

## **FACTORS AND HEALTH CONSEQUENCES ASSOCIATED WITH DOPING AMONG CHESS PLAYERS OF PAKISTAN**

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### **ABSTRACT:**

*Doping is a severe problem in sports; many athletes use various substances to promote/enhance their performance without awareness of the side effects. So, this research study assessed the factors responsible for doping among Chess players in Pakistan. The researcher applied a qualitative approach to achieve the desired results/conclusion. The study population comprised all the Chess players of Pakistan; thus, a representative sample using the LR-Gay (1998) formula was applied. For data collection, the researcher developed a Likert-type scale under the supervision of his research supervisor; thus, validity and reliability were also ensured. For data collection, the developed questionnaire was personally served by the researcher and collected after the respondents filled it out. The collected data were tabulated and analyzed using Statistical Package for Social Sciences (SPSS, version - 26); thus, suitable statistical tools were applied, and thus, based on analysis, the researcher concluded that social factors like fame, peer pressure, encounter jealousy, fun and mainly responsible factors caused doping among Chess players.*

*Similarly, the researcher concludes that anxiety, stress, fear of Loss, and fear of coach are psychological causative agents of doping. The researcher also concluded that many athletes use drugs/doping to improve stamina, focus and neuromuscular coordination, which is also responsible for doping among athletes. Finally, the researcher also concluded that many athletes are aware of doping and its side effects, but due to the above-stated factors, they are involved in doping*

**Keywords:** *Doping, Substances, Fear of coach, Factors, Stamina, Chess player.*

### **INTRODUCTION:**

Drugs are commonly used to avoid health issues, maintain fitness, and enhance performance. Athletes use several drugs to improve performance and achieve the desired results in sports. Usage of these drugs has short-term benefits while having long-lasting, many side effects. Various illegal substances have been used secretly to enhance performance, fast injury recovery, and

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relax the body. The World Anti-doping Agency (WADA) stresses the use of illicit drugs in sports. Thus, WADA created strict rules for controlling doping (Park, 2005).

The International Olympic Committee (IOC) has faced doping issues for over five decades among international athletes. IOC has taken different steps to create awareness among athletes through various educational programs, tests, and medical disorders arising after using illegal substances (Ljungqvist et al., 2009).

According to WADA (2013), the test ratio had increased by more than 20%, which is higher than the previous record of 2012 (Adeola et al., 2020). In the general population, a meta-analysis of a study conducted by (Sagoe et al., 2014) done in the African region between 1970-2013 found a 2.4% lifetime prevalence of anabolic-androgenic steroid use

The drug-free policy has been more strict and transparent so athletes can get equal chances; multiple diagnostic techniques, such as blood test sampling, are taken to recognize the guilty athlete who has taken illegal drugs with higher punishment (Ewen, 2011).

Quick performance, team influence, family pressure, and enhancing injury recovery doping among athletes. Every athlete wants victory and performance improvement in sports; likewise, athletes sometimes adopt illegal ways for the said purpose. This has been indicated that athletes use performance-enhancing drugs to increase self-confidence, financial obtain and social recognition among themselves (Kirby et al., 2011).

Physical and psychological satisfaction and desire to achieve optimal performance and success quickly may lead athletes to use illegal drugs. In addition, the influence of peers, motivation, lack of social support, desire to please coaches, mother & father, the public, and media are also factors responsible for doping among athletes (Weber et al., 2022).

Considering the above critical discussion of the various researchers, it is clear that doping is the cause which creates so many health complications for athletes, so what factors are responsible for the global problem of sports? This research study will be conducted by targeting Chess players in Pakistan. Further, the detailed research gap, objectives, hypotheses and significance are below.

Due to their extraordinary potential for performance enhancement and the fact that they are almost identical to their endogenous counterparts, doping agents pose a severe threat to sports and provide a problematic scientific challenge to clinical scientists. As detailed below, there are documented incidents of abuse of recombinant proteins, and there are also established methods for detecting some of them. However, this remains one of the most challenging tasks in doping detection (Azzazy et al. 2005).

### **STATEMENT OF THE STUDY:**

Chess is the national game of Russia, and thus, it is not only confined to Russia but is also one of the most popular games around the globe. It is considered a mind sport because it involves the processing or functional approach of the brain. In Chess, Amphetamines (Adderall, Ritalin, Ephedrine, Methylephedrine, Pseudoephedrine, Modafinil, Caffeine and Codeine substances are commonly used by athletes for the improvement of psychological functions (Shaw, 2021). World Chess Federation (FIDE) was founded on 20<sup>th</sup> July 1924. Nowadays, 199 countries are affiliated with FIDE, and thus Pakistan is placed 100<sup>th</sup> in the 42<sup>nd</sup> Chess Olympiad 2016 hosted by Baku, Azerbaijan. As the most popular game, most athletes use different kinds of performance-enhancement drugs. What factors are responsible for this entire sports situation about Chess? To discover the facts, this researcher intended to conduct a study titled "Factors Associated with Doping among Chess Players of Pakistan."

Likewise, the study's primary purpose was to determine the factors responsible for doping in sports among Chess players in Pakistan. According to the desire to achieve high performance, fame and success are considered causative solid agents in a short time. In addition, improving the recovery rate from injury is also considered a dominant factor responsible for doping in sports (Lippi & Maffulli, 2010). Therefore, this study will help clarify all those factors accountable for doping in mind sports, particularly Chess in Pakistan. Likewise, based on findings and conclusions, the researcher will suggest some remedies to help the readers/concerned authorities find out the causative factors and solutions for this universal problem.

### **METHODOLOGY OF THE STUDY:**

To reach specific findings and conclusions, the researcher adopted the following procedures. As this study is concerned with factors responsible for doping among Chess players, thus the researcher adopted qualitative research. Considering the nature of the analysis, two types of data were collected, i.e., primary data through a questionnaire and secondary data through related literature. The population of this particular research study comprised all the registered players of different Chess clubs in Punjab, Pakistan. As per the official record of the Chess Federation of Punjab Pakistan, it is around two thousand (2000). Therefore, it is difficult for a researcher to select the whole population per the LR Gay formula. Thus, the researcher used the available sample to choose one hundred seventy-four (174) respondents. For data collection, the researcher developed a Likert-type scale under the supervisor of his research supervisor. The developed scale was sent to the filed expert for validity, and similarly, the reliability process was also ensured. The researcher personally served the final scale among the respondents and collected it back after the respondents filled it out. The collected data was processed through a statistical package for social sciences (SPSS, version-26), and thus, suitable statistical tools were applied.

## **PRESENTATION AND ANALYSIS OF DATA:**

**Table No.1**  
**Showing the Demographic Attributes of the Respondents**

<b>Variables</b>	<b>Mean</b>	<b>SD</b>	<b>T</b>	<b>Df</b>	<b>P</b>
Age	1.32353	.38235	45.134	169	.000
Gender	.79412	.45699	22.657	169	.000
Level of Participation	1.04118	.49977	27.163	169	.000

The above table shows the demographic attributes of the respondents. The total number of respondents was 174; thus, the data was expressed as mean, standard deviation, t value, df and p value. The mean and standard deviation (SD) of the age was  $1.32 \pm .38235$ , df was 169, t value was 45.134, and the level of significance was .000; the mean and standard deviation (SD) of the gender was  $.79 \pm .45699$ , df was 169, t value was 22.657 and level of significance was .000, the mean and standard deviation (SD) of the level of participation was  $1.04 \pm .49$ , df was 169, t value was 27.163 and level of significance was .000.

**Table No.2**  
**Shows the Descriptive Analysis of Trend of Doping among the Respondents**

<b>Variables</b>	<b>Mean</b>	<b>SD</b>	<b>T</b>	<b>Df</b>	<b>P</b>
Use a special dietary plan?	1.86471	1.40031	17.362	169	.000
Use energy drink?	1.77647	1.36743	16.939	169	.000
Use cigar/Smoke/Vape	1.57647	1.30997	15.691	169	.000
Use drugs/doping?	1.40588	1.33787	13.701	169	.000
Performed doping Testing	1.68824	1.43493	15.340	169	.000
Familiar with side effects of Doping	2.8000	1.61208	18.602	169	.000

The above table shows the trend of doping among the respondents. The total number of respondents was 174; thus, the data were expressed as mean, standard deviation, t value, df and p value. The mean and standard deviation (SD) of the dietary plan was  $1.86 \pm 1.40$ ; df was 169, t value was 17.362, and the level of significance was .000; the mean and standard deviation (SD) of the energy drink was  $1.77 \pm 1.36$ , df was 169, t value was 16.939 and level of significance was .000, The mean and standard deviation (SD) of the Cigar/smoke/vape was  $1.57 \pm 1.30$ , df was 169, t value was 15.691 and significance level was .000, The mean and standard deviation (SD) of the Drug/doping was  $1.40 \pm 1.33$ , df was 169, the t value was 13.701, and the significance level was .000, The mean and standard deviation (SD) of the Doping test was  $1.68 \pm 1.43$ , and df was 169, the t value was 15.340, and the level of significance was .000, The mean and standard deviation (SD) of the Side effects was  $2.8000 \pm 1.61$ , and df was 169, t value was 18.602, and the level of significance was .000,

**Table No. 3**  
**Shows the descriptive information of respondents regarding psychological factors**

Variables	Mean	SD	T	Df	P
Use drugs/ doping to control anxiety?	1.94118	1.51504	16.706	169	.000
Use drugs/ doping to control stress?	1.94118	1.53058	16.536	169	.000
Use drugs due to fear of Loss?	1.60588	1.42275	14.717	169	.000
Use drugs/ doping due to fear of Coach?	1.42899	1.31191	14.160	168	.000

The above table shows the psychological factors responsible for doping among the respondents. The total number of respondents was 174; thus, the data were expressed as mean, standard deviation, t value, df and p value. The control anxiety's mean and standard deviation (SD) was  $1.94 \pm 1.51$ , the df was 169,

the t value was 16.706, and the significance level was .000, The control stress's mean and standard deviation (SD) was  $1.94 \pm 1.53$ , df was 169, the t value was 16.536, and the significance level was .000, The mean and standard deviation (SD) of the fear of Loss was  $1.60 \pm 1.42$ , df was 169, the t value was 14.717, and the significance level was .000, The mean and standard deviation (SD) of the fear of the coach was  $1.42 \pm 1.31$ , df was 168, the t value was 14.160, and the significance level was .000.

**Table No. 4**  
**Showing the Descriptive Analysis of Respondents regarding**  
**Physiological Factors Caused Doping among the Respondents**

Variables	Mean	SD	T	Df	P
Use drugs/ doping medications to control the mental stress?	1.70000	1.39992	15.833	169	.000
Use drugs/ doping to improve mental stamina & focus?	1.71176	1.47238	15.158	169	.000
Use drug/ doping to enhance mind alertness?	1.76471	1.49771	15.363	169	.000
Use drug/ doping to improve neuromuscular coordination?	1.82941	1.50650	15.833	169	.000

The above table shows the physiological factors responsible for doping among the respondents. The total number of respondents was 174; thus, the data were expressed as mean, standard deviation, t value, df and p value. The mean and standard deviation (SD) of the control mental stress was  $1.70 \pm 1.39$ , df was 169, t value was 15.833, and the level of significance was .000; the mean and standard deviation (SD) of the improved mental stamina & focus was  $1.71 \pm 1.47$ , df was 169, t value was 15.158 and level of significance was .000, The mean and standard deviation (SD) of the mind alertness was  $1.76 \pm 1.49$ , df was 169, the t value was 15.363, and the significance level was .000, The mean and standard deviation (SD) of the neuromuscular coordination was  $1.82 \pm 1.50$ ; df was 169, the t value was 15.833, and the significance level was .000.

**Table No. 5**  
**Shows the Descriptive Analysis of Respondents regarding**  
**Financial Factors Caused Doping among the Respondents**

Variables	Mean	SD	T	Df	P
Use drugs/ doping due to fear of losing sponsorship?	1.57059	1.32154	15.496	169	.000
Use drugs/ doping to win titles/ prizes/ trophies?	1.75294	1.44346	15.834	169	.000

The above table shows the financial factors responsible for doping among the respondents. The total number of respondents was 174; thus, the data were expressed as mean, standard deviation, t value, df and p value. The mean and standard deviation (SD) of the losing sponsorship was 1.57  $\pm$ 1.32, df was 169, t value was 15.496, and the level of significance was .000; the mean and standard deviation (SD) of the win title/prize/trophy was 1.75  $\pm$ 1.44, df was 169, t value was 15.834 and level of significance was .000.

**Table No.6**  
**Shows the Descriptive Analysis of Respondents regarding**  
**Social Factors Caused Doping among the Respondents**

Variables	Mean	SD	T	Df	P
Use drugs/ doping due to winning/ Familiarity?	1.65294	1.43090	15.062	169	.000
Use drugs/ doping to win the title as a result of peer pressure?	1.76471	1.42066	16.196	169	.000
Encounter Jealousy influences is the cause of the use of drugs to capture desired results	1.70588	1.40117	15.874	169	.000
Use drugs/ doping for fun?	1.72353	1.49853	14.996	169	.000



The above table shows the social factors responsible for doping among the respondents. The total number of respondents was 174; thus, the data were expressed as mean, standard deviation, t value, df and p value. The mean and standard deviation (SD) of the winning/familiarity was  $1.65 \pm 1.43$ , df was 169, t value was 15.062, and the significance level was .000, The mean and standard deviation (SD) of the peer pressure was  $1.76 \pm 1.42$ ; df was 169, the t value was 16.196, and the significance level was .000, The mean and standard deviation (SD) of the encounter jealousy influence was  $1.70 \pm 1.40$ , df was 169, t value was 15.874, and the significance level was .000, The fun factor's mean and standard deviation (SD) was  $1.72 \pm 1.49$ ; df was 169, the t value was 14.996, and the significance level was .000.

### **CORRELATION ANALYSIS:**

**Table No. 7**  
**Results of Pearson Correlation Analysis of the Study**  
**Variables (n=169)**

	Social	Psychological	Physiological	Financial	Chess Sports Participation
Social	1	0.00	-0.06	0.00	0.00
Psychological		1	0.00	0.00	0.00
Physiological			1	0.00	0.00
Financial				1	0.00
Chess Sports Participation					1

\*. Correlation is significant at the 0.05 level (2-tailed), \*\*. Correlation is significant at the 0.01 level (2-tailed).

Table 5 shows the results of the correlation analysis of the study variables. The results show that Chess sport participation has a significant ( $p < 0.05$ ) correlation with social ( $r = 0.00$ ), Psychological ( $r = 0.00$ ), Physiological ( $r = 0.00$ ), finance ( $r = 0.00$ ) and Chess sports participation ( $r = 0.00$ ).

## **DISCUSSION:**

Based on the analysis, the researcher concluded that social factors such as winning/Familiarity, peer pressure, and jealousy are all responsible for doping among chess players. The mean and standard deviation (SD) of the winning/familiarity was  $1.65 \pm 1.43$ , df was 169, t value was 15.062, and the significance level was .000, The mean and standard deviation (SD) of the peer pressure was  $1.76 \pm 1.42$ ; df was 169, the t value was 16.196, and the significance level was .000, The mean and standard deviation (SD) of the encounter jealousy influence was  $1.70 \pm 1.40$ , df was 169, t value was 15.874, and the significance level was .000, The mean and standard deviation (SD) of the fun factor was  $1.72 \pm 1.49$ ; df was 169, the t value was 14.996, and the level of significance was .000. In line with the above findings, the study conducted by Petroczi & Aidman, (2008); Wiefferink et al., (2008) indicated that in terms of social aspects, it is well established that athletes in a doping-prone or drug-using group may be more likely to use drugs themselves Furthermore, social factors, such as direct interaction with athletes who take performance-enhancing drugs, may have a role. Few studies have evaluated athletes' views towards doping while considering various sports (such as resistance sports versus non-resistance sports). This must understand the factors that influence when and why some athletes use performance-enhancing drugs and the factors that influence when and why others don't.

The study also found that stress, anxiety and arousal are psychological factors responsible for doping among athletes. The mean and standard deviation (SD) of the control anxiety was  $1.94 \pm 1.51$ , df was 169, t value was 16.706, and the level of significance was .000; the mean and standard deviation (SD) of the control stress was  $1.94 \pm 1.53$ , df was 169, t value was 16.536 and level of significance was .000, The mean and standard deviation (SD) of the fear of Loss was  $1.60 \pm 1.42$ , df was 169, the t value was 14.717, and the significance level was .000, The mean and standard deviation (SD) of the fear of coach was  $1.42 \pm 1.31$ , df was 168, t value was

14.160, and the significance level was .000. Such an emerging concept is supported by Petroczi (2007). According to the findings of Petroczi (2007), win orientation impacts doping attitudes in terms of psychological aspects. Likewise, the study of Sarouses et al. (2010) found that sports motivation showed that extrinsically motivated athletes have a positive attitude towards doping.

The study also found that mental stress, mental focus, mind alertness, and neuromuscular coordination are physiological factors that cause doping among Chess players. The mean and standard deviation (SD) of the control mental stress was  $1.70 \pm 1.39$ , df was 169, t value was 15.833, and the level of significance was .000; the mean and standard deviation (SD) of the improved mental stamina & focus was  $1.71 \pm 1.47$ , df was 169, t value was 15.158 and level of significance was .000, The mean and standard deviation (SD) of the mind alertness was  $1.76 \pm 1.49$ ; df was 169, t value was 15.363 and significance level was .000, The mean and standard deviation (SD) of the neuromuscular coordination was  $1.82 \pm 1.50$ ; df was 169, the t value was 15.833, and the significance level was .000. Same findings were also drawn by Statler and DuBois (2016). According to the results of Statler and DuBois, athletes' perceptions can either be positive (eustress) or harmful (distress). Even though both cause physiological arousal, eustress generates positive mental energy, while distress creates anxiety. The author further stated that it is essential that an athlete has the tools and ability to cope with these stressors to have the capacity to manage both acute and chronic stress. As such, it is essential to understand the types of stressors collegiate athletes are confronted with and how these stressors impact an athlete's performance, both athletically and academically.

The study also found that financial factors are also involved in causative agents of doping among chess players. The mean and standard deviation (SD) of the losing sponsorship was  $1.57 \pm 1.32$ , df was 169, t value was 15.496, and the level of significance was .000; the mean and standard deviation (SD) of the win title / prize /

trophy was  $1.75 \pm 1.44$ , df was 169, t value was 15.834 and level of significance was .000. Likewise, findings of the study conducted NACADA (2014) noted that factors contributing to doping among the youth are varied. The most visible factors are socio-psychological, cultural characteristics and economic factors that include economically unstable families, peer pressure influences, foreign socio-cultural influences, psychological states within the individual (for example, the search for identity, the quest for ultimate fun, curiosity and negative self-image); the unavailability of legitimate economic opportunities and the availability of illegitimate economic opportunities such as locally available markets for the drugs. Sports have a significant social-economic impact, which influences income. Approximately Kshs.500 million (US\$ 5,000,000) annually is earned by athletes in prize money and endorsements in Europe, Asia, and America, and it returns to the local economy. Many youths are attracted to sports since it is increasingly considered a tool or platform through which broader social objectives can be achieved. It contributes to positive societal change in several ways, including social justice, social exclusion, global social movements, poverty and homelessness (New York Times, 2008).

### **CONCLUSION:**

Based on the findings, the researcher concluded that social factors like fame, peer pressure, encounter jealousy, and fun were the main factors responsible for doping among Chess players. Similarly, the researcher concludes that anxiety, stress, fear of Loss, and fear of coach are psychological causative agents of doping. The researcher also concluded that many athletes use drugs/doping to improve stamina, focus and neuromuscular coordination, which is also responsible for doping among athletes. Finally, the researcher also concluded that many athletes are aware of doping and its side effects, but due to the above-stated factors, they are involved in doping.

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