

Survey of Cognition and Consumption Behavior of Consumers of Different Ages on Health Candy

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Abstract

Objective: This study aims to understand the cognition and consumption behavior of consumers of different age groups towards health candies and to understand the functions and sales of health candies on the market. Provide suggestions for the research and future development of new health candy products. **Methods:** A questionnaire survey was conducted to randomly sample consumers of different age groups. **Results:** The survey results indicate that there are differences in the perception of health candies among consumers of different age groups. Whether consumers understand health candies is significantly influenced by their age ($p < 0.01$). The older consumers are, the higher their awareness of health candies. However, overall, 32% of consumers are completely unaware of health candies. 44% of consumers have purchased or consumed health candy, and whether consumers have purchased or consumed health candy is significantly influenced by their age ($p < 0.01$); More than 80% of consumers are willing to purchase health candies, among which the product efficacy, taste, and testing reports of health candies are key factors in consumers' purchasing decisions. **Conclusion:** Health candy should be innovated in terms of efficacy and taste.

Keywords

Consumer, Health care candy, Consumption behavior, Investigation and research

Functional foods are foods with specific healthcare functions or for the purpose of supplementing vitamins and minerals, not for the purpose of treating diseases, and are suitable for consumption by specific groups of people [1]. However, functional food sanctification is one of the food trends of the future [2]. Health candy is attracting attention as a new type of functional food. Now, researchers have mainly focused on the processing, composition, mechanism of action, and active ingredients of functional foods [3]. CedeñoPinos Cristina et al. [4] experimentally demonstrated that green propolis ethanol dry extracts are full of phenolic antioxidants, which can be improved by adding minute propolis antioxidants to jelly candies. Delgado, Bañón et al. [5] experimentally demonstrated that chicory inulin can be used instead of acid-diluted corn starch as a gelling agent for the development of dietary fiber-rich fudge. Nayyer Karimi et al. [6] added muscimol, cardamom, and *Lactobacillus plantarum* nanoparticles as ingredients in functional confectionery, which was found to reduce the risk of tooth decay. This shows that health candies have some efficacy. This study investigates the awareness level and consumption behavior of consumers of different age groups, aiming to understand consumers' awareness level and consumption of health candies and to provide a reference for the future development trend of health candies.

1. Objects and Methods

1.1 Target Objects

This study used a random sampling method to study consumers of different age groups. The sample size of 314 questionnaires was recovered, excluding 3 questionnaires that did not meet the requirements, the final valid questionnaires were 311, with an effective recovery rate of 98.7%. There were 110 males and 201 females in the valid questionnaires.

1.2 Methodology of the Survey

The questionnaire design was carried out after referring to this literature [7] and covered basic information concerning consumer knowledge about health candies, brands of health candies, their functions, and consumer behavior, the questionnaire is composed of 23 questions. The questionnaire was anonymous, distributed online, and recovered.

1.3 Statistical analysis

The resulting values and statistical analysis were processed using SPSS 24.0 software and Microsoft Excel 2016.

2. Results and discussion

2.1 The Analysis of Consumers' Perception of Health Candy

2.1.1 Consumers' knowledge of health candies by age group and gender

Consumers' perceptions of health candies in different age groups are shown in Table 1. Only 3.5% of consumers were intimately aware of health candies, and 64.3% were generally aware of health candies, while 32.2% were not. An analysis of the knowledge of consumers of different age groups about health candies shows that the effect of age on the knowledge of health candies is extremely significant ($p < 0.01$), with the highest percentage of the number of consumers aged 30-45 years old knowing about health candies.

Table 1. Understanding of health candy in different age groups

Age	Situation of awareness			χ^2	P
	Aware well	Generally aware	Unawareness		
Under 18 years	3 (7.1%)	23 (54.8%)	16 (38.1%)	29.272	0.004
18-30 years	5 (3.5%)	85 (59.0%)	54 (37.5%)		
30-45 years	1 (1.1%)	71 (80.9%)	16 (18.0%)		
45-60 years	0 (0.0%)	13 (68.4%)	6 (31.6%)		
Over 60 years	2 (11.8%)	7 (41.2%)	8 (47.1%)		
Total	11 (3.5%)	200 (64.3%)	100 (32.2%)		

The knowledge of health Candy among the same sex is shown in Table 2. 63.8% of male consumers are aware of health candies while 70.1% of female consumers are aware of those. The effect of age on the awareness of health candies is not significant ($p > 0.05$). There is no significant difference between men's and women's knowledge of health candies.

Table 2. Understanding of health confectionery by gender

Gender	Situation of awareness			χ^2	P
	Aware well	Generally aware	Unawareness		
Male	5 (4.6%)	64 (59.2%)	39 (36.1%)	2.077	0.557
Female	6 (3.0%)	135 (67.1%)	60 (29.9%)		
Total	11 (3.6%)	199 (64.4%)	99 (32.0%)		

2.1.2 Analysis of Consumer Perception of Brands and Functions of Health Candy in the Marketplace

As shown in Fig. 1, among the brands of health candies in the market, there is 275 (88.4%) consumers recognized the health candies of BY-HEALTH, 53 (17.0%) consumers recognized the healer, and those who recognized other similar brands such as Ligui, Cats & Bears and Munich are in the range of about 20 persons. BY-HEALTH, as a leading company in the production and marketing of various health food products[8] is recognized by close to 90% of consumers.

The order of consumers' understanding of the functions of health candy is shown in Fig. 4. The order is as follows: supplementing vitamins > immunity improvement > improving sleep > improving gastrointestinal function > assisting in lowering blood lipids > clearing the throat > improving memory > controlling the card > prolonging aging. Based on the data, it can be inferred that at the current time, consumers buy healthy candies with the functions of vitamin and mineral supplementation, immunity enhancement, and sleep improvement.

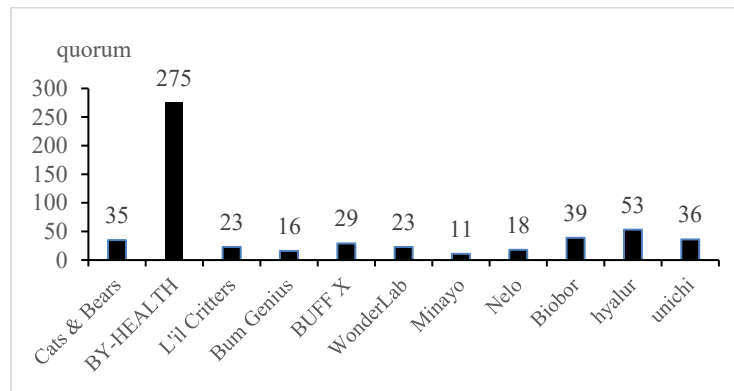


Figure 1. Understand the health confectionery brands in the market.

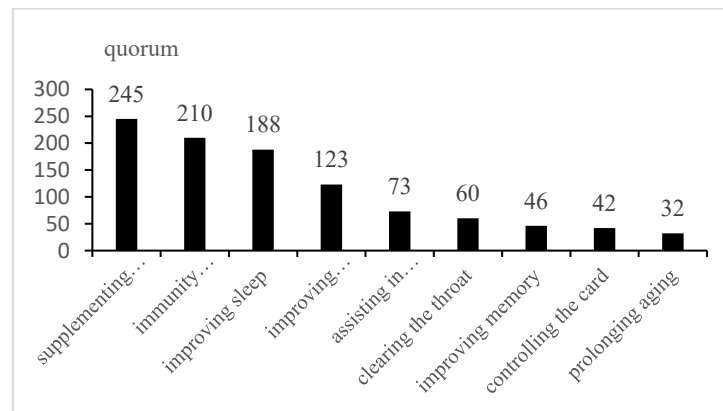


Figure 2. Functional cognition of health candy on the market.

2.2 Analysis of Consumer Attitudes Toward Health Candy

2.2.1 Analysis of Health Candy Forms Preferred by Consumers

62% of the consumers preferred health candies in the form of soft candy, 28.9% preferred health candies in the form of semi-soft candy, and only 9% preferred hard candy.

2.2.2 Market Advantages of Health Candy According to Consumers

202 (65%) consumers believe that healthy candy is easy to eat and carry, 178 (57.2%) believe that it meets the needs of young people to maintain their health, and 152 (48.9%) believe that the good taste of healthy candy is also one of its advantages. In addition, 97 (31.2%) consumers think that health candy is beautiful in appearance, 95 (30.5%) consumers think that health candy is loved by children, while 71 (22.8%) consumers think that the market advantage of health candy is the novelty of their styles.

2.2.3 Reasons why consumers perceive poor sales of health candy on the market

197 (25.5 percent) of consumers thought that its functionality did not meet their needs and that it was expensive. Next, 131 consumers (16.9 percent) thought that it did not have a "blue hat" or that the product was not well advertised, while only 37 consumers thought that it was poorly packaged.

2.2.4 Consumers' perceptions of effective ways to gain trust in health candy

there are 238 (29.4%) people thought that health candies with rigorous and verifiable test reports were more trustworthy, and 156 (19.2%) people thought that those recommended by experts or celebrities were more reliable, instead of 139 (17.1%) people supposed that with a better understanding of their active ingredients and related efficacy were more trusted, while 137 (16.9%) people reckon that those with big brands and old names were more. Eventually, most people preferred health candies with test reports.

2.3 Analysis of Consumer Behavior Towards Health Candy

2.3.1 The purchasing situation of health candy among consumers of different age groups

Whether consumers of different age groups have bought health candy is shown in Table 3, 44.0 % had bought or

consumed health candy by themselves or members of their families and 38.2% have not bought, while 17.8% are not sure whether they have bought health candy. The effect of age on the purchase of health candy is extremely significant ($p < 0.01$). The older consumers are, the greater they have purchased healthy candy with a high probability.

Table 3. The purchase of health candy by consumers of different ages

Age	Purchasing situation			χ^2	p
	Have bought	Has not bought	Unsure		
Under 18 years	17 (41.5%)	19 (46.3%)	5 (12.2%)	23.896	0.002
18-30 years	47 (32.6%)	62 (43.1%)	35 (24.3%)		
30-45 years	47 (53.4%)	28 (31.8%)	13 (14.8%)		
45-60 years	13 (68.4%)	4 (21.1%)	2 (10.5%)		
Over 60 years	12 (70.6%)	5 (29.4%)	0 (0.0%)		
Total	136 (44.0%)	118 (38.2%)	55 (17.8%)		

2.3.2 Consumers' willingness to buy health candy that meets their needs

Consumers' willingness to purchase health confectionery that meets their needs is shown in Figure 9, there are 34.73% of consumers have a strong willingness to purchase health candy, and 50.80% have a generally will buy, on the contrary 14.47 were not among 311 of Consumers.

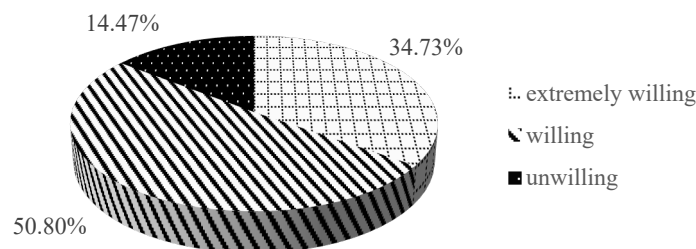


Figure 3. Consumers' willingness to buy health candy.

2.3.3 Reason analysis of consumers who do not want to buy health candy

In addition, of the 45 people who were unwilling to buy healthy candy, their reasons were analyzed as shown in Figure 10, from which it can be seen that 17 (37.7%) of them believed that they did not need to intake healthy food, 13 (28.8%) believed that the efficacy of health candy was not as good as the other health food products, and 8 (17.7%) were afraid of intaking too much sugar, and 7 (15.5%) believed that the health candy was expensive.

2.3.4 Consumers' reception of the price of health candy

It is generally acceptable that 38.91% of the 311 consumers think that health candies with a price range of RMB 15-30. 25.72% accept the price range of RMB 20-45. 19.61% think that health candies with a price are accepted by more than RMB 45 while only 15.76% accept a price range of less than RMB 15. It can be seen that most of the consumers are more receptive to health candies with a price range of RMB 15-45.

3. Conclusion

To sum up, consumers' knowledge and consumption of healthcare confectionery remains conservative. There is a significant difference in the knowledge of consumers of different age groups about health candy, and most consumers learn about it through the Internet, TV, and other platforms. The proportion of consumers who have purchased health candy is not more than 50%, and the number of purchases increases with the age of consumers. Among them, healthcare soft candy is more popular. It can be seen from the data that the efficacy of healthy candy products, taste, and rigorous inspection reports are the key factors in consumers' purchasing decisions. Some consumers said they cannot accept the high price of health candy in the market. Consumers' perception of health candy is still somewhat skewed, but they still believe that

the health confectionery market has a good future.

References

- [1] Salminen Seppo, Vinderola Gabriel, & Sanders Mary Ellen. (2022). Commentary on: Functional Food Science and Gastrointestinal Physiology and Function. *The British Journal of Nutrition*. 128(2), 179-182.
- [2] Zen Shao-wen & Li Bian-sheng. (2022). Research progress of healthy candy [J]. *Food Industry Science and Technology*. *Food Industry Science and Technology*, (15), 451-458.
- [3] Zhang Ting, Zhao Song-Ning, Shang Xiao-Wen, & Liu Jing-Bo. (2022). Research and Exploration on the Reform of Functional Foods Course Based on Smart Classroom Teaching. *Food and Fermentation Science and Technology*, (03), 169-171+180.
- [4] CedeñoPinos Cristina, Marcucci María Cristina, & Bañón Sancho. (2021). Contribution of Green Propolis to the Antioxidant, Physical, and Sensory Properties of Fruity Jelly Candies Made with Sugars or Fructans. *Foods*, 10(11), 25-86.
- [5] Delgado & Bañón. (2018). Effects of Replacing Starch by Inulin on the Physicochemical, Texture and Sensory Characteristics of Gummy Jellies. *CyTA—Journal of Food*, 16(01), 1-10.
- [6] Nayyer Karimi, Vahid Jabbari, Aylar Nazemi, & Hossein Samadi Kafil. (2020). Thymol, Cardamom and Lactobacillus Plantarum Nanoparticles as A Functional Candy with High Protection Against Streptococcus Mutans and Tooth Decay. *Microbial Pathogenesis*, (148), 1-8.
- [7] Dsbaike. (2021). Functional Gummy Market Rising, Health Products Industry May Welcome "Snackify" Upgrade. *Brand Marketing News*, from <http://m.dsbaike.com/article/view/id/36735.html>.
- [8] Sheng Li, Yin Ling-Wei, Zhen Zhen-Liang, Lingli Guo, Xiao Jiang-Hao, & Yu Zhang. Review on Dietary Supplements as an Effective Improvement of Alzheimer's Disease: Focus on Structures and Mechanisms. *Food Science and Human Wellness*, 14(03), 111-113.