WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 18, 741-750. Research Article ISSN 2277–7105

THE PREVALENCE OF USING DIETARY SUPPLEMENTS AMONG TEENAGERS, SAUDI ARABIA, IN 2017

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Article Received on
17 Sept. 2018,

Revised on 07 October 2018,
Accepted on 28 October 2018

DOI: 10.20959/wjpr201818-13394

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ABSTRACT

Introduction: As we are in the era of technological development, and the easy availability of instructiveness information that presented to us in social media or TV by either celebrities, athletes, health providers, or brands marketing managers, and theirs estimations or believes about use of nutritional supplements In order to disease prevention, correction of inadequate lifestyle habits, and physical performance improvement, We carry out a survey involving Saudi's teenagers in order to investigate the use of nutritional supplements in this age group **Methodology:** This is a cross sectional study based on Online questionnaire that will be spread in the period from 10 June to 10 December 2017 in Kingdom of Saudi Arabia. Adolescents aged from 12 to 22 years, are the target population of our study **Result:** About 400 adolescents was included in this study, from age of 12 to age 22 years old, the majority of them were 22 years old 126 (31.5%), male and females were included, females were 232 (58%), participants were from 13 regions but almost from Makkah285 (71.3), the majority were college students 236 (59%). Only 129 (32.3%) of participants use supplements, the majority of them use it to build up their muscles 36 (27.9%), about 48 (37.2%) sale supplement Online, approximately half of them 65 (50.4%) take the information about supplement from internet, about 85 (65.9%) of them take it daily, about 52 (40.3%) of them take proteins. Regarding the knowledge, 216 (54%) think that supplements has benefit to their health, about 269 (67.3%) think that supplements has side effects, about 248 (62%) think that supplement users need routine investigations, 177 (29.3%) think that supplements increase level of concentration, 214 (53.5%) think that supplements increase the power, 182 (45.5%) think that supplements prevents dietary deficiency, 214 (53.5%) think

that supplements increases or maintains muscle mass. In cross tabulation between demographics data and use of supplements, there is significant association with age (p=0.001), and with level of education (p=0.006), there is no significant association for gender (p=0.859), nationality (p=0.782) and region (p=0.593). In crosstab between age and what type of supplement they use, there is significant association (p=0.035) and we found that most of proteins users' age is 22. In crosstab between gender and why they use supplements, there is significant association (p=0.000) and we found that males were the most users aiming to build up their muscles, in other hand most of female use it to disease prevention, control and treatment. In crosstab between gender and what type of supplement they use, there is significant association (p=0.007) and we found that most users of proteins are male, There is significant association in crosstab between gender and from where they .bought the supplements **Conclusion:** The prevalence of using dietary supplements among adolescent was slightly high (32.3%). Factors associated with dietary supplements use are age and level of education. The most used dietary supplements are proteins, vitamins and minerals. The most commonly reason to use of dietary supplements was to build muscles for males and to treat or prevent diseases for females.

INTRODUCTION

In order to disease prevention, correction of inadequate lifestyle habits, and physical performance improvement, dietary supplements use has been increased in the last decades.[1] A dietary supplement is a product intended for ingestion that contains a "dietary ingredient" intended to add further nutritional value to (supplement) the diet.[3]

Dietary supplements include vitamins, minerals, herbals and botanicals, amino acids, enzymes, and many other products, dietary supplements are beneficial in managing some medical condition such as Vitamin D and calcium to maintain bone health, and folic acids to decrease certain birth defects. However, dietary supplements can cause harm or side effects and can interact with certain drugs that might cause problems such as chemotherapy effectiveness can be decreased by antioxidants supplements like Vitamin E and C.[2] A study was conducted on UAE to assess the dietary supplement intake and associated factors among gym users in a university communityfound that the prevalence of dietary supplement intake was 43.8%, and showed that there is a difference between male and female reasons for consumption of dietary supplements, proteins followed by multivitamins were the most consumed dietary supplements.[4] A study was conducted in Saudi Arabia to understand the

using and beliefs about dietary supplements among professionals athletes found that 93.3% of athletes were used dietary supplements, improving their performance and health was the reason for using dietary supplements in majority of them.[5]

Another study was conducted on Saudi Arabia to assess the prevalence of the use of hormones and nutritional supplements by people who exercise in gyms in Riyadh, found that 47.9% of participants take nutritional supplements and 7.9% take hormones, side effects of dietary supplements was noticed by 16.9% of user, 25.7% of hormones user stopped them for their side effects.[6] No current data exist for the Saudi population with respect to dietary supplement consumption. We carry out a survey involving Saudi's teenagers in order to investigate the use of dietary supplements in this age group: Methodology

This is a cross sectional study based on Online questionnaire that will be e spread online in the period from 10June to 10 December 2017 in all .Kingdom of Saudi Arabia

Adolescents aged from 12 to 22 years,[8] are the target population of our study. Objectives of the study will be explained to them, then they should agree to the consent page to be able to fill the questionnaire. Children and adults are excluded from this study

RESULT

About 400 adolescent was included in this study, from age of 12 to age 22 years old, the majority of them were 22 years old 126 (31.5%), male and females were included, females were 232 (58%), participants were from 13 regions but almost from Makkah285 (71.3), the majority were collage students 236 (59%). [Table1]

Table 1: demographic data.

Demographic data		Frequency	%
Age	12	1	0.3
	13	1	0.3
	14	4	1.0
	15	13	3.3
	16	30	7.5
	17	44	11.0
	18	62	15.5
	19	35	8.8
	20	38	9.5
	21	46	11.5
	22	126	31.5
Gender	Male	168	42.0

	Female	232	58.0
Nationality	Saudi	356	89.0
	Non Saudi	44	11.0
Region	Riyadh	37	9.3
	Makkah	285	71.3
	Maddenah	20	5.0
	Qussim	10	2.5
	Asseer	8	2.0
	Tabuk	4	1.0
	Hail	6	1.5
	North borders	4	1.0
	Jazzan	3	0.8
	Najran	1	0.3
	Albaha	3	0.8
	Aljuf	19	4.8
Education level	Illiterate	0	0
	Read and write	2	.5
	Elementary	0	0
	Intermediate	13	3.3
	Secondary	149	37.3
	Collage student	236	59.0

Only 129 (32.3%) of participants use supplements, the majority of them use it to build up their muscles 36 (27.9%), about 48 (37.2%) sale supplement online, approximately half of them 65 (50.4%) take the information about supplement from internet, about 85 (65.9%) of them take it daily, about 52 (40.3%) of them take proteins. [Table2]

Table 2: dietary supplements users data.

Dietary supplements users data		**Frequency**	**%**
Do you use	Yes	129	32.3
supplements	No	271	67.8
What is the	Disease prevention	20	5.0
main reason for using dietary supplements	Disease control/ treatment	15	3.8
	Muscle building	36	9.0
	Improving sports	20	5.0
	performance		
	Improving brain	12	3.0
	performance		
	Losing weight	10	2.5
	Increase weight	16	4.0
Where do you	Pharmacy	43	10.8
usually buy your dietary	Physicians	12	3.0
supplements	Nutritionists or dietitian	7	1.8
	Online store	48	12.0
	Others	10	2.5

From whom do	Health care	0	0
you get	professionals		
information	Family members and friends	65	16.3
about dietary	Internet	52	13.0
supplements	Books	4	1.0
	Others	8	2.0
What is the	Daily	85	21.3
using of dietary	Weekly	15	3.8
supplements	Monthly	0	0
	When needed	29	7.2
What is the	Multivitamin	26	6.5
type of dietary			
supplements do	Multimineral	0	0
you use	Vitamin + mineral	28	7.0
	Oil fish	17	4.3
	Proteins	52	13.0
	Others	6	1.5

Regarding the knowledge, 216 (54%) think that supplements has benefit to their health, about 269 (67.3%) think that supplements has side effects, about 248 (62%) think that supplement users need routine investigations, 177 (29.3%) think that supplements increase level of concentration, 214 (53.5%) think that supplements increase the power, 182 (45.5%) think that supplements prevents dietary deficiency, 214 (53.5%) think that supplements increases or maintains muscle mass. [Table3]

Table 3: level of knowledge.

level of knowledge Qs		**Frequency**	**%**
Do you think taking	Yes	216	54.0
dietary supplements	No	80	20.0
helpful for your health	I don't know	104	26.0
Do you think dietary	Yes	269	67.3
supplements has side	No	68	17.0
effects or interactions	I don't know	63	15.8
Do you think routine	Yes	248	62.0
checkup in mandatory for	No	68	17.0
people who take dietary			
supplements	I don't know	84	21.0
Do you think dietary	Yes	117	29.3
supplements improve your	No	158	39.5
concentration	I don't know	125	31.3
Do you think dietary	Yes	214	53.5
supplements increase your	No	106	26.5
strength	I don't know	80	20.0
Do you think dietary	Yes	182	45.5
supplements can prevent	No	131	32.8

nutritional deficiency	I don't know	87	21.8
Do you think dietary	Yes	214	53.5
supplements can increase	No	78	19.5
or maintain your muscle mass	I don't know	108	27.0

The cross tabulation between demographics data and use of supplements,there is significant association with age (p=0.001), and found the most users of supplements are the adolescents in age 22, and with level of education (p=0.006), there is no significant association forgender (p=0.859), nationality (p=0.782) and region (p=0.593). [Table4]

Table 4: crosstab between demographic data and use of supplements.

Demographic data		**Yes**	**No**	**P value**
Age	12	0	1	0.001
	13	0	1	
	14	0	4	
	15	3	10	
	16	5	25	
	17	8	36	
	18	15	47	
	19	7	28	
	20	13	25	
	21	19	27	
	22	59	67	
Gender	Male	55	113	0.859
	Female	74	158	
Nationality	Saudi	114	242	0.782
	Non Saudi	15	29	
Region	Riyadh	12	25	0.593
	Makkah	90	195	
	Maddenah	10	10	
	Qussim	3	7	
	Asseer	2	6	
	Tabuk	2	2	
	Hail	3	3	
	North borders	1	3	
	Jazzan	2	1	
	Najran	0	1	
	Albaha	0	3	
	Aljuf	4	15	
Education level	Illiterate			0.006
	Read and write	2	0	
	Elementary	0	0	
	Intermediate	1	12	
	Secondary	39	110	
	Collage	87	149	
	student			

In crosstab between age and what type of supplement they use, there is significant association (p=0.035) and we found that most of proteins users' age is 22. [Table5]

Table 5: crosstab between age and what type of supplement they use.

	Multivitamin	Multimineral	Vitamin +minera l	Oil fish	Proteins	Others
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	3	0	0	0	0	0
16	1	0	3	0	1	0
17	0	0	1	2	4	1
18	2	0	6	4	3	0
19	2	0	2	0	3	0
20	1	0	4	2	5	1
21	8	0	3	3	4	1
22	9	0	9	6	32	3

In crosstab between gender and why they use supplements, there is significant association (p=0.000) and we found that males were the most users aiming to build up their muscles, in other hand female use supplement for disease prevention, control and treatment. In crosstab between gender and what type of supplement they use, there is significant association (p=0.007) and we found that most users of proteins are males, In crosstab between gender and from where they bought the supplements there is significant association (p=0.001) and we found that most female bring it from pharmacy, There is no significant association between gender and frequency of supplement use (p=0.595) and from whom they buy supplement (p=0.348). [Table6]

Table 6: crosstab between gender and why they use supplements

Dietary supplements users data		**Male**	**Female**	**P value**
What is the	Disease	6	14	0.000
main reason	prevention			
for using	Disease control/	1	14	
Dietary supplements	treatment			
	Muscle building	28	8	
	Improving sports	9	11	
	performance			
	Improving brain	5	7	
	performance			
	Losing weight	3	7	
	Increase weight	3	13	
Where do you	Pharmacy	12	31	0.001
usually buy your	Physicians	4	8	

dietary supplements				
	Nutritionists or	8	1	
	dietitian			
	Online store	0	7	
	Others	25	23	
From whom	Health care	0	0	0.348
do you get information	professionals			
about dietary	Family members	26	39	
supplements	and friends			
	Internet	21	31	
	Books	3	1	
	Others	5	3	
What is the	Daily	38	47	0.595
frequency of using of	Weekly	7	8	
Dietary supplements	Monthly	0	0	
	When needed	10	19	
What is the type of	Multivitamin	7	19	0.007
dietary	Multimineral	0	0	
supplements	Vitamin + mineral	8	20	
do you use	Oil fish	7	10	
	Proteins	32	20	
	Others	1	5	

DISCUSSION

In this study our aim was to estimate the prevalence of dietary supplements use among adolescents in KSA, to investigate the factors influence dietary supplements use and to assess the awareness among Adolescents.

We surveyed about 400 adolescent, from age of 12 to age 22 years old, the majority of them were 22 years old 126 (31.5%), male and females were included, females were 232 (58%), participants from 13 regions but almost from Makkah 285 (71.3), the majority were collage students 236 (59%).

We found that only (32.3%) of participants use supplements; our findings are similar to data provided by Italian study reporting that (34.8%) of high schools teenagers consumed dietary supplements,[2] maybe because.the same target population.

Regarding factors influence dietary supplements use, we found statically significant association between dietary supplements use and age, and that's similar to result founded in Korean study among Adult,[7] also we found significant association between supplements use and level of education, and that's similar to result founded in Korean study among.

Adult[7] but we found no significant association between supplements use and gender, while study in Shargah (UAE) there was statically significant association between them (0.006),[4] regarding region and nationality there was no statically significant association and we didn't found any researches in KSA asses these factors.

We found the most of male use dietary supplements to build up their muscles,improve sports performance, while female used for prophylaxis, treatment and increase their weight, this is similar to study was conducted in UAE,[4] male exercises used supplements to increase or maintains muscles mass, strength and power and to boost exercise recovery, females mainly used supplements to increase energy, maintains their health, and prevent nutritional deficiency, may because the same geographic region .and cultures.

We found most of male use proteins followed by vitamins and minerals, while female use proteins, vitamins and mineral followed by multivitamins, this is nearly similar to study was conducted in Italia, most of males were use vitamins and minerals followed by multivitamins, while female use multivitamins followed by vitamins and minerals,[2] may because similar target population

CONCLUSION

The prevalence of dietary supplements use among adolescent was slightly high (32.3%). Factors associated with dietary supplements use are age and level of education .The most used dietary supplements are proteins vitamins and minerals .The most commonly reason to use of dietary supplements was to build muscles for males and to treat or prevent diseases for females.

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