequences of drug abuse are considered: skin discoloration and hair loss, reported by the subjects and have been confirmed in many studies. The physical and physiological effects of the general drug users are similar, and there is no difference between athletes and non-athletes. Subject 12 said: "My skin color had changed a lot; My face had changed a lot too. Lately, I hated to stand in front of the mirror, I did not like to go in front of the mirror, and I hated myself."

4. Results

Those wrestlers, whose first experience of using drugs was during their professional time, had motivations to abuse drugs to increase sexual power and reduce pain during minor injuries. The retired wrestlers, who have experienced drug use for the first time, have had motives like getting rid of problems and relieving their minds. Physiological needs (secretion of opioid peptides released as a result of strenuous exercise), frequent weight loss in wrestling, and the experience of doping, which increases the ability of athletes to do more strenuous exercise, results in production of more opioid peptides in the body. After retirement from sport, the lack of these opioid peptides, which are naturally released in the body, will be strongly felt and consequently the athlete will be urged to use drugs as an alternative.

Factors such as the bad effect of inappropriate sports role models, including great heroes who have had drug abuse after retirement, intensify the desire for drug

abuse. Retirement age and how athletes are retired, are considered as other interfering factors that lead to drug abuse. If retirement happens at an earlier age and without planning (for example because of an injury), the likelihood of drug abuse will increase. Non-follow-up actions of sports injuries by relevant organizations play an important role in interfering with drug addiction, because if athletes' injuries are not followed up and treated, athletes will lose hope of returning to sports, and this problem plays a role in their tendency to abuse drugs. The subjects also stated that in the first time of drug abuse, they reported these experiences: pleasant experiences such as relieving physical pain for those

who have suffered physical injuries, enhancing sexual desire, feeling refreshed and improving athletic performance. They continue to use drugs in order to keep on their professional life. Athletes' curious and challenging spirits make them to experience different types of drugs, and gradually change from a form of entertainment into a form of compulsion and addiction. Subjects at the first follow strategies such as rich nutrition as well as exercise to hide drug abuse. But after a period of time, they are forced to continue. In addition to the psychological and social effects of addiction, they suffer from physical effects such as weight loss, digestive disorders, hair loss, and muscle weakness.

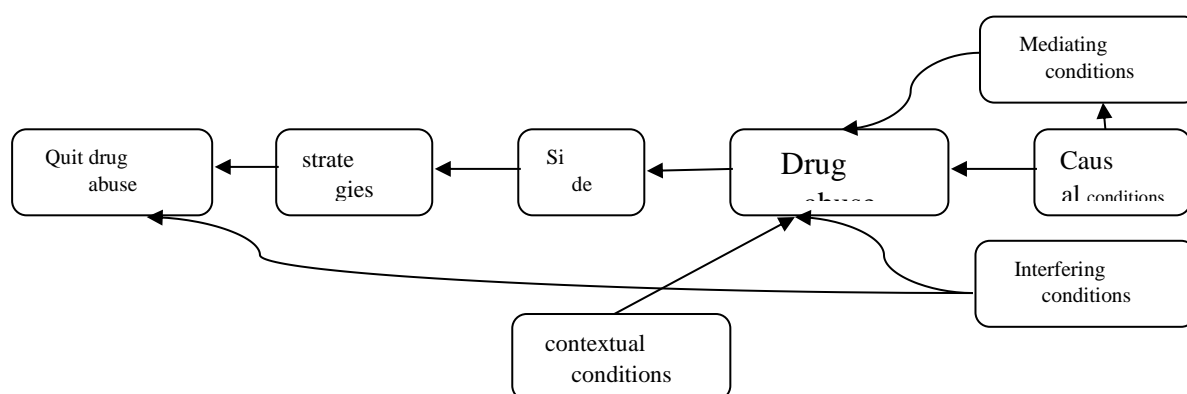


Figure 1. The pattern of the bio-world journey of sports actors from drug use experience to drug withdrawal

5. Discussion

A number of wrestlers have reported using drugs for the first time during adolescence or during wrestling, mostly for pleasure, sex, and doping. However, many wrestlers have stated that they have started using drugs for the first time by the end of their wrestling life. Their motive has been moving away from problems and getting psychological relief. They also cited the impact of sports role models, retirement age, and lack of follow-up by the time of sports injuries by relevant organizations as interfering factors in drug addiction. They

stated that the experience of doping, frequent weight loss and stress, sports injuries, physical pain and physiological needs (reduced levels of secretion of certain hormones) have influenced their tendency to use drugs.

They pursue strategies such as nutrition in order to hide their drug abuse. After being forced and continuing to use, they suffer from social, psychological and physical complications such as weight loss, digestive disorders, hair loss, and muscle weakness.

Paradigm model of the phenomenon of addiction of retired elite athletes from a bio-medical perspective

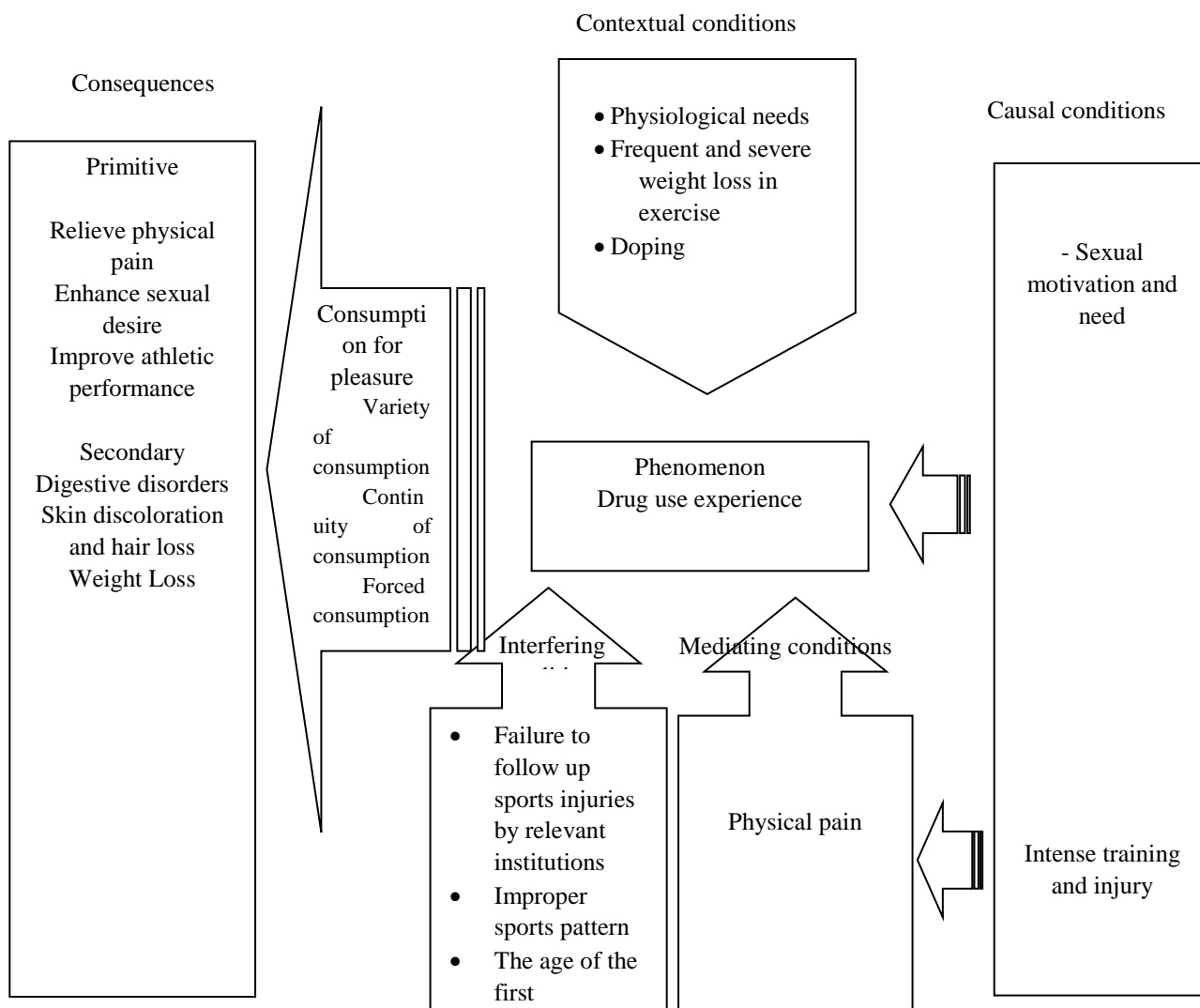


Figure 2. Paradigm model of the phenomenon of addiction of retired elite athletes from a bio-medical perspective

6. Conclusions

Many wrestlers have started using drugs for the first time by the end of their wrestling life. Their motive has been moving away from problems and getting psychological relief. They also cited the impact of sports role models, retirement age, and lack of follow-up by the time of sports injuries by relevant organizations as interfering factors in drug addiction. They stated that the

experience of doping, frequent weight loss and stress, sports injuries, physical pain and physiological needs (reduced levels of secretion of certain hormones) have influenced their tendency to use drugs.

It is suggested that another study can be conducted on the characteristics of the transition period of athletes from professional sports to retirement in order to better identify the factors affecting the

quality transition period and then plan to improve the retirement conditions of the champions.

It is also suggested that a similar study can be conducted for team athletes to find out the differences between team disciplines and individual disciplines in the factors affecting the transfer period. The same research can be done in the community of younger and non-elite athletes who tend to abuse drugs to identify the factors that affect their tendency.

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