

Assessment regarding Prevalence of Using Dietary Supplements among Physically Active Adults in Makkah Almukrramah, Saudi Arabia, 2021

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Abstract:

Background:

Dietary supplements (DSs) are popular in many countries, and their use among individuals is increasing worldwide. Dietary supplements are considered as food products that contain dietary ingredients intended to supplement nutritional value to a diet. It encompasses specific vitamins, multivitamins, minerals, enzymes, amino acids, and herbs. As a balanced diet is essential for development and maintenance of the human body, dietary supplement usage has become commonplace to improve overall health and well-being, and to reduce the risk of certain diseases. Dietary supplements use has become very common in the KSA, and GCC countries. However, there are limited studies examining the characteristics of people who take supplements. The economic boom in Saudi Arabia indirectly, prompted the use of dietary supplements in the last two decades. Must to investigate the prevalence of dietary supplement use and its association with socio demographic/lifestyle characteristics among Saudi female students. The Kingdom of Saudi Arabia is a fast growing economic country that has affected its general population in various ways including a transition in daily lifestyle patterns and dietary intake habits. **Aim of the study** : To assess the Prevalence of Using Dietary Supplements among Physically Active Adults in Makkah Almukrramah / Saudi Arabia, 2021. **Method:** Cross-sectional study design. The current study was conducted at fitness time centers at Holy Capital of Makkah. Sample size will be total of 190 participants. **Results:** Overall, 190 participants. No significant difference between age and using supplements in the study while Chi-

square 7.090 & p-value 0.527 less than 0.05. Most age of participants use supplements from 30-35years were constitute 29.5 % while not use 25.0%, then the age from 25 – 30 years use supplements were constitute 21.45% but in the same age not use supplement were constitute 35.0% followed by age from 19-25years use supplement were constitute 18.5%. **Conclusion:** It is highly recommended to increase awareness measures from official health entities by educating the general population and physically active adults about dietary supplement use and adverse effects to ensure safe practices.

Keywords: supplements, dietary intake, lifestyle , prevalence, physically active , adults

Introduction

An adequate diet plays a key role in the maintenance of good health and ensures sufficient amount of nutrients, vitamins and minerals in human body . The consumption of dietary supplement (DS) has increased tremendously in the last few decades in all age groups including young generation with its use in promoting different health benefits, adequate diet intake and improving physical performance.[1] Based on European Food Safety Authority (EFSA), the DS are defined as “concentrated sources of nutrients or other substances with a nutritional or physiological effect intended to supplement a normal diet”[2]

Definition of a product taken orally that contains one or more ingredients (such as vitamins, minerals, herbs, or amino acids) that are intended to supplement one's diet and are not considered food but know that there are potential pitfalls of these dietary supplements. [3]

A previous study indicated that almost half of Saudi participants consumed dietary supplements[4] Another study reported 93.3% of Saudi athletes consumed supplements,[5]while 76.6% of female Saudi college students reported consumption of dietary supplements.[6] Furthermore, dietary supplements were reported to be used by ~36% and ~24% of students in Saudi health and non-health colleges, respectively, while 62.3% of Saudi adults were reported to be supplement users or had used supplements at least once before.[7]

This insight encourages the dialogue approach in risk communication, which sees the public as an active part of the process and not a passive one. [8] There is a requirement to speak risks to the general public and convey a message that each active substance might need edges however may also have adverse effects on health .The public's risk perception is influenced by personal, psychological, environmental and social factors. So as to speak the danger, there's a requirement to require the danger communication approach to make an interactive method of exchanging information and opinions among people, teams.[9]

Any product labeled as a "supplement," according to Food and Drug Administration (FDA), indicates that its contents and the claims on the label have not been evaluated or validated by the FDA. It well documented that the use of some of these products may lead to critical health injury. It means that the regular users are at risk resulting from taking various categories of DSs intended for athletic improvement.[10] dietary supplement (DS) use is widespread, with over 1/2 adults news use, and also the highest use rumored in older adults . DSs can give nutrients that will be lacking or inadequate within the diet and may facilitate older adults meet counseled

intake targets. DSs is also required to fulfill nutrient necessities, significantly for nutrients that don't seem to be omnipresent within the food provide, like D [11,12]

A cross-sectional study, published in Journal of Nutrition and Metabolism in April 2017 was conducted in Riyadh among regular gymnasiums. The aim of study to determine the prevalence of DSs use. A validated structured questionnaire used. The study showed that 113 (37.8%) individuals out of 299 participants were DSs users. This consumption was less frequent in females than males (16.4% versus 44.7%) The most ordinarily used supplements were whey protein (22.1%), multivitamins (16.8%), amino acids (16.8%), omega 3 (11.5%), and creatine (11.5%). The causes for taking dietary supplements were to improve body shape (47.7%), increase health (44.2%), and improve performance (41.5%).[14]

Literature review

Journal of Family and Community Medicine have published a cross-sectional study in early 2017 about nutrition and hormones among Gyms' Attendees in Riyadh to assess the prevalence of supplements use and their types and to obtain the main reasons of that enhancement. The researcher used self-administered questionnaire proceeded at gyms in Riyadh that were selected randomly from different sectors. Out of a total of 457 randomly selected volunteers, approximately 47.9% of the sample reported an intake of nutritional supplements while 7.9% said that they took hormones. Protein powder massively consumed by 83.1% of the participants . Almost 16.8% of supplement users had noticed some side effects, and 25.7% of those had quit taking them because of adverse effects. Only half of the hormone users (54.2%) reported that they had had medical checkups. The dominant source of information on the supplement and hormone use was non-health professionals. Friends being the primary source (40%) of knowledge on the application of hormones . The method of nutritional supplements significantly associated with BMI, duration of daily exercise, and following a special diet. There was an apparent association between DSs consumption and hormone use .[15.16] Results from observational studies have yielded mixed results regarding the health benefits of individual supplements or multivitamins/multiminerals (MVMM), and randomized clinical trials have often not supported benefits of these supplements, although the duration of many randomized clinical trials may have been insufficient to observe beneficial effects. Furthermore, some research has indicated that the use of selected supplements at high doses may have adverse effects, generating some skepticism regarding their use. [17]

In Sharjah, the United Arab Emirates, a study of gym users with 320 participants showed a high prevalence of DSs use, 43.8%. DSs use was more common among males than females (47.7% versus 28.1%). The reasons for using DSs differed between males and females. Men were taking them to maintain or increase muscles strength, mass, and power and to boost exercise recovery. In contrast, women were planning for managing their health, improving energy, and preventing nutrition deficiency. Whey protein (48.6%) and protein powders (45.7%) were the most-consuming DSs, while creatine was the least (29.3%). Multivitamins (38.6%), branched-chain amino acids (36.4%), caffeine (35.0%), and creatine (29.3%) also used.

Approximately 60.7% of users were self or commercially prescribed with only 12.8% were professionally advised.[15,18]

Their use may be motivated, in part, by evidence suggesting that increased intake of some dietary constituents may be associated with reduced risk of outcomes, including cancer and cardiovascular disease. [19]

The first study investigated DSs use in Middle East was conducted in Beirut, published in Journal of Nutrition and Metabolism in 2012. It was a cross-sectional survey among 512 exercisers between 20 and 50 years old. The high concurrent use of prescription medications and DSs in older adults may increase the risk of drug-nutrient and other drug-supplement interactions . Thus, DSs have the potential to be both beneficial and harmful to health, and it is important to monitor usage patterns in this rapidly growing segment of the US population aged ≥ 60 y. The purpose of this study was to characterize the use of DSs among older adults with the use of the nationally representative data from the NHANES and relate their use to selected demographic, behavioral and health characteristics in that population. [20,21] a large meta-analysis and systematic review were conducted over 159 studies in the United States of America at 2017. Athletes were using DSs much more than USA general population. The use in male and female was the same except that males were using more protein, creatine, and vitamin E than females. On another hand female were using more iron [22,23]

Rationale .

The researcher is a physically active person. She joined several fitness centers in Makkah in the last years. She noticed that DSs were widely used between adult gymnasiums. The researcher failed to lay a hand on previous studies conduct the same subject among athletes In Makkah Al Mukrramah city. Moreover, studies that carried out in this field in our country the Kingdom of Saudi Arabia are insufficient and were performed only in Riyadh, the capital of Saudi Arabia. Previous studies showed the high prevalence of DSs consumption with lack of professional background.

Aim of the study : To assessment the Prevalence of Using Dietary Supplements among Physically Active Adults in Makkah Almukrramah / Saudi Arabia, 2021.

Objectives

- **Aim of the study** : To assessment the Prevalence of Using Dietary Supplements among Physically Active Adults in Makkah Almukrramah / Saudi Arabia, 2021..
- To evaluate the gender variation between users.

Material and Method

Research Design : Cross-sectional study design. Focused on estimation of Prevalence of Using Dietary Supplements among Physically Active Adults

Setting:

fitness time centers .The Holy capital, Makkah Al-Mukarramah city. Makkah Al-Mukarramah

had all services such as Health, Education, Electricity, Municipality, and Transportation.

Study Sampling :

The number of registered adults at fitness centers in main sectors in Makkah Al Mukrammah is a total of 6320, which considered the total population of interest. 2810 (34%) were female, while 3510 (66%) were male. Assuming that, the prevalence of DSs consumption among adult trainees is 50%. Confidence level is: (95%) Error: (7%). Therefore, by stratified sampling technique the required sample size will be total of 190 participants. They would be 65 (34%) female volunteers and 125 (66%) males.

Study population:

Adult gymnasiums between 20 and 65 who are training in different fitness centers in main sectors in Makkah Al-Mukrammah 2021 .

Inclusion criteria:

All healthy male and female gymnasiums between 19 and 65 years of age at the time of study training in fitness time, elite, and curves centers.

Exclusion criteria:

- Training coaches .
- Participants below 20 years of age or over 65 years .
- Participants with chronic diseases or any health problem .

Sampling technique:

Simple random generator used to select centers randomly from sectors around Makkah AlMukrammah. During the period of data collection, 2021, the researcher will distribute a validated questionnaire to every adult gymnasium who fit into the inclusion criteria by non-probability convenience sampling technique till she obtains the required sample size over a period of three weeks.

Data collection tool (instrument)

A validated self-administered questionnaire will be used. That would include demographic characteristics such as age, gender, education and occupation, marital status, health status, smoking status, sleeping length and dietary habits. In addition, it would include exercise-related features like duration, frequency, and type of exercise. Moreover, that form will contain questions concerned with DSs used such as type, duration of use, source of information, and purpose of consumption.

The questionnaire will be constructed in Arabic language to be validated by two consultants, and then it will be distributed and filled by participants.

Data Collection technique :

During the period of data collection, the researcher will go to the selected female fitness centers. She will collect data from eligible gymnasiums, by distributing the questionnaire to athletic adults while they are in the training area. Each questionnaire will be filled by an exerciser, and then the researcher will collect the questionnaires immediately after filling. The researcher will seek the help of male facilitator in the selected male fitness centers. He will collect the data by the same technique followed in the female centers.

Data entry and analysis

Data will be entered into a personal computer and will be analyzed by using Statistical Package for Social sciences (SPSS24). Necessary statistical tests such as Chi-square, T-test, and other appropriate tests will be used. A p- value of less than 0.05 will be adopted for statistical significance.

Pilot study/pretesting

The researcher will perform a pilot study on 20 adult gymnasiums training in “Fitness way’ center (out of the study), to test the tool, the methodology, and the environment. Necessary changes will be made accordingly.

Ethical considerations:

- Research ethics committee approval will be obtained.
- Permission from higher authorities including public health administration and fitness centers’ directors will be obtained.
- All collected data will be kept confidential.
- All participants will sign a formal consent after being informed about the objectives of the study.

Budget It will be self- funded

Result

Table (1):- Distribution of demographic data (gender, Age, Marital status, Education, Occupation and Income.

	N	%
Gender		
Male	133	68.9
Female	60	31.1
Age		
Less than 19years	3	1.6
from19-25years	35	18.1
25-30years	44	22.8
30-35years	56	29.0
35-40years	35	18.1
40-45years	9	4.7
45-50years	9	4.7
55-60years	1	.5
More than 65years	1	.5
Marita status		
Married	118	61.1
Single	75	38.9
Education		
Illiterate	4	2.1
Primary certificate	2	1.0

Middle School certificate	2	1.0
Secondary certificate	28	14.5
diploma	21	10.9
BA	105	54.4
Postgraduate	31	16.1
Occupation		
Yes	145	75.1
No	48	24.9
Income		
Non	37	19.2
Less than 3000SR	19	9.8
3000-10000SR	82	42.5
More than 10000SR	55	28.5

Gender. The majority of our study are male gender in our study was 68.9 % while female were 31.1 % of cases. Age. In our study, age period of 30-35years 29.0 % constitutes the most common period In our study, while the age period of 25-30years represents 22.8 % while the equal from 19-25years & 35-40years represents 18.1%. Marital status. In our study the majority of participant is married 61.1 % while the single were 38.9 %. Education Level. The majority of our participants were at BA were constitutes 54.4 %, followed by Postgraduate were constitutes 16.1 % while secondary certificate were 14.5%, the diploma 10.9% . Occupation. In our study the majority were employees' yes 75.1 % while the not employees was 24.9%. Income . In our study Income from 3000-10000SR were 42.5% , while more than 10000SR were 28.5% but non income were 19.2 % and less than 3000 SR were 9.8% .

Table (2):- Distribution of (BMI, suffering from any problems and Smoking) in study group

	N	%
BMI		
Underweight	3	1.6
Normal	58	30.1
Overweight	81	42.0
Obese	51	26.4
Smoking		
Non	126	65.3
Yes	53	27.5
Quit smoking	7	3.6
Other	7	3.6

Related to BMI the majority of our participants were having overweight constitutes 42.0%, followed by normal BMI participants were constitute 30.1%. While increase BMI (obese) were constitutes 26.4%. Smoking. The majority of our participants were Non-smoker constitutes 65.3%. The followed by smokers were constitutes 27.5%.

Table (3):- The Frequency for (Form of CMOS food user, Motivation of using supplements, Do you know what dose is allowed for supplements?, Are you familiar with the side effects and Did you suffer side effects of supplements?) in study group

	N	%
Form of CMOS food user		
energy drink	27	15.6
Biscuits	15	8.7
Powder	67	38.7
Capsules or tablets	50	28.9
Sweet song	10	5.8
Other	4	2.3
Motivation of using supplements		

Rebuild muscle	52	30.1
Prevent muscle rupture	15	8.7
Weight loss	48	27.7
improve the performance	16	9.2
Improve public health	28	16.2
Improve physical appearance	11	6.4
Other	3	1.7
Do you know what dose is allowed for supplements?		
Yes I know the recommended dosage	82	47.4
Yes I know the maximum dose	8	4.6
Know the recommended dosage and maximum dose	30	17.3
I do not know	53	30.6
Are you familiar with the side effects		
Yes	107	61.8
No	66	38.2
Did you suffer side effects of supplements?		
Yes	37	21.4
No	136	78.6

Form of CMOS food user

Most of participants they user powder form of CMOS food followed by Capsules or tablets were constitutes 38.7 % then 28.9 % , the anther form of CMOS food user energy drink then Biscuits were constitute (15.6% then 8.7 %) .

Motivation of using supplements

majority of our participants were using supplements the motivation is Rebuild muscle were constitutes 30.1 % then using supplements the motivation is weight loss were constitutes 27.7% anther motivation is Improve public health were constitutes 16.2 % then improve the performance were constitutes 9.2% , Followed by Prevent muscle rupture were constitutes 8.7%

Are you familiar with the side effects?

majority of our participants answer by yes I'm familiar with side effects were constitutes 61.8 % Followed by answer NO I'm not familiar with side effects were constitutes 38.2 % .

Did you suffer side effects of supplements?

majority of our participants answer NO I'm not suffer side effects of supplements were constitutes 78.6 % Followed by answer by yes I'm suffer side effects of supplements were constitutes 21.4 %

Table (4):- the relation between using supplement and BMI in study group

BMI		Using supplement		
		Yes	No	Total
Underweight	N	3	0	3
	%	1.7%	0.0%	1.6%
Normal	N	53	5	58
	%	30.6%	25.0%	30.1%
Overweight	N	74	7	81
	%	42.8%	35.0%	42.0%
Obese	N	43	8	51
	%	24.9%	40.0%	26.4%
Total	N	173	20	193
	%	100.0%	100.0%	100.0%
Chi-square	X ²	2.496		
	P-value	0.476		

Related to BMI the majority of our participants were having overweight constitutes 42.0%, followed by normal BMI participants were constitute 30.1%. While increase BMI (obese) were constitutes 26.4%.

Table (5):- The relation between Food supplements used and age in study group .

Food supplements used		Age									Total
		Less than 19years	from19-25years	25-30years	30-35years	35-40years	40-45years	45-50years	55-60years	More than 65years	
Vitamin B	N	0	3	3	3	1	1	0	0	0	11
	%	0.0%	9.4%	8.1%	5.9%	3.3%	11.1%	0.0%	0.0%	0.0%	6.4%
Vitamin C	N	0	3	0	0	1	0	0	0	0	4
	%	0.0%	9.4%	0.0%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	2.3%
Vitamin D	N	1	3	2	4	1	0	0	0	0	11
	%	33.3%	9.4%	5.4%	7.8%	3.3%	0.0%	0.0%	0.0%	0.0%	6.4%
Vitamin E	N	0	1	0	1	1	0	0	0	0	3
	%	0.0%	3.1%	0.0%	2.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.7%
Multivitamins	N	1	5	15	15	13	5	7	1	1	63
	%	33.3%	15.6%	40.5%	29.4%	43.3%	55.6%	77.8%	100.0%	100.0%	36.4%
iron	N	0	1	2	1	1	0	0	0	0	5
	%	0.0%	3.1%	5.4%	2.0%	3.3%	0.0%	0.0%	0.0%	0.0%	2.9%
Omega 3	N	0	2	2	7	3	1	0	0	0	15
	%	0.0%	6.3%	5.4%	13.7%	10.0%	11.1%	0.0%	0.0%	0.0%	8.7%
Omega 6	N	0	0	1	1	0	0	0	0	0	2
	%	0.0%	0.0%	2.7%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%
Whey protein	N	1	8	5	9	3	2	1	0	0	29
	%	33.3%	25.0%	13.5%	17.6%	10.0%	22.2%	11.1%	0.0%	0.0%	16.8%
Amino acids	N	0	0	4	5	1	0	0	0	0	10

	%	0.0%	0.0%	10.8%	9.8%	3.3%	0.0%	0.0%	0.0%	0.0%	5.8%
Creatine	N	0	1	1	0	1	0	0	0	0	3
	%	0.0%	3.1%	2.7%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.7%
Collegians	N	0	1	0	0	2	0	0	0	0	3
	%	0.0%	3.1%	0.0%	0.0%	6.7%	0.0%	0.0%	0.0%	0.0%	1.7%
caffeine	N	0	0	0	1	1	0	0	0	0	2
	%	0.0%	0.0%	0.0%	2.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.2%
Herbs	N	0	1	0	0	1	0	0	0	0	2
	%	0.0%	3.1%	0.0%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.2%
Hormones	N	0	1	1	3	0	0	0	0	0	5
	%	0.0%	3.1%	2.7%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%
Weight Loss Supplements	N	0	2	1	1	0	0	1	0	0	5
	%	0.0%	6.3%	2.7%	2.0%	0.0%	0.0%	11.1%	0.0%	0.0%	2.9%
Total	N	3	32	37	51	30	9	9	1	1	173
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Chi-square	X ²	80.787									
	P-value	0.998									

Show in table (5) that no significant difference between Food supplements used and age in study group While Chi-square 80.787 & p-value less than 0.05. The majority of our participants age were supplement multivitamins (more than 65 years , 55-60 y , 45-50 y , 40-45 y , 35-40 y , 25-30 , less than 19 y , 30-35 y , from 19-25 years) were constitutes (100.0% , 100.0% , 77.8% , 55.6% , 43.3% , 40.5% , 33.3% , 29.4% , 15.6%) then age supplement whey protein (Less than 19 y , from 19-25 y , 40-45 y , 30-35y then 25-30 years) were constitutes (33.3% , 25.0% , 22.2% , 17.6% 13.5 %.) but age supplement vitamin D less than 19 years were constitutes 33.3%

Table (6):- The relation between Food supplements used and Income in study group .

Food supplements used	Income								Total	
	Non		Less than 3000SR		3000-10000SR		More than 10000SR			
	N	%	N	%	N	%	N	%	N	%
Vitamin B	3	8.8%	2	11.8%	4	5.2%	2	4.4%	11	6.4%
Vitamin C	0	0.0%	0	0.0%	4	5.2%	0	0.0%	4	2.3%
Vitamin D	1	2.9%	3	17.6%	4	5.2%	3	6.7%	11	6.4%
Vitamin E	1	2.9%	1	5.9%	0	0.0%	1	2.2%	3	1.7%
Multivitamins	14	41.2%	6	35.3%	26	33.8%	17	37.8%	63	36.4%
Iron	2	5.9%	0	0.0%	1	1.3%	2	4.4%	5	2.9%
Omega 3	5	14.7%	1	5.9%	6	7.8%	3	6.7%	15	8.7%
Omega 6	0	0.0%	0	0.0%	2	2.6%	0	0.0%	2	1.2%
Whey protein	4	11.8%	3	17.6%	13	16.9%	9	20.0%	29	16.8%
Amino acids	1	2.9%	1	5.9%	6	7.8%	2	4.4%	10	5.8%
Creatine	0	0.0%	0	0.0%	3	3.9%	0	0.0%	3	1.7%
Collegians	0	0.0%	0	0.0%	2	2.6%	1	2.2%	3	1.7%
Caffeine	0	0.0%	0	0.0%	1	1.3%	1	2.2%	2	1.2%
Herbs	1	2.9%	0	0.0%	0	0.0%	1	2.2%	2	1.2%

Hormones	0	0.0%	0	0.0%	3	3.9%	2	4.4%	5	2.9%
Weight Loss Supplements	2	5.9%	0	0.0%	2	2.6%	1	2.2%	5	2.9%
Total	34	100.0%	17	100.0%	77	100.0%	45	100.0%	173	100.0%
X²	42.476									
P-value	0.579									

Table 6 Show that no significant difference between Food supplements used and Income in study group While Chi-square 42.476 & p-value less than 0.05. The majority of our participants use supplement Multivitamins the Non income were constitutes (41.2%), then more than 10000SR were constitutes (37.8%) then Less than 3000 SR supplement were constitutes (35.3%) followed by use supplement whey protein the total use 16.8% in deferent income

Discussion

The present study demonstrated the high prevalence of dietary supplement use and its association with socio demographic and lifestyle factors in Adults in Makkah AlMukrramah at King Saudi Arabia. The association between education level and dietary supplement use has been in study. A significant direct association of level of education and dietary supplement use in the adult population. A significantly higher consumption of vitamins and/or mineral food supplements in females with educational status . Our present study supports the above findings showing a significant direct association between level of education and Food supplements used and gender in study group While Chi-square 28.349 & P 0.019 While p-value more than 0.05 .[24]

Studies across completely different populations and sex show a healthier manner related to dietary supplement (men and women) that dietary supplement use. Participants lack correct data and basic information concerning aspect effects, importance of doctor's prescription and reliable supply. A doable cause for this unknowingness might be the shortage of correct counseling and suggestions concerning healthy diet from time to time via reliable sources like physicians and consultants. This study has some limitations and will be thought of before extrapolating the results to the overall public.[25] These findings can't be generalized thanks to little sample size, that isn't representative of the population in Kingdom of Saudi Arabia. Thanks to the cross-sectional style of this study, the reported associations, significantly with relevance socio demographic/lifestyle characteristic and health outcomes couldn't establish relation [26].

Conclusions

Our study highlights the increasing trend of DS use among Saudi adults living in the capital of Saudi Arabia, Makkah AlMukrramah city 2021. More importantly, the prevalence of DS use was on the rise compared with both national and international studies, which potentially predicts an increase in negative consequences. The present results could serve as support to health care provider of to improve their care to encourage better and safer use of DSs and to support the development of messages aimed to safely use DSs. Therefore, we advocate the implementation of educational programs that teach adults pepoal how to use DSs to avoid their complications and achieve the optimum therapeutic benefits.

REFRANS

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