FACTORS ASSOCIATED WITH SOFT DRINK CONSUMPTION IN PRESCHOOL-AGED CHILDREN IN SRI LANKA.

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Abstract—The survey was carried out to evaluate the factors associated with consumption of soft drinks by pre-school children in Western province (Colombo district, Kaluthara district and Gampaha district), Sri Lanka. Here 73 parents who are having pre-school aged children (aged between 4 to 6 years old) answered the following questions through questionnaire and face to face discussions: (1) Demographic characteristics of the survey respondents, (2) Overall idea about the child’s beverage intake, (3) Overall idea about the child’s soft drink intake and (4) Parent’s knowledge about the soft drink. Results reveal that: the most frequent consumed beverage was dairy products (median = 5) followed by fruit juices (median = 4), tea (median = 3) and soft drinks (median = 3). Children highly prefer to consume fruit juices (42.04%) and dairy products (37.50%) over soft drinks (17.04%). Parents prefer to give fruit juices (76.13%) to their children than dairy products (18.18%), soft drinks (17.04%) and tea. The main places where soft drinks were consumed were functions (50%) and at home (22.72%). The main reasons associated with soft drink intake were sweet taste (53.40%), recovering thirsty (17.04%), advertisement (10.22%), recommendation from friends (7.95) and color (5.68%). When purchasing the soft drinks were highly considered about availability and price. Not only that, most of the parents tend to buy soft drinks because of the child’s request. However considerable proportion of parents have no basic idea about the nutritional value (whether provide energy, nutritive or healthy) of soft drinks. In contrast they were aware on negative health impact of consumption of soft drinks. Even though majority of the parents don’t have the knowledge about the E numbers, they all have a better idea about the ingredient in soft drinks.

In conclusion, soft drinks which are available and consumed at different places, were popular among pre-school children and different motivational factors were affected for the choice of beverage. Furthermore they considered it as tasteful drink. Parents’ knowledge, involvement and child’s request are dominate factors for buying behavior and consumption pattern. Nutritional education programs and awareness programs for the parents should discuss how to prioritize the intake of other beverages, aiming to stimulate the intake of more healthy beverages by children.

Index Terms—Pre-school aged children, Soft drink consumption, Sri Lanka, Western Province.

I. INTRODUCTION

A soft drink (also called soda, pop, coke, soda pop, fizzy drink, tonic, seltzer, mineral, sparkling water, lolly water or carbonated beverage) is a beverage that typically contains water (often, but not always carbonated water), usually a sweetener and usually a flavoring agent. The sweetener may be sugar, high-fructose corn syrup, fruit juice, sugar substitutes (in the case of diet drinks) or some combination of these. Soft drinks may also contain caffeine, colorings, preservatives and other ingredients. (1) Evidence indicates that the consumption of soft drinks is increasing worldwide. Compared with 2009, the global consumption of soft drinks increased by 4% in 2010 with a per capita consumption of 81 litres. The highest growth in the soft drinks market in the year 2010 was observed in Asia, with India and China reporting growth rates of 16% and 14% respectively. The high level of soda consumption has some health consequences. First, Guenther found that soft drink intake was negatively correlated with intake of milk, and the nutrients calcium, magnesium, riboflavin, vitamin A and ascorbic acid (2). Mazariégos-Ramos et al found a significant association between the intake of at least 1.5 l/week of soft drinks containing phosphoric acid (Coca-Cola and Pepsi-Cola) and hypocalcemia in children 2.4–5.6 years of age (3). Second, the high sugar and acid contents of soda have consequences for teeth. It accelerates the enamel wear (4) - (6) daily consumption cause to dental erosion (7). It is essential, then, to identify and target those
behaviors that impact bone health, particularly those associated with attaining peak bone mass in the adolescent years. Evidence suggests that soft drink consumption may be a risk factor. Preschool children represent the initiation of the formal education system in a particular country. Therefore, studying the factors associated with the consumption of soft drink among preschool children will be helpful in getting an idea about up to what extent child’s preference and parent’s knowledge involves with consumption behavior of soft drinks. There are no previous studies regarding this matter done with preschool children among western province in Sri Lanka and this study help to understand factors associated with the consumption of soft drink in preschool aged children. The objectives of this study were to determine the trend among preschool children’s’ towards soft drink consumption, to identify the types of beverage which are mostly consumed by preschool children, to determine the parent’s awareness for labeled information and parent’s knowledge about ingredients in soft drink and health consequences of soft drink.

II. MATERIALS AND METHOD

a) Data Sources
Primary Source of data includes data and information which were obtained by questionnaires and interviews. Questionnaires were filled by parents of preschool children. Face to face questioning sessions were carried out to interview the parents. A brief guidance was given to parents prior completing the questionnaire and asked them to fill up it with 100% accurate data.

b) Selection of Sample
The study considered the entire three districts in the Western Province. It includes Colombo, Kaluthara and Gampaha districts. Then pre-schools were selected from every town in three districts. Table 01 gives the percentage of population who contributed to the survey in three districts.

c) Questionnaire
A questionnaire was designed to determine the factors associated with the soft drink consumption of preschool children. The final questionnaire consisted of 20 questions and was divided into four sections. The questionnaire includes both multiple questions and ranking questions.

1) Demographic characteristics of the survey respondents (five questions).
2) Overall idea about the child’s beverage intake (three questions).
3) Overall idea about the child’s soft drink intake (seven questions).
4) Parent’s knowledge about the soft drink (five questions)

d) Measures
Part 1 questions covered generic information which was about the child including age, gender, occupation of father and mother. Second part included questions regarding average beverage consumption of a child. Participants indicated whether they drink dairy, fruit juice, soft drink, tea, coffee and how frequently they drink. And parent’s preference for different types of beverage which they give to the child was also considered. Part three covered the questions about soft drink consumption of children. Main concern was given for some important factors such as type of soft drink, frequency, place, whether it has become a habit and reasons for soft drink consumption. Parents were asked to rate the factors which they consider when buying the soft drink. Factors included price, brand, availability and ingredients. Part four consisted with the questions to measure the parent’s knowledge about the soft drink. Here the facts regarding knowledge about the ingredients, information in the label and health consequences of soft drink consumption were mainly considered.

e) Data analysis
Data were statistically analyzed (a = 0.05) using MINITAB® and SPSS® software.

III. RESULTS AND DISCUSSION

Samples represented the pre-school children in age group; 4 years (61.3636), 5 years (31.8182) and 6 years (6.8182). About 56% participants were female and 43% male. When considering the questions asked in part one (Overall idea about the child’s beverage intake)
intake) following outcomes were obtained. According to the survey data (Figure 01), children frequently consume dairy products (median = 5), fruit juices (median = 4) followed by tea (median = 3) and soft drinks (median = 2).

Child’s preference for the beverage consumption (figure 02) is slightly different than consumption frequency. Highly preferred beverages are fruit juices (42.04%) and dairy products (37.50%) and the least preferred beverage is tea (1.13%). However 17.04% preferred to have soft drinks. When comparing the child and parents preference, there are some significant similarities. Parents prefer to give fruit juices (76.13%) to their children than dairy products (18.18%), soft drinks (17.04%) and tea for which children prefer less. However neither parents nor children prefer to consume coffee.

According to the survey results, 59.09% children consume soft drinks rarely while 23.86% children consume once a week. However 12.50% children consume soft drink for several times per week and there are 2.27% children who consume soft drinks every day. As illustrated in figure 03 most of the pre-school children consume soft drinks in functions (50%) and at home (22.72%) while 17.04% children drink soft drink in pre-school. However 10.22% children consume in other places. Availability of soft drinks near the pre-school may be strongly associated with their consumption.

Among children who consume soft drinks, 12.5% children consume soft drinks as a habit. As illustrate in the figure 04, sweet taste is the highly affected factor for the child preference (53.40%) for soft drinks followed by thirsty (17.04%), advertisements (10.22%), recommendation from friends (7.95) and color (5.68%) are the motivational factors for the soft drink consumption.

When considering the child’s consumption of soft drinks, parents’ involvement is highly affected. Parents are giving soft drinks for their children because of variety of reasons. Table 02 illustrates the information on these reasons. About 76% parents buy soft drinks for their children because of child’s request. Other reasons are easiness (no preparation) (6.8%), availability (4.5%), nutrition (1.1%) and other factors (11.36%).
Parents were asked to order the reasons which affect the purchasing of soft drinks (figure 05). According to the results, availability is the main factor and price is the secondly affected factor. Brand and the ingredients come next to the availability and price. Soft drinks are available in any supermarket in Western province of Sri Lanka and therefore availability may be a main factor why soft drinks are most popular in Sri Lanka. Moreover aggressive advertising campaigns are carried out throughout the country, particularly by multinational soft drink companies, to promote their consumption.

![Figure 05: Factors affected to soft drink purchasing](image)

Part 04 focuses on the parents’ knowledge about the soft drinks. According to the results (table 03) most of the parents think that soft drink consumption provides energy (92.04%). However 93.18% parents think soft drinks provide nutrition and 94.31% think those are healthy. Fortunately more than 50% of parents think soft drink consumption cause to nutrition imbalance, 57.95% know that it causes tooth decay, 64.77% think it is main cause for diabetics and 88.63% think it leads to obesity. Sometimes continuous consumption of soft drink may result to abnormal addiction; some parents (34.09%) think it is not a cause for any addiction. All the parents who participated in the survey were aware that soft drinks contain sugar, artificial flavors and artificial colors. About 97% parents think it contains preservatives and 78.40% parents think that it contains some acids.

![Table 03: Parents’ awareness about soft drinks](image)

Next question was focused on label information (figure 06). There are about 37% parents who check both expiry date and ingredient list before consuming soft drinks. But 59% parents check only the expiry date while 3.4% check only the ingredient list.

![Figure 06: Awareness about the label information](image)
As illustrated in figure 07, most of the parents don’t have the awareness (85.22%) about the E numbers where as others have the relevant knowledge. Food habits of children, particularly those from developed countries depend on the level of education of the mother. Children and young people whose mothers had a lower level of education were less likely to follow a healthy dietary pattern (8). According to the findings of Al Sabbah et al., (9) the consumption of soft drinks was positively associated with the mother’s level of education.

IV. CONCLUSION

It is evident from the present results that the majority of Pre-school children in this sample consumed soft drinks in different frequency at different places. Sweet taste of the soft drink and mother’s knowledge and involvement are dominant factors for soft drink consumption. Therefore there is a need for nutrition education to limit the consumption of soft drinks in Sri Lankan pre-school children

REFERENCES


