

## AWARENESS OF MOTHERS REGARDING USE OF NATURAL PROBIOTICS IN SCHOOL GOING HEALTHY CHILDREN'S DIET

Fasiha Shah<sup>1</sup>, Nabia Shah<sup>2</sup>, Faisal Hyder Shah<sup>3</sup>

School of Social work, Faculty of Social Sciences, Universiti Sains Malaysia, Penang, Malaysia, <sup>2</sup>Department of Education and <sup>3</sup>Department of Social Work, University of Sindh, Pakistan

### Correspondence:

Fasiha Shah, School of Social work, Universiti Sains Malaysia Penang, Malaysia

### Email:

[fasiha.sw@gmail.com](mailto:fasiha.sw@gmail.com)

### DOI:

10.38106/LMRJ.2022.4.1-07

Received: 01.01.2022

Accepted: 18. 03.2022

Published: 31. 03.2022

### ABSTRACT

Probiotics are recently getting popular as immunity enhancers, and being investigated to treat acute infections, including gastroenteritis. Commonly used probiotics have been in practice for ancient periods. This study was thus conducted to evaluate the knowledge of mothers of school-going children regarding the use of probiotics in their children's diet. Our results showed that 23% of women were aware of probiotics and their health benefits out of 200 women surveyed, while 16% had never heard of probiotics. However great majority were taking probiotic-rich food, including yogurt, buttermilk, and cheese, in their diet. The knowledge of the use of probiotics in mothers was significantly associated with mothers' level of education. We conclude that there is limited knowledge of probiotics and their health benefits in mothers, but given the anecdotal evidence and inherited dietary patterns, probiotics are part of the daily diet of the school-going children in our study population.

**Key Words:** Children, Mother's knowledge, Probiotics

### INTRODUCTION

Probiotics are living micro-organisms that produce health benefits when taken in a certain quantity. The probiotics are mainly bacteria that resemble normal organs' normal flora, including the gastrointestinal tract, mouth, and skin. Using antibiotics and other conditions that can affect normal flora make patients further susceptible to infections most commonly observed are gastroenteritis. Growing children have higher nutrition demands and protection from infections. Probiotics boost immunity significantly strengthen gut flora to reduce gastrointestinal tract infection.

On the other hand, gastrointestinal infection is the most common cause of illness in children of all age groups. A meta-analysis and systematic review including 34 studies of 4911 patients concluded that probiotics were beneficial in acute diarrhea in children(1). It has been suggested that the use of probiotics not only improves autistic symptoms but also improves gut health in young children (5 – 9 years old)(2). Another interesting study included 120 children with recurrent respiratory tract infections and added probiotics. They showed that probiotics improved gut health by balancing gut flora, thus reducing respiratory tract infection(3). This is probably because of the post- antibiotic effect in gut flora; therefore, the use of probiotics maintains normal intestinal flora.

Yogurt, cheese, pickles, kefir/ fermented milk are commonly used food having a live culture of micro-organisms, and these are everyday dietary items used around the globe. Yogurt has been used since ancient times to improve health and is used as supportive therapy in gastrointestinal disease. There is evidence about fermented food like Kefir showing evidence of modulation of gut flora and reducing the risk of non-communicable disease(4).

There is literature available suggesting using probiotics in children to reduce the risk of infection(5). However, there is still a lack of understanding of parents in using probiotics in the regular daily diet of growing children. Therefore, this study was conducted to evaluate the knowledge of mothers of school-going children about probiotics and the pattern of probiotic-rich food in school-going children's nutrition.

## METHODS

This was a questionnaire-based cross-sectional study conducted in two junior schools in Hyderabad. Questionnaires were sent to the mothers of children in junior school classes 1 to 5. The questionnaire had two sections one section had information regarding mothers' knowledge about probiotics and food containing probiotics and their health benefits on the growth and well-being of school-going children. The second part of the questionnaire was related to probiotic-rich food and the frequency of the mentioned food per week. The foods included yogurt, buttermilk, cheese, and pickle.

The responses were recorded as categorical variables. Data were analyzed using SPSS version 22. The frequency of responses was recorded as frequency distribution and presented in tables and graphs and 0.05 was taken as a cut-off for significance.

## RESULTS

A total of 200 mothers consented to be part of the study with 285 children. The mean age of children was 7.2 years (range 5- 11.5 years). Out of 200 mothers who participated, 38 were working women, and all the children were city dwellers. Educational level ranged from primary level to masters. The mother's education level was significantly associated with the understanding of the probiotics and their benefits on the health of children (Figure 1). Yogurt was the most frequently used probiotic source, and buttermilk was the least used probiotic source. A summary of the results is given in Table 1.

## DISCUSSION

The study suggested that mothers with high education levels were aware of the health benefits of probiotics; yogurt was the most commonly and frequently used source of probiotics included in the diet of school-going children regardless of the mothers' knowledge.

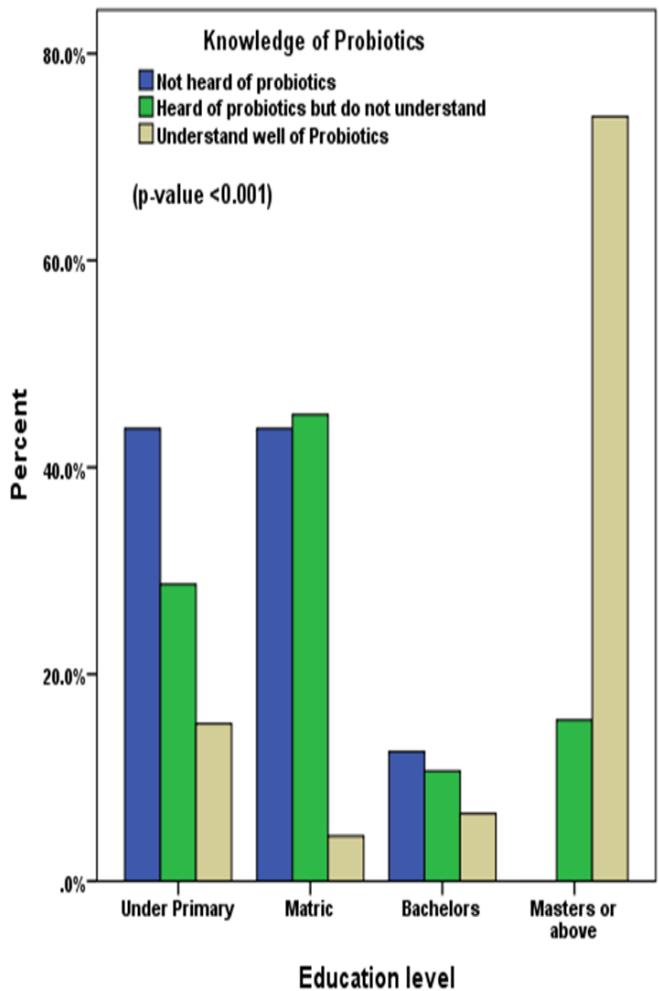
A study reported from Turkey assessed knowledge of women regarding probiotics during pregnancy and for their infants. The study participants demonstrated inadequate ability, significantly associated with age, socio-economical status, educational level(6). The results regarding mothers' knowledge were consistent with our study, and though the children in this study were younger and in the infant group. Similarly, the Alberta Pregnancy Outcomes and Nutrition (APrON) analysis was conducted on 413 Canadian mothers of two years and younger infants. One-third of mothers were not well aware of probiotics, though a great majority heard of probiotics. A considerable number was taken by themselves, but half of the mothers were not giving them to their infants as they were not aware of health benefits in infants(7). Thus the lack of awareness of probiotics is a global issue.

Previously reported systematic review suggested that the parents received information from the internet or the other family members. However, many children were taking probiotics as part of their diet(8). A meta-analysis published in 2019 suggested that using probiotics as an adjuvant in acute diarrhea in children is useful for management(1). Interestingly, probiotics suggest a preventive role then therapeutic as a meta-analysis including 33 studies showed a protective role in children's antibiotic-associated diarrhea. Thus knowledge of parents and caretakers is essential in providing enough quantity. A double-blind placebo-controlled trial looked at the efficacy of yogurt in preventing antibiotic-associated diarrhea and showed promising results(9). There is data available evaluating the effectiveness of the probiotics where there are favorable reports in general. However, there is a limited role as a therapeutic agent. Regardless of the use, the priority is safety, and the reported studies suggest that probiotics are well tolerated and that there were

no significant reported issues (10). The study evaluated mothers for their knowledge regarding probiotics in their school-going children. The small sample size was considered a limitation, though the prospective nature of the study is a strength.

<b>The educational level of mothers</b>	<b>n=200</b>
Up to Primary	56(28%)
Matric	71(35%)
Bachelors	20(10%)
Masters and above	53(26.5%)
<b>Knowledge of probiotics</b>	<b>n=200</b>
Never heard	32(16%)
Heard but don't know the details	122(61%)
Know well	46(23%)
<b>Yogurt</b>	<b>n=200</b>
Not used	35(17.5%)
At least once a week	71(35.5)
More than three times a week	94(47%)
<b>Buttermilk</b>	<b>n=200</b>
Not used	158(79%)
At least once a week	30(15%)
More than three times a week	12(6%)
<b>Cheese</b>	<b>n=200</b>
Not used	62(31%)
At least once a week	92(46%)
More than three times a week	46(23%)
<b>Pickle</b>	<b>n=200</b>
Not used	168(84%)
At least once a week	21(10.5%)
More than three times a week	11(5.5%)

**Table 1: Summary of the knowledge of mother's regarding use of probiotics in diet of school going children**



**Figure 1. Association of the education level of mothers regarding use of probiotics in the diet of school going children**

## CONCLUSION

A considerable number of children take probiotics as part of their regular diet. However, most mothers were not aware of the probiotics—the knowledge of probiotics in mothers associated with the level of education. However, using a probiotic-rich diet is inherited as the dietary habits based on anecdotal evidence. Further studies are required to assess the preventive role of probiotics in children's growth.

## Conflict of interest

All the authors declared no conflict of interest.

## Funding

No funding was received for this project

---

## REFERENCES

1. Yang B, Lu P, Li M-X, Cai X-L, Xiong W-Y, Hou H-J, et al. A meta-analysis of the effects of probiotics and synbiotics in children with acute diarrhea. *Medicine (Baltimore)* [Internet]. 2019 Sep;98(37):e16618. Available from: <https://journals.lww.com/10.1097/MD.00000000000016618>
2. Shaaban SY, El Gendy YG, Mehanna NS, El-Senousy WM, El-Feki HSA, Saad K, et al. The role of probiotics in children with autism spectrum disorder: A prospective, open-label study. *Nutr Neurosci* [Internet]. 2018 Oct 21;21(9):676–81. Available from: <https://www.tandfonline.com/doi/full/10.1080/1028415X.2017.1347746>
3. Li K-L, Wang B-Z, Li Z-P, Li Y-L, Liang J-J. Alterations of intestinal flora and the effects of probiotics in children with recurrent respiratory tract infection. *World J Pediatr* [Internet]. 2019 Jun 24;15(3):255–61. Available from: <http://link.springer.com/10.1007/s12519-019-00248-0>
4. Peluzio M do CG, Dias M de M e, Martinez JA, Milagro FI. Kefir and Intestinal Microbiota Modulation: Implications in Human Health. *Front Nutr* [Internet]. 2021 Feb 22;8. Available from: <https://www.frontiersin.org/articles/10.3389/fnut.2021.638740/full>
5. Depoorter L, Vandenplas Y. Probiotics in Pediatrics. A Review and Practical Guide. *Nutrients* [Internet]. 2021 Jun 24;13(7):2176. Available from: <https://www.mdpi.com/2072-6643/13/7/2176>
6. Cevik Guner U, Kissal A. Mothers' knowledge, attitudes and practices regarding probiotic use during pregnancy and for their infants in Turkey. *Public Health Nutr* [Internet]. 2021 Sep 5;24(13):4297–304. Available from: [https://www.cambridge.org/core/product/identifier/S1368980021000951/type/journal\\_article](https://www.cambridge.org/core/product/identifier/S1368980021000951/type/journal_article)
7. Bridgman SL, Azad MB, Field CJ, Letourneau N, Johnston DW, Kaplan BJ, et al. Maternal perspectives on the use of probiotics in infants: a cross-sectional survey. *BMC Complement Altern Med* [Internet]. 2014 Dec 29;14(1):366. Available from: <https://bmccomplementalternmed.biomedcentral.com/articles/10.1186/1472-6882-14-366>
8. Irwin N, Davis D, Currie M. Probiotic supplementation in well children: A scoping review. *J Child Heal Care* [Internet]. 2020 Sep 25;24(3):386–401. Available from: <http://journals.sagepub.com/doi/10.1177/1367493519864750>
9. Fox MJ, Ahuja KDK, Robertson IK, Ball MJ, Eri RD. Can probiotic yogurt prevent diarrhoea in children on antibiotics? A double-blind, randomised, placebo-controlled study. *BMJ Open* [Internet]. 2015 Jan 14;5(1):e006474–e006474. Available from: <https://bmjopen.bmjjournals.org/lookup/doi/10.1136/bmjopen-2014-006474>
10. van den Nieuwboer M, Brummer RJ, Guarner F, Morelli L, Cabana M, Claassen E. Safety of probiotics and synbiotics in children under 18 years of age. *Benef Microbes* [Internet]. 2015 Oct 15;6(5):615–30. Available from: <https://www.wageningenacademic.com/doi/10.3920/BM2014.0157>