PREVALENCE, INFORMATION & ATTITUDE TOWARDS USING SUPPLEMENTS AMONG UNIVERSITY ATHLETES

ABSTRACT: The purpose of this study was to analyze the prevalence of dietary supplements usage amongst university's players, in addition to their know-how and players towards sports supplementation. Current study check out the extent of knowledge, attitudes, beliefs and practices regarding using dietary supplements of 100 athletes was administered, which included 88 Males and 12 Females, 20 to 27 years of age from the population of university athletes. The comparison was analyzed by chi-square test to observe the importance of distinction amongst respondents' notion about the statements of questionnaires. The results calculated through Statistical Package for Social Sciences (SPSS-25). The outcomes displayed that maximum of the athletes proven the satisfactory knowledge of dietary supplements and the motives for the usage of them; however the outcome of the study suggested that need of inclusive knowledge of players about supplements and under vigilant management showed improvement of University athletes.

Key words: Supplements, prevalence and

Introduction:

Athletic dietary supplements are a class of supplements whose motive is to serve as an addition to the everyday diet to enhance fitness and overall performance. Sports persons are trying to discover the approaches where as they are able to enhance their overall performance to continue making improvements to themselves and be a stronger competitor during competition. A primary technique that is frequently becoming famous to enhance performance is the use of sports supplements (Meeusen, 2014; Islam *et al.*, 2022). The industries which manufacture the sports supplements worth billion dollars which provide a huge number of various dietary supplements, which are different in their effects according to the desire of athlete. However, all dietary supplements are not always beneficial. These dietary supplements are designed to provide a super balanced expanse of vitamins, minerals and other major nutrients to assist the growing muscular tissues and health. Additionally, supplements include amino acids, vitamins, minerals, and herbs and offer them in a whole single product to make sure that the body gets a balanced quantity of each thing which is not included in the daily diet plan (Islam *et al.*, 2022). These are crucial elements to assist muscle tissues construction, stamina and various attribute which are required to perform on the pinnacle on favored sports activities of collegiate athletes. When athletes incising the sports supplements to take, make sure the product has an appropriate ingredient which you desire to achieve (Darvishi, L., Askari, G., and Hariri, M., 2013). An innovative exercise methodologies and broadcasting illustration of skilled sports, athletes from a

basic formative year elevated the dimensions of competitive aspect with the help of distinctive strategies. Sports diet and training physical principles supported and beautify the exercise tricks to enhance performance and recovery. Dietary supplements are also taken into consideration as ergogenic aids, and those which supposed as development of athletic whole display and quickly restoration known as diet supplements. In other words you can say that sports supplements are helpful for the development (Thomas *et al.,* 2016; Nabuco *et al.,* 2017; Dunford *et al.,* 2018; Jovanov *et al.,* 2019). Younger athletes sometimes lack the supply of instant energy particularly in in-season; As a result, maximum athletes are not able to make proper diet alternatives for escalation and muscles expansion plus for enhanced performance which rely upon extra dietary consumption which has been taken from sports supplements (McDowall, 2007; Smith, J. W., Holmes, M. E., McAllister, M. J., 2015; Tawfik, S., El Koofy, N., and Moawad, E. M., 2016; Thomas, D., Burke, Louise and Erdman, Kelly., 2016; Jovanov *et al.,* 2019). The utilization of supplements has unexpectedly accelerated in the past ten years the availability of production in the market cannot be accompanied through a suitable scientifically-based research regarding their protection, worth and efficacy (Torres-Ronda & del Alcazar, 2014). Moreover, the growing social popularity of intake of supplements might also provide an extra explanation of this phenomenon (Dascombe *et al.,* 2010). With the elevating intake of diet supplements here is also a requirement for significant information about those supplements (McDowall, 2007; Jovanov *et al.,* 2019). Unfortunately, athletes not in mood of exploring of data from acquainted resources of enumerated dietitians. Thus, academic plans are not available in each country, in particular within the developing ones. Thus, the players have wrong information which might be the cause of health issues and it can result in adverse performance (Froiland *et al.,* 2004; McDowall, 2007; Jovanov *et al.,* 2019). The exploit of nutritional supplements is such a threat which might purpose an inadvertent doping because of the contamination in their ingredients (Sundgot-Borgen *et al.,* 2003). Another issue really well worth considering is their effectiveness that is controversial (Sundgot-Borgen *et al.,* 2003; Nabuco *et al.,* 2017).

Although various studies explored the athletes self-reported expertise regarding sports supplementation. Furthermore, a distinct method used in this research i.e. checking out university players' information regarding the use and cause of diet supplements, triumphing facts regarding sports supplementation (Slater *et al.,* 2003). In this study, researcher has tried to

investigate the motives of prevalence of supplements amongst university athletes. The study inspected their knowledge and attitude towards dietary supplements.

Literature review

What is supplement?

The food supplements as intense resources of vitamins or different ingredients with a nutritional or biological effect, whose motive is to supplement a routine diet (EFSA, 2017). A food supplement is described as a locally available product that is ingested as an accumulation to balanced diet plan which consists of vitamins, minerals, herbs(botanicals), amino acids and as a whole, lot of new different crops (National Center for Health Statistics, 2012).

Categories

Sports supplements had been described and classified in lots of ways. Though, not a single definition classified completely. Now widespread, categories consist of sports foods (gels, bars, drinks and protein powders), vitamins and minerals, herbals, botanicals and ergogenic dietary supplements. Moreover, there is a class which incorporates for weight loss, extended libido and there are also gluten-free, lactose-free, allergen-free and other functional foods, which is another source of energy. The food which consisted of natural, organic and superb (foods) segments which may be described as dietary supplements (meals) which are in particular tough because of the complex mixtures and the anti homogeneous contents material of natural ingredients. However, this class has advanced speedily in recent years, ambitious in component through ordinary notion that natural equal health (Silano *et al.,* 2011). Furthermore, it has been observed that natural food put less risk for utilizers resulted negative to dope test. The finding supported the user for taking hurbs regularly for better results and brought consciousness for patrons (Avelar-Escobar *et al.,* 2012).

Prevalence of supplement use

Surveys concerning that utilizing the herbal supplements among the general population have constantly proven, the supplements that are used by a big population which is substantiated consumed through by huge industry (Timbo *et al.,* 2006; Hameen-Anttila *et al.,* 2011). A comprehensive survey of the overall residents in United States identified forty percent of the colts were habitual of utilized supplements (1988–1994), this had spread over one-half during (2003 to 2006) centers for disease Control and Prevention till 2011. The board is responsible of nutrition with an annual survey taken 2007 samples of mature people extracted with 18 years

age adults living in USA. The latest survey concluded that 71% of US adults (greater than one hundred and seventy millions adults) utilized supplements to get energy and maintain overall health. An increasing effect after 2015 stated that 68% dietary supplements utilized were vitamin and minerals. Their usage is however increased for the last five years in the age group of 18 to 34 years. In addition survey statistics of 2016 showed interest of teenagers which have been grown day by day, use of dietary supplements for the hypertrophy of muscles and optimal performance in different life activities (Tawfik, S., El Koofy, N., & Moawad, E. M., 2016).

Supplement use and training load

The researcher which determined the association between supplement and training intensity by Lim *et al.* (2012), consents with the review by Knapik *et al.* (2016) and with latest reviews by Heikkinen *et al.* (2002), who concluded that sports professionals consumed a huge amount of supplements than non-professionals and it became as an essential part of meals. Further, numerous researches predicted that players from aerobic sports activities use dietary supplements greater than other sports (Heikkinen *et al.*, 2002; Lim *et al.*, 2012; Shaw, M. H., Twilton, J., and MacMillan, D. W., 2016; Jovanov *et al.*, 2019).

Prevalence of supplements gender wise

Sobal and Marquart (1994) investigated that female athletes utilized 10% natural supplements more than male athletes, Similarly, Nieper (2005) depicted the usage of dietary supplements with a precise sample of thirty two track and field athletes competing at the World Junior Championships during 2004 which resulted 62% athletes used supplements. The trend depicted about 20% higher in female's athletes as compared with male. However, Karimian and Esfahani (2011) deprived that 77% more usage in male as compared with female athletes as they had taken a survey of 500 athletes. As, numerous research had no longer locate any distinction among male and female athletes (Sundgot-Borgen *et al.*,2003; Kim *et al.*,2011; Wiens, K., Erdman, K. A., Stadnyk, M., and Parnell, J. A., 2014); Parnell, J. A., Wiens, K., and Erdman, K. A. (2015). Wiens, K., Erdman, K. A., Stadnyk, M., and Parnell, J. A. (2014) stated a negative sex-related aspect highlighted in use of supplements, however they discovered that male athletes have keen interest to devour protein powder and ergogenic supplements, commonly related to enhanced muscle mass and strong sexual relation, while female addicted to take vitamin and mineral supplements, usually related to increase health and recover nutritional deficiencies.

Prevalence of supplement age wise

The consumption of supplements noticed to be endemic and famous in young colts. Braun *et al.* (2009) investigated that an age group of (10 to 25) German athletes, utilized herbal supplements envisioned at 80% along with high rated German athletes Nutritional Survey (GANS-II) which resulted that 16–19% of all German mature athletes of age (14–18) utilized nutritional supplements(Federal Research Center for Nutrition 2008). They also deprived different in various ages and performance as well: at the age of 18 years, competing globally stated use more than players at state level. A number of systematic researchers resulted that supplements used by adolescent athletes, depend upon types, different sports, categories and range of dietary supplements which enhanced in growing age exercise hours (Corrigan, B., and Kazlauskas, R., 2003; McDowall, 2007; Petroczi *et al.,* 2008; Tscholl, P., Junge, A., and Dvorak, J., 2008; Dietz *et al.,* 2014; Parnell, J. A., Wiens, K., and Erdman, K. A., 2015; Pedrinelli, A., Ejnisman, L., Fagotti, L., Dvorak, J., and Tscholl, P. M., 2015; Tawfik, S., El Koofy, N., and Moawad, E. M., 2016).

Remuneration of supplements utilized by athletes

However, nutrition (dietary supplements) can be crucial at a specific periodic span of sports or sometimes with nutritional challenges especially for those, who like to eat vegetable along with a particular medical condition. In Nordic, the official organization follow a legit rules for concerning particular dietary supplements, including every day consumption of omega-3, fatty acids and vitamin D (NNR, 2014). They allowed the barricade of particular food with vital nutrients. When it comes to the athletes, the official guidelines were nevertheless applied (Wardenaar *et al.,* 2017). Otherwise, the players would to take advantages from dietary supplements. Such circumstances might be useful to adopt a specific technique of supplementation utilization to achieve optimum fitness and performance.

Pattern and reasoning for use among athletes

Sport-precise motives for consumption consisted of extreme pressure training/competition cannot be achieved with food alone as supplements provided a particular benefit in both practicing and competition. Another cognizance is that performed athletes are the consumers of dietary supplements, and its usage is frequently encouraged or endorsed by senior athlete's circle consisted of coaches, parents & colleagues (Reinert *et al.,* 2007;www.journal.humankinetics.com). Among athletes and physiologically active people,

there are numerous problems associated particularly to the psychological and physiological factors of overall performance. In-fact, athletes like to enjoy healthy sports life with efficient training and lacrative performance is viable if fitness is compromised. Injury and rehabilitation that needs intervals of time out from training can damage periodization and even at successful competitions it can breakdown the athlete's competitive season. The sports essential elements which boost up restoration, from injury/illness retraining are manifestly well known among athletes and they used them frequently with combination other necessary diet (Heikkinen, A., Alaranta, A., Helenius, I., and Vasankari, T., 2011; Heikkinen, A., Alaranta, A., Helenius, I., Vasankari, T., 2011. Major effects of dietary supplements are

- Athletes have extra necessities as compared with sedentary population
- Low performance in competitive era
- Vitamins are conquering stress, lost by vigorous exercise and its replacement is replenished during exercise (Corrigan & Kazlauskas, 2003).

Dietary counseling effect on supplement use

A recent investigation of Netherlands assessed the impact of nutritional therapy on supplement discovered that players have advised to utilize greater amount of supplements as compared with others (Wardenaar *et al.*, 2017). They also observed the high dose of supplement was specifically due to an accelerated use of vitamins, mirror guidelines to the players got by advisers, resulted that the data collected from the counselor (advisers) might have a tremendous impact its research layout restricted the results which has been drawn from the research.

Supplements can confer health benefits

Marik and Flemmer (2012), and Rock (2007) stated the athletes who utilized nutritional supplements diet are usually investigated above than average nutrients intakes along with healthy food. The research conducted by Nieper (2005) at countrywide (track and field) athletes revealed that approximately eighty three percent players showed optimistic results as they did not use it while 42% used supplement with less performance. Further, the athletes who used sports supplements with workout enhances the performance and obligation of sports supplements (Nieper, 2005) a deficit in nutrition provokes the need of supplementation is unlikely to enhance wellbeing physical condition. Actually it has an adverse impact both on performance and posture, through absorption of an ordinary training (Paulsen *et al.*, 2014), In addition, through extended chance to cut off from sports (Garcia-Cortes *et al.*, 2016). Moreover,

athletes performed in competition followed an anti-doping code which need to understand that supplement consumed exposed them to a hazard for a optimistic attitude towards doping test (Maughan, 2013).

Influence of supplements on exercise performance

There is growing interest in inspecting the feasible impact of sports supplements on exercise performance, specifically endurance performance. It is obvious that overall performance in many sports activities additionally includes high-intensity exercise which includes instantly decision making and skill accuracy. Motor control, making decision, coordination, reflexes, and other cognitive tasks can be important at some point of numerous sports, which include team sports. Sports performance relies upon the interplay of the mind with the periphery. However, peripheral level fatigue does not only occur, however "central" fatigue or "intellectual" fatigue exist, concerning mind mechanisms. Cognitive characteristic performs a critical function in athletic overall performance, and evidently mind functioning can be motivated via way of means of nutrition (McDowall, 2007; Meeusen, 2014).

Important Supplements for Competition

The dietary supplements which enhance the exercise and athletic recital, in the market comprise more than one substance. Therefore, one cannot understand or expect the outcomes and secure of mixtures in these supplements except medical trials have investigated that specific combination. Additionally, the quantities of those elements range extensively among the products. Following are the few supplements, majorly used by new generation for the enhancement of their body and performance.

Protein

An essential part of body is protein to develop, preserve and reload muscle. Exercise enhanced the load of protein oxidation and crashes as the myofibrillar protein formation increases up to a certain level (Burd *et al.,* 2012). Amino acids are mainly essential to maximize the training response and restoration after workout (Thomas *et al.,* 2016; Jager *et al.,* 2017). Regular resistance training consequences in the accumulation of myofibril (protein) and hence increment in human muscle size or skeletal muscles. A low impact exercise results in moderate protein accumulate in operating fibers mostly in mitochondria, which increases the oxidative capability for upcoming exercise plans (Burd *et al.,* 2012; Cermak *et al.,* 2012). Sports persons want to get necessary building blocks of proteins through food or from supplementation to help

in muscle hypertrophy, maintenance growth and replenish it (Burd *et al.,* 2012). The nine essential amino acids with names are (Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Tryptophan, and Valine) has great importance in the performance of athletes, not only growth but also for the competitive environment. The major essential proteins are comprised of 40% important amino acids. As a meal with 25 g overall protein offers 10 g essentials amino acids (EAAs). Dietary protein intake enhances the assimilation of essential proteins in the blood and muscle cells. Amino acids are mainly essential to maximize the training response and restoration after workout (Thomas *et al.,* 2016; Jager *et al.,* 2017).

Creatine

Creatine is one of the most thoroughly studied and extensively used nutritional supplements to increase exercise and sports performance (Kreider *et al.,* 2017). Creatine is produced endogenously and received from the diet in small quantities. It facilitates to generate ATP and thereby provides the muscle tissues with energy, especially for short-time period events (Salomons *et al.,* 2010). Creatine may enhance muscle overall performance in four ways: by increasing storage of phosphocreatine used to generate adenosine tri phasphate (ATP) at the start of intense workouts, accelerating the re-synthesis of phosphocreatine after exercise, suppressing the degradation of adenine nucleotides and lactate accumulation, and/or improving glycogen stores in skeletal muscular tissues (Salomons *et al.,* 2010).

The Beta Alanine

Beta-alanine is naturally occurring as beta amino acid, which is an amino acid group is attached to the β-carbon instead of the more usual α-carbon for alanine in 3-aminopropanoic acid. It is a non-essential amino acid that is produced naturally in the body. It aids in the production of carnosine. The compound plays a role in muscle endurance in high intensity exercise (Hobson *et al.,* 2012; Harris *et al.,* 2013). It has been important factor to take it on regular basis as regarding on training schedule, because Beta-alanine works by increasing muscles concentration of carnosine. It does not need to be taken around a training session to produce results. Its supplementation currently appears to be safe in healthy populations at recommendation doses. The only reported side effect is parenthesis (i.e. tingling) but studies indicate that it can be attenuated by using divided lower doses (1.6 g) or using a sustained release formula (Hobson *et al.,* 2012).

Glutamine

The large number of amino acid in muscle, blood and in body's free protein is glutamine. The Branch chain amino acids (BCAAs) material first and foremost build glutamine by the body, additionally, a mature person consumes about three to six gram per day in protein-containing foods (Gleeson *et al.,* 2008; Ziegler *et al.,* 2014). This is one of the vital molecules in energy formation and it helps out nitrogen for a lot of vital biochemical retort (Abcouwer *et al.,* 2010).

Antioxidants (vitamin C, vitamin E, and coenzyme Q_{10})

Through physical activities and training an athlete elevates the utilization of oxygen of body and creates oxidative stress, which leads to formation of oxygen and nitrogen reaction along with production of more oxidized molecules in different tissues, as well as muscular tissues theoretically, free radicals could impair exercise performance by delaying ability of muscles to create power thus, increasing fiber fatigue injury by producing inflammation and soreness (Konig *et al.,* 2001; Fisher-Wellman *et al.,* 2009; de Sousa *et al.,* 2017). Numerous scholars have recommended that supplements having antioxidants, such as vitamins C and E and coenzyme Q10 (CoQ10), might decrease this free-radical pattern, so minimize skeletal fibers injury, tiredness and enhancing improvement in muscles (Merry *and* Ristow, 2016).

Caffeine

Caffeine is naturally found as a methylated xanthine in variable amounts in coffee, tea, cacao pods (the source of chocolate); and other herbal/botanical sources (Brunye *et al.,* 2010; Gill *et al.,* 2020). Caffeine stimulates the central nervous system, muscles and other organs, such as the heart by binding to adenosine receptors on cells, thereby blocking the activity of adenosine, a neuro modulator with sedative-like properties (Lieberman *et al.,* 2010; Spaeth *et al.,* 2014; Gill *et al.,* 2020) thus, caffeine enhances arousal, increases enthusiasm and cut off fatigue (Goldstein ER 2010; Goldstein *et al.,* 2009; McLellan *et al.,* 2016; Gill *et al.,* 2020) and reduce perceived pain and exertion (Goldstein *et al.,* 2009; Goldstein *et al.,* 2010). In the starting plans of longer duration exercises caffeine might activate fats as a release of power and muscle glycogen (ACSM *et al.,* 2009; Gill *et al.,* 2020).

Objectives

- To check the prevalence of competitive sports for utilization supplements.

- To guesstimate the level of knowledge and reasons of athletes regarding supplements usage.
- To assess the beliefs and attitude of athletes towards the use of supplements.

Research Questions

- What is the prevalence level of sports supplements among university's athletes?
- How sports supplements are perceived by the university's athletes?
- What are the reasons for the usage of sports supplements by the university's athletes?

Methodology

Nature of the study:

This present study was quantitative, in which information was gathered in numeric format and the way it was analyzed through Statistical Package for Social Sciences (SPSS-25).

Population:

The student of University of the Punjab, University of central Punjab & Govt College University (GCU) athletes was the population of this research (Lahore Campus).

Sample of study:

Data was collected from sample of 100 athletes belonging to the University of Punjab.

Research instrument:

Research tool for the study was a questionnaire designed on a likert scale of five points: strongly disagree, disagree, neutral, agree and strongly agree selected.

Plan of data analysis:

Chi-square test applied on the statements to view the significant difference among the practice adopted by the significant differences among the practices adopted by the athletes regarding supplements usage.

Data Analysis and Interpretation

Table 1: Distribution of participants according to demographic variables and supplement usage variables

Variable	Frequency	%
Gender		
Male	88	88
Female	12	12
Age	**Male & Female**	**%**
18-21	13 & 33	13 & 33
22-24	64 & 43	64 & 43
25 & above	23 & 24	23 & 24
Use Dietary Supplements		
Yes	100	100
Medical condition	**Restrict food**	**Use**
Yes	0	0
No	100	100

Figure 1 & 2: Male and female age percentage ratio

Total number of respondents were 100 out of whom 88 (88.0%) male and 12 (12.0%) females respectively. According to age 18 to 21was (13 and 33) %, 22-24 respondents were (64 and 43) % and 25 and above respondents of (23 and 24) % for male and females respectively. Which also shown in the Figure 1 & 2 to The According to dietary supplement use 100 (100.0%) respondents were users of supplements and 100 (100%) of them had no medical complications which restricts food consumption.

Table 2: Chi-square value of respondent's perception about "You search information about the supplement prior to buying or choosing it".

Statement	Observed number					X^2	P
You search information about the Supplements prior to buying or choosing it?	SD	D	N	A	SA	135.1	.001
	0	0	3	9	88		

Table 2 reveals the responses about statement. Table 4.1 shows that majority of respondents 88 strongly agree, 9 agree, 3 neutral, and for disagree and strongly disagree 0 values has been shown. The chi value (X^2=135.1) shows the percentage of respondents. The "P" value (.001) shows the significance of data.

Table 3: chi-square value of respondent's perception about "You look at the nutrition facts label prior to buying or choosing the supplement".

Statement	**Observed number**					**X^2**	**P**
You look at the nutrition facts label prior to buying or choosing the supplement	SD	D	N	A	SA	95.7	.001
	0	0	5	16	79		

Table 3 reveals the responses about statement and it show that majority of respondents 79 strongly agree, 16 agree, 5 neutral, 0 disagree and 0 strongly disagree with this statement. The chi-square value (X^2=95.7) shows the percentage of respondents. The "P" value can be (.001) which shows the calculated value is significance.

Table 4: chi-square value of respondent's reasons for using supplements "To build muscles mass"

Statement	**Observed number**					**X^2**	**P**
To build muscles mass?	SD	D	N	A	SA	130.8	.001
	0	1	3	24	72		

Table 4 reveals the responses about statement which shows that majority of respondents 72, 24, 3, 1 and 0 for defined scale with this statement. The chi value (X^2=130.8) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 5: chi-square value of respondent's reasons for using supplements "To prevent muscle loss".

Statement	**Observed number**					**X^2**	**P**
To prevent muscle loss?	SD	D	N	A	SA	52.22	.001
	0	0	4	63	33		

Table 5 reveals the responses about statement and shows that 33 respondents strongly agree, 63 agree, 4 neutral, 0 disagree and 0 strongly disagree with this statement. The chi value

(X^2=52.22) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 6: chi-square value of respondent's reasons for using supplements "To enhance physical performance".

Statement	Observed number					X^2	P
To enhance physical performance?	SD	D	N	A	SA	29.2	.001
	0	0	0	23	77		

Table 6 reveals the responses about statement. The Table 6 shows that 77 respondents strongly agree, 23 agree, 0 neutral, 0 disagree and 0 strongly disagree with this statement. The chi value (X^2=29.2) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 7: chi-square value of respondent's reasons for using supplements "To boost energy level".

Statement	Observed number					X^2	P
To boost energy level	SD	D	N	A	SA	61.5	.001
	1	0	0	34	65		

Table 7 reveals the responses about statement and it shows that 65 respondents strongly agree, 34 agree, 0 neutral, 0 disagree and 1 strongly disagree with this statement. The chi value (X^2=61.5) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 8: chi-square value of respondent's reasons for using supplements "To prevent or treat muscle soreness after workouts".

Statement	Observed number					X^2	P
To prevent or treat muscle soreness after workouts	SD	D	N	A	SA	44.7	.001
	0	0	2	46	52		

Table 8 reveals the responses about statement. Thus, it shows that 52 respondents strongly agree, 46 agree, 2 neutral, 0 disagree and 0 strongly disagree with this statement. The chi value

(X^2=44.7) shows the percentage of respondents. The "P" value can be (.001) which showed the significance of the statement.

Table 9: chi-square value of respondent's reasons for using supplements "To help weight control".

Statement	**Observed number**					**X^2**	**P**
To help weight control	SD	D	N	A	SA	61.1	.001
	0	4	19	57	20		

Table 9 reveals the responses about statement which shows that 20 respondents strongly agree, 57 agree, 19 neutral, 4 disagree and 0 strongly disagree with this statement. The chi value (X^2=61.1) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 10: chi-square value of respondent's reasons for using supplements "To burn fat and calories faster".

Statement	**Observed number**					**X^2**	**P**
To burn fat and calories faster	SD	D	N	A	SA	47.1	.001
	0	7	23	53	10		

Table 10 reveals the responses about statement and it shows that 10 respondents strongly agree, 53 agree, 23 neutral, 7 disagree and 0 strongly disagree with this statement. The chi value (X^2=47.1) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 11: chi-square value of respondent's reasons for using supplements "As a meal replacement".

Statement	**Observed number**					**X^2**	**P**
As a meal replacement	SD	D	N	A	SA	57.5	.001
	5	28	42	24	1		

Table 11 reveals the responses about statement. Thus, it shows that 1 respondents strongly agree, 24 agree, 42 neutral, 28 disagree and 5 strongly disagree with this statement. The chi value (X^2=57.5) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 12: chi-square value of respondent's reasons for using supplements "To help digestion and metabolism".

Statement	Observed number					X^2	P
To help digestion and metabolism	SD	D	N	A	SA	176.3	.001
	1	2	16	72	9		

Table 12 reveals the responses about statement. Table 4.11 shows that 9 respondents strongly agree, 72 agree, 16 neutral, 2 disagree and 1strongly disagree with this statement. The chi-sqaure value (X^2=176.3) shows the percentage of respondents. The "P" value (.001) shows the significance of the statement.

Table 13: chi-square value of respondent's reasons for using supplements "To detoxify the body".

Statement	Observed number					X^2	P
To detoxify the body	SD	D	N	A	SA	129.3	.001
	1	4	26	62	7		

Table 13 reveals the responses about statement and it shows that 7 respondents strongly agree, 62 agree, 26 neutral, 4 disagree and 1 strongly disagree with this statement. The chi value (X^2=129.3) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 14: chi-square value of respondent's reasons for using supplements "To boost immunity".

Statement	Observed number					X^2	P
To boost immunity	SD	D	N	A	SA	82.7	.001
	0	2	3	43	52		

Table 14 reveals the responses about statement. The Table 14 shows that 52 respondents strongly agree, 43 agree, 4 neutral, 2 disagree and 0 strongly disagree with this statement. The chi value (X^2=82.7) shows the percentage of respondents. The "P" value (.001) which shows the significance of the statement.

Table 15: chi-square value of respondent's reasons for using supplements "To prevent osteoporosis".

Statement	**Observed number**					**X^2**	**P**
To prevent osteoporosis	SD	D	N	A	SA	75.9	.001
	0	3	7	57	33		

Table 15 reveals the responses about statement, which shows that 33 respondents strongly agree, 57 agree, 7 neutral, 3 disagree and 0 strongly disagree with this statement. The chi value (X^2=75.9) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 16: chi-square value of respondent's perception about supplement that he/she believes "The information displayed on dietary supplements is helpful to understand it better and an appropriate for me".

Statement	**Observed number**					**X^2**	**P**
The information displayed on dietary supplements is helpful to understand it better and an appropriate for me	SD	D	N	A	SA	82.7	.001
	0	2	3	43	52		

Table 16 reveals the responses about statement. And shows that 52 respondents strongly agree, 43 agree, 3 neutral, 2 disagree and 0 strongly disagree with this statement. The chi value (X^2=82.7) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 17: chi-square value of respondent's perception about supplement that he/she believes "The source I receive my information on supplements from is reliable".

Statement	**Observed number**					X^2	P
The source I receive my information on supplements from is reliable	SD	D	N	A	SA	80.2	.001
	0	1	0	26	73		

Table 17 reveals the responses about statement which shows that 73 respondents strongly agree, 26 agree, 0 neutral, 1 disagree and 0 strongly disagree with this statement. The chi value

(X^2=80.2) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 18: chi-square value of respondent's perception about supplement that he/she believes "The supplement that I take is effective for what I am trying to treat, prevent, etc".

Statement	Observed number					X^2	P
The supplement that I take are effective for what I am trying to treat, prevent, etc.	SD	D	N	A	SA	74.8	.001
	0	0	1	28	71		

Table 18 reveals the responses about statement. The Table 18 shows that 71 respondents strongly agree, 28 agree, 1 neutral, 0 disagree and 0 strongly disagree with this statement. The chi value (X^2=74.8) shows the percentage of respondents. The "P" value (.001) which shows the significance of the statement.

Table 19: chi-square value of respondent's perception about supplement that he/she believes "I understand which supplements are best suited for my desired health changes".

Statement	Observed number					X^2	P
I understand which supplements are best suited for my desired health changes.	SD	D	N	A	SA	175.8	.001
	0	1	5	12	82		

Table 19 reveals the responses about statement, which shows that 82 respondents strongly agree, 12 agree, 5 neutral, 1 disagree and 0 strongly disagree with this statement. The chi value (X^2=175.8) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 20: chi-square value of respondent's perception about supplement that he/she believes "Dietary supplements can have adverse side effects".

Statement	Observed number					X^2	P
Dietary supplements can have adverse side effects.	SD	D	N	A	SA	110.3	.001
	1	2	6	49	42		

Table 20 reveals the responses about statement. Table 20 shows that 42 respondents strongly agree, 49 agree, 6 neutral, 2 disagree and 1 strongly disagree with this statement. The chi-square

value (X^2=110.3) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 21: chi-square value of respondent's perception about supplement that he/she believes "Dietary supplements can be used as a substitute for a good diet."

Statement	Observed number					X^2	P
Dietary supplements can be used as a substitute for a good diet.	SD	D	N	A	SA	32.2	.001
	5	13	23	39	20		

Table 21 reveals the responses about statement. The Table 21 shows that 20 respondents strongly agree, 39 agree, 23 neutral, 13 disagree and 5 strongly disagree with this statement. The chi value (X^2=32.2) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 22: chi-square value of respondent's knowledge about supplement that he/she thinks "Herbal supplements are safe to take because they come from "natural sources".

Statement	Observed number					X^2	P
Herbal supplements are safe to take because they come from "natural sources"	SD	D	N	A	SA	78.8	.001
	0	4	13	21	62		

Table 22 reveals the responses about statement, it shows that 62 respondents strongly agree, 21 agree, 13 neutral, 4 disagree and 0 strongly disagree with this statement. The chi value (X^2=78.8) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 23: chi-square value of respondent's knowledge about supplement that he/she thinks "The more protein supplement you take the more muscle you will build".

Statement	Observed number					X^2	P
The more protein supplement you take the more muscle you will build.	SD	D	N	A	SA	26.0	.001
	0	10	25	45	20		

Table 23 reveals the responses about statement. Table 23 shows that 20 respondents strongly agree, 45 agree, 25 neutral, 10 disagree and 0 strongly disagree with this statement. The chi value (X^2=26.0) shows the percentage of respondents. The "P" value (.001) which shows the significance of the statement.

Table 24: chi-square value of respondent's knowledge about supplement that he/she thinks "Dietary supplements should fulfill labeling claims."

Statement	**Observed number**					**X^2**	**P**
Dietary supplements should fulfill labeling claims.	SD	D	N	A	SA	261.5	.001
	0	1	1	3	95		

Table 24 reveals the responses about statement. Table 24 shows that 95 respondents strongly agree, 3 agree, 1 neutral, 1 disagree and 0 strongly disagree with this statement. The chi value (X^2=261.5) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 25: chi-square value of respondent's knowledge about supplement that he/she thinks "FDA regulates the ingredients in dietary supplements."

Statement	**Observed number**					X^2	P
FDA regulates the ingredients in dietary supplements.	SD	D	N	A	SA	37.5	.001
	0	3	23	46	28		

Table 25 reveals the responses about statement which shows that 28 respondents strongly agree, 46 agree, 23 neutral, 3 disagree and 0 strongly disagree with this statement. The chi value (X^2=37.5) shows the percentage of respondents. The "P" value can be (.001) which shows the significance of the statement.

Table 26: chi-square value of respondent's knowledge about supplement that he/she thinks "Dietary supplements including herbs can be dangerous when combined with prescription medications".

Statement	**Observed number**					**X^2**	**P**
Dietary supplements including herbs can be dangerous when combined with prescription medications.	SD	D	N	A	SA	50.9	.001
	0	4	25	53	18		

Table 26 reveals the responses about statement and shows that 18 respondents strongly agree, 53 agree, 25 neutral, 4 disagree and 0 strongly disagree with this statement. The chi value (X^2= 50.9) shows the percentage of respondents. The significance of the statement is shown by "P" value (.001) which shows the significance of the statement.

Conclusion

In this research, the researcher present that dietary supplement use is prevalent among university level athletes. Users of dietary supplements demonstrate the satisfactory knowledge of supplements and the reasons for using them as their enhancement in performance but these findings indicate the necessity of a comprehensive education of all athletes about sports supplements and careful supervision of the athletic development of University athletes. These findings suggest that university athletes perceived dietary supplement effectiveness as favorable among the users, which means supplement users showed positive attitude towards supplements usage. Furthermore, the previous researcher's emphasis on numerous dietary supplements (Protein (Amino Acid), Creatine, Beta Alanine, Glutamine, Antioxidants and Caffeine) which resulted in the enhancement of performance but our research also suggested that the intake dietary supplements should be according to the game, duration, climate, workout (training) and body demand as well. One more thing was found out that most of the athletes do not know as they have medical complications which restricted their nutritional consumption and cut down their performance graph. The most of the athletes are also well aware of nutrients which they require in the form of supplements (oral & in meals) and the effectiveness of that dietary supplement for the reasons they are using them.

Recommendation

- Complete educate all athletes regarding supplements
- Vigilant management of the player's progression at school, clubs, colleges and Universities athletes.

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