

DETERMINING THE RELATIONSHIP BETWEEN ORDER OF PREFERENCE OF FOOD AND CONSUMPTION FREQUENCY OF INDIVIDUALS HAVING INTELLECTUAL DISABILITY IN TURKEY

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Abstract

The concept of preference is used quite alot today. Individuals with disabilities also have preferences. In this study, the relationship between order of food preference and consumption frequency of individuals with intellectual disabilities has been investigated according to parental views. In this study thirty-five parents of children at seven-fourteen years of age participated in the diagnosis of intellectual disabilities. According to the research results, a relationship has been found between the food items preferred by the individuals with intellectual disabilities and their consumption frequency of these items at different levels.

Key words: *Preference, Intellectual Disability, Consumption Frequency*

1. Introduction

The concept of preference is used quite alot today and it is usually confused with selection. Preference usually means ‘to like an individual or item subjectively or to dislike it’ (Kearney and McKnight 1997). In other words, preference refers to repeatedly selecting an alternative as compared to other alternatives (Belfiore, Browder and Mace 1994). Selection is defined as the individuals’ act of selecting an alternative preferred among different familiar options (Shevin and Klein 1984). Based on these definitions, while items liked by the person shows the persons preferences, his/her showing, pointing at the thing he/she liked or saying its name shows the persons selection.

Preferences take place at every phase of our daily life. We have to give preferences regarding many issues until we wake up in the morning and go to work. These preferences could be regarding many issues such as what we are going to eat during breakfast, what we are going to wear during the day, what we are going to go to work with, and which bus we will get on (Şafak 2012).

As preferences and selections in accordance with the preferences give the opportunity for the individuals to have their life under control, it gives the ownership of daily activities, routines and operations. Moreover, preferences increase the freedom of individuals and it improves their life quality. It also develops their social competence, freedom and skills of autonomous decision-making.

In addition to this, preferences give opportunity for the individuals to use their cognitive skills, communication skills and social skills (McCormick, Jolivet and Ridgley 2003).

To know and predict our preferences which are quite significant in our personal life for ourselves, family and educators is really important for our daily lives and education life. Knowing the preferences of the family members, eases our work while arranging activities in the family and buying presents, etc. Knowing it for the educators is necessary in arranging activities, presenting reinforcer, increasing bondage and dealing with behavior problems.

There are many ways for determining preferences. Bambara and Koger (1995) have stated that the individuals should be observed during routine activities in order to identify the preferences. Hagopian, Long and Rush (2004) expressed that preferences could be evaluated directly and indirectly. Direct preference evaluation, is an evaluation carried out by presenting the preference items, photographs and miniatures at various numbers to the person evaluating the preference. Direct preference evaluations, is an evaluation carried out based on the opinions of the people besides the person whose preference is to be evaluated, the parents, carer or other individuals knowing the participant. In such evaluations, structured and unstructured interviews or check lists

are used (Fisher, Piazza, Bowman, and Amari 1992; Hagopian et al. 2004; Matson et al. 1999).

People could have preferences regarding many things in their lives. We could group these preferences as: food- drink preferences, clothing preferences, and transportation preferences, work preference, free time preference, occupation preference. For example, in the research carried out by Volz and Cook (2009), they have examined preferences by grouping them as food items, activity preferences done alone and activity preferences done together.

Among the preference types, the food preference is defined as the degree of liking or disliking a food (Skinner et al. 1998). Food preferences is learnt and experienced in the first years of life. It is really difficult to change it later (Hare-Bruun et al. 2011). The repertoire for the food preference which forms in the first years of life thrives with the selection done in the following years of life.

Koehler and Ute Leonhaeuser (2008) have stated that food preference and the selection done in accordance with this is a complex human behaviour. This is due to the fact that food preference and food selection is effected by many factors. These are psychological, social and cultural factors. While Rozin (2002) deals with these factors as biological, psychological and cultural factors, Khan and Hackler (1981) have dealt with the factors affecting the food preferences in seven categories. These are personal, socio-economical, educational, cultural- religious- regional, internal, external, biological, physiological, and psychological factors. Personal factors include, level of expectation, effect of other people and connecting to the food sensitively. Socio-economical factors contains family income, food prices, symbolic meaning, social status, security and soceity. Educational factors include educational state of people and family nutrition education. Cultural- religious- regional factors comprises of cultural origins, religious belief and traditional culture and geographical region. Internal factors include appearance, odour, texture, temperature, taste, quality, amount, preparation and presentation of food. External factors- secondary factors contain environmental and situational advertisements, display period and seasonal variables. Biological, psychological and psychological factors comprise of age, sex, psychological variables, psychological factors and biological appearance.

Randall and Sanjur (1981) have collected these factors under three titles. These are individual,

environmental and food characteristics. Individual characteristics are attitudes for age, sex, education, income, nutrition knowledge, cooking skill, creativity, role of eating that item, and health. The characteristics of the food are the combination of taste, appearance, texture, price, food type, preparation method, style, season and food. The characteristics of the environment are season, accomodation, mobility, and degree of urbanization, household and the family level.

Some researchers have stated that the food preferences change with age (Lukasewycz and Mennella 2012; Nicklaus, Boggio, Chabanet and Issanchou, 2004). In the longitudinal research carried out by the researchers Nicklaus et al. (2004), they have identified that preferences are stable until young adulthood and that there are changes during puberty.

It is also expressed that the food preferences of individuals are affected by food preference of the parents (Guidetti, Cavazza 2008; Skinner et al. 1998; Rozin 2002). However, in the researches they have carried out, Lukasewycz and Mennella (2012) and Birch (1980) have stated that food preferences are not so related with the food preferences of the parents.

The researches carried out shows that the food marketing and commercials have a positive effect on the food preferences of the children (Chernin 2008). In the research carried out by Nicklas et al. (2012), the effect of television commercials on food preferences has been examined. At the end of the research, the experimental groups watching the television commercials have been found significantly higher than the control groups of fruit-vegetable preferences.

Todhunter, has stated that in liking and disliking the foods(as cited in Skinner et al. 1998), in other words in food preference, it is important that foods are known and familiar (Skinner et al, 1998; Volz and Cook 2009). It cannot be expected that an individual has a preference for a food he/she is not familiar, which he/ she does not know its taste, odour and appearance. Rozin (2002) has stated that consumption of food is also important in food preference. The pleasure left on the individual while consuming the food or after consuming it, plays an important role on the food preferences of the individual. At the end of the research carried out by Cashman, Tripurana, Englund and Bergman (2010), they have expressed that food consumption is the greatest determinant of the food preferences. In another research, in which Sigafos and Dempsey (1992) have examined whether there is

consumption in accordance with the preferences, they have presented the preferred items and unpreferable items to the experimentals. At the end of the research, while the experimentals were consuming the items in accordance with their preferences, they have refused the items which are not their preference. Birch (1979) has examined the relation between the food preferences and consumptions of children going to preschool. At the end of the research, a high level relation has been identified between food preference and its consumption. In the research carried out by Skinner et al. (1998), they have reported that there is a relation between individual food preferences and consumption and that this relation could change ($r: 0.5- 0.7$) between %50-25. In the research carried out by Unusan (2006), he has examined the food preferences and consumption during early childhood, and the current food preferences, current consumption and later a positive relation has been found between the current food preference and consumption during childhood.

Based upon these researches, a research examining whether there is relation between the food- drink preference, parent income, education level of individuals with intellectual disability, and consumption has not been encountered. Therefore, the relation between food- drink preferences and consumption frequency of individuals with intellectual disability has been studied.

The purpose of this research is to study with the parental view whether there is relation between order of food- drink preference, parent income, education level of parent and consumption of individuals with intellectual disability or not. With his purpose, answer was sought for the following questions. (1) At what level is the relation between order of preference of the items that take place in the food-drink item groups and the consumption frequency? (2) At what level is the relation between the parent income and total point of the consumption frequency of food- drink item groups? (3) At what level is the relation between the education level and total point of the consumption frequency of food- drink item groups?

2. Method

2.1. Research model

This study is a correlational research due to the fact that in this study it has been researched whether there is relation between food- drink preferences and consumption frequency of individuals with intellectual disability, between parent income and consumption frequency, and between education level of parent and consumption frequency.

According to Büyüköztürk Çakmak, Akgün, Karadeniz and Demirel (2011), correlational research is defined as researches carried out in order to determine the relation between two or more variables.

2.2. Research Group

The type of availability sampling has been used in this research.

The research group comprises of 35 parents who are willing to participate in the research among the parents who live at the provinces of Bolu and Duzce in Turkey and who have a child at the age of 7-14 diagnosed with intellectual disability.

2.3. Data Collection

Preference Ordering and Consumption Frequency Form has been developed in order to collect data in the research. While developing this form, the form has been arranged by identifying the most consumed junk foods by the school age children. According to the research findings of Skinner et al. (1998), chips, fruit juice, saltine and biscuits which are the most liked foods by children have been added to this form. The formal arrangement of the form has taken its final form by receiving the opinion of a professional lecturer at the Department of Educational sciences.

Preference Ordering and Consumption Frequency Form comprises of two sections. These sections include sections which the data regarding identification details and Preference ordering-consumption frequency are to be written.

In the identification details section, the Parent's name and surname, child's name and surname, diagnosis, date and time of interview, education level, and monthly income takes place.

In the Preference ordering and consumption frequency section, the purpose of the form and the practices directive takes place. In the purpose of the form section, the reason why the form was developed takes place and in the practice directives section how this form is to be filled takes place.

Right below the practices directives, the table which the data for preference ordering and consumption frequency is to be marked takes place. In this table, there are columns classified as 1,2,3,4,5 in order to state the order of preference, food- drink items and consumption frequency and there is a column for comments.

2.4. Analysis and Interpretation of Data

All evidence collected in the study have been processed to the SPSS 16,0 package programme and the relation between two variables has been calculated with Spearman Rank Correlation Coefficient.

While processing the data to the SPSS package programme, the order of preference of the food-drink item and number value given to the consumption frequency have been entered to the relevant columns. In the order of preference, the items which are not among the first 10 preferences have been graded as 0.

According to Büyüköztürk (2005), Correlation coefficient of 1:00 shows an excellent relation, Correlation coefficient of -1 shows an excellent relation at negative level, Correlation coefficient of 0.00 shows that there is no relation. Correlation coefficient between 0.70-1.00 could be interpreted as the existence of the relation at high level, Correlation coefficient between 0.70-0.30 could be interpreted as the existence of the relation at

average level, Correlation coefficient between 0.30-0.00 could be interpreted as the existence of the relation at low level. The research data are to be interpreted in the light of these details.

3. Results

3.1. Participation Demographics

Participations are given in Table 1. Participations are 82.8% female and 17.1% male. Participations' education levels illiterate 11.4%, primary education 62.8%, secondary education 17.1, High school 2.8%, university 5.7. Participations' ncome Levels are 0-500L. 37.1%, 501-1000L. 40%, 1001-1500L. 14.2%, 2001L.+ 8.5%.

Table 1 Characteristic of the Research Group

Characteristic of the Research Group	N	%	
Sex	Female	29	82.85
	Male	6	17.14
Educational Background	Illiterate	4	11.42
	Primary Education	22	62.85
	Secondary Education	6	17.14
	High school	1	2.85
	University	2	5.71
	Master's degree	0	0
Income Level	0-500L.	13	37.14
	501-1000L.	14	40
	1001-1500L.	5	14.28
	1500-2000L.	0	0
	2001L.+	3	8.57

3.2. Relationship between the Order of Preference of Food- drink item groups and the consumption frequency.
Table 2

Relationship between the order of preference of food items and consumption frequency which takes place in the Chocolate group.

Items	Variables	r	p
Chocolate (plain chocolate)	Order of Preference-Consumption Frequency	,441	,008
Chocolate Bread	Order of Preference-Consumption Frequency	,358*	,035
Chocolate Wafer	Order of Preference-Consumption Frequency	,419*	,012
Coloured Chocolate	Order of Preference-Consumption Frequency	,593	,000
Coconut Chocolate	Order of Preference-Consumption Frequency	,276	,108
Caramel Chocolate	Order of Preference-Consumption Frequency	,247	,152

As seen in the table, there is a positive relation at average level between the order of preference of plain chocolate, chocolate bread, chocolate wafer and coloured chocolate, and consumption frequency.

There is a positive relation at low level between the order of preference of coconut chocolate and caramel chocolate and consumption frequency

Table 3

Relationship between the order of preference of food items and consumption frequency which takes place in the biscuit group.

Items	Variables	r	p
Plain Biscuit	Order of Preference-Consumption Frequency	,430	,010
Cream Biscuit	Order of Preference-Consumption Frequency	,524	,001
Cocoa Biscuit	Order of Preference-Consumption Frequency	,357	,035
Marshmellow Biscuit	Order of Preference-Consumption Frequency	,517	,001
Chocolate Marshmellow Biscuit	Order of Preference-Consumption Frequency	,450	,007
Saltine	Order of Preference-Consumption Frequency	,513	,002

As seen in the table, there is a positive relation at average level between the order of preference of the items (plain biscuit, cream biscuit, cocoa biscuit, Marshmellow biscuit, Chocolate Marshmellow biscuit) which take place in the biscuit group and consumption frequency.

Table 4

Relationship between the order of preference of food and consumption frequency in the Sugar group.

Items	Variables	r	p
Sugar (Sugar Candy)	Order of Preference-Consumption Frequency	,562	,000
Candy Bar	Order of Preference-Consumption Frequency	,489	,003

As seen in the table above, there is a positive relation at average level between the order of preference of sugar candy and candy bar and consumption frequency of the food in the sugar group.

Table 5

Relationship between the order of preference of the items and the consumption frequency that takes place in the Fizzy Drink group

Items	Variables	r	p
Cola	Order of Preference-Consumption Frequency	,312	,068
Acidic Fruit Juices	Order of Preference-Consumption Frequency	,509**	,002
Pure Soda Water	Order of Preference-Consumption Frequency	,453	,006

As seen on the table above, there is a positive relation at average level between the order of preference of the fizzy drinks cola, acidic fruit juice and pure soda water and consumption frequency.

Table 6

Relationship between the order of preference of the items and consumption frequency that takes place in the unfizzy drinks.

Items	Variables	r	p
Milk	Order of Preference-Consumption Frequency	,451	,007
Buttermilk	Order of Preference-Consumption Frequency	,483	,003
Fruit Juice	Order of Preference-Consumption Frequency	,403*	,017
Coffee	Order of Preference-Consumption Frequency	,408*	,015

Tea	Order of Preference-Consumption Frequency	,112	,521
Lemonade	Order of Preference-Consumption Frequency	,303	,077

As seen in the table above, with the parental view there is positive relation at average level between the order of preference of the unfizzy drinks and milk, buttermilk, fruit juice, coffee and lemonade and consumption frequency of individuals with intellectual disability.

However, a meaningful relation has not been encountered between the order of preference of tea and consumption frequency.

Table 7

Relationship between the order of preference of food and consumption frequency that takes place in the other group.

Items	Variables	r	p
Chips	Order of Preference-Consumption Frequency	,241	,164
Cake	Order of Preference-Consumption Frequency	,405*	,016

As seen in the table above, there is a positive relation at average level between the order of preference of the cake and consumption

There is positive relation at low level between the order of preference of the chips and consumption frequency.

3.3. Relationship between parent income and Total point of the consumption frequency of food- drink item groups.

Table 8

Relationship between parent income and Total point of the consumption frequency of food- drink item groups.

Variables	r	p
Parent Income – Total Point of Chocolate Group Consumption Frequency	,422	,012
Parent Income - Total Point of Biscuit Group Consumption Frequency	,049	,781
Parent Income - Total Point of Sugar Group Consumption Frequency	,093	,594
Parent Income - Total Point of Fizzy Drink Group Consumption Frequency	-,012	,944
Parent Income - Total Point of Unfizzy Drink Group Consumption Frequency	,110	,531
Parent Income - Total Point of Other Group Consumption Frequency	,212	,222

As seen in the table above, there is a positive relation at average level between the parent income and chocolate group.

There is a positive relation at low level between the parent income and group consumption frequency of items which take place in the biscuit, sugar, unfizzy drinks and other group.

There is a negative relation at low level between the parent income and total point of consumption frequency of the fizzy drink group.

3. 4. Relationship between the education level and Total point of the consumption frequency of food- drink item groups.

Table 9

Relationship between the education level and Total point of the consumption frequency of food- drink item groups.

Variables	r	p
Education Level- Total Point of Chocolate Group Consumption Frequency	-, 144	,934
Education Level – Total Point of Biscuit Group Consumption Frequency	,000	,997
Education Level - Total Point of Sugar Group Consumption Frequency	-,053	,763
Education Level - Total Point of Fizzy Drink Group Consumption Frequency	-,229	,186
Education Level - Total Point of Unfizzy Drink Group Consumption Frequency	,041	,814
Education Level - Total Point of Other Group Consumption Frequency	-,122	,487

As seen in the table above, there is a negative relation at low level between the education level of parents and point of consumption frequency of the items which takes place in the chocolate, sugar, fizzy drink and other group.

A relation has not been encountered between the education level of the parents and the biscuit group. There is positive relation at low level between the education level of the parents and total point of consumption frequency of the unfizzy drink group.

4. Discussion

As a consequence, there is positive relation at average level between the order of preference of plain chocolate, chocolate bread, chocolate wafer, coloured chocolate, plain biscuit, cream –cocoa-marshmallow- chocolate marshmallow biscuit, saltine, sugar candy, candy bar, cola, acidic fruit juice, pure soda water, milk, buttermilk, fruit juice, coffee, lemonade, cake and consumption frequency. The finding of this research is different than the findings of the research which was carried out by Birch in 1979. This is due to the fact that in the research carried out by Birch he has identified that there is a high level relation between the preference of the children and their consumption. There is a positive relation at a low level between the order of preference of coconut, caramel chocolate, tea and chips and consumption frequency. In the research carried out by Skinner et al. in 1998, it has been discovered that among these items, chips has been liked at a rate of %95 among the children. According to Birch (1979), with the consideration of the finding of high level relation between preferences and consumption, chips consumption is expected to be high. However the data of this research shows that the relation between the preference of chips and its consumption is low, in other words it shows that chips is preferred a lot but it has not been consumed much. It is thought that in not consuming chips so much, the thought of the family that it could be harmful and that they do not permit the child to consume and buy is effective.

Khan ve Hackler (1981) and Randall and Sanjur (1981) have stated that the parent income effects the preferences. It is expected that the parent income which affects the preferences has a strong relation with consumption. However in this research there is a positive relation at average level between parent income and consumption frequency of the food that takes place in the chocolate group. In other words, it could be said that as parent income increases, usually the consumption of the food in this group also increases. There is a positive relation at low level between parent income and

point of group consumption frequency of the items that take place in the biscuit, sugar, unfizzy drink and other group. In other words, it could be said that as parent income increases, leastwise the consumption of the good in this group also increases. Negative relation at low level has been discovered between parent income and total point of consumption frequency of fizzy drink group. In other words, it could be said that as parent income increases the consumption of the drink items in this group decreases. The reason for this is that as the consciousness level of families whose socio-economical level is good is high, it is thought that their children may not be permitted to consume the drink items in this group.

Khan and Hackler (1981) and Randall and Sanjur (1981) have stated that the education level of the parents effects the preferences. It is expected that there is a strong relation between the education level which affects the preferences and consumption. However in this research, there is a negative relation at low level between the level of education and total of group consumption frequency of the items which takes place in the chocolate, sugar, fizzy drink and other group. In other words, it could be said that as the level of education of parent increases, the consumption of the food items in this group decreases a bit. A relation has not been encountered between the education level of the parents and the biscuit group. In other words, it could be said that there is no relations between the education level of the parents and the consumption of the food items in this group. A positive relation at low level has been identified between the level of education of the parents and the total point of consumption frequency of the unfizzy drink group. In other words, it has been identified that as the education level of the parents increase, the consumption of unfizzy drinks increases at low level. It is thought that as the education level increases, the knowledge of the families regarding nutrition increases and in accordance with this as they think that unfizzy drinks give less harm to their children; this is effective in positive relation.

In light of the data of this research, the general food preferences of the individuals with intellectual disability in Turkey could be determined in the future researches. At the same time, the food preferences of individuals having other disability types could be determined. Food preferences and the factors affecting the food preference could be determined with a longitudinal study on individuals with disability. It could also be examined whether

the factors affecting the food preference changed according to age or not on individuals with disability. In accordance with the data of this research and the data of the new researches that is to be carried out with the students who have been effected by different disability groups, healthy nutrition programs could be applied to the individuals with disability and its effect could be evaluated.

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