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Determination of Various Factors Effective in Constipation: A Common Practice

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ABSTRACT The purpose of this study is to conduct applied research through evaluation of individuals with a constipation problem due to various reasons in terms of their socio-demographic characteristics. The research population is from Turkey, while its sample consists of men and women living in different city centers of Marmara, Black Sea, Central Anatolia, Eastern Anatolia, Mediterranean and Southeastern Anatolia regions. The research took approximately 5 months. During the period of this research, (n=2007) men and (n=1853) women participated in the research. The respondents were administered a questionnaire consisting of two sections. The first section includes 32 questions about socio-demographic characteristics of the respondents, while the second section contains 28 questions as a 5-point Likert scale. The SPSS 18 statistical program was used during this study conducted for patients with varying professional, educational, income and socio-demographic features. The data obtained was entered into this program and put to a reliability test. This test resulted in Cronbach's Alpha coefficient of 0.891. This number obtained from the test shows that the measuring device utilized in this research is highly reliable. While different analysis techniques were employed for analyzing the results, the multiple regression, ANOVA, chi-square, factor, hypothesis and variance analyses were applied. Upon analyses and questionnaire, it is seen that many respondents have a problem of constipation and psychological, eating and drinking habits, family, gender and other different factors are effective in terms of constipation problem.

INTRODUCTION

Gradually increasing population, working conditions and consumption habits create differences on the society and lifestyle of individuals (Sentürk 2012). Differences of lifestyles also change the socio-demographic attributes of individuals in society (Turan et al. 2015). Eating habits differ by the society and individuals (Demirkasimoglu 2015). Various problems occur in individuals due to these differences (Karaca 2012). Moreover, immobility resulting from working conditions and consumption of unhealthy foods due to fast food eating habit also create negative effects on health conditions of individuals (Bilge 2009). Constipation is the main one among those problems. Constipation not only negatively affects the social life of individuals, but also creates negative conditions on the general physical activities of them (Fichter 2011). In general, constipation is an important health problem that occurs depending on the lifestyle of individuals frequently or at certain time periods. Although it is mostly observed in elderly nowadays, it is also monitored in different age groups (Yönt et al. 2011).

Objectives

Chronic constipation is a clinical picture generally accepted as functional and affected from such factors as nutrition habits, hygienic conditions, toilet training and stress. The most frequently observed type is the functional constipation with no organic pathology. The purpose of this study is to examine the demographic attributes of chronic functional constipation cases and predisposing factors.

Epidemiology and Risk Factors

When constipation is evaluated epidemiologically, it is observed mostly among children (0.3-28%) and elders (24-50%) (Yurdakul 2004). The other frequent patients of this case include women above 60 years, non-White race, persons with chronicle diseases, the ones with diet limitations, inactive people, the ones with a low level of education and income, sexually abused individuals and the ones with psychological problems such as depression (Savas 2004).

Although, for healthy individuals, it varies from person to person and with various factors (demographic features, diagnose criteria) (Yur-

dakul 2004), its frequency changes between two percent and thirty percent (Savas 2004; Drossman et al. 1993; Sonnenberg and Koch 1989; Kasirga 2007; Benninga et al. 2004; Korkmaz 2009).

In the country, the rate of functional constipation is found to be 8.3 percent (Korkmaz 2009). Constipation-related risk factors are as below (Ramkumar and Rao 2005; Bengi et al. 2014; Yetkin and Kara 1998; Taylor et al. 1993; Brunner et al. 1988; Luckman and Sorensen 1980).

- Insufficient liquid intake: Insufficient liquid intake is found to be related with slow colon passage and rare stool expelling and insufficiency of liquid intake is accepted to be a risk factor.
- Diet: Unbalanced, non-fibrous, less pulpy nutrition
- Insufficient mobility
- Environment: Inability to or refraining from going go to the toilet due to environmental reasons may contribute to constipation.
- Pregnancy
- Sexual abuse
- Laxative and enema abuse
- Lack of education,
- Financial impossibility
- Other factors: Constipation may emerge due to anxiety, depression and deterioration of cognitive functions. Some medicines such as narcotic analgesic, anticholinergic and antidepressant may increase the risk of constipation.

Etiology

Constipation is not a disease, but a symptom. A number of mechanisms and organic diseases may cause functional or organic constipation (Altintas 2010). Idiopathic constipation may emerge together with any other disease. As mentioned above, loss of body liquid and environmental habitats may also lead to constipation. It is frequently observed among individuals who have been subject to psychological, physical or sexual abuse during childhood (Savas 2004), the pregnant and diabetic patients (Savas 2004; Preston and Lennard-Jones 1986; Klauser et al. 1990; Werth et al. 1992; Nowak et al. 1982).

Endocrine or metabolic disorders may be among the reasons causing organic constipation. Such disorders lead to failures in intrinsic motility of bowels, thus causing constipation. Conditions resulting in constipation may also include hypothyroidis, use of medicines causing hypokalemia, (Altintas 2010; Morais and Maffei 2000) calcium canal blockers, medicines such as narcotic analgesics, anticholinergics and antidepressants, (Savas 2004) meconium ileus, distal intestinal obstruction syndrome, colon cancers, diabetes, extrinsic and intrinsic neural abnormalities affecting motor functions of colon, presenile dementia, Alzheimer disease, Parkinson's, multiple sclerosis, spinal cord lesions, quadriplegia, (Savas 2004) pregnancy, rectal polyp, constipation and post-acquired megacolon, cystic fibrosis, coeliac disease (CD) and Hirschsprung Disease (HD large bowel obstruction) (Altintas 2010).

Habit of holding stool may be shown as the most prominent reason leading to functional constipation. Since holding stool for a long time causes accumulation of stool inside bowel, increasing size and intensity. Therefore, constipation symptoms are observed. Solid stool causes pain and ache while passing through anal zone. The individual keeps holding defecation as a result of this situation and this furthers constipation problems to serious levels. Among main reasons for functional constipation in which family, cultural and social factors are significantly effective are toilet phobia, lifestyle, feeding habits, diet, low liquid consumption, stress, diseases, lack of hygiene in toilets, pressure and unconsciousness about toilet training (Altintas 2010).

Clinical Evaluation

During clinical evaluation of chronic constipation, medical history is firstly taken and physical examination is then conducted (Bengi et al. 2014). A detailed medical history and physical examination is critical for understanding the reason for constipation and/or fecal incontinence (Mandelstam 1985; Altintas 2010).

During such evaluation made for the patient, his/her age, his/her risk of colon cancer, scale of discomfort felt due to constipation by the patient, possibility of an underlying disease and possible pathologic physiology of constipation should be considered carefully (Savas 2004).

Laboratory tests, endoscopic evaluation and radiologic studies are utilized for chosen cases under special circumstances. In a routine prac-

tice and systematic evaluation, blood tests, radiologic or endoscopic procedures are not a requirement. However, should hematochezia, anemia, weight loss be observed or should intestinal cancer in family history, blood in stool be detected for the case and if a symptom for constipation with acute onset is seen, such tests must definitely be conducted (Rao et al. 2005; Bengi et al. 2014).

For cases where such symptoms are not observed, it is possible to conduct treatment practices including patient training, diet revisions and pulpy nutrition without carrying out any diagnostic tests (Bengi et al. 2014).

During physiological evaluation of the constipation case, it is considered whether symptoms are refractory, and patients without any secondary reason are not responding to highly fibrous diet and laxative treatment are taken into consideration. During such evaluation, physiological capacity of colon and anorectic zone is examined (Savas 2004).

In case of chronic constipation, abdominal examination and rectal touch are employed (Bengi et al. 2014). It is possible to examine fecal impaction, tightness in anal canal, rectal mass, blood in stool, defect in front wall of rectum (rectocele), mucosal prolapses by means of rectal touching (Savas 2004).

Fissures or hemorrhoids emerging due to constipation as well as fecal retention may be detected and puborectal and external anal sphincter muscles' responds may be evaluated by means of rectal touching (Bengi et al. 2014).

During laboratory evaluation, *"complete blood cell count, serum glucose, creatinine, calcium and thyroid stimulant hormone (TSH)"* tests are completed. Such tests are demanded for the patients with much more severe symptoms (hematochezia, weight loss, family history, anemia, blood in stool, positive occult blood in stool).

In case of suspected dyssynergic defecation disorder (Savas 2004), anorectic manometry, which evaluates reflex activation as well as anal sphincter function of pelvic floor during rest and defecation and balloon expulsion test, which evaluates basic defecation in physiological terms are applied (Bengi et al. 2014; Savas 2004; Rao et al. 1998).

In case of an abnormality such as rectocele for which no result is obtained by such tests, defecography, an imaging method, which gives information about anatomic and functional changes of anorectum is applied. Furthermore, dyssynergic defecation disorder may also result in delays in colon transition. Therefore, after pelvic floor dysfunction is fixed, colon transit time, which is important for diagnosing normal or slow colon transition (Bengi et al. 2014; Savas 2004) should be measured (Bengi et al. 2014; Savas 2004; Rao et al. 1998) particularly in the laxative resistant cases. For the patients with normal colon transit time, the reasons for dyssynergic defecation should be separately eliminated. Measuring colon transit time is not superior to radio-opaque determinant test where transition of radio-opaque material through gastrointestinal system (Savas 2004; Rao et al. 1998; Kadayifci et al. 2002).

While flexible sigmoidoscopy is used for diagnosing (solitary rectal ulcer, inflammation, malignity...), colonoscopy is employed for patients with anemia, positive test results for occult blood in stool, obstructive symptoms, sudden constipation condition, weight loss, change in defecation type and rectal prolapses (Bengi et al. 2014).

Direct and barium graphics among other evaluation methods may show mega colon and mega rectum, aganglionic distal intestine and proximal colon enlargement for Hirschsprung disease.

Capsule endoscopy may be utilized to evaluate the entire gastrointestinal system including stomach discharge, small intestine transition and colonic transition. Furthermore, it may be used for separating two sub-types including normal and slow transition time for laxative resistant constipation (Bengi et al. 2014).

Any other information about internal lumen pressure, motor activity and colonic motility of colon and rectum may be obtained through colonic manometry. Lastly, rectal barostat test, which is used for evaluating rectal hyposensitivity and detecting mega rectum may be employed to examine rectal sensitivity, tonus and compliance (Bengi et al. 2014; Qureshi et al. 2005; Rao and Singh 2010).

Treatment

Constipation treatment should be oriented for the reasons causing constipation (Savas 2004). Firstly, preliminary information should be obtained from the individuals with constipation. In this regard, it should be questioned whether

they have any medical record for constipation, if any, their family story and risk situation should be examined. Then, abdominal auscultation, palpation and percussion should be conducted, and the individual should be examined rectally when required (Korkmaz 2009). Tests do not have any conclusive reliability for diagnosing constipation. For instance, absence of constipation-related symptoms in a patient who has had an abdominal x-ray does not exactly show that the patient does not suffer from constipation (Korkmaz 2009).

In case of constipation due to organic reasons, a surgical intervention in mechanical and structural lesions of colon and rectum may be required (Savas 2004). For Hirschsprung disease, in case of constipation secondary to anal stenoza (Yurdakul 2007) for rectocele and "rectal intussusception", surgical intervention may be an option (Yurdakul 2007).

A gradual treatment procedure is followed for treatment of chronic-functional constipation (Altintas 2010; Loening-Baucke 2002). Such treatment is planned in four stages that include training, expelling accumulated stool, maintenance treatment (preventing re-accumulation of stool) and quitting medicine treatment (Altintas 2010).

1. ***Treatment:*** For positive results during constipation treatment, the individual should receive training about this treatment. The individual is taught about the importance of regular defecation (Altintas 2010; Yurdakul 2007). The individual is informed that the problem is temporary and the treatment is free of hazard and pain but a long one (Yurdakul 2007; Kasirga 2007; Loening-Baucke 2002). Patients should be taught to decrease laxative use, increase exercising and intake of liquid and fibrous products (Bengi et al. 2014).
2. ***Expelling Accumulated Stool:*** Fecaloma in the colon is expelled manually or with the help of oral medicines including high dose of mineral oil, polyethylene glycol, magnesium hydroxide, magnesium citrate, lactulose, sorbitol, Senna, bisacodyl or rectal medicines including serum physiologic, mineral oil, hypertonic phosphate enema. Its impact is much more rapid. "*Fecaloma is a hardened, solid stone inside the rectum, which is felt by palpating and hard to expel through straining or pushing and difficult to go through"* (Altintas 2010). After cleaning the bowel, an osmotic laxative medicine or a bulking agent is administered to ensure defecation once a day. The individual is stimulated to defecate after a meal as gastro colic reflex increases. If there is no defecation within two days, enema is repeated. Should defecation be observed regularly, laxatives are decreased step by step in a couple of months (Yurdakul 2007).
3. ***Maintenance Treatment Toilet Training or Behavior Modification Treatment:*** While the individual acquires the habit of using toilet and defecating regularly during this step, he/she learns how to relax his/her pelvis floor and anal muscles (Altintas 2010). The purpose is hereby to give back to the individual the ability to relax anal sphincter muscles, activate abdominal muscles and the coordination among abdominal muscles, rectum and anal sphincter as well as rectum sensitivity during defecation. For such acquisition, individuals are taught to train their muscles through exercising (Yurdakul 2007). For this purpose, the individual is asked to sit on the toilet 3-4 times a day, following meals for five minutes (Altintas 2010; Kasirga 2007). Additionally, the individual with the problem of constipation increases his/her efforts by trial and error after seeing his/her pushing values during defecation with the help of devices used for viewing inside the rectum. This is called recto-anal coordination training. Another method is a balloon installed inside the rectum. Sensation of defecation is felt after the balloon is inflated up to 20 cc. The individual may rearrange his/her rectal sensitivity or threshold by this means (Yurdakul 2007).

a. *Nutrition:* Nutrition is the most important stage of maintenance treatment. During this stage, energy and other nutritional element requirements, pulp amount, liquid intake of the individual's diet must be rearranged (Altintas 2010; Koksal and Gokmen 2000). Before starting a fibrous diet, the colon should be emptied through osmotic laxatives, enemata. As fibrous food may lead to bezoar formation and obstruction for patients with gastroparesis

or diffuse gastrointestinal dismotility, they should be used carefully (Bijkerk et al. 2004; Savas 2004). Individuals with the complaint of constipation should consume at least two liters of water a day. Bulking laxatives such as psyllium and methylcellulose together with a diet rich in fiber are among the most physiologically efficient treatment methods. When received with sufficient amount of liquid, they increase bowel movements in many patients of constipation (Bengi et al. 2014). Regular physical exercises are also critical for the treatment together with such a diet. Working out, particularly hiking, increases colon transit, decreases stress and tension, and strengthens abdominal muscles (Savas 2004; Annells and Koch 2003).

b. *Psychological Support:* Irritable bowel syndrome requires psychiatric consultation especially for the patients with underlying diseases such as depression, anxiety, anorexia nervosa and psychosis. Pharmacologic treatment should be given for the patients not responding to lifestyle modifications, diet recommendations and nutrition rich in fibrous food (Savas 2004).

4. ***Quitting Medicine Treatment:*** After the individual has acquired a habit of regular defecation, laxative amount should be decreased. It is quit after six months. Should constipation repeat again, laxative treatment will be restarted. If laxatives are to quit sooner than it should, this is the usual outcome (Kasirga 2007; Loening-Baucke, 2002; Constipation Guideline Committee of the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition 2006).

MATERIAL AND METHODS

This study was conducted to determine conditions of individuals experiencing the problem of constipation and to make evaluations about various factors effective in constipation. The data obtained from this study was collected using a vis-à-vis questionnaire method. The introduction of the study focuses on general profiles of the individuals. Cronbach alpha coefficient was calculated for constipation problem scale in order to measure reliability of the study and reliability analysis was conducted. Factor analysis was made to determine common factors by means of the questions in constipation problem scale. Multilinear regression analysis technique was employed to specify factors effective in defecation problem from the perspective of constipation problem. Chi-square analysis was conducted to detect the relationship between the individuals with the problem of constipation and demographic features effective in this problem. Furthermore, evaluations are also made by means of using frequency percentages of constipation problem among demographic problems.

RESULTS

Reliability Analysis

Table 1 indicates the Cronbach Alpha coefficient obtained from the reliability analysis on the constipation problem scale. Reliability coefficient was calculated to be 0.891. Accordingly, this analysis is reliable at approximately eighty-nine percent. According to this result, it is found out that the scale is highly reliable (Table 1).

Table1: Reliability analysis

Cronbach's Alpha	*N*
.891	28

Table 2 shows total correlations of corrected item for each material, scale average, scale variance and Cronbach Alpha coefficient when the item is deleted with regard to the scale. The important part in this regard is the Cronbach Alpha coefficient obtained when the item is deleted. In case present reliability coefficient of this value is significantly higher than 0.891, the item will be deleted. Given Cronbach Alpha coefficients, which will be obtained when the item is deleted, it is seen that there is no question to be excluded from the analysis as such values are not significantly higher than 0.891. Accordingly, no question out of constipation scale was excluded from the analysis (Table 2).

Factor Analysis

The Barlett Globality Test was applied to the responses given to the constipation scale. According to Barlett Globality Test results, as its significance value is 0.000, error margin of five percent and significant correlation between vari-

Table 2: Comparative correlation variance and reliability analyses

Item	*Scale average when the item is deleted*	*Scale variance when the item is deleted*	*Total correlations of corrected item*	*Cronbach Alpha Coefficient when he item is deleted*
1. I feel discomfort in my abdominal zone.	77.240	118.800	.181	.890
2. I feel a sensation of pain in my abdominal zone.	77.675	120.858	.162	.878
3. I feel dyspepsia in my abdominal zone.	78.208	121.974	.075	.879
4. I feel a sensation of abdominal cramp.	78.219	120.987	.101	.879
5. I feel pain during my intestinal movements.	78.099	115.990	.314	.888
6. I feel pain during defecation.	77.802	116.471	.310	.888
7. I feel a sensation of burning in the rectal during and/or after defecation.	77.852	116.446	.304	.878
8. I have a problem of rectal blooding/discharge during and/or after defecation.	77.982	116.166	.335	.878
9. I experience problem of inability to complete defecation.	77.989	117.167	.273	.878
10. I feel difficulties during my intestinal movements.	78.081	117.642	.245	.878
11. I have a situation of defecation in small quantities.	77.830	117.248	.248	.888
12. I need to push/strain for defecation.	77.915	115.319	.347	.888
13. I experience a problem of inability to defecate despite sensation of defecation.	78.057	116.139	.297	.888
14. I need to go back to the toilet.	78.095	116.916	.306	.888
15. Our family has a defecation problem.	78.127	117.750	.253	.888
16. I have problems with eating.	78.046	115.235	.373	.886
17. My saliva secretion increases at nights.	77.929	115.598	.386	.885
18. I have problems with losing weight.	77.965	115.665	.382	.885
19. I have a constipation problem recurrent in less than 3 months.	78.102	116.787	.282	.885
20. I receive medicine treatment very often due to my problems of constipation.	77.954	118.363	.222	.891
21. I feel a sensation of itching in my rectal zone.	78.088	117.159	.271	.891
22. I consume alcohol, coffee, tea and smoke excessively.	78.102	114.837	.370	.891
23. I do not have a regular habit of eating and drinking.	78.085	113.589	.448	.891
24. I have night life. I do not have regular sleeping schedule.	78.057	113.429	.464	.887
25. I sit for a long period of my working day.	78.102	116.809	.297	.888
26. I do not work out and do physical exercises regularly.	78.230	115.787	.344	.890
27. I am present in such environments that may lead to psychological problems causing vision and hearing problems.	78.021	115.886	.342	.889
28. I experience a very stressful work and social life.	78.092	114.062	.403	.885

ables were found. The scale was found to be appropriate for factor analysis at approximately ninety-six percent according to KMO statistics (Table 3).

According to factor analysis results, five factors with Eigen values higher than 1 were detected. These five factors obtained explain 80.220 percent of total variability. Accordingly, as the ratio of explained variance is higher than 2/3, conduct of factor analysis is deemed appropriate (Table 4). Explanation ratio obtained is also quite high according to the analysis result (Table 4).

Table 5 shows rotated components matrix regarding all questions. This matrix enables to

Table 3: Kaiser-Meyer-Olkin measure of sampling adequacy

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.961
Bartlett's Test of Sphericity	Approx. Chi-square	2366.454
	df	378
	Sig.	.000

Table 4: Distribution table of factors

Factors	*Eigen values*	*Explained variance percent*	*Cumulative percent*
1	8.789	29.297	29.297
2	6.632	22.107	51.403
3	4.856	16.187	67.590
4	2.354	7.847	75.437
5	1.435	4.783	80.220

see under which factor each question is collected. Furthermore, for each question, the factor it belongs to as well as their correlation values are shown in this Table. A total of 28 questions were collected under five factors as a consequence of this analysis. These five factors obtained could explain eighty percent of total variability and this is a highly successful rate. Five factors are named as below according to the factor analysis (Table 5).

Table 5: Correlation and comparisons table

	Component				
	1	*2*	*3*	*4*	*5*
q22	0.742				
q21	0.709				
q17	0.697				
q12	0.586				
q18	0.538				
q28	0.513				
q27	0.511				
q26		0.806			
q24		0.704			
q19		0.682			
q14		0.616			
q23		0.529			
q25			0.895		
q11			0.632		
q15			0.626		
q16			0.598		
q10			0.535		
q13				0.874	
q20				0.852	
q6				0.841	
q3				0.742	
q1				0.733	
q9					0.785
q4					0.741
q7					0.685
q2					0.674
q5					0.589
q8					0.571

Multiple Regression Analysis

The multiple regression analysis was conducted in this study through considering the question "*I feel pain during defecation*" as a dependent variable. Independent variables include constipation problem, psychological problem, headache and lack of sleep, changes in weight, use of cosmetics products and use of psychotherapy or antidepressant medicines (Table 6).

Table 7 indicates values including multiple correlation coefficient, certainty coefficient and

Table 6: Determined factors and their names

Factor	*Name of factor*
1st Factor	WILL BE NAMED ACCORDING TO THE QUESTIONS
2nd Factor	WILL BE NAMED ACCORDING TO THE QUESTIONS
3rd Factor	WILL BE NAMED ACCORDING TO THE QUESTIONS
4th Factor	WILL BE NAMED ACCORDING TO THE QUESTIONS
5th Factor	WILL BE NAMED ACCORDING TO THE QUESTIONS

standard error of the estimate. When looking at the summary table of the model, it is seen that certainty coefficient is 0.893. Such value shows that a total of 18 independent variables explain variable of pain experienced during defecation at 89.3 percent (Table 7).

Table 7: Model statistics

Model	*R*	*R square*	*Std. error of the estimate*
1	0.945	.893	1.1120

Ho: The multiple regression model is not significant.

Hi: The multiple regression model is significant.

Total values of regression and error squares are calculated above in ANOVA Table 8. According to the F test performed, its significance value is found to be 0.027. Accordingly, Ho hypothesis is rejected with an error margin of five percent. According to the hypothesis test, the researchers can say that such regression model is significant (Table 8).

Table 8: Regression analysis

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
1	Regression	21.890	8	2.736	2.213	0.027
	Residual	341.317	276	1.237		
	Total	363.207	284			

When reviewing the Table 9 of coefficients, it is possible to parameter estimates for each independent variable. Additionally, t-statistics and significance values are calculated for each parameter. Reviewing significance values, it can be seen that all independent variables have a statistically significant effect in the level of pain

experienced during defecation process ($p<0.05$) (Table 9).

Chi-square Analyses

Chi-square analysis is conducted in order to determine whether there is statistically significant relation between the problem of constipation and demographic characteristics of the respondents. Chi-square analysis results are given in Table 10. Accordingly, there is a statistically significant relation between all factors including gender, marital status and the problem of constipation ($p<0.05$) (Table 10).

According to chi-square analysis results, such evaluations may be made for each factor determined to be relevant with constipation problem:

- Eighty-seven percent of men and forty-eight percent of women experience the problem of constipation.
- The rate of experiencing constipation problem is sixty-four percent for married respondents.
- The rate of experiencing constipation problem is seventy-eight percent for respondents using psychotherapy or antidepressant medicines.
- The rate of experiencing constipation problem is sixty-nine percent for individuals using cosmetics products.
- The rate of experiencing constipation problem is eighty-one percent for individuals using medicines regularly.
- The rate of experiencing constipation problem is seventy-four percent for individuals with headache and lack of sleep.
- The rate of experiencing constipation problem is eleven percent for individuals consuming sufficient amount of water each day.
- The rate of experiencing constipation problem is respectively thirty-four percent and forty-one percent for individuals staying in the toilet for 16-20 and 21-30 minutes during number two.
- The rate of experiencing constipation problem is fourteen percent for individuals pay-

Table 9: Distribution of independent variables

Independent variables		*Beta*	*t-statistic*	*Significance*
1	(Constant)	3.108	5.360	.000
	Do you experience a problem of constipation?	.065	7.499	.006
	Do you experience psychological problems?	.069	9.456	.006
	Do you have headaches and experience lack of sleep?	.101	8.961	.003
	Do you experience frequent changes in your weight?	.134	7.947	.004
	Do you use different cosmetics products such as "hair dye, nail polish, perfume, chemical"?	.484	3.192	.002
	Do you use psychotherapy or antidepressant medicine?	.055	10.976	.000

Table 10: Results of chi-square analysis

	Variable	*p*
Do You Have a Problem of Constipation?	Your gender?	0.004
	Your marital status?	0.009
	Do you receive psychotherapy and antidepressant medicines?	0.007
	For how many years do you experience the problem of constipation?	0.008
	Do you experience frequent changes in your weight?	0.007
	Do you use any medicine regularly?	0.007
	Do you have headache and experience lack of sleep?	0.006
	Do you use different cosmetics products such as "hair dye, nail polish, perfume, chemical"?	0.003
	Which region of Turkey do you live?	0.001
	Do you consume sufficient amount of water per day?	0.003
	For how many "minutes" do you stay in the toilet during your number two?	0.000
	Do you pay attention to consume fibrous and liquid additive-free food and drinks?	0.010
	Do you skip any meals during the day?	0.002
	What kind of preferences do you have for eating and drinking?	0.007
	Have you consumed sufficient amount of breast milk during your babyhood?	0.008
	Does any other person in your family experience a problem of constipation?	0.032

ing attention to consume fibrous and liquid additive-free food and drinks.

- The rate of experiencing constipation problem is sixty-one percent for individuals skipping any meal during the day.
- The rate of experiencing constipation problem is respectively forty-nine percent and forty-two percent for individuals consuming meat and bakery products. The rate of experiencing constipation problem is nine percent for individuals consuming herbal products.
- The rate of experiencing constipation problem is twenty-five for individuals having consumed insufficient amount of breast milk during babyhood. According to this rate, individuals consuming sufficient amount of breast milk do not mostly experience a problem of constipation.
- The rate of experiencing constipation problem is eighty-two percent for individuals with family members having a problem of constipation.

Demographic Evaluations

The majority of the participants are female. Women constitute fifty-two percent of the research. Men constitute forty-eight percent. Moreover, sixty-nine percent of the participants experience psychological and eighty-two percent of them experience emotional problems. Accordingly, most of the respondents maintain a psychological and stressful life. Thirty-eight percent of the respondents receive psychotherapy and antidepressant medicines. The rate of the respondents having a child is thirty-two percent, while the rate for respondents with two children is thirty-eight percent. The rate for respondents with one child is twenty-one percent, seven percent for respondents with three children and two percent for the respondents without any children. The rate of the respondents having had no surgical intervention is seventy-two percent. The rate of respondents having been actively in work life for 7-9 and 10-12 years is respectively thirty-nine percent and thirty-one percent. The rate of respondents having worked for 13-15 years is twelve percent, while it is ten percent for the ones who have worked for 16-20 years and eight percent for the ones having worked for 21 years and above. Seventy-seven percent of the respondents experience the problem of constipation. The rate of individuals with constipation problem who have taken laboratory tests and analyses is eighty-three percent. Sixty-seven percent of the respondents having a problem of constipation receive medicines under physician control. For educational background of the respondents, it is respectively thirty-five percent for university, twenty-five percent college, twenty-one percent high school, thirteen percent elementary school graduate and six percent postgraduate.

According to occupational groups of the respondents, fifty-two percent are from public sector, seventeen percent are workers, eleven percent are retired, eight percent are housewives, seven percent are engineers and five percent are managers. According to income distribution of the respondents, fifty-nine percent have an income level between 1001-2500 TL, thirty-three percent have an income level between 2501-3500 TL and eight percent have an income level of 3501 TL and above. The rate of respondents with social security is eighty-nine percent. The rate of respondents with private health insurance is twenty-one percent. Seventy-one percent of the respondents experience frequent changes in their weight. The rate of women among the ones dieting is seventy-five percent. The rate of respondents regularly using medicines and experiencing frequent changes in weight is eighty-three percent. Sixty-four percent of the overweight respondents experience lack of sleep and headache. According to the distribution of respondents by their location, sixty-three percent of the respondents live in metropolitans, twenty-two percent lives in cities, nine percent lives in towns and municipalities, six percent lives in villages and sub-districts. All respondents living in metropolitans stated that they have a healthcare provider where they live. Forty-four percent of the respondents live in Marmara (n=1698), twenty-six percent live in Central Anatolia (n=1004), twelve percent live in Eastern Anatolia (n=463), ten percent live in Black Sea (n=386), six percent live in Mediterranean (n=232) and two percent live in Southeastern Anatolia (n=77). The rate of respondents living in Central Anatolia and consuming bakery products is seventy-one percent. The rate of respondents living in Eastern and Southeastern Anatolia regions and consuming meat products is seventy-five percent. The rate of respondents living in western regions and

consuming herbal products is eighty-six percent. Thirty-nine percent of the respondents living in Marmara consume meat products, thirty-two percent consume bakery products and twenty-one percent consume herbal products.

DISCUSSION

Constipation without any organic reason underneath should not be considered as a disease (Yurdakul 2004; Colizzi et al. 2014) since it is variable situation depending upon individual characteristics (Bengi et al. 2014). While it varies from one person to another person, defecation ranging from three times a day to once in three days is accepted to be normal (Yurdakul 2004; Ramkumar and Rao 2005; RNAO 2005; Korkmaz 2009). Patients define the case of constipation as rare and hardly defecation in small quantities, with solid consistency, the sensation of inability to completely empty the bowels, spending too much time in toilet, discomfort in pelvic cavity, tightness and dyspepsia, and they consult a physician/doctor for such complaints (Johanson et al. 1989; Bengi et al. 2014; Savas 2004). Constipation is a gastrointestinal problem (Burak et al. 2006) having an impact on two to twenty-eight percent of the general population (Kaya and Turan 2011; Talley 2004; Burak et al. 2006). This rate in the country is between twenty-two percent (Kaya and Turan 2011; Uysal et al. 2010).

In a constipation research carried out in the USA and United Kingdom, it is defined as a frequency of defecation which is three times in a week or less (Bengi et al. 2014; Heylens et al. 2014). Kaya and Turan, in their definition state, *"Constipation is difficulty in defecation, discontinuous, partial defecation and insufficient or painful defecation"* (Kaya and Turan 2011). Savaº, in his work defines constipation as a defecation number, which is less than three times in a week together with the complaint of inability to easily and completely empty the bowels (Savas 2004). *"Constipation is the solid and rare defection due to inability to perform normal defecation or insufficient defecation"* (Sahin et al. 2014). In Korkmaz's study, *"Constipation is rare defecation due to difficulty during defecation or decreasing number of bowel movements*" (Korkmaz 2009).

According to another definition, *"Constipation is the situation of a delay or retention in pushing fecal content inside the rectum"* (Yetkin and Kara 1998; Taylor et al. 1993; Brunner et al. 1988; Luckman and Sorensen 1980).

Considering all these definitions given above, it is possible to come to a definition as such, *"Constipation, together with abnormality in bowel functions, is a defecation causing abdominal dyspepsia and pain, harsh defecation performed less than three times a week with some trouble*" (Bengi et al. 2014; Savas 2004; Yetkin and Kara 1998; Yurdakul 2007; Bozkurt et al. 2012; Altintas 2010; Loening-Baucke 1993; Partin et al. 1992).

When gastric motility is decreased, feces pass much slower through large bowels, and therefore, liquid absorption from fecal content increases. This will cause a dry and solid defecation, leading to difficulties during defecation in this context. That is, stool remains much longer inside the bowels as a result of rare defecation and its water absorption is increased, thus making the stool more solid (Yurdakul 2004). Its indicators include seventy-five percent less stool than the required amount, individual's pain during defecation, difficulty in defecating, inability to completely empty bowels, sensation of detention/feeling stuck while expelling feces and need of expelling stools with the help of fingers, (Kaya and Turan 2011; Ferrazzi et al. 2002; Demirbas 2010) abdominal distension, hemorrhoid problem, lack of appetite and at the least back pain (Taylor et al. 1993; Brunner et al. 1988; Luckman and Sorensen 1980; Yetkin and Kara 1998).

If the constipation is not from organic reasons, it can be considered to be "functional constipation". Patients with functional constipation do not suffer from abdominal pain (Kocaay 2008; Bengi et al. 2014; Altintas 2010; Kasirga 2007).

However, should defecation be performed less than once in three weeks during the last eight weeks, if two or more indications including palpable large masses of stools during rectum or abdominal examinations, extremely large feces, a practice of holding defecation, accumulation of faces and painful defecation are observed, this case is called chronic constipation (Kocaay 2008; Benninga et al. 2005; Altintas 2010; Kasirga 2007).

Constipation is a significant problem, which may result in fatal bowel obstruction due to unnoticed clinical symptoms (Hakverdioglu Yont et al. 2011).

In this context, Roma III criteria with the leadership of "Drossman" in order to diagnose pa-

tients with complaints of constipation efficiently as well as Bristol Scale for examining visual stool shape are accepted practicable (Sahin et al. 2014; Bozkurt et al. 2012). For chronic constipation, it is important to observe the below mentioned Rome III criteria in the last 12 months and for at least three months in a row (Yetkin and Kara 1998).

1. Must include two or more of the following:
   - Straining during at least twenty-five percent of defecations
   - Lumpy or hard stools in at least twenty-five percent of defecations
   - Sensation of incomplete evacuation for at least twenty-five percent of defecations
   - Sensation of ano-rectal obstruction/blockage for at least twenty-five percent of defecations
   - Manual maneuvers to facilitate at least twenty-five percent of defecations (for example, digital evacuation, support of the pelvic floor)
   - Fewer than three defecations per week
2. Loose stools are rarely present without the use of laxative
3. Insufficient criteria for irritable bowel syndrome (C-IBS).

CONCLUSION

This study examined the problem of constipation in general terms and basic elements effective in this problem were detected using statistical analysis methods. Reliability analysis, factor analysis, multiple regression analysis and chi-square analysis were applied among statistical analysis methods. According to the research results, the questionnaire scale is found to be highly reliable. 28 items within the scale of constipation may be highly explained with a total of five factors. Psychological levels of individuals, the cosmetics products they use, the change in weight, having a problem of constipation, headache and lack of sleep problems are statistically significantly effective in the level of pain experienced during defecation. Various factors including marital status, gender, genetic factors relevant with constipation, psychological status and product consuming preferences are statistically significantly effective in experiencing the problem of constipation.

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