



OPINIONS AND RECOMMENDATIONS OF INDIAN DIETITIANS REGARDING BOVINE MILK

Aditi Goyal	Research Fellow, Kasturba Health Society's Medical Research Centre, Mumbai, India.
Shobha A Udipi	Research Director & Head, Kasturba Health Society's Medical Research Centre, Mumbai, India.
Rama Vaidya	Hon. Director, Endocrine & Metabolic Disorders, Kasturba Health Society's Medical Research Centre, Mumbai, India.
Ashok DB Vaidya	Professor Emeritus, Kasturba Health Society's Medical Research Centre, Mumbai, India

ABSTRACT In the recent past, the possible role of milk in disease pathology has been debated in the scientific community. Dietitians play an important role in healthcare as diet is important for promotion of health; and prevention and management of non-communicable diseases. Therefore, this study was undertaken to understand dietitians' perspectives on dairy and milk. Fifty-one female dietitians were interviewed to understand their opinions and recommendations about milk. Their opinions on milk alternatives, the causative role of milk in diseases and the A1/A2 milk debate were also sought. Almost all the dietitians (96.1%) stated that milk is good for health and is a good source of calcium and protein. Most dietitians advocated the inclusion of milk for all age groups. However, about one-tenth of dietitians were concerned that milk may be a causative factor for ASD (9.8%) and T1DM (13.6%). Milk was associated with an increased risk of PCOS (52.9%), gastric discomfort (94.1%), and IBS (90.2%). Approximately two-thirds of dietitians (60.8%) recommended plant-based milk alternatives. Further research with a larger number of dietitians is required to determine dietitians' viewpoints about dairy at a national level and to know their practices and knowledge about milk.

KEYWORDS : *milk consumption, dietitians, opinions, milk alternatives, cow milk*

INTRODUCTION

In the last three decades, there has been a sharp rise in the global disease burden owing to unhealthy lifestyles, economic growth, population swell, etc. (Bai et al., 2023; Habib & Saha, 2010). The ICMR-INDIAB study (Anjana et al., 2023) reported a weighted prevalence of 11.4% for diabetes mellitus (DM), 35.5% for hypertension, 28.6% for generalised obesity and 81.2% for dyslipidaemia. These numbers are a testament to the deteriorating health status of Indians. Multiple studies have been conducted to identify factors contributing to these increasing numbers, globally. In this context, bovine milk has received a lot of attention in recent years. Cow's milk, particularly, has been linked to a higher risk of non-communicable diseases (NCDs), which is often attributed to a high saturated fat content, induction of post-prandial hyperinsulinemia and A1 beta-casein (Melnik, 2009; Lu et al., 2016; Chia et al., 2017; Sluijs et al., 2012; Snijder et al., 2008). There is also some concern about the treatment of cows with hormones. Few reports suggest that the hormones, predominantly injected to increase milk yield, percolate into the animal's milk. Such milk can increase the risk of cancers, premature puberty (in females), infertility, gynecomastia (in males) and PCOS (Kumar et al., 2018; Malekinejad & Rezabakhsh, 2015). However, the low bioactivity of orally ingested IGF-1 from cows seems to have alleviated these concerns (Collier & Bauman, 2014).

Decades of research have conclusively shown that a sedentary lifestyle and unhealthy dietary patterns are among the leading modifiable risk factors for NCDs including type 2 DM (T2DM), cardiovascular diseases (CVD), cancer, polycystic ovarian syndrome (PCOS), etc. (Iriti et al., 2020; WHO, 2023; Peters et al., 2019). Dietitians, therefore, play a central role in a healthcare team. Reports have shown that nutritional support as a part of the treatment modality in NCDs, provides significant clinical and economic benefits (Bednarczuk & Czekała-Kozłowska, 2019; Howatson et al., 2015).

With their significant role in improving health and the potential to modify consumer perception, the opinions of dietitians regarding milk and dairy assume importance. The paucity of Indian data in this context prompted us to undertake this study to understand the knowledge, attitudes and practices of Indian dietitians regarding bovine milk consumption.

MATERIALS AND METHODS

Ethics Approval

The study was approved by Intersystem Biomedica Ethics Committee (ISBEC) (Approval No. ISBEC/KM-JJ/2020) (September 10, 2020).

Sample Selection

One hundred and six practising dietitians were contacted through snowball sampling for the study. Fifty-five dietitians did not agree to participate; therefore, the survey was conducted with 51 participants. All the dietitians who participated in the study were females.

Data Collection

The data was collected through telephonic (n=21) and online (n=30) surveys after obtaining informed consent from participants. Demographic information about their highest educational qualification in the field of nutrition and dietetics, the location, nature and duration of their dietetic practice, and their area of expertise was collected. Each dietitian was interviewed regarding her knowledge of milk and milk products by one of the investigators who is a trained dietitian. The participants were asked what they considered the health benefits and health concerns related to milk. They were presented with 10 statements for health benefits and nine statements for health concerns regarding milk consumption. They were requested to select all the statements that they believed to be true. Participants' agreement and disagreement were sought for two statements – 'Milk is essential for the growth and development of a child and a nutritional necessity' and 'Milk helps to fulfil calcium requirement' on a scale of 1 to 5. On this scale, 1 corresponded to 'strongly disagree' and 5 corresponded to 'strongly agree'.

They were also asked what they advised their patients/clients from different age groups as well as having different health conditions about milk consumption. In addition, their opinions about plant-based milk substitutes were sought. Also, their knowledge and opinions about A1 and A2 milk were recorded.

Data Analysis

Results were computed and analysed using MS Excel (MS Office 2019).

RESULTS

Profile of participants

The mean duration of dietetic practice among the participants was 13.5 ± 9.9 years (n=50), varying from 7 months to 35 years. Twenty-four dietitians had been working from 0-10 years, 13 had been working from 11-20 years, 11 from 21-30 years and 2 dietitians had more than 30 years of experience. Thirty participants (58.8%) were conducting their practice from a clinic whereas 14 (27.5%) were working at hospitals. Five participants (9.8%) practised at both a clinic as well as a hospital, one participant (2%) worked with a nutraceutical company, and one participant (2%) did not reveal the location of her practice.

One-fifth of the dietitians (n=21) had completed a graduate degree (Master's) in Nutrition, 12 had a diploma certificate, 10 had a doctorate, and five were registered dietitians. One participant each had an undergraduate degree, a certificate course and an MD in alternate medicine, respectively.

Of those working at clinics, 13 participants (25.5%) worked with a medical consultant, 19 (37.3%) had a private clinic, and three (5.9%) worked both with a consultant as well as privately. Among those working at hospitals, 14 participants (27.5%) worked in private hospitals, two (3.9%) worked in government hospitals whereas 3 participants (5.9%) worked in charitable hospitals.

Participants counselled patients of all the major metabolic and lifestyle disorders, namely, gastrointestinal (GI) disorders (n=37, 72.5%), DM (n=42, 82.4%), cancer (n=37, 72.5%), renal disorders (n=38, 74.5%), CVDs (n=37, 72.5%), weight management (n=41, 80.4%), paediatric nutrition (n=38, 74.5%), and sports nutrition (n=38, 74.5%). One participant specifically counselled patients with endocrine disorders (2%).

Opinions About Milk And Milk Product Consumption

Almost all dietitians (n=49, 96.1%) considered milk to be good for health and none of them considered it to be completely unhealthy. However, among these, 27 (55.1%) had some concerns about it. Two participants (3.9%) did not respond to this question.

Responses to the different statements regarding health benefits and health concerns of milk consumption varied (Table 1).

Health Benefits of Milk Consumption			Health Concerns of Milk Consumption		
	Agree	Disagree		Agree	Disagree
	N (%)			N (%)	
Source of Calcium	48 (94.1)	3 (5.9)	CVD	14 (27.5)	35 (68.6)
Source of Essential Vitamins	37 (72.5)	14 (27.5)	ASD	4 (7.8)	46 (90.2)
Source of Protein	44 (86.3)	7 (13.7)	T1DM	8 (15.7)	42 (82.4)
Source of High Biological Value Protein	44 (86.3)	7 (13.7)	High Blood Glucose	18 (35.3)	31 (60.8)
Suitable Food for Infants	34 (66.7)	17 (33.3)	IR	15 (29.4)	34 (66.7)
Growth	41 (80.4)	10 (19.6)	Milk Allergy	33 (64.7)	17 (33.3)
Satiety	40 (78.4)	11 (21.6)	LI	35 (68.6)	15 (29.4)
Bone Health	45 (88.2)	6 (11.8)	Acne	20 (39.2)	30 (58.8)
Patients with Swallowing Difficulties	36 (70.6)	13 (25.5)	Atopic Dermatitis	12 (23.5)	38 (74.5)
Patients with Increased Nutritional Needs	40 (78.4)	11 (21.6)			

CVD – Cardiovascular Diseases; ASD – Autism Spectrum Disorder; T1DM – Type 1 Diabetes Mellitus; IR – Insulin Resistance; LI – Lactose Intolerance

Health Benefits

A high percentage of dietitians opined that milk was high in calcium (94.1%) and good for bone health (88.2%), followed by those who considered milk a source of high protein (86.3%), particularly that of high biological value. However, almost one-thirds disagreed that it is a source of essential vitamins (27.5%) and one-thirds disagreed that it is a source of essential vitamins (27.5%) and one-thirds disagreed that it is an important food for infants (33.3%). Almost one-fifth of the dietitians felt milk was not important for growth (19.6%) nor did it confer satiety (21.6%). About one-fourth opined that milk was not useful for patients with swallowing difficulties (25.5%). Further, one-fifths disagreed with milk being useful for patients with increased nutritional needs (21.6%). Upon further probing, dietitians reported milk to be beneficial for – laxative effect (2.0%), relieving acidity (3.9%), improving sleep (5.9%) and being appropriate for sportspersons (2.0%) (Table 1).

Health Concerns

A very high percentage of dietitians disassociated autism spectrum disorders (ASD) (90.2%) and type 1 diabetes mellitus (T1DM) (82.4%) with milk consumption. About two-thirds associated milk with an increased risk of acne (39.2%), high blood glucose (35.3%), insulin resistance (IR) (29.4%) as well as CVD (27.5%). Similarly, one-fourth (23.5%) stated that atopic dermatitis was associated with milk consumption. More than half of the dietitians stated that lactose intolerance (68.6%) and milk allergies (64.7%) were health concerns. A small percentage also listed additional concerns such as inflammation (5.9%), cancer (5.9%) and hormonal imbalances (9.8%) (Table 1).

Is milk an important part of the diet and helps to fulfil calcium requirements

The participants' level of agreement and/or disagreement was assessed using a 5-point scale for two statements – “Milk is essential for the growth and development of a child and a nutritional necessity” and “Milk helps to fulfil calcium requirement”. Majority of the dietitians agreed to the two statements; with a higher number considering it a dietary necessity compared to it being a food that helps fulfil calcium requirements (Figure 1). Only one dietitian (2%) disagreed that milk is a dietary necessity and another (2%) disagreed that it helps to fulfil calcium requirements.

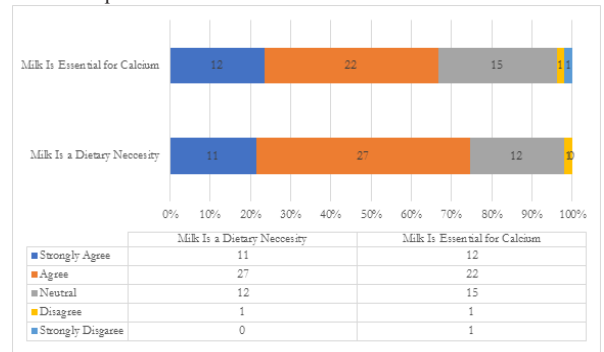


Figure 1: Dietitians' opinion(s) about the role of milk in health

Opinions of dietitians about the causative role of milk in disease development

Majority of the dietitians (n=34, 66.7%) opined that milk could not be a causative factor in the development of T1DM. A similar trend was also observed regarding the association of milk with T2DM, ASD, schizophrenia, heart disease, asthma, cancer and IR (Table 2). In contrast, a majority of the dietitians believed milk and milk products were associated with the increased risk of PCOS (n=27, 52.9%), gastric discomfort (n=48, 94.1%) and irritable bowel syndrome (IBS) (n=46, 90.2%) (Table 2).

	N (%)			
	'Yes'	'No'	'Not Aware'	'Not Sure'
T1DM	13 (25.5)	34 (66.7)	4 (7.8)	0 (0)
T2DM	13 (25.5)	35 (68.6)	3 (5.9)	0 (0)
ASD	7 (13.7)	30 (58.8)	12 (23.5)	2 (3.9)
Schizophrenia	4 (7.8)	34 (66.7)	11 (21.6)	2 (3.9)
Heart Disease	15 (29.4)	33 (64.7)	3 (5.9)	0 (0)
Atopic Dermatitis	22 (43.1)	22 (43.1)	7 (13.7)	0 (0)
PCOS	27 (52.9)	20 (39.2)	3 (5.9)	1 (2.0)
Acne	24 (47.1)	25 (49.0)	2 (3.9)	0 (0)
Gastric Discomfort	48 (94.1)	3 (5.9)	0 (0)	0 (0)
IBS	46 (90.2)	5 (9.8)	0 (0)	0 (0)
Asthma	14 (27.5)	31 (60.8)	4 (7.8)	2 (3.9)
Cancer	13 (25.5)	30 (58.8)	7 (13.7)	1 (2.0)
IR	18 (35.3)	29 (56.9)	3 (5.9)	1 (2.0)

T1DM – Type 1 Diabetes Mellitus, T2DM – Type 2 Diabetes Mellitus, ASD – Autism Spectrum Disorders, PCOS – Polycystic Ovarian Syndrome, IBS – Irritable Bowel Syndrome, IR – Insulin Resistance

Recommendation For Consumption Of Milk And Milk Products

The dietitians were asked about the nature of their advice about milk consumption across the various epochs of life as well as based on different health conditions.

Age group

-Infants less than 1 year of age

Two-fifths (n=21, 41.2%) of the dietitians recommended six months of exclusive breastfeeding (EBF) followed by cow's milk for infants below 1 year of age. After six months of EBF, nine dietitians (17.6%) advised using any animal milk whereas seven dietitians recommended infant formula (13.7%). Five dietitians said that no animal milk should be used in the first year of life (9.8%). Very few dietitians advised the use of buffalo milk (n=4, 7.8%), and cow milk and/or infant formula (n=1, 2.0%) after EBF. Two dietitians did not respond to this question (3.9%) and another two (3.9%) did not know.

-Children (1-5 years of age)

For children of this age group, 54.9% (n=28) recommended the use of cow's milk. Eleven dietitians (21.6%) stated that they allowed the parents to use a milk of their choice, but eight dietitians recommended the use of buffalo milk (15.7%). Two dietitians (3.9%) did not respond and another two (3.9%) were unaware.

-Children (5-18 years of age)

Approx. half of the dietitians (n=26, 51.0%) recommended using cow's milk and one-fourth (n=12, 23.5%) recommended using any milk of choice for children between 5 and 18 years of age. Eight dietitians recommended buffalo milk (15.7%), and two (3.9%) recommended A2 milk or milk from Indian cow breeds. Two dietitians (3.9%) did not respond. In contrast, one dietitian recommended the use of supplements instead of milk (2.0%).

-Adults (≥18 years of age)

About two-thirds of the dietitians (n=31, 60.8%) recommended cow's milk intake for adults. Almost one-fourth stated that the choice of type of milk should align with the rest of the family (23.5%), whereas only two dietitians advised adults to use buffalo milk (3.9%). One participant (2.0%) each recommended A2 milk and toned milk, respectively. One dietitian recommended that milk should be avoided (2.0%). Three participants (5.9%) did not respond to this question.

-Pregnant and Lactating Mothers

About two-thirds of the dietitians recommended that cow milk should be consumed (n=31, 60.8%) during pregnancy and lactation, whereas 27.5% (n=14) recommended that mothers should consume whichever milk is being consumed by the family. Only three dietitians recommended buffalo milk (5.9%) and one (2.0%) recommended A2 milk. One dietitian (2.0%) recommended that milk should be avoided and another one (2.0%) did not respond to this question.

-Elderly (>60 years of age)

The majority of dietitians (n=34, 66.7%) recommended that elderly persons should consume cow's milk. Only one dietitian (2.0%) recommended that the elderly should avoid milk. Eleven dietitians (21.6%) recommended them to continue using the milk being consumed by the family. One dietitian (2.0%) recommended using buffalo milk and another dietitian (2.0%) recommended using A2 milk. Only one dietitian (2.0%) stated that their recommendation would depend on the digestive capacity of the patient. Two dietitians (3.9%) did not respond to this question.

Recommendations For Patients

Dietitians were asked what they recommended for 12 NCDs and acne regarding milk and milk product consumption (Table 3). Generally, the dietitians personalized their recommendations depending on the health problem. However, 14 dietitians (27.5%) recommended discontinuation of fluid milk intake for patients having gastric discomfort but allowed the continuation of other dairy products. Sixteen dietitians (31.4%) gave the same recommendation for IBS. However, one dietitian (2.0%) each recommended continuing milk and dairy intake as usual for patients with gastric discomfort and IBS, respectively.

Opinion about excluding milk from the diet

Two-thirds of the dietitians opined that dairy-free diets are beneficial for patients with IBS (n=35, 68.6%) and gastric discomfort (n=33, 64.7%). Almost half the participants (n=25, 49.0%) felt that the exclusion of milk products is beneficial for women with PCOS. Other conditions where a dairy-free diet was considered beneficial were: T2DM (n=19, 37.3%), acne (n=18, 35.3%), heart disease (n=17, 33.3%), and T1DM (n=15, 29.4%) (Figure 2). Seventeen dietitians (33.3%) stated that milk could exacerbate the symptoms hence

removing milk from the diet could alleviate them, with four particularly stating that reducing milk intake would improve digestion. Three dietitians (5.9%) felt that milk affects hormone levels due to adulteration. One dietitian (2.0%) believed that alternatives to bovine milk are easily available and another (2.0%) opined that the high-fat content of milk could be detrimental for IBS, non-alcoholic steatohepatitis, weight management, etc.

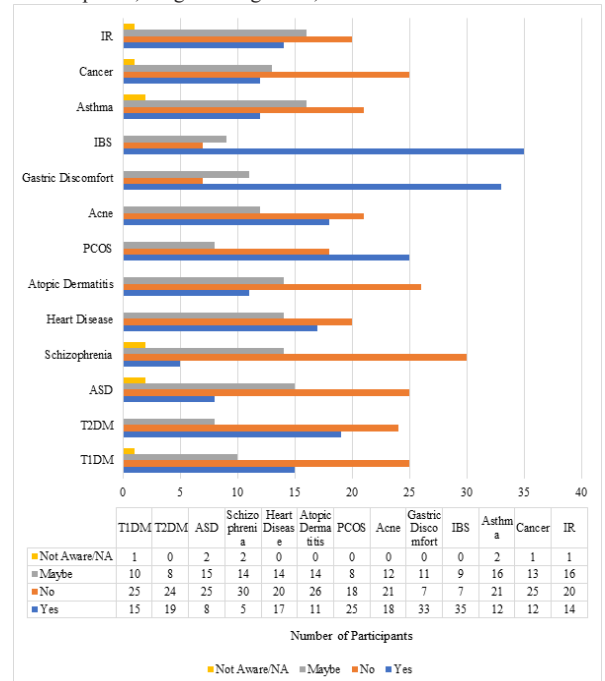


Figure 2: Participants' opinions about the exclusion of milk from diet Recommendation for the use of Milk Alternatives

Two-thirds of the dietitians (n=31, 60.8%) reported that they recommended alternatives to milk to their patients if they wanted to discontinue fluid milk or if it was advised to them. Responses regarding recommending milk alternatives were equivocal as 19.6% said they recommend it sometimes while another 19.6% said that it should not be recommended. Various alternatives were suggested (Figure 3), the most common being soy milk (70.6%) and nut milk (58.8%). Dietitians did not recommend hemp milk and only one dietitian recommended camel milk (2.0%).

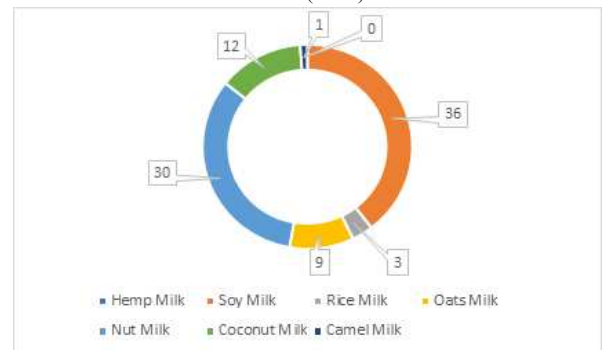


Figure 3: Participants' Recommendation for Milk Substitutes

Knowledge about A1 and A2 milk

Most of the dietitians had heard about the A1-A2 milk debate (n=47, 92.2%). However, when asked for further details, 21 did not respond (41.2%) and six did not know much (11.8%) with five (9.8%) stating that they only knew that it was related to casein. Five dietitians (9.8%) said that A2 milk is sourced from hormone treatment-free grass-fed cows. Only three dietitians knew that A2 milk was from Indian-bred cows while four stated that A1 milk was from hybrid cows/ western breeds. Two dietitians believed that A2 was better for health. One dietitian thought A2 milk was the same as fortified milk and one thought that the difference between A1 and A2 is genetic.

The sources of information varied, although half of them (n=26, 51.0%) had researched the topic. The sources of information were:

blogs (n=18, 35.3%), friends/ family/ professional colleagues (n=16, 31.4%), newspapers (n=11, 21.6%), books (n=4, 7.8%), patients (n=5, 9.8%), conferences (n=2, 3.9%), students (n=1, 2.0%), advertisements (n=1, 2.0%) and multiple sources (n=1, 2.0%). Three dietitians (5.9%) did not respond to this question.

Table 3: Dietitians' recommendations about milk consumption to patients

	N (%)					
	'Continue milk as before'	'Stop all dairy products'	'Reduce the amount of dairy'	'Stop fluid milk, can continue other dairy products'	'Not sure/ NA'	'Case-by-case'
T1DM	11 (21.6)	1 (2.0)	9 (17.6)	4 (7.8)	4 (7.8)	22 (43.1)
T2DM	11 (21.6)	2 (3.9)	11 (21.6)	5 (9.8)	2 (3.9)	20 (39.2)
ASD	9 (17.6)	3 (5.9)	4 (7.8)	3 (5.9)	19 (37.3)	13 (25.5)
Schizophrenia	11 (21.6)	3 (5.9)	3 (5.9)	2 (3.9)	21 (41.2)	11 (21.6)
Heart Disease	12 (23.5)	2 (3.9)	11 (21.6)	4 (7.8)	3 (5.9)	19 (37.3)
Atopic dermatitis	8 (15.7)	6 (11.8)	5 (9.8)	3 (5.9)	13 (25.5)	16 (31.4)
PCOS	8 (15.7)	4 (7.8)	11 (21.6)	9 (17.6)	4 (7.8)	15 (29.4)
Acne	7 (13.7)	2 (3.9)	9 (17.6)	8 (15.7)	8 (15.7)	17 (33.3)
Gastric discomfort	1 (2.0)	8 (15.7)	10 (19.6)	14 (27.5)	2 (3.9)	16 (31.4)
IBS	1 (2.0)	8 (15.7)	9 (17.6)	16 (31.4)	2 (3.9)	15 (29.4)
Asthma	10 (19.6)	4 (7.8)	4 (7.8)	7 (13.7)	11 (21.6)	15 (29.4)
Cancer	11 (21.6)	3 (5.9)	7 (13.7)	4 (7.8)	10 (19.6)	16 (31.4)
IR	9 (17.6)	2 (3.9)	9 (17.6)	6 (11.8)	3 (5.9)	22 (43.1)

T1DM – Type 1 Diabetes Mellitus, T2DM – Type 2 Diabetes Mellitus, ASD – Autism Spectrum Disorders, PCOS – Polycystic Ovarian Syndrome, IBS – Irritable Bowel Syndrome, IR – Insulin Resistance

The participants were also asked if they considered milk harmful to health. Twelve participants (23.5%) felt that A1A1 milk could be detrimental but 18 dietitians did not find any milk harmful to health (n=18, 35.3%). Three dietitians (5.9%) considered buffalo milk harmful, and another three (5.9%) found all animal milk harmful. Only one dietitian (2.0%) believed A2A2 milk is harmful to health and one (2.0%) believed unpasteurized milk could be harmful. Ten dietitians (19.6%) did not have any opinions in this regard and three (5.9%) did not respond.

Thirty-nine participants (76.5%) opined that more scientific research was required to make a conclusive statement about the health effects of A2 milk but nine (17.6%) did not. Three participants (5.9%) did not respond. Further, dietitians were asked what reasons would prompt them to recommend A2 milk to their patients. Almost one-fourth of the dietitians (n=12, 23.5%) had never recommended A2 milk. Nine dietitians advocated A2 milk due to its health benefits (17.6%) and six said that A2 milk was of better quality and composition (11.8%). Five dietitians cited scientific evidence as the reason for their recommendations (9.8%), whereas four (7.8%) decided on a case-by-case basis. One dietitian (2.0%) was unaware of A2 milk, while one (2.0%) said she needed to read more about it. One dietitian (2.0%) recommended A2 milk for better digestion and another (2.0%) for patients with lactose intolerance. Eleven participants (21.6%) did not respond.

DISCUSSION

The effect of dairy consumption on health has been a subject of debate in the scientific community for more than two decades. Many studies have indicated a possible role of milk in the pathology of type 1 diabetes, IBS, leaky gut, obesity, etc. (Sluijs et al., 2012; Clarke & Trivedi, 2014; McLachlan, 2001; Berkey et al., 2005). Also, concerns regarding the purity of milk have been at the forefront. Consumers have tended to discontinue dairy consumption due to adulteration and added impurities (Goyal et al., 2024; Basu et al., 2022). However, sufficient literature also suggests that milk has a beneficial effect on weight management and metabolic health (Chiang & Pan, 2021; Elwood et al., 2007; Dougkas et al., 2018). Additionally, owing to a

diverse micro- and macronutrient composition, the individual nutrient benefits of milk are indisputable (Pereira, 2014). In this context, we deemed it worthwhile to interact with dietitians about their perspectives on dairy consumption as healthcare professionals who can modify consumption practices.

Majority of the participants stated that milk was good for health; and a good source of calcium and protein. Almost three-fourths of the dietitians agreed that milk was essential for the growth and development of children and a dietary necessity. 68.6% of dietitians advocated introducing bovine milk before 1 year of age following 6 months of EBF. This recommendation aligns with the findings of a 2021 study where children 3-5 years of age had better height-for-age Z-scores when cow milk was introduced at 9 vs 12 months of age (Soczynska et al., 2020). However, about one-tenth of dietitians associated milk intake with the development of ASD (9.8%) and T1DM (13.6%). Almost all dietitians associated milk with gastric discomfort and IBS and recommended milk exclusion for such patients. This aligns with a 2022 report that suggested a high incidence of lactose intolerance and aggravated symptoms in IBS patients (Sochol et al., 2019).

Most clinical and epidemiological studies suggest an inverse relationship between dairy products and T2DM (Drehmer et al., 2016). This is especially true for low-fat dairy foods, which have been shown to improve glycaemic response in adults (Rideout et al., 2013; Fontecha et al., 2019). The intake of low-fat dairy products has also been shown to have either a beneficial effect on the lipid profile or at least does not seem to increase the risk of CVD (Fontecha et al., 2019; Penhaligan et al., 2022). The latest RDA guidelines for India (ICMR-NIN 2024) recommend a daily milk intake of 300 ml for adults, both males and females. In line with this, dietitians who participated in the present study stated that they advised their patients to continue consuming all milk products in T2DM (21.6%) and IR (17.6%). In the present study, a little more than half of the dietitians believed that milk can cause PCOS development (52.9%). Chavarro et al. (2007) found that a high intake of low-fat dairy was associated with an increased risk for anovulatory infertility whereas high-fat dairy foods showed a lower risk. Despite this, only 21.6% recommended the reduction of milk intake for PCOS patients.

In the current study, almost two-thirds of the dietitians supported recommending alternatives to milk to their patients, while the remainder had some reservations. Clark et al. (2021) reported that dietetic professionals were more likely to opine that dairy milk is nutritionally superior to milk alternatives, but also see potential for plant-based alternatives in healthy diets. The health potential of plant-based milk alternatives is being studied with the growth of veganism. A 2019 comparison of bovine milk and milk alternatives showed that some milks, like soy, may come close to meeting the protein quantity in bovine milk. However, the report emphasised that the micronutrient composition of milk was not easily imitated in plant-based alternatives. Also, the use of non-fortified milk alternatives could increase the risk of deficiencies, especially in children (Scholz-Ahrens et al., 2019).

In India, A2 milk has received much attention from the media and enterprises, with numerous products being sold at premium prices. Therefore, we asked dietitians what they knew about A2 milk and whether they would recommend it to their patients. However, majority of the dietitians were not fully educated about the details of the A1-A2 debate. More than three-fourths of the participants opined that more research is necessary to provide evidence-based recommendations to consumers and patients regarding whether A2 milk is superior to A1 milk.

To our knowledge, this study is among the few that explored the opinions of Indian dietitians regarding dairy consumption. It highlights that despite concerns, dietitians largely advocated for milk to remain a dietary staple for all age groups. These findings also underscore the necessity to educate dietitians about products such as A2 milk and plant-based dairy alternatives. Moreover, it stresses the need for further research in larger groups to establish the viewpoints of dietitians on a national level about the practices and knowledge regarding milk.

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Conflict of Interest

The author declares no conflict of interest.

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