

Sugar Sweetened Beverages (SSBs)-Awareness, Intention and Self-Efficacy Among Low-Income Adults in a Tertiary Care Setting

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ABSTRACT

Objective: To assess the awareness, self-efficacy and intention of Sugar Sweetened Beverages (SSBs) among low-income staff members of a tertiary care hospital.

Study Design: Cross sectional analytic study.

Place and Duration of Study: Tertiary care hospital in Rawalpindi Pakistan, for 4 months, from May to Aug 2022.

Methodology: The research was conducted among low-income urban adults of a tertiary care hospital in Rawalpindi Pakistan. A non-probability purposive sampling technique was used to select a sample of 200 participants. After taking informed consent the data was collected using a validated questionnaire to assess the SSB-related awareness, self-efficacy and intention. The association between SSB-related constructs and demographic factors was analyzed by using chi-square test and a p -value of ≤ 0.05 was considered as significant.

Results: The mean age of the participants was 21(SD=2.9). Majority 124(62%) of the participants were male, while almost two third 150(75%) had a higher secondary education. Remarkably participants had good SSBs related awareness 170(85%), self-efficacy 151(75.5%) and intention 177(88.5%). Whereas 60(30%) of the participants rarely using sugary drinks, comprised of 35(58.3%) females and 25(41.7%) males. However, association between these two variables was statistically significant ($p=0.001$). Association analysis between sociodemographic with SSB-related constructs, reported significant association between awareness with employment status (p -value=0.05) and self-rated health status (p -value=0.001).

Conclusion: The current study concluded that despite less education level and monthly income. Majority of the participants consumed sugary drinks once weekly but not daily with good awareness, self-efficacy and intention, whereas no significant association was evident between gender and SSBs related awareness, self-efficacy and intention.

Keywords: Awareness, Intention, Sugar Sweetened Beverages, Self-efficacy.

How to Cite This Article: Mohsin S, Zahoor M, Mashhadi SF, Saleem N, Ansari W, Akhtar S, Inam A, Ahmed S, Karim A. Sugar Sweetened Beverages (SSBs)-Awareness, Intention and Self-Efficacy Among Low-Income Adults in a Tertiary Care Setting. *Pak Armed Forces Med J* 2022; 72(Suppl-4): S703-707.
DOI: <https://doi.org/10.51253/pafmj.v72iSUPPL-4.9642>

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INTRODUCTION

Sugar-Sweetened Beverages (SSBs) include, soft drinks, fruit juice, energy , sport drinks, as well as sweetened coffees and teas.¹ Research indicates that consumption of SSBs can affect an individual's risk for developing diabetes, obesity, weight gain and other chronic diseases.² A study in the United States reported that SSBs are responsible for almost half (39%) of all added sugars ingested in the US.³ Evidence from China and India also indicate a sharp surge in the consumption of these beverages in certain income groups.^{4,5}

The World Health Organization (WHO) has suggested that sugar intake in beverages should be less than 5% of total energy intake.⁶ A study in Australia reported higher consumption of SSBs in low-income participants (on an average 217ml per day), constituted

5.5% of their daily caloric intake,⁷ whereas in Mexico, this consumption accounted for 8.3% of adolescent total caloric intake.⁸

Increase in urbanisation and aggressive marketing in low- and middle-income countries has led to rise in the consumption of SSBs.⁹ In the absence of legislation such as increase pricing, sugar-sweetened beverages are likely to grow more accessible and popular worldwide.¹⁰ WHO has suggested to increase the tax on sugar-sweetened beverages to promote the consumption of other, healthier options including water, low-fat milk and fruit juice.¹¹ Research indicates that replacing SSB with more water may reduce the risk of weight gain and type 2 diabetes.¹² In another study conducted in adolescents, greater SSB intake was linked to increase in dental caries.¹³ Public health measures such as front of package warning labels, SSB portion-size restrictions, implementation of an SSB tax have been designed to lower SSB intakes.¹⁴

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Even though SSBs is the subject of much regional and international research, there is paucity of research in Pakistan. Therefore, the objective of the study was to assess the three dimensions; awareness, self-efficacy for reducing SSB consumption, and intention to restrict SSB intake among low-income hospital employees.

METHODOLOGY

A cross sectional analytic research was conducted among low-income adults of tertiary care hospital in Rawalpindi Pakistan, from May to August 2022. The sample size was calculated using Rao Soft Sample Size Calculator keeping a margin of error (5%) and 95% confidence level and prevalence of consumption of SSBs of 19%,³ the sample size of 192±10 was obtained. Non-probability-based convenience sampling was used. Informed consent was taken from the participants.

Inclusion Criteria: All non-clinical staff with a monthly income of PRs 15,000 to 25000 were recruited in the study.

Exclusion Criteria: Clinical staff and those unwilling to participate. A closed ended validated questionnaire was used. It was translated into Urdu for the convenience of participants.

The questionnaire was divided into two sections, the first section constituted the demographic variables and the second section addressed the SSB-related awareness, self-efficacy and intention.³ Data were entered and analyzed by using Statistical Package for the Social Sciences (SPSS) version 26. Descriptive analysis was applied to determine the frequencies and percentages of categorical variables. SSB-related awareness, self-efficacy and intention total score were converted to dichotomous variables. The association between SSB-related constructs and demographic factors was analyzed by chi-square test. The *p*-value of <0.05 was considered statistically significant.

RESULTS

Majority of the participants were male 124(62%) with higher secondary education 150(75%). Mean age of the participating candidates was 21± 2.9. Sample comprised of non-clinical staff members mostly Punjabi speaking 95(47.5%) and full time employed 141(70.5%) as shown in Table-I. Almost 76(38%) of participants reported their self-rated health status as good, whereas 71(35.5%) were having sugary drinks once weakly but not daily.

Table-I: Demographic Characteristics of the Participants (n=200)

Demographic variables	n (%)
Sex	
Male	124(62)
Female	76(38)
Languages	
Urdu	74(37)
Punjabi	95(47.5)
Saraiki	18(9)
Pashto	9(4.5)
Others	4(2)
Education	
Primary	2(1)
Middle	10(5)
Secondary	38(16)
Higher Secondary	150(75)
Employment Status	
Full Time	141(70.5)
Part Time	35(17.5)
Unemployed	24(12)
Self-Rated Health Status	
Excellent	47(23.5)
Good	76(38)
Fair	68(34)
Poor	9(4.5)
Frequency Of Sugary Drinks	
Rarely Or never	60(30)
Once Weekly but Not Daily	71(35.5)
Once Daily	46(23)
Twice Daily or More	23(11.5)

Figure-1 shows that majority of participants SSBs related awareness 170(85%), self-efficacy 151(75.5%) and intention 177(88.5%) was good.

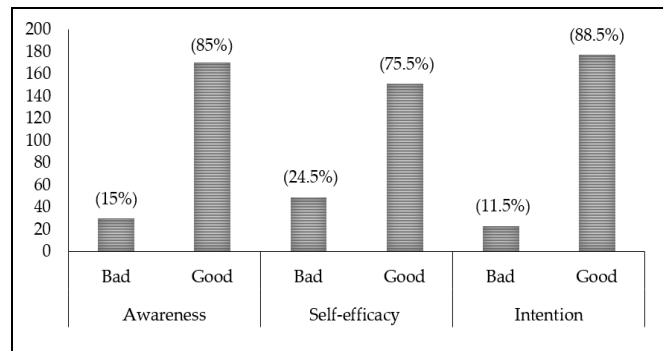


Figure-1: Frequency Distribution of Awareness, Self-efficacy and Intention

Majority of the Participants consumed sugary drinks once weakly but not daily with good SSBs related awareness 64(90.1%), self-efficacy 56(78.9%) and intention 61(85.5%) evident in Figure-2. However, there was no statistically significant association

between frequency of consumption of sugary drinks and SSBs related awareness, self-efficacy and intention as p -value was 0.4, 0.1 and 0.5 respectively.

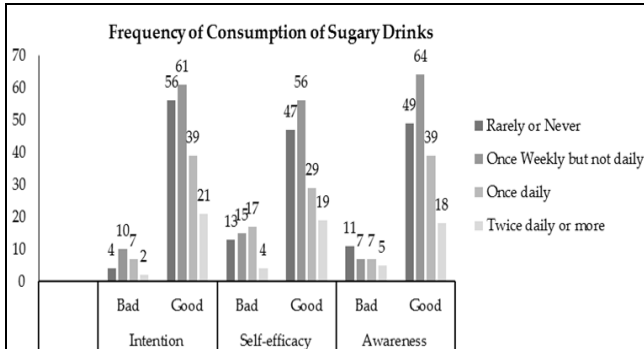


Figure-2: Comparison of Frequency of SSBs Consumption with Awareness, Self-efficacy and Intention

Figure-3 showing that 45(63.4%) males and 26 (36.6%) females consumed sugary drinks once weekly but not daily, whereas 60(30%) of the participants rarely using sugary drinks, comprised of 35 (58.3%) females and 25 (41.7%) males. However, association between these two variables was statistically significant ($p=0.001$).

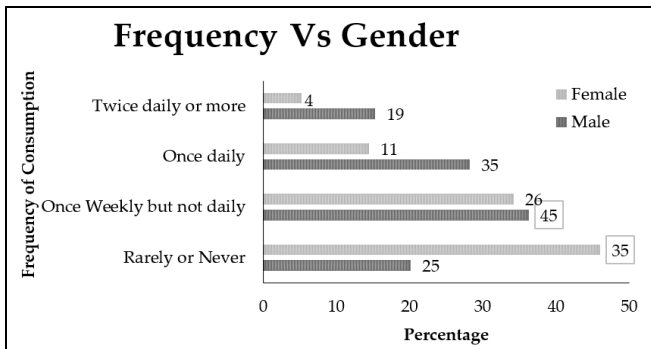


Figure-3: Comparison Between Gender and Frequency of Consumption of Sugary Drinks

Association analysis between sociodemographic with SSB-related awareness, intention and self-efficacy reported significant association between awareness with employment status (p -value=0.05) and self-rated health status (p -value=0.001). Whereas gender (p -value =0.22), education level (p -value=0.29), and frequency of sugary drinks (p -value=0.15), showed no significant association as shown in Table-II.

DISCUSSION

This study evaluated the awareness, efficacy, and intention of SSBs consumption in a sample of low-income adults at a tertiary care hospital. According to the study's findings, awareness, self-efficacy, and

intention did not significantly correlate with SSB consumption.

Table-II: Association Between Socio Demographic Variables with SSB-Related Awareness, Intention and Self-efficacy

Demographic Variables	Awareness	Intention	Self-efficacy
Gender	0.11	0.9	0.22
Education Level	0.15	0.25	0.77
Employment Status	0.05*	0.29	0.65
Frequency of Sugary Drinks	0.42	0.45	0.15
Self-Rated Health Status	0.001*	0.13	0.15

*The p -value of ≤ 0.05 was considered statistically significant

Our study revealed that, women consume more (46%) SSBs than men (36.2%) at least once a week, respectively.¹⁵ Whereas a study done in North America revealed that men drink more sweetened sugared beverages than women.¹⁶ According to a study done on US adults, women firmly believe that SSB consumption causes obesity. Our study demonstrates that women are more aware than males are. Consequently, it also suggests that both studies' awareness of women was higher.¹⁷ In contrast to our findings, a study of US Hispanic adults reveals that 87.7% of adults consume SSB at a frequency of once daily. This discrepancy between our findings and the research's findings may be related to regional differences and socioeconomic status. The same research supports our findings by demonstrating that men consume alcohol more frequently than women.¹⁸

The findings of our study on adult inhabitants of a public housing development in Boston demonstrated that participants exhibited good awareness of SSBs.³ Adults in the US who regularly drank SSB were found in studies conducted between 1999 and 2004 to have the same demographic as the cohort we chose for our study. The same study demonstrates that males consume more than females.¹⁰ As demonstrated in our research, where the majority of adults have good awareness of SSBs, a telephone survey of US adults reveals that they have a good awareness regarding the negative effects (diabetes, cavities, and weight gain) of SSBs. The findings of our study, which are consistent with this survey, show that increased general awareness of SSBs is associated with less frequent SSB use.¹⁹ Low SSB consumption is connected to high self-efficacy and intention. In the United States of America, a national poll discovered a similar relationship.²⁰ Our study's findings that awareness alone might not be enough to modify adult behaviour are supported by

the study's finding that awareness is not substantially connected with SSB consumption.¹⁷ Limited health literacy was linked to increased SSB intake, according to another study of persons living in rural lower Mississippi Delta who consumed SSBs, contrary to our current study results.²¹ This study highlights the advantages of improving SSBs related constructs and having the aim to cut back on SSB use. Despite the fact that social economics and health literacy have been connected to many different health outcomes, promoting compliance to consume fewer SSBs requires an understanding of the causes and effects of low health literacy.

These results point to the significance of raising self-efficacy and reducing SSB consumption intention. Therefore, a solely awareness-focused solution may not be enough. This study gives programme designers the validity they need to make the required changes for future interventions to increase staff members' awareness of SSB-related issues, their level of self-efficacy, and their intention to engage in them.

ACKNOWLEDGEMENTS

The Army Medical College Rawalpindi and National University of Medical Sciences (NUMS), which gave us the opportunities we needed to conduct this research, are acknowledged and thanked by the authors.

LIMITATIONS OF STUDY

There are a few limitations of this study as there was only one facility involved in this investigation and the sample size was small, it was not appropriate to generalise the findings. However, SSB consumption was self-reported which may be subject to recall bias and influenced by social desirability.

CONCLUSION

The current study concluded that despite less education level and monthly income. Majority of the participants consumed sugary drinks once weekly but not daily with good awareness, self-efficacy and intention, whereas no significant association was evident between gender and SSBs related awareness, self-efficacy and intention.

Conflict of Interest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

SM: Supervision, Conception, Study design, analysis and Interpretation of data, Critically reviewed manuscript & approval for the final version to be published.

MZ: Co-supervision, Data entry, analysis and interpretation, manuscript writing & approval for the final version to be published.

SFM: Critically reviewed, Drafted manuscript & approval for the final version to be published.

NS, WA: Data collection, Entry and analysis of data, preparation of rough draft & approval for the final version to be published.

SA: Data collection and entry, Preparation of rough draft & approval for the final version to be published.

AI, SA, AK: Data collection and entry & approval for the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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