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The correlation between children's own health control and their health perceptions and behaviours, and the associated factors

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ABSTRACT. The study was conducted as a correlational descriptive study to determine the correlation between children's own health control and their health perceptions and behaviours, as well as the associated factors. The sample of the study consisted of 963 children in the age group of 7-12 years studying at one primary schools affiliated with the Ministry of National Education. It was determined that age affected health control and health perception and behaviours in children. A positive significant correlation was found between the health locus of control and health perceptions and behaviours of the children. The children had positive health behaviours, and they had high internal control in their own health management. In accordance with these results, children's own health management should be increased to increase their positive perceptions and behaviours.

Keywords: children's health control; children's health perceptions and behaviours; children.

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Introduction

Children's population constitutes 26.11% of the total population around the world. While the society is aging rapidly, the young population is decreasing at a similar rate (World Health Organization [WHO], 2015). In order to ensure economic and social development of countries and create a healthy community, children, whose numbers decrease within the total population and who are mostly affected by risk factors, are required to be addressed as a primary concern.

Children aged between 6 and 15 years who have sufficient cognitive and social skills to manage their own health behaviours begin to express themselves better with their peers at school and in their social environments. In this period, they can integrate what they learn into their lives (O'Rourke, 2005) and compel their environments to change in this regard (Breidablik, Meland, & Lydersen, 2008; O'Rourke, 2005). However, today, children face many negative stimuli and have to cope with the health problems that occur as a result of negative health behaviours (Gobina, Zaborskis, Pudule, Kalnins, & Villerusa, 2008).

Health-promoting practices provide children with the power to control their health (Bektas & Ozturk, 2008) and help school-age children gain positive health behaviours (Gaspar, 2010). Children who feel weakness or loss of control in health management may suffer anxiety, depression, regression and somatic complaints (Torsheim & Wold, 2001).

Children's health perceptions have a key role in developing health-related behaviours (Breidablik et al., 2008). Health perceived by the individual is a subjective indicator of general health (Breidablik et al., 2008; Gaspar, 2010). Children's health is related to not only the existence or absence of chronic diseases or disabilities but also how they perceive themselves (Breidablik et al., 2008; Gaspar, 2010). In a study conducted in the USA in the scope of health behaviours of school-age children, a great majority of children who participated in the study were found to perceive themselves as healthy (Inchley & Currie, 2013). Even though this is a finding, many countries do not seem to have similar perceptions on their children. It is necessary to conduct extensive research for this.

According to previous studies, the health condition perceived by the individual affects the control of possible diseases in the future (Breidablik et al., 2008; Idler & Benyamini, 1997). Weak health in the early childhood period may cause negative effects in the long run in adolescence and adulthood (WHO, 2006).

The way that a child evaluates their health condition is related to medical, psychological, socio-environmental, cultural and behavioural factors. Family, peers and school environment are also important factors that affect the health of a child (Breidablik et al., 2008; Matos, Barrett, Dadds, & Shortt, 2003).

It has been determined that healthier individuals have more internal locus of health control than those who are less healthy (Hakeem, Thomas, & Badruddin, 2001). Health management acts as a buffer against the negative effects of stress and development of psychopathological behaviours (Brown, Nobiling, Teufel, & Birch, 2011; Huebner, Suldo, Smith, & McKnight, 2004). Therefore, children should be helped in promoting their health so that they can succeed in managing their own health (Hakeem et al., 2001). It has been found as a result of reviewing the relevant literature that studies conducted on children generally focus on a certain phenomenon (obesity, physical activity, substance addiction, sexual activity, bullying) (Alexanderson & Näsman, 2017; Berry, Burton, & Howlett, 2017; Gaspar, Gaspar de Matos, Ribeiro, Leal, & Albergaria, 2014; Helmus, Hanson, Babchishin, & Mann, 2013), and the number of studies conducted on children's health perceptions and controls is limited. This study was planned to contribute to the literature and shed light on future studies by filling the dearth on this subject. This study was conducted to determine the correlation between children's health controls and their health perceptions and behaviours, as well as the associated factors.

Material and methods

This correlational descriptive study was conducted at one primary schools. The population of the study consisted of 1158 children in the age group of 7-12 years studying at these one primary schools. Since it was aimed to include the whole population in the study, no sampling method was used, and a sample size was not calculated. 963 children in the age group of 7-12 years participated in the study, and 92.7% of the population were reached.

A 6-item introductory questionnaire, prepared by the researchers upon literature review (Breidablik et al., 2008; Matos et al., 2003; Hakeem et al., 2001), as well as the Children's Health Locus of Control Scale and Children's Perceptions of Health and Health Behaviour Inventory were used in the data collection process in the study. Data collected between January-February 2020. The data were collected by the researchers with the face-to-face interview technique between the dates of the study, and the interviews took averagely 25-30 minutes.

Ethics Committee approval was obtained for the study from University's ethics committee (2019/21-41). The data of the study were collected in accordance with the principles of the Declaration of Helsinki

Instrument

Introductory Questionnaire: It involved a total of 6 questions including the personal characteristics of the children (age, gender, class, department, mother's education level, father's education level).

Children's Health Locus of Control Scale (CHLCS): Developed by Guy Parcel in 1978, the aim of this scale is to evaluate the children's health locus of control in the age group of 7-12 years (Parcel & Meyer, 1978). Its validity and reliability study was conducted by Gurbuz in 2006. The scale consists of a total of 20 items with response options of Yes and No. While the 'internal locus of control' items are evaluated with 2 points, the 'external locus of control' items are evaluated with 1 point. 1.5 points are given to items when both or no items are marked in the scale. A high score received from this scale indicates a high internal locus of control in the health management of the individual. The scale's Cronbach's Alpha internal consistency coefficient was found as .91 (Mert & Aksayan, 2016). The Cronbach's Alpha internal consistency coefficient was found as .82 in this study.

Children's Perceptions of Health and Health Behaviour Inventory: Developed by Walker, Sechrist and Pender (1987), this inventory evaluates the health perceptions and health behaviours of adults (18-88 age). Its validity and reliability study was conducted for children by Gurbuz in 2006 and the inventory consists of 51 items. Consisting of 3 options, the inventory gives 1 point to the option 'never', 2 points to the option 'sometimes' and 3 points to the option 'always'. The lowest score that can be received from the inventory is 51, while the highest possible score is 163. A high score obtained from the inventory indicates the existence of positive health behaviours. The inventory's Cronbach's Alpha internal consistency coefficient was found to be .84 (Mert & Aksayan, 2016). The Cronbach's Alpha internal consistency coefficient in this study was found as .78. The frequency, percentage and mean values, and ANOVA, independent-samples t-test and Pearson correlation analyses were used to analyse the data. The level of significance was accepted as $p < 0.05$.

Results

When the demographic characteristics of the children participating in the study were examined, it was found that 43.1% of the children were 3rd graders, 42.1% were nine years old, and 50.9% were girls, while 22.7% of the mothers and 35.2% of the fathers of the children were university graduates (Table 1).

The health control, perceptions and behaviours of the children studying at 5th grade were found to be significantly higher in comparison to the children in other grades ($p < 0.05$) (Table 1, 2). The health control levels of the 12-year-old and female children were found to be significantly higher than the other age groups and male ($p < 0.05$) (Table 1). It was determined that the health perceptions and behaviours of 11-year-old children were significantly higher than the other age groups ($p < 0.05$) (Table 2). The health controls, perceptions and behaviours of the children whose mothers were high school graduates were significantly higher than the other groups ($p < 0.05$) (Table 1, 2). No statistically significant difference was found the children's health controls, perceptions and behaviours levels in terms of father's educational levels ($p > 0.05$) (Table 1, 2).

Table 1. Comparison of children's demographic characteristics and scores of Health Locus of Control Scale (n = 963).

Demographic Characteristics	Number	%	CHLCS [Mean $\pm$ SD]	Test and Significance
Grade				
2	242	25.1	30.48 $\pm$ 3.18	F:22.93 p:.000
3	415	43.1	31.36 $\pm$ 2.87	
4	195	20.2	32.08 $\pm$ 3.39	
5	111	11.5	33.27 $\pm$ 3.44	
Age				
7	35	3.6	30.57 $\pm$ 3.20	F: 17.13 p:.000
8	234	24.3	30.51 $\pm$ 3.12	
9	405	42.1	31.37 $\pm$ 2.92	
10	196	20.4	32.02 $\pm$ 3.48	
11	62	6.4	33.80 $\pm$ 3.04	
12	31	3.2	33.93 $\pm$ 2.82	
Gender				
Female	490	50.9	31.72 $\pm$ 3.16	t : 2.157 p:.031
Male	473	49.1	31.27 $\pm$ 3.29	
Mother's educational level				
Illiterate	85	8.8	31.00 $\pm$ 2.86	F:2.80 p: .025
Literate	186	19.3	31.61 $\pm$ 3.32	
Primary school	327	34.0	31.52 $\pm$ 3.26	
High school	146	15.2	32.17 $\pm$ 3.41	
University and higher	219	22.7	31.14 $\pm$ 3.08	
Father's educational level				
Illiterate	16	1.7	30.75 $\pm$ 2.04	F:2.33 p:.054
Literate	102	10.6	31.96 $\pm$ 3.09	
Primary school	241	25.0	31.64 $\pm$ 3.40	
High school	265	27.5	31.73 $\pm$ 3.19	
University and higher	339	35.2	31.12 $\pm$ 3.21	

F= ANOVA, t= t test.

It was found that the mean score obtained by the children from the health locus of control scale was 119.31 $\pm$ 10.86, and their mean score in the perceptions of health and health behaviour Inventory was 31.50 $\pm$ 3.23 (Table 3). A positive significant correlation was found between the mean scores of the children from the two scales (Table 3).

Discussion

Belief in being able to control health is related to health behaviours (Norman, 1995). Children in the age group of 7-12 years learn to think abstractly (Helmer, Krämer, & Mikolajczyk, 2012). Therefore, children in this age group can consider the possible predictable consequences of their acts before they take action.

In children, 'health control focus' and 'health perception and health behaviour' were examined (Table 3). The internal locus of control of the children was found to be high, and the children were found to have positive health behaviours in the study (Table 3).

Table 2. Comparison of the children's demographic characteristics and scores of Perceptions of Health and Health Behaviour Inventory (n = 963).

Demographic Characteristics	Number	%	CPHHBI [Mean ±SD]	Test and Significance
Grade				
2	242	25,1	115.91 ± 11.47	F:16.06 p:.000
3	415	43,1	119.86 ± 10.59	
4	195	20,2	119.68 ± 10.27	
5	111	11,5	124.04 ± 9.29	
Age				
7	35	3,6	112.88 ± 12.69	F:7.98 p:.000
8	234	24,3	117.44 ± 11.15	
9	405	42,1	119.11 ± 10.21	
10	196	20,4	121.20 ± 10.99	
11	62	6,4	123.80 ± 9.90	
12	31	3,2	122.48 ± 9.72	
Gender				
Female	490	50,9	119.49 ± 10.35	t : 1.30
Male	473	49,1	119.12 ± 11.37	p:.599
Mother's educational level				
Illiterate	85	8,8	117.17 ± 9.66	F:6.82 p:.000
Literate	186	19,3	121.13 ± 11.05	
Primary school	327	34,0	119.66 ± 11.43	
High school	146	15,2	121.31 ± 11.87	
University and higher	219	22,7	116.70 ± 8.80	
Father's educational level				
Illiterate	16	1,7	119.87 ± 9.45	F:1.69 p:.148
Literate	102	10,6	118.71 ± 12.30	
Primary school	241	25,0	120.66 ± 11.16	
High school	265	27,5	119.50 ± 11.95	
University and higher	339	35,2	118.36 ± 9.18	

F= ANOVA, t= t test.

Table 3. Correlation and Mean Scores Obtained by the Children from Health Locus of Control Scale and the Children's Perceptions of Health and Health Behaviour Inventory (n = 963).

Scale	$\bar{X} \pm SD$	Correlation
CHLCS	119.31 $\pm$ 10.86	r : .245**
CPHHBI	31.50 $\pm$ 3.23	p = .000

X : Mean, SD: Standard deviation.

Individuals with high internal locus of control consider health a product of their personal decisions, and they believe that it is under their control to lead a healthy or unhealthy lifestyle. Individuals with high external locus of control advocate the perception that health determinants are luck and different variables (Cheng, Cheung, & Lo, 2016; Helmer et al., 2012). In the studies by Helmer et al. (2012) and Norman (1995), individuals with high internal locus of control were found to exhibit healthier behaviours, and they showed specifically high health behaviours on matters such as healthy food preferences, not using substances (alcohol, cigarettes), not being underweight or overweight, being physically active and having strong social relationships. Similarly, in this study, the children's health locus of control was higher, and they had positive health behaviours in areas such as health responsibility, nutrition, exercise, self-realization, social support, coping with stress and cleaning habits.

It was found that the children studying in 5th grade had significantly better health controls, perceptions and behaviours in comparison to the other grades (2, 3, 4) in this study ($p < 0.05$). It is stated in the literature that health perceptions positively increase with increasing educational levels (Kaleta, Polanska, Dzionkowska-Zaborszczyk, Hanke, & Drygas, 2009). In the study by Tabak and Akkose (2006), it was determined that the provided training increased adolescents' health controls and health behaviours. The finding that the children studying in 5th grade had higher health controls than those studying in other grades in this study may be associated with that longer years of education made children more responsible and knowledgeable about health.

In comparison to those in the other age groups, 11-year-old children had significantly higher health perception and behaviour scores in the study. In the Health Behaviour in School Aged Children survey in 2014, 54.2% of the 11-year-old children were determined to perceive their health as perfect (Marques & Matos,

2014). In Meireles, Xavier, Proietti and Caiaffa (2015) found that the perceived health condition increased significantly with increasing age (Meireles et al., 2015).

It was determined that the health controls of the girls were better than those of the boys, though the difference between the groups was statistically significant. Molcho, Gabhainn, Kelly, Friel and Kelleher (2007) found that male students consumed more unhealthy foods than female students, and they consumed commonly fries and hamburgers. In the Irish health behaviour in school-aged children (HBSC) study in 2014, boys were found to consume less healthy food such as vegetables and fruits in comparison to girls (Gavin et al., 2015).

In this study, the health controls, perceptions and behaviours of the children whose mothers were high school graduates had significantly higher health perceptions and behaviours than the other groups. Sharma et al. (2016) found that support of the family reduced adolescents' bad perceptions about their health. It was thought that parents with higher educational levels were more responsible and knowledgeable, therefore they raised their children with this awareness, and this affected their children's health perceptions positively.

The 12-year-olds were found to have significantly more health controls than the other age groups in the study. It was thought that increasing age and educational levels, and concordantly as a result of development of decision-making abilities, the health control of the children increased.

In this study, the participants whose mothers with university and higher educational level were found to have significantly worse health perceptions and behaviours than others. Tang et al. (2010) determined that obesity was more common among children coming from families with high educational levels. Children with parents who had high educational levels had easier access to unhealthy food due to high economic levels, and therefore, their health controls were lower.

This study found a positive correlation between the children's health controls and their health perceptions and behaviours, while, as their internal health controls increased, their health perceptions and behaviours also increased. Kuwahara et al. (2004) said that an individual's health control affected their health behaviours. In the study conducted by Burkhart and Rayens (2005) on children aged 7-11 years, a strong and positive correlation was determined between children's self-perception levels and their health controls. Similarly, in the study by Norman (1995), an individual's health behaviour was found to be related to one's own internal health control. In a study conducted on students in Germany, the correlation between health behaviours and health control was examined, and students who believed that good health was a matter of chance exhibited unhealthy behaviours (Helmer et al., 2012). Nonetheless, an individual's belief in controlling their health was associated with healthier behaviours (Helmer et al., 2012). These results also indicated the necessity to take health control beliefs into account while designing protective strategies in a certain population.

The limitation of the study was that the result of the study may be generalized only to the region where the study was conducted. In addition, it is one of the limitations that the researcher explains the questions in order to make it easier for young students to understand the questions and does not apply to the wider population

Conclusion

It was found that the children in the age group of 7-12 years had positive health behaviours, and their internal controls developed in terms of their own health management. Age affected health control, health perceptions and behaviours, and this effect was observed mainly at the age of 11 and 12. Additionally, a positive correlation was found between health control and health perceptions and behaviours.

In accordance with these results, children's own health management should be increased to increase positive health perceptions and behaviours among them. Since the health control and behavior of children is related to education level and age, the desired health habits can be arranged. Additional training can be offered to boys to increase health surveillance. Since the education level of the mother is effective on the child, mother-child education can be supported. This may strengthen countries and regions in determining protective health strategies.

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