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Assessment the Knowledge of Gem Attendance about the Side Effects of Hormones

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Abstract: ***Background:*** *The use of hormones and nutritional supplements has become prevalent worldwide. Even more alarming is the fact that multiple studies have shown that a considerable number of people who consume these enhancements sought no medical advice before taking them. The use of human growth hormones in sport today is not only based on its anabolic properties, but also on its effect on carbohydrate and fat metabolism.* ***Methodology:*** *This was a cross-sectional study, and data was collected using a self-administered questionnaire. The questionnaire include the sociodemographic data (age, BMI, smoking history), questions about types of hormones available (steroids and growth hormones), and Awareness of the side effects of and hormones and whether respondents had suffered any adverse effects were also investigated.* ***Results****: In the present study 97.06% of study participants use testosterone. 23.53% of participants on hormone courses use Dihydrotestosterone. Some of the participants (5.88%) uses non specified androgenic steroids. Other participants use Growth hormone (5.88%). most of the study participants were unaware the side effects associated with hormones and they answered "No" when they have been asked about these side effect. The participants were mainly aware of the weight gain [26 participants(76.47%)], psychiatric problem[20participants(5***8.82*%)], *increase RBC [19participants(5***5.88*%)] *and breast enlargement[18 participants [52.94%].****Conclusion:*** *Testosterone was the most popular hormone used among bodybuilding athletes. Majority of study participants were not aware of the possible side effects of the dietary supplements and hormones in spite of using them regularly.*

Keywords: Hormones, Athletes, Testosterone, Human growth hormones

1. INTRODUCTION

The use of hormones and nutritional supplements has become prevalent worldwide. Even more alarming is the fact that multiple studies have shown that a considerable number of people who consume these enhancements sought no medical advice before taking them[(1-4)]. Although the hormone in the body is rather heterogeneous, the major component is made up of 191 amino acids, stabilised by two disulphide bonds and reaching a molecular weight of 22 kDa[(5,6)].

The use of human growth hormones hGH in sport today is not only based on its anabolic properties, but also on its effect on carbohydrate and fat metabolism. International federations and the International Olympic Committee have had hGH on the list of forbidden compounds since 1989, when it became obvious that the development of biotechnology products based on the recombination of DNA made hGH much more easily available on the regular and black markets[(7)].

There are few controlled studies on the effectiveness of GH on the performance of top level athletes. In general these studies have been performed with supraphysiological dosages but not with the large amounts claimed to be effective, for instance, by bodybuilders. The results of most of these controlled studies are generally less impressive than the claims of those who misuse the substance. A study of volunteers under heavy resistance training found decrease of free fatty mass but no difference in the muscle strength[(8)]. With weight lifters, it has been shown that short term GH treatment does not increase muscle protein synthesis more than placebo[(9)] or other factors such as maximal voluntary strength (biceps or quadriceps) [(10)].

In Al Ain, United Arab Emirates, a study of gym users showed a very high prevalence of the misuse of anabolic steroids (22%). Most (59%) users believed that the benefits of using anabolic steroids outweighed the risks. It is possible that some steroid users may have selectively declined to participate in the study for this reason([11)].

2. METHODOLOGY

2.1. Study design

This was a cross-sectional study, and data was collected using a self-administered questionnaire. The survey was conducted at randomly selected gyms in Baghdad. . The information was collected from 34 (17-48 years) participant. Written permission was obtained from the gym administrators agreeing to participate in the study. The researchers were available to supervise the distribution and collection of the questionnaires and answer any questions posed by participants. Gym employees were not part of this process.

A predesigned questionnaire was used to collect the data. The questionnaire include the sociodemographic data (age, BMI, smoking history), questions about types of hormones available (steroids and growth hormones), and Awareness of the side effects of and hormones and whether respondents had suffered any adverse effects were also investigated. Possible known side effects of

hormones were listed, and the participants were asked to give their opinions as follows: Yes = it is a possible side effect, No = it is not a side effect or I do not know. Responses of "NO" or "I do not know" regarding well-known side effects were considered incorrect and indicated a lack of knowledge and awareness.

All gym members who were in the gym at the time of the survey were included. Informed consent was obtained from the participants, who were then asked to complete the predesigned questionnaire. We excluded only two incomplete questionnaires.

2.2. Statistical analysis

Data were processed using Microsoft Excel. Descriptive analysis included calculation of means and standard deviations (SDs) for continuous variables and frequencies and percentages for categorical variables.

3. RESULTS

3.1. Main Sociodemographic characteristics of study participants

In the present study the mean age was (27.72± 6.58) and mean BMI was (28.47± 7.55) of study participants. People who not smoke represent 58.82%.

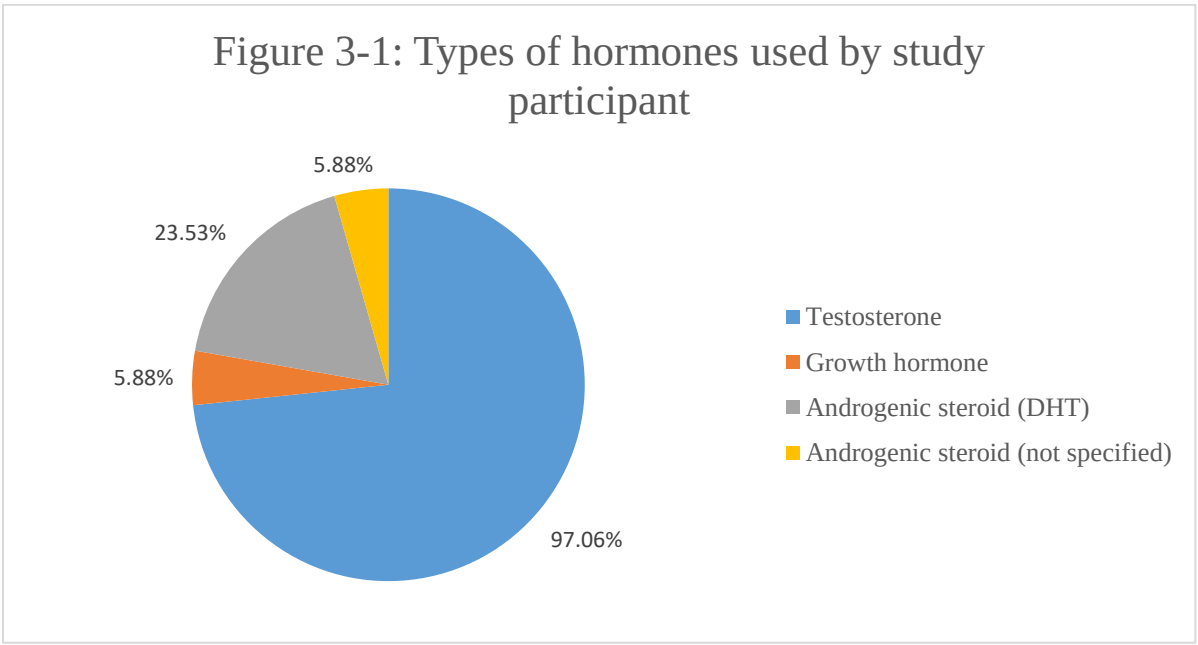
Table 3-1: Main Sociodemographic characteristics of study participants.

Variable		**Study participants**	
Body mass index(BMI) kg/m^2		**28.47 ± 7.55**	
Age (years)		**27.72 ± 6.58**	
		N	**%**
Smoking status	**Smoker**	**14**	**41.18%**
	Non smoker	**20**	**58.82 %**

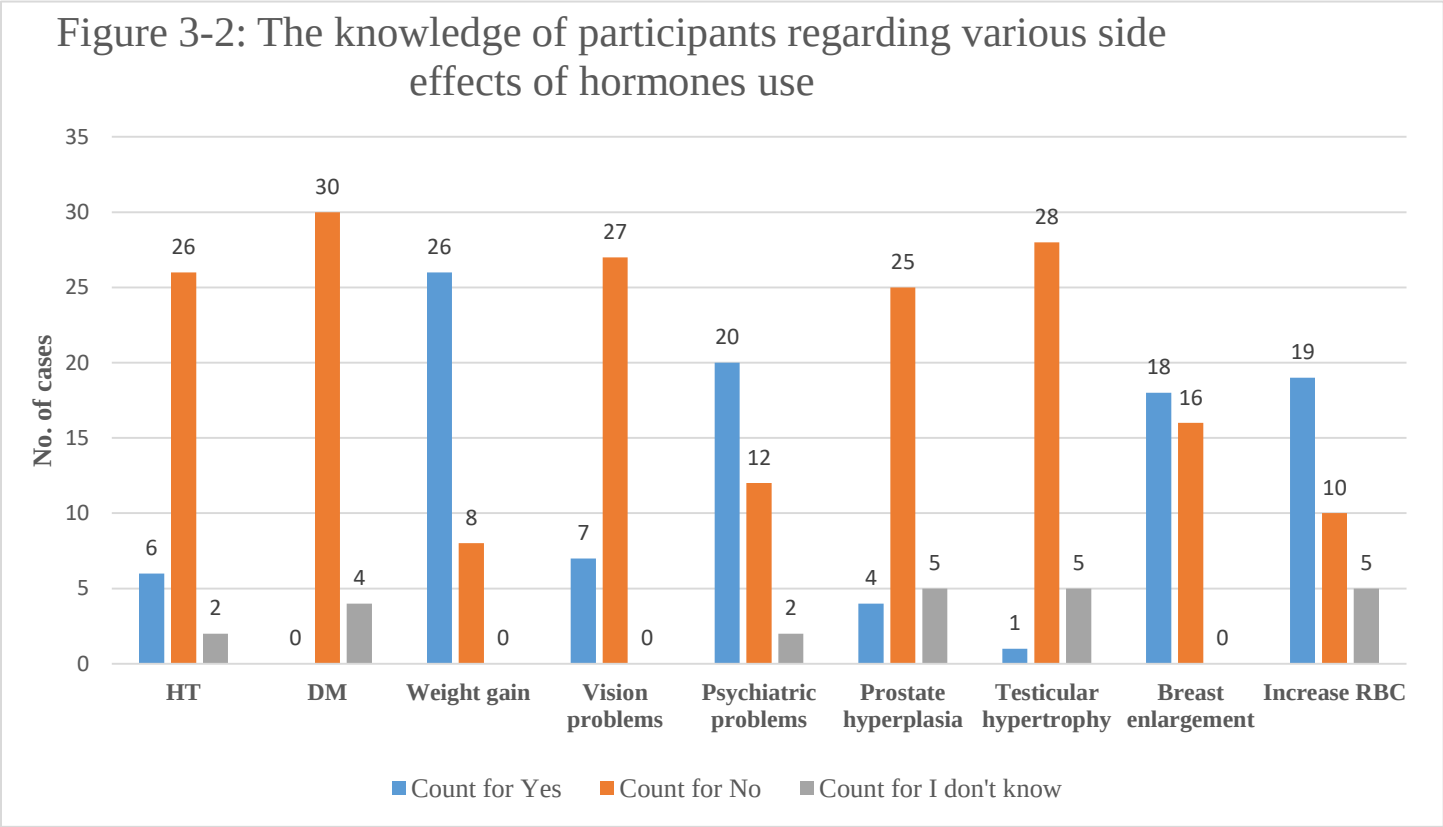
Data presented as mean, number and percentage

3.2. Types of hormones used by study participant

Figure (3-1) showed that 97.06% of study participants use testosterone which is the most popular hormone among bodybuilding athletes. 23.53% of participants on hormone courses use Dihydrotestosterone. Some of the participants (5.88%) uses non specified androgenic steroids. Other participants use Growth hormone (5.88%).



Figure(32): Types of hormones used by study participant



3.3. The knowledge of participants regarding various side effects of hormones used

Figure (3-2) showed that most of the study participants were unaware the side effects associated with hormones and they answered "No" when they have been asked about these side effect. The participants were mainly aware of the weight gain [26 participants(76.47%)], psychiatric problem[20participants(58.82%)], increase RBC [19participants(55.88%)] and breast enlargement[18 participants [52.94%].

Figure (3-2): The knowledge of participants regarding various side effects of hormones used

4. DISCUSSION

The present study showed that the mean age of study participate was (**27.72 ± 6.58**) this indicates growing awareness about fitness and aesthetics among the younger generation Similarly, Karthik *et al* founded that 42% of the study participants were aged between 26-30 years. And a small group aged between 15 to 20 years[12]. People who not smoke in this study represent 58.82% due to their needing to have healthy and fit body. In similar, other study founded that 65.3 % of the study participant were non-smokers[13].

The present study showed that among 20.86% of hormones users, 97.06% used testosterone which is the most popular hormone among bodybuilding athletes, and 23.53% used dihydrotestosterone which is the precursor for testosterone formation.

A study of heavy testosterone use among bodybuilders by Westerman et al, showed that 81% reported using 400 mg or more of testosterone per week among hormonal consumers[14]

The present study showed that among the hormones users, 97.06% used testosterone which is the most popular hormone among bodybuilding athletes, and 23.53% used dihydrotestosterone which is the precursor for testosterone formation.

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Clearly, the study participants lacked valid information, proper medical advice, and checkups. A high percentage of those in the current study who took hormones have experienced some side effects, but the adverse effects did not create enough discomfort to make the users stop taking them. Similar results were obtained by Tian et al., where 86.4% of university athletes in Singapore were unaware that supplements can adversely affect health[(1)]. A large proportion of participants used hormones and nutritional supplements without any medical guidance or checkup. The coaches played an important role in encouraging gym members to use nutritional supplements and hormones.

a study by El Khoury and Antoine Jonville signifies that most of the coaches, trainers and the users had limited knowledge about hormones and nutritional supplements. Many of them were unaware about the possible side effects of these products[(15)]. This indicates the need for further research on the knowledge base of gym trainers about nutrition supplements and hormones.

5. CONCLUSION

Majority of study participants were young (mean age;27.72± 6.58).Testosterone was the most popular hormone used among bodybuilding athletes. Majority of study participants were not aware of the possible side effects of the hormones in spite of using them regularly.

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REFERENCES

1. Tian HH, Ong WS, Tan CL. Nutritional supplement use among university athletes in Singapore. Singapore Med J. 2009;50:165–72.

2. Al-Falasi O, Al-Dahmani K, Al-Eisaei K, Al-Ameri S, Al-Maskari F, Nagelkerke N, et al. Knowledge, attitude and practice of anabolic steroids use among gym users in Al-Ain district, United Arab Emirates. Open Sports Med J. 2008;2:75–81. [Google Scholar]

3. Aljaloud SO, Ibrahim SA. Use of dietary supplements among professional athletes in Saudi Arabia. J Nutr Metab. 2013;2013:245349. [PMC free article] [PubMed] [Google Scholar]

4. Froiland K, Koszewski W, Hingst J, Kopecky L. Nutritional supplement use among college athletes and their sources of information. Int J Sport Nutr Exerc Metab. 2004;14:104–20.

5. Li C H, Dixon J S. Human pituitary growth hormone. The primary structure ot the hormone: revision, Arch Biochem Biophys 1971233–236.

6. Niall H D. Revised primary structure for human growth hormone. Nat New Biol 197123090–91.

7. Wu Z, Bidlingmaier M, Dall R.*et al* Detection of doping with human growth hormone. Lancet 1999353895

8. Yarasheski K E, Campbell J A, Smith K.*et al* Effect of growth hormone and resistance exercise on muscle growth in young men. Am J Phys 1992262(3 Pt 1)E261–E267.

9. Yarasheski K E, Zachweija J J, Angelopoulos T J.*et al* Short-term growth hormone treatment does not increase muscle protein synthesis in experienced weight lifters. J Appl Phys 1993743073–3076.

10. Deyssig R, Frisch H, Blum W F.*et al* Effect of growth hormone treatment on hormonal parameters, body composition and strength in athletes. Acta Endocrinol 1993128313–31

11. Al-Falasi O, Al-Dahmani K, Al-Eisaei K, Al-Ameri S, Al-Maskari F, Nagelkerke N, et al. Knowledge, attitude and practice of anabolic steroids use among gym users in Al-Ain district, United Arab Emirates. Open Sports Med J. 2008;2:75–81.

12- Karthik S, Sonawane B, Knowledge and Use of Dietary Supplements in Gym Going Population of Thane District, India. International Journal of Innovative Research in Science, Engineering and Technology. 2017;6(5):9611-16.

13- Alshammari SA, AlShowair MA, AlRuhaim A. Use of hormones and nutritional supplements among gyms' attendees in Riyadh. J Family Community Med Jan-Apr 2017;24(1):6-12.

14- Westerman ME, Charchenko CM, Ziegelmann MJ, Bailey GC, Nippoldt TB, Trost L. Heavy Testosterone Use Among Bodybuilders: An Uncommon Cohort of Illicit Substance Users. Mayo Clin Proc. 2016 ;91(2):175-82.

15- El Khoury D, Antoine-Jonville S. Intake of nutritional supplements among people exercising in gyms in Beirut city. J Nutr Metab. 2012;2012:703490.