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A Study on the Awareness and Consumption Pattern of Millets among the Consumer and Dieticians.

MRS. PRIT R BADHIYE
Assistant Professor
Smt. Kishoritai Bhoyar Adhyapak
Mahavidyalaya, Kamptee

Abstract-
Millets are one of the oldest foods known to humans and possibly the first cereal grain to be used for domestic purpose. Millets are highly nutritious, non – glutinous and not acid forming foods. There is still a lack in awareness of abouts numerous health benefits of millets in India and witnessing extinction of millets recipes from Indian households.
The continuous parameter like age was expressed in terms of mean, median, standard deviation and range, while the discrete parameters were summarized in terms of numbers and percentages. The comparison of different millet consumption patterns between two groups, viz., consumers and dieticians were performed using Fisher's exact test. The difference in the reasons of consumption between two groups was tested using z-test for proportions. The perception about benefits of millet consumption, awareness about varieties of millets between two groups was evaluated using Pearson's Chi-square test. The comparison of most typical recipes as well as the barriers of millet consumption between two groups was compared using z-test for proportions. The frequency distribution of millets purchases and the volume of millets purchased between two groups were statistically evaluated using Pearson's Chi-square test. On similar lines the comparisons were made between gender types. All the analyses were performed using SPSS ver 20.0 (IBM Corp, USA) and the statistical significance was tested at 5% level. Result indicated by the data collected concluded that dietician's awareness about millet consumption was found to be more as per statistical interpretation of chi square, which showed the significant difference hence we reject the hypothesis here and females and dieticians were more aware about the availability, variety of millets. Subjects consumed millets more in the winter season, followed by providing the variety in menu. Mean purchasing frequency 51 of millets was found to be twice in month and quantity purchased at a time was 1 kg.

I. Introduction

Present study was postulated to understand the awareness and consumption pattern of millets amongst consumers and dieticians. The objectives of the study were to assess the awareness of consumers towards consumption of millets, to find out the reason for usage of millets by customers in the everyday life and to study the awareness among dieticians. Study was conducted in west region of Nagpur city mostly in Anant Nagar and Mahesh Nagar of Nagpur city. Subjects were selected on the basis of purposive random sampling method. Total subjects were 25 male, 25 female members and 20 dieticians formed the subjects of the study. Purposive random sampling method was adopted to collect the data. Data was collected with the help of structured questionnaire method. Personal interviews were recorded with consumers and telephonic interviews were done in case of dieticians due to their busy schedule. In the present study two groups were formed to understand the awareness levels and easy for statistical interpretation. One group formed is called consumer group which comprised of male and female subjects selected by purposive random sampling method while the second group was of dieticians.

Statistical interpretation was done using SPSS version 20.0 (IBM Corp, USA) and the statistical significance was tested at 5% level. Null hypothesis was formulated: Null hypothesis- H0-There is no significant awareness on millets and its consumption among consumers and dieticians. Results of the present study was found to be such that dietician's awareness about health benefits of millet consumption and varieties of millets was found to be more than consumers.

II. Objectives:

The main objectives wereto study the health benefits of millets, to assess the awareness of consumers and dieticians towards consumption of millets, to find out the reason for usage of millets by customers in the everyday life and to Study the awareness among dieticians

Sample:
A sample of 25 Males and 25 females and 20 Dieticians from west region of Nagpur city was selected forthe study. The age group range of 25-45 years was only considered which formed thepopulation for this research. Purposive Sampling method is used for selection of samples.

III. Research Method:

Researcher had secured all the necessary helps and references for planning and constructing the questionnaire. Before constructing the questionnaire, the researcher had attained a clear understanding of the objectives of the study and of the nature of the data needed. On the basis of the objectives of the research problem the researcher had constructed the questions.
Personal interview with consumers and Telephonic interviews with Dieticians were arranged.

Analysis-

The data collected through the samples was computed and analysed for interpretation for drawing of conclusion by using percentage of answers. All the analyses were performed using SPSS ver 20.0 (IBM Corp, USA) and the statistical significance was tested at 5% level. Suitable conclusions were drawn on the basis of data analysis.

Table1: Distribution of subjects based onmilletsconsumptionpatternin two groups

Typeof millet		Group						P-value*
		Consumers(n=50)		Dietician(n=20)		Total(n=70)		
		N	%	N	%	n	%	
Jawar	Oftenconsumed	1	2.0%	0	0.0%	1	1.4%	0.999(NS)
	Regularlyconsumed	42	84.0%	20	100.0%	62	88.6%	
Bajra	Oftenconsumed	43	86.0%	19	95.0%	62	88.6%	0.999(NS)
	Regularlyconsumed	1	2.0%	0	0.0%	1	1.4%	
Ragi	Rarelyconsumed	24	48.0%	12	60.0%	36	51.4%	0.520(NS)

*ObtainedusingFisher'sexacttest;NS:Notsignificant

Interpretations-

Table.1showsthemilletsconsumptionpatternintwogroups.Intheconsumersgroup, Jawar was regularly consumed by 42 (84%) respondents, while all thedieticians consumed Jawar regularly. The difference in the proportions wasstatistically insignificant (P=0.999). Further, there were 43 (86%) consumersusing Bajra quite often, while 19 (95%) dieticians used Bajra quite often. Thedifferenceintheproportionsbetweentwogroupswasstatisticallyinsignificant (P=0.999).Ragiwasrarelyconsumedby24(48%)consumers,while12(60%)dieticiansconsumeditrarely.Thedifferenceintheproportionswasstatisticallyinsignificant (P=0.520).In summary, the millets consumption pattern in twogroups differed insignificantly.However here it can be concluded that theconsumptionofjowarwasfoundtobemorepopular inboththegroups.

Table2:Reasonsforconsumingmilletsgivenbyrespondentsintwogroups

Reason forconsumptionofmillets	Group						P-value*
	Consumers(n=50)		Dietician(n=20)		Total (n=70)		
	N	%	N	%	n	%	
Season	14	28.0%	18	90.0%	32	45.7%	< 0.0001(S)
Price	17	34.0%	13	65.0%	30	42.9%	0.035(S)
Taste &Variety	38	76.0%	10	50.0%	48	68.6%	0.067(NS)
Health	28	56.0%	20	100.0%	48	68.6%	< 0.0001(S)

*Obtainedusingz-testforproportions;S:Significant;NS:Notsignificant

Interpretations-

Data shown in the table.2 indicates thereasons for consuming millets in twogroups. In the consumer category, season was the cause suggested by 14(28%),whilethesamecausewassuggestedby18(90%)dieticians.Particularly in the winter season the consumption of jowar and bajra and theproportion of respondents with this cause of consumption was significantlyhigherindieticiangroupcomparedtoconsumersgroup,asindicatedbyP-value

< 0.0001. In the consumers group, 17 (34%) respondents suggested price asthe reason of consumption, while in the dietician group, 13 (65%) suggestedthisreason.Theproportionwassignificantlyhigherindieticiangroupasindicated by P-value of 0.035. The reason Taste & Variety was stated by 38(76%)consumers,while10(50%)ofthedieticiansgavethisreasonforconsumption.Thedifferenceintheproportionsw asstatisticallyinsignificant
(P=0.067). Health was the reason stated by 28 (56%) consumers, while all 20(100%)dieticiansgavethisreasonforconsumptionofmillets.Thedifferenceofproportionswas statistically significantwith aP-value<0.0001.

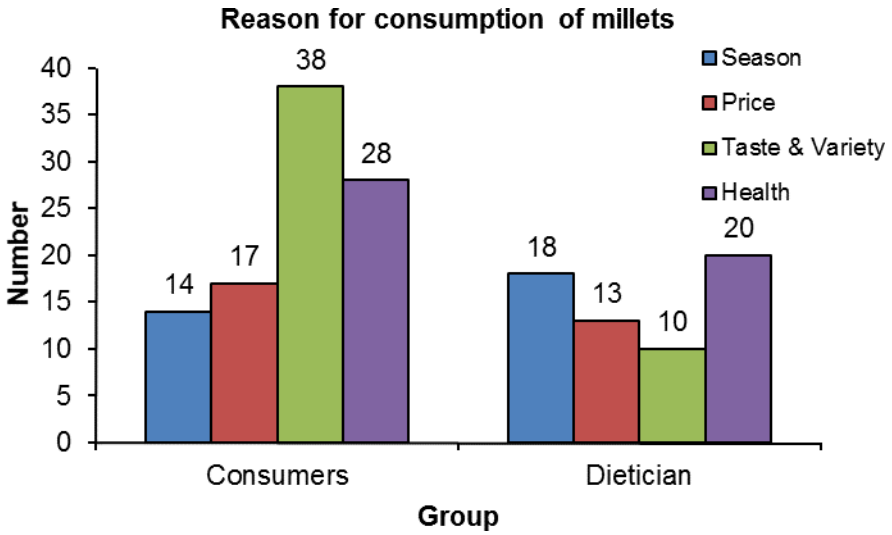

Figure 1: Column chart showing number of respondents as per reasonfor consumptionofmilletsin twogroups

Table 3: Respondent's perception about benefits of millets consumptionin twogroups

Benefits ofmilletconsumption	Group						P-value*
	Consumers(n=50)		Dietician(n=20)		Total (n=70)		
	N	%	n	%	n	%	
Yes	16	32.0%	20	100.0%	36	51.4%	<0.0001(S)
No	34	68.0%	0	0.0%	34	48.6%	

*ObtainedusingPearson's Chi-squaretest; S:Significant

Interpretations-
Millets are amazing in their nutrition content. Each of the millet is three to fivetimes nutritionally superior to the widely promoted rice and wheat in terms ofproteins, minerals and vitamins. The millet is highly nutritious and containsimportant amino acids and also has several health benefits such as anti-diabetic,antitumerogenic,atherosclero-geniceffects,andantioxidant.

Table 3 data indicatesthe perception of respondents regarding benefits ofmilletsconsumption.Therewere16(32%)consumerswhobelievedthatmilletsconsumption is beneficial, while all 20 (100%) dieticians believed that it isbeneficial. The difference in the proportion of respondents believing in thebenefits differed significantly between two groups, as indicated by P-value <0.0001.

Table4:Awarenessaboutdifferentvarietiesofmilletsintwogroups

Awareness aboutvarietiesof Millet	Group						P-value
	Consumers(n=50)		Dietician(n=20)		Total(n=70)		
	N	%	n	%	n	%	
Yes	15	30.0%	15	75.0%	30	42.8%	0.0006(S)
No	35	70.0%	5	25.0%	40	57.2%	

*ObtainedusingPearson'sChi-squaretest;S:Significant

Interpretations-

Itisveryimporttounderstandconsumersmustbeawareabouttheavailabilityofdifferentvarietiesofmillets.Table6datprovidestheinformationon awareness of respondents regarding different varieties of millets. Therewere 15 (30%) consumers who were aware about varieties of millets, while 15(75%)dieticianswereawareofthevarieties;andthedifferenceintheproportionswassignificantlydifferent, asindicatedbyP-value < 0.0001.

Table5: Barriers ofmilletsconsumptionintwogroups

Althoughthemilletsarethestorehouseofnutrients,theacceptabilityintheregulardiet ismajor challenge

Barriers ofconsumption	Group						P-value*
	Consumers(n=50)		Dietician (n=20)		Total(n=70)		
	N	%	n	%	n	%	
Not preferred infamily	18	36.0%	14	70.0%	32	45.7%	0.021(S)
Not aware	14	28.0%	2	10.0%	16	22.8%	0.192(NS)
Notinterested	34	68.0%	6	30.0%	40	57.1%	0.008(S)

*Obtainedusingz-testforproportions;S:Significant; NS:Notsignificant

Interpretations-

Table 5 indicates the data on gives the barriers of millets consumption in twostudy groups. In the consumer group, 18 (36%) responded that millets are notpreferred in the family, while 14 (70%) dieticians mentioned the same barrier.Thedifferenceintheproportionswasstatisticallysignificantwitha P-valueof 0.021. There were 14 (28%) respondents in consumer group not aware aboutmillets consumption, while 2 (10%) from the dietician group were not aware,andthisdifferenceofproportionswasstatistically insignificant(P=0.192).Therewere 34 (68%) respondents in the consumer group not interested in milletsconsumption, while 6 (30%) from dietician group were not interested. Theproportionwassignificantlyhigherinconsumergroupascomparedtodietician with aP-value of 0.008.

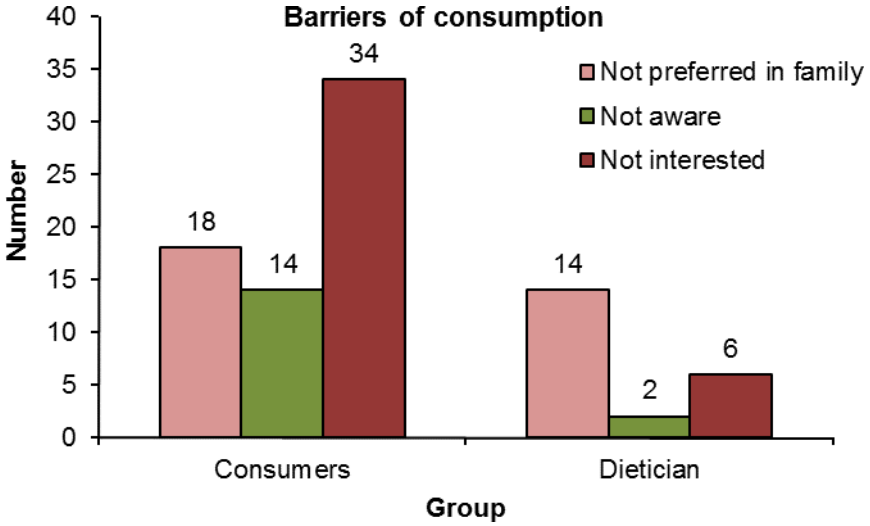

Figure2:Columnchartshowingnumberofrespondentsasperbarriersofconsumption in two groups

Table 6: Consumption pattern of millets in CONSUMER groupaccordingto gender

Millettype	Consumptionpattern	Gender				P-value*
		Female(n=25)		Male(n=25)		
		n	%	n	%	
Jawar	Oftenconsumed	1	4.0%	0	0.0%	0.999(NS)
	Regularly consumed	22	88.0%	20	80.0%	
Bajra	Oftenconsumed	23	92.0%	20	80.0%	0.999(NS)

	Regularly consumed	1	4.0%	0	0.0%	
Ragi	Rarely consumed	14	56.0%	10	40.0%	0.396(NS)

*ObtainedusingFisher'sexacttest;S:Significant;NS:Notsignificant

Interpretations-

Table 6 indicates the data to understand whether there is any difference inconsumptionofmilletsbasedongender.ItisevidentfromthetablethatJawar,BajraandRagiconsumptionpatterninmalesandfemalesdifferedinsignificantly as indicated by P-values > 0.05. Similar study was presented by(***A. Kalaiselvi*** 2016)on millets consumption by women responded. It is clearlyindicated from the table that millets consumption was found to be more in thefemalesubjectsand dieticians'group.

It can be concluded from the above data presented the tables that, respondedinthepresentstudywasawareabouttheavailability,varietyofmillets.Subjectconsumed millets more in the winter season, followed by providing the varietyinmenu.Meanpurchasingfrequencyofmilletswasfoundtobetwiceinmonthandquantitypurchased ata time was1 kg.

IV. Result

The outcome was assessed through the responses given by consumers and dieticians on the continuous parameter like age was expressed in terms of mean, median, standard deviation and range, while the discrete parameters were summarized in terms of numbers and percentages. The comparison of different millet consumption patterns between two groups, viz., consumers and dieticians were performed using Fisher's exact test. The difference in the reasons of consumption between two groups was tested using z-test for proportions. The perception about benefits of millet consumption, awareness about varieties of millets between two groups was evaluated using Pearson's Chi-square test. The comparison of most typical recipes as well as the barriers of millet consumption between two groups was compared using z-test for proportions. The frequency distribution of millets purchases and the volume of millets purchased between two groups were statistically evaluated using Pearson's Chi-square test. On similar lines the comparisons were made between gender types. All the analyses were performed using SPSS ver20.0 (IBM Corp, USA) and the statistical significance was tested at 5% level. Results of the present study was found to be such that dietician's awareness about health benefits of millet consumption and varieties of millets was found to be more than consumers.

V. Findings and Conclusion

Dietician's awareness about health benefits of millet consumption and varieties of millets was found to be significantly more than consumers. consumers were less aware about the benefits and varieties of millets than dieticians. Jowar was most regularly consumed than any other millet while ragi was rarely consumed. consumption of jowar was found to be more popular in both the groups.

Most popular reason for consumption of millets by consumers was found to be Taste & Variety over Season, Price and Health while for dieticians, was health over Season, Price, Taste & Variety.

Recipes of millets cherished by dieticians were more than by consumer's family. Bhakri wasthe most popular dish amongst both the groups than Upma, Dosa and Porridge.

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