

Knowledge, Attitude and Practice Related to the Use of Dietary Supplements in Indian Population

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Abstract:-This KAP (Knowledge, Attitudes, and Practices) survey is designed to explore the knowledge, attitudes, and practices of the Indian population regarding dietary supplements. The survey will examine the prevalence of dietary supplement use, sources of information, and reasons for use. Additionally, the survey will investigate any potential concerns or negative experiences associated with dietary supplement use. The results of this survey will provide important insights into the use of dietary supplements in India and can be used to inform future public health interventions and policies related to supplement use.

Keywords:-

Dietary supplements, Knowledge, Attitudes, Practices India, Herbal supplements, Nutritional Supplements

I. INTRODUCTION

Dietary supplements are products that are intended to supplement one's diet and contain vitamins, minerals, herbs, or other substances. In recent years, the use of dietary supplements has been increasing globally, including in India. A KAP (Knowledge, Attitudes, and Practices) survey on dietary supplements among the Indian population can provide valuable insights into the prevalence of use, sources of information, reasons for use, and any potential concerns or negative experiences associated with their use.

The research population for this study includes individuals living in various regions of India, including urban and rural areas. The survey will be conducted on a representative sample of the population to ensure that the results are applicable to the broader population.

The dietary supplements industry in India has been rapidly growing, with an increasing number of products being introduced into the market. The financial overview of the industry shows that the dietary supplements market in India is projected to

reach USD 10.8 billion by 2023, with a growth rate of 20.3% CAGR (Compound Annual Growth Rate) from 2018 to 2023.^[1] This indicates a significant demand for dietary supplements in the Indian market.

Some of the top consumed dietary supplements in India include multivitamins, omega-3 fatty acids, and probiotics, calcium, and vitamin D supplements.^[2] However, the use of other dietary supplements, such as herbal supplements and weight loss supplements, is also prevalent.

In India, the market for dietary supplements is expanding, but the general population is not sufficiently informed about the benefits and possible side effects of these products. The level of dietary supplement knowledge and awareness among the Indian population can be evaluated with the aid of a KAP survey.

The COVID-19 pandemic has had an effect on the nutritional supplement market as well, as there is now more demand for goods that promise to strengthen immunity or prevent or treat the virus.^[3] More study is required to assess the efficacy and safety of such supplements because many of these claims are not backed by scientific data.^[4]

The belief that dietary supplements can provide health advantages, such as enhancing general wellbeing, increasing the immune system, and preventing chronic diseases, is a common motivation for their use. These claims are, however, frequently not well-supported by science, and some supplements may even be hazardous to health.

Despite the fact that dietary supplements can be helpful in supplying critical nutrients, there is a need for caution and control due to potential safety issues, such as interactions with drugs, overdosing, or contamination. To ensure quality and safety, the Indian government has put rules in place for the

production, labelling, and distribution of nutritional supplements (FSSAI, 2021).^[5]

Marketing and the media, as well as cultural and conventional ideas, frequently have an impact on how dietary supplements are used. For instance, Ayurveda and other conventional herbal supplements are well-liked in India, but there is some debate over the safety and usefulness of these products.

II. MATERIALS AND METHODS

Study Area: The investigation was conducted across India.

Study period: 1st February to 2nd March 2023

Study design: As part of an observational research data analysis, students from the Gahlot Institute of Pharmacy distributed a structured questionnaire to the general public in India.

Data collection: There were two sections to the questionnaire.

Section 1: It includes demographic data like name, age, gender, occupation, location, and field of work.

Section 2: It covers questions related to knowledge, attitude and practice of ‘Dietary supplements in India’. 19 questions were circulated to people.

It was further divided into 3 sections:

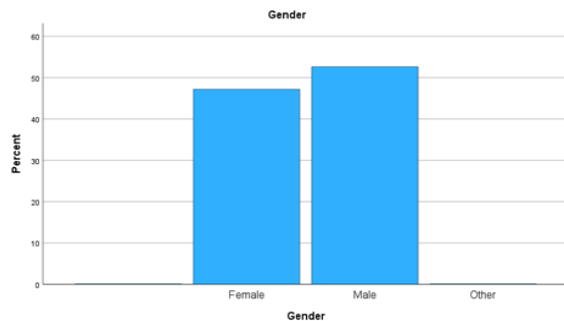
- 1) knowledge-based (5 questions)
- 2) Attitude based (2 questions)
- 3) Practice based (12 questions)

III. RESULTS

Socio-demographic:

Age Group

Frequency	Percent	
19-20	125	12.4%
20-30	599	59.2%
30-40	229	22.7%
40-50	52	5.1%
50- Above	4	0.4%
50-Above	1	0.1%
Total	1011	100.0



Gender

Frequency	Response	Percent
Female	477	47.2
Male	532	52.6
Other	1	0.1
Total	1011	100

Occupation

	Frequency	Percent
Business	2	0.2
Employed	383	37.9
Housewife	34	3.4
Self-employed	3	0.3
Student	530	52.4
Unemployed	57	5.6
Total	1011	100

Knowledge

Knowledge related questions	Responses	All Participants	Percentage
Do you think dietary supplements can prevent chronic diseases?	Yes	490	48.5%
	No	296	29.3%
	Don't know	225	22.3%
Do you know the risk associated with Dietary supplements?	Yes	698	69%
	No	313	31%
In the long term, what do you think is a better way of getting Nutrients (Vitamins, minerals, etc.) ?	Food	623	81.4%
	Supplement	188	18.6%
Do you think higher cost of dietary supplements provides higher quality ?	Yes	305	30.2%
	No	229	22.7%
	May be	432	42.7%
	Not Applicable	45	4.5%
Which dietary supplement do you Know?	Whey protein	716	70.8%
	Probiotics	493	48.8%
	Vitamin A	383	37.9%
	Vitamin B	382	37.8%
	Vitamin C	563	5.7%
	Vitamin D	463	45.8%
	Minerals	427	42.2%
	Botanical compounds	374	37%
	Multivitami	618	61.1%

	n		
	Iron Supplement	1	0.1%
	Supplements	2	0.2%
	Creatine	1	0.1%
	Calcium	1	0.1%
	I don't take them	1	0.1%
	Biotin	1	0.1%
	Vitamin E		

Attitude

Attitude related Questions	Responses	All Participants	Percentage
Which source/sources would you consider the most trustworthy (i.e you are most likely to believe the information coming from this source)?	Social media	221	21.9%
	Friends/Relatives	229	22.7%
	Health care professional	422	41.7%
	Poster		
	TV or Journal advertisement	51	5%
		88	8.7%
Do you always look for professional/medical help, to take dietary supplements ?	Yes	544	53.8%
	No	242	23.9%
	Sometime	225	22.3%

Practice

Variable	Responses	All Participants	Percentage
Do you use any dietary supplements?	Yes	744	73.6%
	No	267	26.4%
Have you attended any health campaigns/workshops on dietary supplements?	Yes	655	64.8%
	No	356	35.2%
From where do you buy/prefer to buy your dietary supplements?	Pharmacy	435	43%
	Supermarket	257	25.4%
	A health club	243	24%
	other sources	76	7.5%
How frequently do you take	Daily to improve my health.	216	21.4%

dietary supplements?	Whenever I am sick.	363	35.9%
	As prescribed by doctor.	331	32.7%
	Not applicable.	101	10%
For what purpose would you use a nutritional supplement?	Prophylaxis to prevent disease.	146	14.4%
	To prevent minor illness for example cold.	207	20.7%
	To enhance adequate nutrition.	227	22.5%
	To maintain good health.	276	27.3%
	All of the above	155	15.3%
Do you consume any other medication along with dietary supplements ?	Yes	291	28.7%
	No	307	30.3%
	Sometimes	286	28.2%
	Not applicable	127	12.5%
Which dietary supplement do you use?	Whey protein	362	41.1%
	Probiotic		
	Vitamin A	171	9.4%
	Vitamin B	160	18.2%
	Vitamin C	154	17.5%
	Vitamin D	294	33.4%
	Minerals	190	21.6%
	Botanical compounds	152	17.3%
	Multivitamin	174	19.8%
	Others	374	42.5%
		35	4%
How long have you been using dietary supplements?	Less than a year	375	37.1%
	More than a year		
	Never	452	44.7%)
		184	18.2%
Did you experience any side effect with dietary supplements?	Yes	360	35.6%
	No	433	42.8%
	Not Applicable	218	21.6%
If so have you informed your physician?	Yes	189	76.2%
	No	604	23.8%
On a scale of 1 to 10, rate about how consuming dietary supplement has increased your strength and immunity	1	14	1.4%
	2	4	0.4%
	3	9	0.9%
	4	13	1.3%
	5	39	3.9%
	6	56	5.5%
	7	164	16.2%
	8	259	25.6%
	9	380	37.6%
	10	73	7.2%

Does taking dietary supplement has improved your quality of life?	Strongly Agree	208	20.6%
	Agree	438	43.3%
	Somewhat agree	286	28.3%
	Neither agree or disagree.	66	6.5%
	Disagree	13	1.3%

Do you use any dietary supplements?

		Do you use any dietary supplements?		Total
		No	Yes	
Occupation	Business	3	2	5
	Employed	90	293	383
	Housewife	14	21	35
	Student	145	385	530
	Unemployed	15	43	58
Total		267	744	1011

The chi-square statistic is 8.1533. The *p*-value is .08612. The result is significant at $p < 0.1$.

The result shows us that the employed individuals are the largest consumers of dietary supplements of the total consumers being 744. A significant difference was found among participants with different occupation.

This shows that people with stable employment can afford dietary supplements.

How frequently do you take dietary supplements?

		How frequently do you take dietary supplements?				Total
		As prescribed by a doctor	Daily to improve my health	Not applicable	Whenever I am sick	
Age group	19-20	38	31	14	42	125
	20-30	178	129	66	226	599
	30-40	97	44	16	72	229
	40-50	17	8	5	22	52
	50-Above	1	4	0	1	5
Total		331	216	101	363	1011

The chi-square statistic is 21.86. The *p*-value is .03912. The result is significant at $p < .05$.

The majority of the survey responses (59.2%) were received from the age group of 20-30, with a total of 599 out of 1011 participants. This indicates that younger individuals tend to show a greater preference for using dietary supplements as compared to those in

their 30s or 40s. The survey findings reveal that most participants tend to take dietary supplements primarily when they are sick, with 363 responses. Additionally, 331 participants reported taking supplements only when prescribed by a doctor.

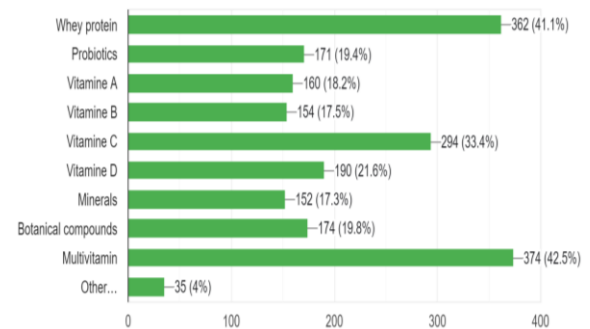
Do you think higher cost of dietary supplements provides higher quality ?

		Do you think higher cost of dietary supplements provides higher quality ?				Total
		Maybe	No	Not applicable	Yes	
Occupation	Business	1	1	1	1	4
	Employed	144	103	15	122	384
	Housewife	16	10	3	5	34
	Student	246	96	20	168	530
	Unemployed	25	19	6	8	58
Total		432	229	45	305	1011

The chi-square statistic is 34.8673. The *p*-value is .000492. The result is significant at $p < .05$.

Maximum number of respondents are students. Most of the respondents (432) have selected the option maybe thus majority of the people are not aware about if higher cost of dietary supplements give greater quality. Some supplements such as protein powder the quality increases with price with the low cost protein being lower quality with adulterants added in it.

Which Dietary supplements do you use?

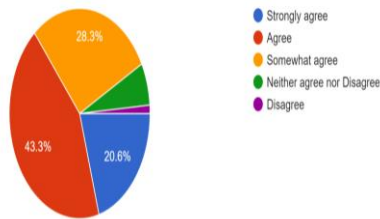


According to the results of the survey conducted, Whey Protein has emerged as the most commonly used supplement among the sample population, with a response rate of 41.1% (362 individuals). Multivitamins rank second with 42.5% preference among the participants. The usage of Probiotics, Vitamins A, B, and D are observed to be average among the sample population. However, Vitamin C

stands out as the most commonly used vitamin supplement, with a significantly higher usage rate of 13% than other vitamins on average. Minerals have been found to be the least used supplement, with only 17.3% of the participants reporting its usage. These findings underscore the need for further research and education on the use of dietary supplements, particularly with regard to the optimal and safe usage of various types of supplements in promoting overall health and well-being.

Does Taking dietary supplements has improve your quality of life?

1,011 responses



A significant proportion of the participants (63.9%) agreed that dietary supplements have a positive impact on their quality of life. Specifically, 43.3% of the respondents agreed, while 20.6% strongly agreed with the statement. About 28.3% of the participants somewhat agreed with the statement, indicating a moderate level of agreement. A small percentage of the participants (8.12%) neither agreed nor disagreed with the statement, suggesting a lack of clarity on the subject. Overall, the data suggests that a majority of the participants believe in the potential benefits of dietary supplements in enhancing their quality of life.

IV. DISCUSSION

The current study suggests that greater proportion of participants had a good knowledge and positive attitude towards the use of dietary supplements. The most used dietary supplements were multivitamins with 42.5% and followed by whey protein with 41.1%. 53.8% of the participants look for professional help before taking dietary supplements this shows peoples trust in healthcare professionals rather than other sources. More than half of the respondents agree that using dietary supplements has improved their quality of life. A significant difference was found among participants with different occupation (p value < 0.1).

This shows that people with stable employment can afford dietary supplements. A significant difference was found participants with different age groups who take dietary supplements (p value < 0.05). A significant difference was found between the occupation of the participants (p value < 0.05) who think higher cost of dietary supplements provides higher quality.

V. CONCLUSION

In conclusion, the KAP survey on dietary supplements in India reveals that there is a high prevalence of dietary supplement use among the population, with multivitamins, whey protein and vitamine C being the most commonly used. The study also indicates that there is a lack of knowledge and awareness among the Indian population regarding the benefits and potential side effects of dietary supplements, which calls for greater education and awareness campaigns. The survey highlights the need for caution and control in the use of dietary supplements, as potential safety issues such as drug interactions, overdosing, or contamination can be detrimental to one's health. The study recommends that more people attend health campaigns and workshops to stay informed about the latest developments in the field of healthcare. Finally, the survey provides valuable insights into the use of dietary supplements in India and can be used to inform future public health interventions and policies related to supplement use.

VI. ACKNOWLEDGMENT

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