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Research Articles

The Effect of Peer Mediation Training on Self-Efficacy, Locus of Control and Conflict Resolution Skills

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Abstract
Peer mediation is an effective method for individuals to solve interpersonal conflicts in constructive ways. The aim of this study is to investigate the effect of peer mediation training on self-efficacy, locus of control and conflict resolution on secondary school students. Pretest-posttest-tracing test quasi-experimental design method was used in the study. The research was carried out on the sixth-grade students of two secondary schools in Şehitkamil district of Gaziantep. In this research, two study groups, consisting of 24 students, 12 of which were experimental and 12 control groups, were formed. "Conflict Resolution Scale", "Locus of Control Scale" and "Children's Self-Efficacy Scale" were applied as pre-test, post-test and follow-up test to the experimental and control groups. Peer mediation training was given only to the experimental group during 10 sessions. Mann-Whitney U and Wilcoxon Signed Ranks Test method was used for data analysis. Results showed that after mediation training, self-efficacy levels of students, internal locus of control and conflict resolution skills increased. In conclusion, it was determined that students who have taken the peer mediation training have more effective conflict resolution skills, internal locus of control and self-efficacy levels in comparison with those of students who have not taken this training.

Keywords: peer mediation, conflict resolution, self-efficacy, locus of control

1. Introduction
Schools are institutions with a complex and dynamic structure with a wide variety of dissimilar individuals from students, teachers and administrators to staff members and custodians. This diversity is an inevitable result of all behaviors, thoughts and emotions of people related with perceptions, needs, values, power desires, goals, opinions and human relations (Kite, 2007). Conflicts inevitably take place when it is considered that it is impossible for the wishes, desire, values and requirements of people to overlap throughout their lives. Conflicts make up an indispensable part of daily life and are also indicators of a healthy community (Kite, 2007; Türnüklü, 2007). Conflicts, differences of opinions and problems that date as far back as humanity emerge almost in any relationship (Moore, 2016). Hence, it is only natural that conflicts take place at schools when it is considered that they are a small reflection of social life. Since secondary school can be considered as the start of a period of time during which individuals are in search of something and are in frequent conflicts with their families, environment the community they live

in, it is possible to state that conflicts due to differences will inevitably emerge during this period (Cüceloğlu, 2011).

Schools can be considered as second homes in the lives of students as an important location where they spend a significant amount of their daily life. The presence of violence at such an important location that should provide a safe environment to support the healthy development of children may result in adverse impacts on the students. Hence, friendship relations that are important as foundations of trust especially during adolescence can be affected negatively. Schools that are responsible from the education of students should be prepared against the interpersonal conflicts among students that are inevitable and natural (Bush & Folger, 2013; Çetin, et al., 2015; Gülkokan, 2011; Taştan, 2004; Türk, 2008; 2013; Türnüklü & Şahin, 2002; 2004).

Majority of the conflicts that take place at schools are resolved by adults generally by the use of force. Students are warned not to display the undesired behaviors again. Thus, both the school administration and the teachers expect that the warnings will eliminate the undesired behaviors of students. However, the management and control of emotions and behaviors by the external environment may lead to discomfort in the individual resulting in resistance and refusal of control. The ability of such directives, advices and counsels to guide towards achieving the desired behaviors is also very low. Because they emphasize what should be done instead of focusing on guiding the individuals towards acquiring the information and skills related with what should be done. Students acquire the correct behaviors over time by doing and experiencing hence leading to permanent behaviors. When it is considered that majority of the students come to schools without displaying the required social and emotional development in their families, the importance of the responsibility of the schools for ensuring that students acquire the required constructive conflict resolution skills gains further significance (Gülkokan, 2011; Özmen, 2004; Türnüklü & Bekmezci, 2010).

The reactions of students towards conflicts are closely related with their past experiences, their perspectives related with conflict, how people around them resolve conflicts and the individuals that students consider as models. If the student sees that destructive solutions resolve his/her conflicts, he/she will prefer to continue this type of behaviors. However, if the student is taught constructive means to resolve conflicts, he/she will add these behaviors to his/her repertoire and transform them into skills that will be used throughout his/her life. At this point, the duty of the school should be to teach the students constructive conflict resolution methods. For this purpose, conflict resolution and peer mediation programs can be used at schools (Taştan, 2004; 2006).

Students will be able to take on the responsibility of their own conflicts and resolve them personally by way of peer mediation programs. It will also help in eliminating any negativities involved when the school administration or an adult such as their teachers decide for themselves and resolve their conflicts on behalf of the students. The self-confidence of the student will increase further when he/she takes on the responsibility of the conflict and resolves it through democratic means according to his/her own decisions thereby improving self-control and transforming them into useful skills that will be necessary throughout his/her life. Moreover, the interpersonal relations of the students will not be affected when he/she resolves the conflicts constructively. Thus, it can be stated that implementing peer mediation programs at schools is important since it enables the students with advanced interpersonal skills to express themselves more comfortably and resolve their problems before they escalate any further.

Students will find it possible to feel successful in conflict resolution thanks to peer mediation programs that can be considered to provide the best support to the students for resolving their own conflicts and to transform conflict resolution into a skill. It is apparent that the self-efficacy perception of the student will be supported positively when he/she feels successful in resolving conflicts. In the meantime, the student will have also contributed to strengthening his/her sense

of control on his/her behaviors as he/she continues to resolve his/her own conflicts as well as contributing to the development of his/her internal locus of control. When considered from this perspective, it can be stated that the implementation of peer mediation trainings at schools holds significant importance.

Türnüklü and Şahin (2002) carried out a study putting forth that the conflicts between students are generally tried to be resolved by the teachers through the use of authority. The teachers have stated that they spend a lot of time to resolve conflicts. It is also among the findings that teachers generally take on the responsibility for resolving the conflicts started by the students among themselves, that generally teachers try to end the conflict through their own decisions, that the win-lose method is generally preferred and that conflicts are generally tried to be resolved through the inspection of a third person. These implementations lead to students not taking on the responsibility of resolving the conflicts through negotiations thereby resulting in the inability of their internal control to develop (Noaks & Noaks, 2009). However, the self-confidence of students increase when they manage to resolve their own conflicts by themselves without any directives from adults or traditional methods such as award and punishment thereby improving their internal control rather than making them dependent on external control. This study by Türnüklü and Şahin (2002) is also an indication that it is necessary to include conflict resolution and peer mediation programs in the curricula of schools that teach the students conflict resolution strategies encouraging internal control, self-management and internal discipline.

It is observed when the general objectives of the Turkish National Education indicated in the National Education Basic Law numbered 1739 that the emphasis is not only on ensuring that the students improve themselves academically to learn a profession but also to have a balanced personality with regard to spirit and emotions that is beneficial for the society they live in. It is put forth here that it is necessary to improve the students academically while also equipping them with the necessary life skills. Democracy education is also emphasized in the same law as part of the fundamental principles of National Education, in addition to mentioning the necessity of including innovations and advancements in accordance with scientific studies on education. It is apparent that peer mediation programs should be implemented at schools as programs with the necessary attributes for improving the communication, anger management, empathy and negotiation skills of students that will enable them to develop the skill of resorting to democratic means in solving problems. However, the implementation of such programs is unfortunately not very common in our country as of yet (Çetin, et al., 2015). There may be cases in secondary schools when the emphasis is placed on preparing the students for high school examinations resulting in pushing back the activities that will support their development in all areas. However, schools also need to include activities that will equip the students with many different skills such as peer mediation that will provide them with life skills thus supporting their multi-dimensional development instead of acting only as institutions that prepare the students for examinations. The returns of conflict resolution and peer mediation program are in full accordance with the National Education Basic Law numbered 1739.

Even though students may not use the knowledge they acquire during courses such as Mathematics or Turkish at every stage of their daily lives, their conflict resolution skills will support them wherever they go. Students who are able to resolve their conflicts in a constructive manner will be more successful in interpersonal relationships. In this regard, it is apparent that the implementation of conflict resolution and peer mediation program at schools will contribute to the personal development of students (Türnüklü, 2005). Students will be able to resolve their own conflicts thanks to the implementation of peer mediation program instead of resorting to the guidance department, their teachers or the school administration in cases of interpersonal conflicts. This will result in eliminating interpersonal problems from the focus of guidance activities thereby making it possible to spare more time to rehabilitative, preventive and enhancing activities. Similarly, it will also enable the teachers and the school administration to

save time for educational and instructional activities. Thus, it will contribute to further increasing the quality of education and instruction at schools.

Conflict resolution and peer mediation trainings have been used in many different studies and it has been observed to make an impact on skills such as conflict resolution (Ateş, 2014; Arslan, 2014; Çavuş-Kasik, 2012; Çoşkuner, 2008; Damirchi, 2014; Göğebakan-Yıldız, 2016; Gülkokan, 2011; Hart & Gunty, 1977; İspirgil, 2007; Johnson,et al., 1997; Johnson, et al., 1995; Kılıçarslan & Atıcı, 2015; Koruklu, 1998; Kutlu, 2016; Sağkal, 2011; Stevahn, et al., 1996; Şevkin, 2008; Tapan, 2006; Taştan, 2004; Türk, 2008; Türnüklü, 2008; Türnüklü et al., 2010; Uysal, 2003; Zengin, 2008), aggressiveness (Çoşkuner, 2008; Sağkal, 2011; Şevkin, 2008; Türnüklü et al., 2010; Uysal, 2003), anger (Kutlu, 2016), empathy (Lane-Garon, Ybarra-Merlo et al., 2005; Sağkal, 2011; Schaeffer & Rollin, 2001; Türk, 2008; Türnüklü et al., 2009). Hence, it is observed that the peer mediation model should be considered not only as a model for preventing and reducing violence but also a model that contributes to the social emotional development of children and adolescents. Different from the other studies, the importance of examining its impact on locus of control and self-efficacy as important social and emotional skills is observed in the present study. Positive findings acquired from this study will put forth not only why the conflict resolution and peer mediation model is necessary but also that it makes significant contributions to the personal development of students/young individuals. Thus, it will be put forth that peer mediation training is not only a model for preventing violence but that it is also an important element of social and emotional development. Abdi-Golzar (2006) carried out a study in which it was put forth that successful students are more responsible than unsuccessful students and that students with high levels of responsibility have internal control. Based on this finding, it is considered that students who are raised as peer mediators as a result of conflict resolution and peer mediation training will take on the responsibility of helping their peers in resolving their conflicts hence contributing to their internal control. Moreover, helping their peers in resolving their conflicts will also increase the responsibility levels of the students thereby contributing to increasing their internal control. It can be stated that the confidence of the students in their own skills will increase when they are able to resolve their conflicts successfully which will in turn increase their self-efficacy perception levels.

1.1. Objectives and Hypotheses
Thus, based on all these reasons, it was aimed in the present study to examine the impact of peer mediation training on self-efficacy, locus of control and conflict resolution skill. For this purpose, the following hypotheses were tested:

1. There is a statistically significant difference between the conflict resolution skills pre-test, post-test and follow-up test scores of students who have and have not taken the peer mediation training.
2. There is a statistically significant difference between the locus of control pre-test, post-test and follow-up test scores of students who have and have not taken the peer mediation training.
3. There is a statistically significant difference between the academic, social, emotional and general self-efficacy pre-test, post-test and follow-up test scores of students who have and have not taken the peer mediation training

2. Method

2.1. Study Model
Pre-test-post-test-follow-up test control group semi-experimental pattern was used in the present study to examine the impact of peer mediation training on self-efficacy, locus of control and conflict resolution skills. The subjects were selected in this study based on the sociometry results taking into consideration the distribution of female-male subjects after which the subjects were

assigned randomly to the experimental and control groups. The independent variable in this study is peer mediation training. Whereas the dependent variables are self-efficacy level locus of control level and conflict resolution skill.

2.1.1. Participants

The study was carried out at two Ministry of Education secondary schools with similar characteristics at Şehitkamil district of the Gaziantep province. The study group was comprised of students selected from among the sixth graders at these schools. Two study groups were prepared namely as the experimental and control groups each comprised of 12 students. The experimental group students were selected from one of the schools included in the study, while the control group students were selected from the other school. The reason for selecting the students of different groups from different schools was to minimize the impact of the interactions between the students who are and are not subject to this training.

Sociometry was applied to the students while preparing the study groups. The sociometry question directed at the students was: "Can you write down the names of three classmates you trust and you would want help from in order to resolve the interpersonal conflicts with your friends?". Sociometries were applied to all students in all sixth grade classes at both schools without providing any information on the study after which the results were evaluated.

There were three classes in the secondary school from where the experimental group students were selected. A total of 15 students were selected with five students from each class by taking into consideration the female-male distribution among those with the highest sociometry scores. The number of sixth grade classes was six in the secondary school from where the control group students were selected. Two students were selected from two random classes among these; whereas three students were selected from each of the remaining classes making up a total of 15 students in the control group.

All of the male students (total of three students) included in the study from the "B" class of the experimental group school wanted to leave the group after two sessions. Thus, the experimental group was left with 12 students. Whereas three students from the control group were excluded from the study since post-test and follow-up test could not be applied due to school change. Thereby, the control group was also left with 12 students. As a result, the study was carried out with 12 students (7 female, 5 male) in the experimental group and 12 students (6 female, 6 male) in the control group making up a total of 24 students.

2.2. Instruments

2.2.1. Self-Efficacy Scale for Children

The Scale developed by Murris (2001) and adapted into Turkish by Telef (2011) was used for measuring the self-efficacy level as the dependent variable of the study. Telef (2011) determined three sub-dimensions in the Scale as social, academic and emotional. The Scale is comprised of a total of 21 items with seven items in each sub-dimension. The score calculated based on the responses to all items indicate the total self-efficacy level. The lowest score that can be obtained from the Scale is 21, whereas the highest score is 105. High scores obtained from the Scale indicate that the individual has a high self-efficacy level, whereas low scores indicate a low self-efficacy level (Telef, 2011).

Telef (2011) carried out exploratory and confirmatory factor analysis to determine the construct validity of the Scale. The variance ratios obtained as a result of the exploratory factor analysis were 25,52% for academic self-efficacy, 10,49% for social self-efficacy and 7,64% for emotional self-efficacy while the total explained variance ratio was determined as 43,74%. The Eigen values regarding the factor common variance of the Scale items were determined to vary between .612

and .305. While the fit index values were determined as a result of confirmatory factor analysis as GFI=.94, NFI=.95, CFI=.96, SRMR=.066 and RMSEA=.049. The values calculated for determining the internal consistency coefficient of the Scale were determined as α=.86 for the Scale in general, α=.84 for academic self-efficacy, α=.64 for social self-efficacy and a=.78 for emotional self-efficacy (Telef, 2011).

2.2.2. Locus of Control Scale

The Likert type Locus of Control Scale developed by Dağ (2002) was used for measuring the locus of control which is another dependent variable of the study. The researcher prepared a pool comprised of 80 comprehensive items during the development period of the Scale put forth by either taking the same or revised items from already existing locus of control scales. The 80 item form developed was applied to a group of 272 individuals as a result of which the Locus of Control Scale comprised of 47 items was obtained following the item analyses using the acquired data (Dağ, 2002). The Locus of Control Scale developed by Dağ (2002) was comprised of five factors named as "auto control", "belief in luck", "meaningfulness of striving", "fatalism" and "unfair world belief ". Increase in scores indicates the locus of control, while decreasing scores signify an internal locus of control. The highest score that can be obtained from the scale is 47, while the highest score is 235 (Dağ, 2002).

Dağ (2002) calculated the internal consistency coefficient of the scale as α=.92. It was observed that the correlation value calculated between the developed Locus of Control Scale and that of Rotter's Internal-External Locus of Control Scale was .67; or that in other words both scales share a variance of 45% (Dağ, 2002).

2.2.3. Conflict Resolution Scale

Conflict Resolution Scale developed by McClellan (1997) and adapted into Turkish by Taştan (2004) was used for measuring the conflict resolution skill which is one of the dependent variables. This 40 item scale adapted by the researcher is comprised of 10 sub-dimensions. The scale is scored as five-point Likert type (Taştan, 2004). Two factors named as "constructive conflict resolution approach" and "destructive conflict resolution approach" were determined as a result of the factor analysis for the scale (Taştan, 2004).

It was observed when the coefficients obtained by the researcher regarding the reliability of the scale were examined that the total score is .74, that the score for constructive conflict resolution approach is .75 and that the score for destructive conflict resolution method is .74. Hence, it was concluded that the scale yields consistent results. The researcher calculated the internal consistency coefficients as .82 for the constructive conflict resolution approach as the first sub-dimension of the scale and as .73 for the destructive conflict resolution approach as the second sub-dimension (Taştan, 2004).

2.3. Peer Mediation Training Program

The "Peer Mediation Training Program" developed by Türk, Türkmen, Satıcı, Başol and Gümüş (2015) was applied to the experimental group students during the study. The researchers developed two separate books for the students and the psychological counselor. Student books are used for implementation. There are a total of 17 activities in the training program comprised of 10 sessions. Each session has been planned as 80 minutes.

The program developed by Türk et al. (2015) is comprised of four main skills of "understanding the nature of the conflict ", "communication skills", "anger management skills" and "negotiation and peer mediation skills". Explanatory information has been provided below on the four main skills included in the peer mediation training program included in the study:

1. Understanding the Nature of the Conflict: The objective here is to ensure that the students gain the skills and knowledge related with the nature of the conflicts and misunderstandings

that inevitably develop during interpersonal relations. For this purpose, knowledge and skills were tried to be provided regarding the determination of the associations related with the conflict, understanding the nature of the interpersonal conflict, noticing conflict2s gains, learning the reasons of the conflict and the reactions given to the conflict along with the skills and knowledge related with analyzing interpersonal conflicts.

2. Communication Skills: The objective in this section is to ensure that the students gain the fundamental communication skills to resolve the conflicts in a constructive manner rather than a destructive manner involving violence. For this purpose, knowledge and skills related with effective listening, body language, empathy and self-awareness were included.

3. Anger Management Skills: Individuals generally experience a sense of anger during conflicts which prevents the constructive resolution of the conflict. For this purpose, it is important in order to be an effective mediator to identify anger and to learn how to behave without disrupting interpersonal relations during conflicts. This section includes information on subjects such as anger awareness, words and behaviors that increase the anger, use of the 'I' language and anger control.

4. Negotiation and Peer Mediation Skills: The objective in this section was to teach the students the necessary negotiation skills that will enable them to resolve their conflicts in a constructive manner as well as the mediation skills that will enable them to resolve the conflicts of their peers. For this purpose; subjects of learning and implementing the steps of negotiation, learning about mediation and the steps of mediation as well as the evaluation of mediation steps have been included.

2.4. Procedure

Before starting the studies, legal and ethical permissions were obtained for the research. The pilot application for the peer mediation program was carried out by the primary author at the secondary school where she works as a psychological counsel. The fact that the pilot application was carried out at the institution where the researcher works made it easier to implement the training program as well as to determine the negativities experienced during the actual peer conflict resolution stage at the end of the implementation due to the easy access to the students. Sociometry was applied to all classes at the sixth grade level during the start of the implementation. Students to be included in the peer mediation training were determined from among the most preferred students based on the sociometry results also taking into consideration the female-male distribution. The study was carried out with a total of 18 students with three from each classroom of the six sixth grade classes. The evaluations of the students, observations and evaluations of the implementer with regard to the process were examined together with the second author at the end of each session and the defective parts of the program were determined by the primary and second author. Revisions were made at the end of each session with regard to the defective parts. Moreover, a general assessment was made together with the students at the end of the sessions and student opinions were taken with regard to the program.

After pilot application, the study was carried out. Cadre approach was used in this research. Therefore, a limited number of students were educated instead of all students in the class. Sociometry was applied to all sixth grade classes of the experimental and control group schools. Students were selected for the experimental and control groups as a result of the application from among the most preferred students also taking into consideration the female-male distribution. First of all, the Conflict Resolution Scale, Locus of Control Scale and Self-Efficacy Scale for Children were applied to the experimental and control groups as pre-test. This was followed by a 10 session peer mediation training given to the experimental group by the primary author. Even though 2 sessions were conducted in certain weeks due to official holidays, exam weeks, ceremonies etc., the training was carried out mostly with one session per week. The control group was not subject to any application during this period of time. The Conflict Resolution Scale, Locus of Control Scale and Self-Efficacy Scale for Children were applied once again to both groups after the training. The Conflict Resolution Scale, Locus of Control Scale and Self-Efficacy Scale

for Children were applied once again to the experimental and control groups as follow up test six months after the end of the peer mediation training applications in order to determine whether the effectiveness of the peer mediation training is sustained over long periods of time. The experimental and control groups were planned to include 15 individuals each, however the study was completed with 12 students in each group.

2.5. Data Analysis

Quantitative data analysis was used for determining the impact of peer mediation training on self-efficacy, locus of control and conflict resolution skills. The study data were analyzed via SPSS 20 software. Mann-Whitney from among the non-parametric statistical methods was used on the values obtained from the scales since the normality assumption was not met during the statistical operations and because the number of students included in the study was below 30. Wilcoxon Signed Ranks Test was used for determining whether the results obtained by the experiment and control groups from the pre-test-post-test-follow-up test varied at a statistically significant level internally.

The reason for using the Wilcoxon Signed Ranks Test instead of the Friedman Test was the desire to observe the difference between the follow-up test scores after the post-test scores of students included in the experimental group who were raised as peer mediators helped them in resolving the actual conflicts of their peers.

The effect size values regarding the changes between the pre-test and post-test as well as between the post-test and follow-up test scores of the study groups were calculated and presented in the related tables. Effect size is the unit of the strength of the relationship between two variables (Borenstein et al., 2009). The effect is low if the effect size intervals are $r < 0.20$, moderate if the effect size intervals are between $20 < r < 50$ and high if the effect size is $r > 50$ (Cohen, 1988).

3. Findings

The purpose of the present study was to examine the impact of peer mediation training on conflict resolution skill, locus of control and self-efficacy. First, the arithmetic averages and standard deviations were calculated for the scores obtained by the experimental and control groups from the Conflict Resolution Scale, Locus of Control Scale and Self-Efficacy Scale for Children before and after the operation. Table 1 presents the acquired results.

Table 1. Descriptive results of the experimental and control groups for the CRS, LCS and SESC pre- test and post-test and follow-up test

Measures	Groups	N	Pre-Test		Post-Test		Follow-up Test	
			$\overline{X}$	Sd	$\overline{X}$	Ss	$\overline{X}$	Ss
CRS	Experimental	12	137.17	14.88	152.42	17.38	153.08	13.28
	Control	12	141.92	11.03	140.00	8.78	142.67	16.06
LCS	Experimental	12	120.00	20.45	97.83	18.93	94.75	21.76
	Control	12	111.67	15.59	115.25	14.19	111.00	20.37
SESC	Experimental	12	74.50	7.50	87.50	10.83	89.58	7.53
	Control	12	71.42	10.08	72.83	10.94	71.58	15.06

CRS: Conflict Resolution Scale, LCS: Locus of Control Scale, SESC: Self-Efficacy Scale for Children

A greater increase is observed in the pre-test, post-test and follow-up test averages of the experimental group in Table 1 compared with the Conflict Resolution Scale pre-test, post-test and follow-up test score averages of the control group. It is observed when the Locus of Control Scale is examined that there is a decrease in the pre-test, post-test and follow-up test scores for the locus of control. Similarly, an increase is observed in the pre-test, post-test and follow-up test scores

for the Conflict Resolution Scale of the experimental group after the pre-test. A significant difference was not observed between the experimental and control groups.

Mann-Whitney U Test analysis was carried out for determining whether there is a statistically significant difference between the pre-test scores of the students in the experimental and control groups obtained from the Conflict Resolution Scale, Locus of Control Scale and Self-Efficacy Scale for Children. Table 2 presents the results of the analysis.

Table 2.CRS, LCS and SESC pre-test Mann-Whitney U test results for the experimental and control groups

Measures	Experimental		Control		U	p
	Mean Rank	Sum of Rank	Mean Rank	Sum of Rank		
CRS	11.50	138.00	13.50	162.00	60.00	.488
LCS	16.00	240.00	15.00	225.00	105.00	.75
SESC	15.43	231.50	16.53	264.50	111.50	.74

It can be indicated upon examining Table 2 that the conflict resolution, locus of control and self-efficacy pre-test scores of the experimental and control groups do not differ at a statistically significant level. In other words, it can be stated that the conflict resolution, locus of control and self-efficacy levels of both groups are similar before the experimental.
Table 3 presents the Wilcoxon Signed Ranks Test results regarding the pre-test and post-test as well as post-test and follow-up test conflict resolution scores of the experimental and control groups.

Table 3. Wilcoxon Signed Ranks Test Results for the Conflict resolution Pre-test-Post-test and Post-test-Follow-Up Test Scores of the Experimental and Control Groups

Group	Measure		n	Mean Rank	Sum of Rank	z	p	r
Experimental	Pre-test-Post-Test	Negative Ranks	1	1.00	1.00	2.982	.003	.86
		Positive Ranks	11	7.00	77.00			
		Ties	0					
	Post-test-Follow-up	Negative Ranks	5	7.30	36.50	.196	.844	.06
		Positive Ranks	7	5.93	41.50			
		Ties	0					
Control	Pre-test-Post-Test	Negative Ranks	8	5.50	44.00	1.684	.092	.49
		Positive Ranks	2	5.50	11.00			
		Ties	2					
	Post-test-Follow-up	Negative Ranks	5	5.30	26.50	.982	.326	.28
		Positive Ranks	7	7.36	51.50			
		Ties	0					

It can be put forth upon examining Table 3 that the increase between the Conflict Resolution Scale pre-test and post-test scores of the experimental group is statistically significant (z=2.982; p < 0.05, r=.86); whereas the difference between the post-test and follow-up test scores is not statistically significant (z=.196; p > 0.05 r=.06). While a statistically significant difference could not be observed between the Conflict Resolution Scale pre-test and post-test scores of the control group (z = 1.684; p > 0.05 r=.49); and similarly there was also no statistically significant difference between the post-test and follow-up test scores (z=.982; p > 0.05, r=.28). Thus, it can be stated that the peer mediation training has been effective in the difference between the conflict resolution pre-test and post-test scores of the experimental group and that the impact has also continued for the follow-up measurements.

Table 4 presents the Wilcoxon Signed Ranks Test results regarding the pre-test and post-test as well as post-test and follow-up test locus of control scores of the experimental and control groups.

Table 4. Wilcoxon Signed Ranks Test Results for the Locus of control Pre-test-Post-test and Post-test-Follow-Up Test Scores of the Experimental and Control Groups

Group	Measure		n	*Mean Rank*	*Sum of Rank*	z	p	r
Experimental	Pre-test-Post-Test	Negative Ranks	10	6.70	67.00	2.197	.028	.63
		Positive Ranks	2	5.50	11.00			
		Ties	0					
	Post-test-Follow-up	Negative Ranks	8	5.50	44.00	.392	.695	.11
		Positive Ranks	4	8.50	34.00			
		Ties	0					
Control	Pre-test-Post-Test	Negative Ranks	4	7.25	55.00	.785	.209	.23
		Positive Ranks	8	6.13	23.00			
		Ties	0					
	Post-test-Follow-up	Negative Ranks	9	6.11	55.00	1.255	.209	.36
		Positive Ranks	3	7.67	23.00			
		Ties	0					

The decrease between the Locus of Control Scale pre-test and post-test scores of the experimental group is statistically significant based on the results presented in Table 4 (z=2.197; p < 0.05, r=.63); while the difference between the post-test and follow-up test scores is not statistically significant (z=.392; p > 0.05, r=.11). It is also understood that the increase between the Locus of Control Scale pre-test and post-test scores of the control group is not statistically significant (z=.785; p > 0.05, r=.23); and similarly that there is no statistically significant difference between the post-test and follow-up test scores (z=1.255; p > 0.05, r=.36). Thus, it can be stated that the peer mediation training has been effective in the difference between the locus of control pre-test and post-test scores of the experimental group and that the impact has also continued for the follow-up measurements.

Table 5 presents the Wilcoxon Signed Ranks Test results regarding the pre-test and post-test as well as post-test and follow-up test self-efficacy scores of the experimental and control groups.

Table 5. Wilcoxon Signed Ranks Test results for the Self-Efficacy pre-test and post-test and post-test and follow-up test scores of the experimental and control groups

Group	Measure		n	*Mean Rank*	*Sum of Rank*	z	p	r
Experimental	Pre-test-Post-Test	Negative Ranks	1	2.00	2.00	2.904	.004	.84
		Positive Ranks	11	6.91	76.00			
		Ties	0					
	Post-test-Follow-up	Negative Ranks	5	5.80	29.00	.785	.432	.23
		Positive Ranks	7	7.00	49.00			
		Ties	0					
Control	Pre-test-Post-Test	Negative Ranks	5	6.40	32.00	.550	.583	.16
		Positive Ranks	7	6.57	46.00			
		Ties	0					
	Post-test-Follow-up	Negative Ranks	8	6.19	49.50	.824	.410	.24
		Positive Ranks						
		Ties						

It is observed when Table 5 is examined that the increase between the Self-Efficacy Scale for Children total self-efficacy pre-test and post-test scores of the experimental group is statistically significant (z=2.904; p < 0.05, r=.84); while the difference between the post-test and follow-up test scores is not statistically significant (z=.785; p > 0.05, r=.23). It was also observed that the increase between the Self-Efficacy Scale for Children total self-efficacy pre-test and post-test scores of the control group is not statistically significant (z=.550; p > 0.05, r=.16); and that similarly the difference between the post-test and follow-up test scores is also not statistically significant (z=.824; p > 0.05, r=.24). In other words, it can be stated that the peer mediation training has been effective in the difference between the self-efficacy pre-test and post-test scores of the

experimental group and that the impact has also continued for the follow-up measurements. In conclusion, it can be put forth that the peer mediation training has been effective in the higher conflict resolution skills, locus of control and self-efficacy levels of secondary school students who have taken this training in comparison with those who have not. Moreover, it is also possible to state that this impact is long-lasting.

4. Discussion and Conclusion

The objective of the present study was to examine the impacts of peer mediation training on self-efficacy, locus of control and conflict resolution skills. It was determined in this study when students who have taken the peer mediation training were compared with those who have not that there is an increase in their conflict resolution skills which also continued during the follow-up measurements. It was observed as a result of a literature survey that there are many studies which put forth that conflict resolution and peer mediation training programs improve conflict resolution skills (Arslan, 2014; Ateş, 2014; Ay et al., 2019; Çavuş-Kasik, 2012; Çoşkuner, 2008; Damirchi, 2014; Johnson et al., 1995; Lane-Garon, 2000; Gülkokan, 2011; Kılıçarslan & Atıcı, 2015; Koruklu, 1998; Kutlu, 2016; Mutluoğlu & Serin, 2012; Sağkal, 2011; Şevkin 2008; Tapan, 2006; Taştan, 2004; Türk, 2008; Türnüklü et al., 2010; Uysal, 2003; Zengin, 2008; Bosworth et al., 1998; Cardoza, 2013; Carruthers et al., 1996; Farrell & Meyer, 1997; Hart & Gunty, 1977; Johnson et al., 1997; Johnson et al., 1995; Schaeffer & Rollin, 2001; Schellenberg, 2005; Smith et al., 2002; Stevahn et al., 1996; Stewart, 2000; Stacey-Cremin, 2001; Thompson, 1996).

Similarly, the meta-analysis studies which put forth the impact of peer mediation, conflict resolution and negotiation skills indicate that these trainings increase conflict resolution skills (Burrell et al., 2003; Johnson & Johnson, 2001; Wilson et al., 2007; Türk, 2018). It can be stated when these study results are considered alongside the studies with similar results that peer me-diation training can play an important role in supporting students to resolve their own conflicts at schools while also contributing to both their social and emotional developments. Hence, it is observed that the inclusion of these trainings in school-based programs is important.

It was determined in the present study that there is a statistically significant increase in the internal locus of control levels of students who have taken the peer mediation training in comparison with those who have not and that the increase continued during the follow-up measurements. Internal or external perception of the locus of control is responsible with whether the individual feels responsible for his/her own actions or not. If the individual holds himself/herself responsible from his/her own behaviors that individual has internal control; however if he/she relates the outcome of his/her behaviors with other factors outside of his/her own will it means he/she is an individual with external control (Başal & Dönmez, 1985; Yüksel, 1991). Therefore, it can be put forth that peer mediation model adolescents who are able to resolve the conflicts with their friends by themselves or with the support of a peer will have contributed to taking on more re-sponsibility and being a more internally controlled individual. A transformation from external control to internal control is generally considered as a function of the circumstances and events which strengthen self-efficacy and efficiency (Başal and Dönmez, 1985). It can be put forth that the effective and constructive resolution of conflicts by adolescents through the use of their per-sonal skills contributes to themselves taking on the responsibility of their own behaviors thereby improving their internal control. The periods when adolescence has started that correspond to secondary school years are of critical importance for self-development that is also expressed as identification (Cüceloğlu, 2011). Adolescents who are provided with opportunities for making their own decisions and whose autonomy is supported in social environments such as family and school will have paved their way to becoming individuals with internal control. Contrary to this study, the study by Stacey-Cremin (2001) evaluated the effectiveness of the peer mediation programs applied on 5th grade students, however a statistically significant difference could not be observed in their loci of control. A small number of studies have been determined which ex-amine the impact of peer mediation training on the locus of control. The fact that the effective-

ness of peer mediation training on developing internal control has been put forth in this study can be considered as a significant contribution to the relevant literature.

It was determined in this study that there is an increase in the self-efficacy levels of students who have taken peer mediation training in comparison with those who have not and that the increase also continued during the follow-up measurements. Türk (2018) carried out a study as a result of which it was put forth that the self-efficacy perception is a statistically significant pre-cursor of conflict resolution skill. It can be expected that the conflict resolution skills will be high for students with high self-efficacy levels and that self-efficacy levels will increase with increasing conflict resolution skill.

A significant number of studies could not be observed as a result of the literature survey carried out with regard to the impact of peer mediation on self-efficacy. However, it is observed that the results obtained can be in parallel with the results of studies that may be related with self-efficacy. Stewart (2000) carried out a study in which it was determined that a similar increase has taken place in the social skills of students subject to peer mediation program and that their interpersonal relations have developed. Similarly, Stacey-Cremin (2001) also determined that the peer mediation program has improved the personal and social skills of students. Schaeffer and Rolin (2001) carried out a study in which it was reported that the conflict resolution program prepared for developing the problem solving and adaptation skills has led to an increase in the interpersonal relations of students. Similarly, Cardoza (2003) determined in their study that stu-dents who have taken peer mediation training display high levels of social-competence. Lane-Garon, Ybarra-Merlo, Zajac and Vierra (2005) also determined in their studies that there is a statistically significant difference in the social emotional skills for understanding perspective as a result of the conflict resolution and peace training applied.

In conclusion, it was determined that students who have taken the peer mediation training have more effective conflict resolution skills, internal locus of control and self-efficacy levels in comparison with those of students who have not taken this training. Schools play an important role in supporting the cognitive developments of students for the raising of healthy generations in addition to supporting the social and emotional developments of students (Durlak et al., 2011). Hence, it is considered that making these training programs part of the school culture is important for the development of the students. It is thought that including peer mediation trainings as part of the psychological counseling and guidance curricula of the schools will contribute to preventing violence at schools as well as developing the required social and emotional skills. At this point, it can be stated that the awareness and professional competence of school psychological counsels should be increased with regard to peer mediation trainings. Conflict resolution, locus of control and self-efficacy were used as dependent variables in this study. It can be suggested for future studies to examine the impact of peer mediation training on dependent variables such as subjective well-being, school commitment, school climate, peer relations. In addition, longitudinal studies can also be carried out for determining whether the impacts of peer mediation training continue in the long run. A peer mediation training program was not developed in the present study and an already existing program was used. Random assignment was not possible since the peer mediators were selected via sociometry and a semi-experimental study pat-tern was used. This research was conducted with a small study group, so it is difficult to generalize the results.

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Visualizing Career Orientations of College Students on a Standard Educational Classification System

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Abstract
In this research it is aimed to present a visual comparison of career orientations of college students using ISCED (International Standard Classification of Education) classification system. Research sample consisted of seven experts and 529 college students from 10 different majors of ISCED broad domains. Data was collected with a survey developed by researcher and Personal Globe Inventory – Short Form (Tracey, 2010). Expert opinions were used to locate 26 ISCED narrow educational fields in the light of vocational interest and competence scores. Multi-Dimensional Scaling was used with data obtained from Personal Globe Inventory – Short Form to determine college majors' positions. Most of the college majors were mapped in theoretically congruent positions, yet some discrepancies were found, especially in Conventional and Realistic types. When competence belief placements on dimensions were inspected there found some significant differences in comparison with their interest locations. These differences between interests and competence beliefs highlight the importance of a holistic evaluation when choosing a college major instead of stressing just one important factor. It might be interpreted that interests and abilities are still not the major determinants when deciding a college major and current environmental models scarcely match with the theoretical explanations.

Keywords: Vocational choice, interests, competencies, Holland, ISCED

1. Introduction

Vocational choices are being made to a large extent depending on some assessment results and circumferential obligations. Even coincidence has a major role since there is a lack of systematic and effective vocational guidance and career counseling support. As it is evidently known, when individuals work in an unintentionally, non-systemic or coincidentally chosen vocation, they do not feel satisfied and usually change their vocations; therefore, problems such as reluctance to work and low productivity, not following professional innovations are brought about. These problems affect the working enterprise, the sector and the country's economy in a negative way, reducing the occupational and life satisfaction of individuals; it weakens national and international competitive power (Akkök & Watts, 2006).

These problems, which are experienced while making a career decision, also affect young people's career significantly. Educated young people in Turkey have difficulty finding job. Along with

high unemployment rates, this rate is even higher, especially for young people (World Bank, 2015). At this point, with factors such as economic conditions and employment opportunities, there seems to be a need to question the professional choices made in entering the higher education system.

The purpose of professional decision making in career counseling which may be a framework that can be a solution to the problem, is to present the options appropriate to the type of the person. In this case, it is assumed that job satisfaction and success will increase (Tracey & Gupta, 2008). Research has shown that individuals are much more productive when there is a good level of fit between their personality typologies and environmental characteristics. The mismatch between the type of personality and the environment causes dissatisfaction, unbalanced career orientations and poor performance (Holland, 1974, 1996).

As a consequence of the transition of higher education graduates from school to business life, unemployment in the young population is accompanied by school dropouts (EU, 2011). Over the years, a number of public regulations have begun to be implemented towards this negative picture emerging in higher education. For example, in the 10th National Development Plan (DPT, 2014, p.32), attention was drawn to the problems between education and employment and in this regard it is stated that "The secondary education and higher education transition system can be made a process-oriented evaluation with the support of effective guidance and guidance services that take into account the interests and abilities of students".

As long as there is an academic field that is congruent with a student's personality, and the content of the courses is similar to the working environment with their professional lives, the satisfaction for that area is also higher (Feldman, Ethington, & Smart., 2001). Along with the level of satisfaction, the congruency between the measured vocational interests and the major is also a predictor of academic performance (see Tracey & Robbins, 2006). The choice of academic field is influenced by the students' interest patterns and in many researches Holland's personality typology (1997), which is widely used in career counseling, has been shown to be a predictor of the academic major (Miller, 2010; Porter & Umbach, 2006).

Although there are many measurement tools for self-exploration which is a component of person-vocational environment congruence, their interpretation is based on subjective evaluations. The norms used in the evaluation of the measurement tools were determined according to the characteristics of a limited sample (Özyürek, 2013). When it is thought of as a career information system, it is necessary to know what career assessment scores mean to use, and how to interpret such a system easily while it is useful to have it integrated with the educational system. In the case of individual, vocational and educational environment congruence, it can be considered that the determination of environmental characteristics can help in this respect. According to Miller (1994) personalities of the individuals of the same occupation are similar and individuals tend to choose college majors or vocational environments that are congruent with their personality orientation.

Parallel to this point of view, the environmental characteristics of the academic major that a student participates in is largely in accordance with individuals who are dominated by certain personality types. In such a university environment, the dominant skills in the educational environment are unique to the study world that education requires. As a result, academic programs are environments where similar types of personality dominate because people and environments are inseparable entities (see Feldman et al., 2001). For example, it is expected that people in the social environment will have the characteristics of the social type.

In this research, which is based on Holland's theory (1997) about the vocational selection of individuals and their career orientations, it is aimed to develop a method that facilitates the

interpretation of interest and competence profiles of the students. In this context, it is aimed to create a visualization method that integrates Holland's personality types and the broad fields of education and in the International Standard Classification of Education (ISCED) system. With such a mapping system in which the interests and competence of the clients and the educational fields are in relation to these two variables, clients will be able to gain an awareness by comparing their competence with their interests and also be able to distinguish any possible contradiction.

Although Holland's theory (1997) is one of the most important and influential theories in career counseling, the environmental aspects of the theory, especially university campuses, learning fields and job positions, are less understood and regarded as less important. Because the environment might be regarded as a foundation utilizing interests this topic seems to be crucial yet paid little attention. This research also aims to fill the void found in this field of literature.

1.1. Holland's Personality Types Theory

The theoretical framework of the research and the measurement tools used were determined by Holland's personality theory (1997). This section outlines the general descriptions of Holland's personality theory, the assumptions and principles of the theory, contemporary contributions to Holland's theory and the ISCED classification system.

Holland's theory (1997) consists of a few basic ideas and components of a more complex structure of these ideas. Firstly; people can be categorized to the extent that they are similar to the one of six types (Realistic, Investigative, Artistic, Social, Enterprising, & Conventional). People with high level of similarities to one of the types are more likely to demonstrate their personality traits and behaviors. Secondly; the environments where people live and work can be defined according to the model that resembles the six environmental models (The same names with the personality types). Finally; Matching people and environments may result in predictions based on knowledge of personality types and environmental models. These may include vocational preference, vocational commitment and achievement, educational preference and achievement, self-efficacy, susceptibility to social behavior and environmental exposure.

The similarities and relationships between the types can be shown on a hexagonal model. The closer the distance between the two types, the greater the relationship and similarity between them. For example, on the hexagonal model, the Realistic and the Investigative types are closer and their similarities are more when compared with the other types. On the contrary, the Realistic and Social types are far from each other and their relationship and similarities are relatively small (Holland, 1997).

1.2. Environmental Models

Individuals can be assessed based on their personality types, in a similar way environment also can be evaluated according to some hypothetically defined environmental models. Environmental modalities are determined by the environment in which majority of a certain population takes place. For example, a social environment is mostly made up of people of the social type. If the characteristics of a group of forming an environment is known, then the features in which this group will be formed can also be estimated. Certainly an office environment full of bureaucrats and an office environment full of engineers will be different from each other. Environmental models, like personality types, are also shaped by activities, beliefs, competences, perceptions and values. For this reason, there are very close relationships between them (Holland, 1997). It is not considered as necessary to repeat these characteristics of environmental models as they are the same as those of personality types.

In a research conducted by Smart, Feldman and Ethington (2006) it is stated that university faculty members in different academic fields create academic environments that are characterized by differentiated characteristics depending on the priorities and goals of the environment.

Considering the first research sample of the Holland's (1997) theory is made up of university and high school students (Reardon & Bertoch, 2011), it might be concluded that environmental characteristics in educational life are also distinguished as it is the case for working environments.

However, despite the large number of empirical evidences on Holland's model, there are also research findings that RIASEC (Realistic, Investigative, Artistic, Social, Enterprising, & Conventional) types are not sufficiently comprehensive enough to meet the complexity of the business world (Armstrong, Allison, & Rounds, 2008). In Holland's theory (1997), some of the characteristics of working life are multi-dimensional and composed of some subcomponents, while the types are extremely broad. For example, there are jobs that are run by realistic types, such as factories, as well as jobs that are performed in the open field (Einarsdottir, 2001). Parallel to these explanations, and according to Holland's theory, environmental models can also be defined in terms of their orientation to the professional activities performed by individuals. In other words, environmental models can be expressed by RIASEC letter codes just like personality types, making it possible to examine the interaction between individuals and a specific environmental model (Spokane & Cruza-Guet, 2005).

1.3. Data/Ideas, Things/People Dimensions in Holland's Model

Dimensions that are presumed to exist on the basis of Holland's hexagonal structure have been classified by Prediger (1981) as a two-dimensional structure with Data/Ideas (D/I), Things/People (T/P) poles. Prediger (1981) added Holland's hexagonal model Data-Ideas (Entreprising, Conventional - Investigative, Artistic types) and Things-People (Social - Realistic types) dimensions. These ensuing dimensions reveal the differences between personality types. For example, in the Data pole of the Data-Idea dimension, Conventional and Enterprising types are more interested in activities such as information recording and filing in contrast with Investigative and Artistic types in the Ideas section. Enterprising and Social types, on the sociability dimension, are more likely to engage in activities involving interpersonal interaction than either the Realistic or the Investigative types (Armstrong, Day, McVay, & Rounds, 2008; Rounds and Tracey, 1993).

1.4. International Standard Classification of Education (ISCED)

There are a number of problems with the measurement of education levels and the nature of the comparison of these measures. First of all, this can be a very complicated task because it eliminates the need to reconcile a wide range of educational systems with the same titles. So much so that this differentiation can change over time in the same country, let alone among the countries (Schröder & Ganzeboom, 2013).

One of the most widely used classifications in this regard is the International Standard Classification of Education (ISCED) developed by United Nations Educational, Scientific and Cultural Organization (UNESCO, 2006). ISCED is a highly detailed and comprehensive classification system developed by Organization for Economic Co-operation and Development (OECD, 1999) designed to "establish a framework for the compilation, analysis and reporting of internationally comparable educational statistics".

The ISCED Classification was developed primarily to compile comparable statistics across countries. With this kind of comparison, it is aimed to create a basis for international reporting at least on "broad fields". ISCED was originally developed by UNESCO in the mid-1970s and since then had been revised three times. ISCED is a product of an international agreement and has been officially recognized by the member countries of the UNESCO General Conference. In the ISCED-2013 classification, there are 26 broad educational fields organized in 10 broad groups. The term "broad field" in ISCED refers to the broad field or branch of an education or accreditation program. Detailed areas (third hierarchical level in classification) are only used in higher education or vocational training (UNESCO, 2014).

2. Method

In this research it is aimed to present a visual comparison of career orientations of college students using ISCED classification system and Holland's personality types. Relational screening model, which aims to investigate certain relationships with demographic variables and to collect data by administering questionnaires or scales or interviews to learn and identify certain characteristics of a group (Cohen, Manion, & Morrison, 2007; Karasar, 2012) was used.

2.1. Sample

The research was conducted on two separate samples. The first sample consisted of seven experts who are teaching staff working in the fields of education and Holland's theory and consulted with a structured interview form. For the second research sample a total of 529 university students (54.8% female, 45.2% male) attending Hacettepe University were selected from 10 various higher education programs from each ISCED broad fields (see Table 1). It was decided to select the participants of this second sample from the sophomore and junior classes at the age of 18 and over, considering that the participants should facilitate the attributes such as success, continuity, and knowledge of the chosen major. Senior classes are left out of the research since they may tend to have concerns such as finding a job and answer the questionnaires accordingly. It has been decided that the number of participants to be included in the research sample from each educational program should be at least 50 with the assumption that the inter-variable analyzes are performed with parametric tests at the level of higher reliability of the group comparisons.

Table 1: Educational Programs of the Research Sample and Their Equivalents in ISCED 2013

ISCED Broad field code	Broad field	Faculty	Educational Program	n
01	Education	Education	Science Education	53
02	Arts and humanities	Literature	German Language and Literature	54
03	Social sciences, journalism and information	Education	Psychological Counseling and Guidance	60
04	Business, administration and law	Law	Law	50
05	Natural sciences, mathematics and statistics	Science	Math	51
06	Information and Communication Technologies	Education	Computer and Instructional Technology Education	51
07	Engineering, manufacturing and construction	Engineering	Electrical engineering	53
08	Agriculture, forestry, fisheries and veterinary	Engineering	Food Engineering	55
09	Health and welfare	Health Sciences	Physical Therapy and Rehabilitation	51
10	Services	Economics & Administrative Science	Family and Consumer Sciences	51

(n=529)

2.2. Instruments

A personal information form developed by the researcher and the Personal Globe Inventory-Short Form (PGI-SF) developed by Tracey (2010) and adapted to Turkish by Vardarlı (2014) were used to collect data in the research.

2.2.1. Personal Globe Inventory Short Form

Personal Globe Inventory (PGI) is an interest inventory developed by Tracey and Rounds (2002). Researchers have developed a three-dimensional inventory of interest to measure individuals' core

interests, competence expectations and vocational preferences. In order to facilitate the use of inventory Tracey (2010) developed a short form (PGI-SF) with a total of 80 items, 40 of which are used to measure perceived abilities and 40 items for measuring interests. Short form of the PGI showed high validity and reliability values in the American sample. Based on the findings obtained in the development of the inventory, the researchers stated that PGI-SF was free of bias and did not produce different results in terms of gender and ethnicity. The Cronbach's alpha reliability coefficient in the long form of the inventory was .90, while the reliability coefficient in the short form was .89.

PGI-SF was adapted to Turkish by Vardarlı (2014) and applied to high school (n = 605) and university students (n = 359) in İzmir, Turkey. To examine the cultural validity of PGI-SF a randomization test was conducted and CI and p values obtained are interpreted as it indicates a good fit with the complex circular pattern of inventory. RIASEC scores similarly have also been found to be in congruence with a complex circular model. Also subscale scores of Self-Evaluation Inventory (Kuzgun, 2003) and PGI-SF subscales correlations obtained were in the expected direction.

2.2.2. Personal Information Form
A standardized form was developed by the researcher to collect expert opinions. Three of the RIASEC letter codes, which represent the narrow educational fields of ISCED 2013 basic education and training the most, are expected to be chosen by the consulted experts. In the form, a sample application is given along with the directive. In addition, detailed information about Holland personality types is presented in order to guide the experts and to form concept union.

2.3. Data Analysis
In line with the opinions received from the experts, 26 ISCED educational fields have been located on a two-dimensional space (T/P - D/I) in accordance with their required interests and competences. Using the PGI-SF data collected from the second research sample, the positions of the undergraduate programs on the map were determined by multidimensional scaling (MDS) method. The mean scores of the T/P - D/I dimensions were converted to the correlation matrix consisting of the standardized z scores and the Euclidean distances between the educational fields.

3. Findings and Discussion

3.1. Findings of the First Research Sample and Discussion
Using the data of the first research sample interest scores of the ISCED educational fields were tried to be shown on a coordinate plane. In order to provide this indication, the triple-letter codes specified by the participants for each ISCED field have been converted into T/P - D/I scores.

In the MDS findings of the first research sample, the stress value calculated according to the Kruskal stress formula was found to be 0.01510 for three-dimensional solution and 0.05808 for two-dimensional solution. The value of R^2 obtained shows that the explained variance of change according to the stress value reveals 99.9% ($R^2 = .99890$) for three-dimensional solution and 98.5% ($R^2 = .98471$) for two-dimensional solution.

Table 2: Mean Scores of the T/P - D/I Dimensions of the First Research Sample

ISCED Broad field code	ISCED Narrow field of education	Dimension-1 Things/People	Dimension -2 Data/Ideas
11	Education	1.6943	-.4140
21	Arts	1.6497	.0208
22	Humanities (except languages)	.6713	.9836
23	Languages	1.2958	-.0058
31	Social and behavioural sciences	1.4826	-.4131
32	Journalism and information	.2846	.9805
41	Business and administration	-.0360	-2.2975
42	Law	.4208	-1.4482
51	Biological and related sciences	-.1511	1.3223
52	Environment	-1.1665	.4031
53	Physical sciences	-.2181	1.2828
54	Mathematics and statistics	-.8967	.5228
61	Information and Communication Technologies (ICTs)	.1970	1.2933
71	Engineering and engineering trades	-.7366	.9100
72	Manufacturing and processing	-1.2713	-.2167
73	Architecture and construction	.4381	1.0933
81	Agriculture	-1.3208	-.5692
82	Forestry	-1.3977	-.6088
83	Fisheries	-1.2717	.1398
84	Veterinary	-.4056	1.0512
91	Health	.7437	1.1210
92	Welfare	1.5666	-.7537
101	Personal services	.9019	-1.2760
102	Hygiene and occupational health services	-.5657	-1.0602
103	Security services	-.9957	-.9618
104	Transport services	-.9131	-1.0993

Using MDS does not aim to reduce the stress value of the application to zero. It is aimed at obtaining a balance in terms of interpretability (with a stress value just as low as a competence) (Hout, Papesh, & Goldinger, 2015). With this point of view, a two-dimensional solution has been preferred to the interprete the educational fields in this research. Table 2 shows the values of the dimensions found in the two-dimensional MDS analysis.

After the distances between disparities were found to be in a linear relationship, distances between the variables and their proximity were investigated in a two dimensional space representation (see Figure 1).
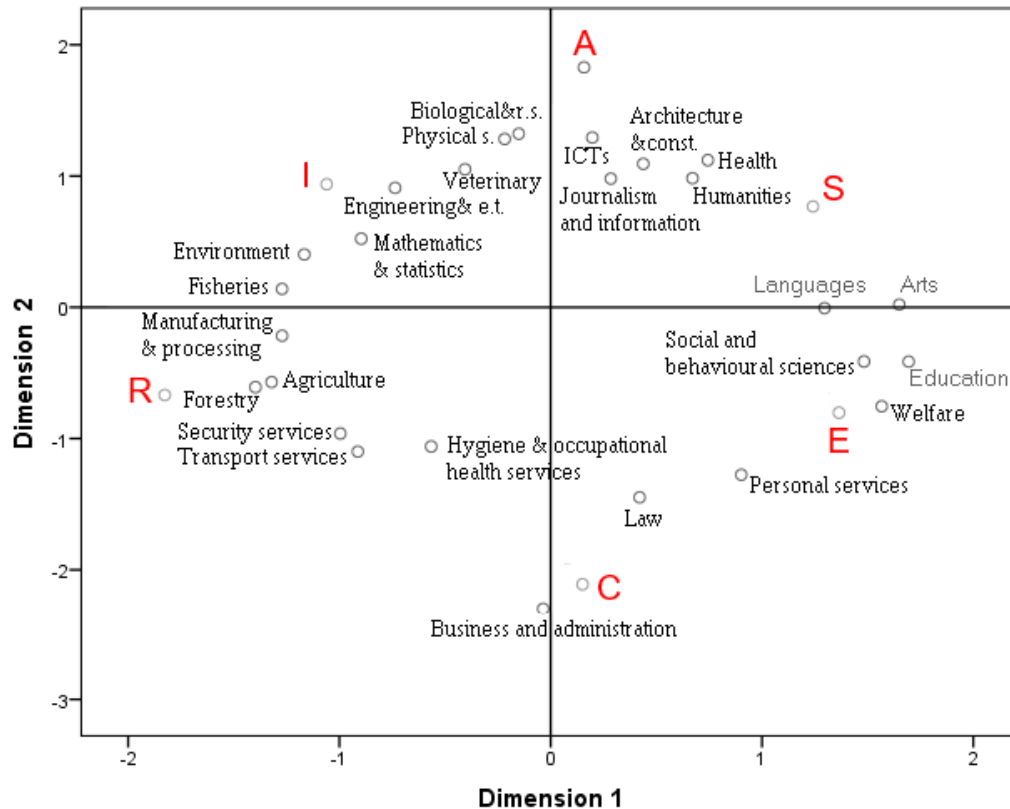
Figure 1. T /P – D / I Euclidean Distance Model Locations of ISCED Educational Fields

When Figure 1 is examined, it appears that in the Things pole there are educational fields such as forestry, agriculture, fishery products, engineering and mathematics where usually objects are used. Contrary to this, in the People's pole, there are educational fields such as education, social work and behavioral sciences which include activities such as informing, motivation and education in accordance with Prediger's (1981) explanations. Education fields on accounts, records and business processes such as business and management and law are included in the Ideas pole in the direction of the same explanations. Educational fields such as abstract subjects based on information, theories, biology involving working on concepts, physical sciences, information communication technologies, etc. are also in the Ideas pole that include these concepts as they are expected. In general, it is seen that educational fields are located in the appropriate regions in the D/I - T/P dimensions (see ACT, 2009; Armstrong, Deng & Rounds, 2007; Prediger, 1981; Prediger & Swaney, 2004).

Considering Holland's (1997) explanations of RIASEC types, it was seen that the educational fields were also in the appropriate regions for explaining the theoretical types. For example, in the Investigator type zone, which focuses on the investigation of observational, symbolic, systematic, physical, biological and cultural phenomena, appropriate exploration, mathematics and veterinary fields are located in these explanations. In the findings, a number of incompatible conclusions with Holland's theory (1997) were reached. As we have seen in this research, nine of the 26 ISCED educational fields are located between Realistic and Conventional types, and the distance between these two types is the highest distance when compared with the other types. This inconsistency with the theoretical structure may have been due to the disorder in the Conventional and Realistic types as indicated by Tracey and Rounds (1995) and Prediger or as Reardon and Bertoch (2011) have reported educational and academic environments may have limited options for these two personality types.

3.2. Findings of the Second Research Sample

3.2.1. Interests of College Students
Based on the data obtained from the second research sample, locations of D/I - T/P dimensions were determined according to the mean interest scores of the educational programs and compared with the areas on a two dimensional solution (see Table 3).

Table 3: D/I - T/P Dimensions Mean Scores of the Second Research Sample

Nr	Educational Field	Dimension-1 Data/Ideas	Dimension-2 Things/People
1	Family and Consumer Sciences	.8329	.8210
2	German Language and Literature	-1.1973	.7575
3	Computer and Instructional Technology Education	-.7931	-.7067
4	Electrical engineering	1.4921	-1.3282
5	Science Education	-.6086	.9026
6	Physical Therapy and Rehabilitation	-.2737	-1.0739
7	Food Engineering	-1.0561	-.9710
8	Law	1.0396	.8270
9	Math	1.8319	.3178
10	Psychological Counseling and Guidance	-1.2677	.4539

The stress value calculated according to the Kruskal stress formula in the MDS findings of the second research sample's interests was found to be .01972 for three-dimensional solution and .12845 for two-dimensional solution. The value of R^2 obtained explains 99.82% ($R^2 = .9982$) of the change for three-dimensional solution and 89.51% ($R^2 = .8951$) of the change for two-dimensional solution according to the stress value. In the second research sample, a two-dimensional representation was chosen for the same reasons explained in the first research sample findings section. The stress value obtained in two-dimensional display indicates poor fit according to criteria in related literature (see Hout, Papesh, & Goldinger, 2015; Mead, 1992; Özdamar, 2004; Takane, Young, & De Leeuw, 1977). Second research sample's interest scores about the distance and closeness between two variables in two-dimensional space were examined and this representation is presented in Figure 2.
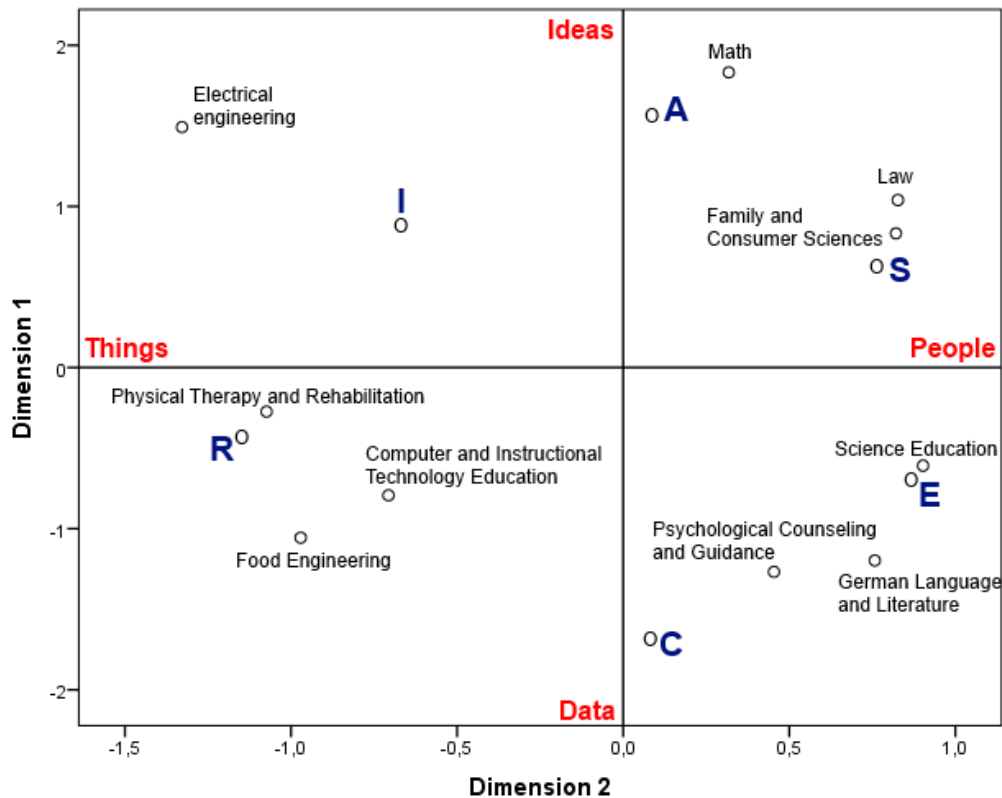
Figure 2. Relations of the Education Programs in the Second Research Sample in D/I - T/P Dimensions According to Euclidean Distance Model

Other than some inappropriate findings with the theoretical explanations in the positioning of the higher education programs in the D/I - T/P dimensions, some of the programs' interest characteristics were found to be mismatching with their presumed environmental models. Tracey and Rounds (1995) and Prediger (2000) also report that the vague structure revealed by the Realistic and Conventional types in Holland's theory is apparent. Particularly positioning of Psychological Counseling and Guidance and Computer Education Technologies programs in Conventional and Realistic types regions does not match the theoretical explanations of Holland (1997). While Psychological Counseling and Guidance program is expected to be close to the Social type and the Computer Education Technologies program to the Investigative type, these programs are located closer to other relatively irrelevant types. These inconsistencies may also depend on factors that influence participants' selection of the tertiary program, other than limited work experience. Participants may have chosen their program utilizing their higher education entrance exam scores rather than considering their area of interest. Other factors, such as employment opportunities of the program, may also be considered as more important than their interests. For these reasons, one of the comprehensible interpretations that can be brought to this research sample findings is that college students do not make choices according to their interests while selecting a higher education program.

3.2.2. Competence Beliefs of College Students
Based on the data obtained from the second research sample, D/I - T/P dimensions were determined according to participants' from 10 educational programs mean scores of competence beliefs (see Table 4).

Table 4: D/I - T/P Dimensions Competence Beliefs Mean Scores of the Second Research Sample

Nr	Educational program	Dimension-1 Data/Ideas	Dimension-2 Things/People
1	Family and Consumer Sciences	.4124	1.1662
2	German Language and Literature	-1.8270	-.6988
3	Computer and Instructional Technology Education	.4090	1.1811
4	Electrical engineering	1.2594	-1.0634
5	Science Education	-.8474	.5743
6	Physical Therapy and Rehabilitation	.6885	.7813
7	Food Engineering	-1.1521	-.8419
8	Law	.9925	-.0640
9	Math	1.3748	-1.2469
10	Psychological Counseling and Guidance	-1.3102	.2122

The stress value calculated according to the Kruskal stress formula in the MDS findings applied to the competence beliefs scores of the second research sample was found to be .01527 for three-dimensional solution and ,16945 for two-dimensional solution. The value of R^2 obtained explained 99.8% (R^2 = .99852) of three-dimensional solution and 89.5% (R^2 = .83863) of two dimensional solution according to the stress value. For the second research sample's competence beliefs data a two-dimensional representation is preferred for the same reasons explained above. Stress value obtained in two-dimensional display indicated poor fit (see Hout, Papesh, & Goldinger, 2015; Mead, 1992; Özdamar, 2004; Takane, Young, & De Leeuw, 1977). Two-dimensional representation of the distance between the competence beliefs scores of the second research sample were investigated and this representation is presented in Figure 3.

When examining the competence beliefs of the educational programs in the second research sample using D/I - T/P poles, significant differences are noticed according to participants' interests. For example, mathematics program is closer to the Investigative type in terms of competence beliefs while it is close to the Artistic type in terms of interests. It is seen that the activities in the mathematics program are based on the activities that are related with the use of creativity, but the activities they perform are mostly the activities of the Investigative type. This differential between interests and competence beliefs shows that there is not a single factor effecting major selection in higher education and that all of the relevant factors must be evaluated together.
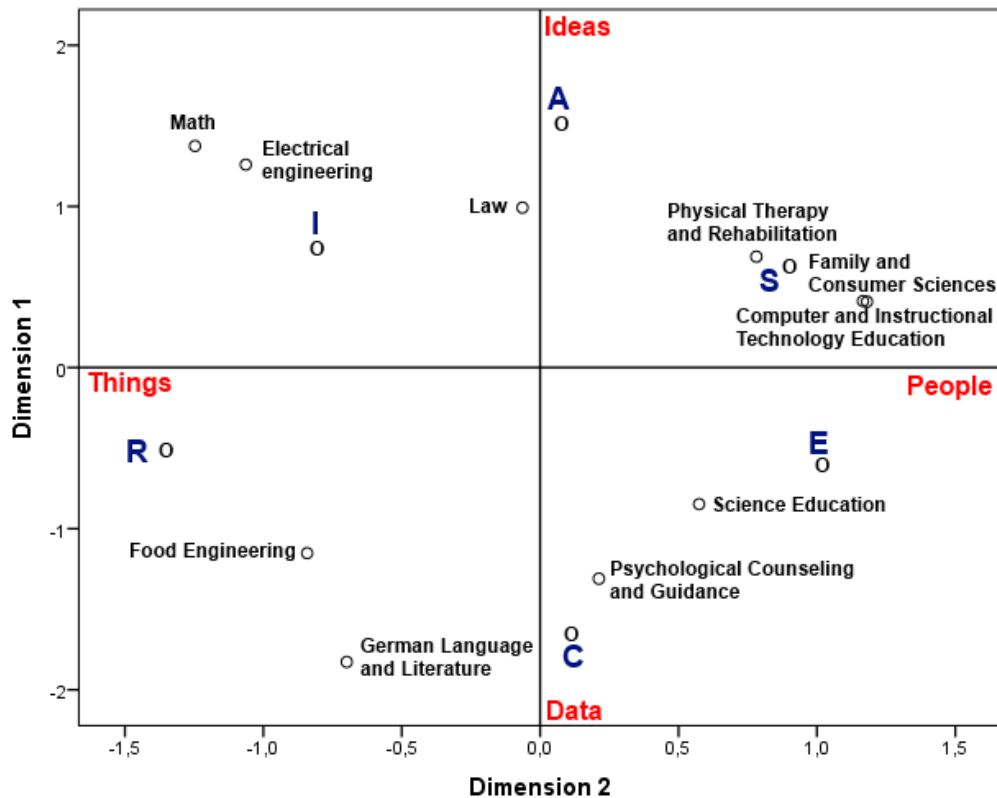
Figure 3. Competence Beliefs of the Educational Programs in Second Research Sample Using D/I - T/P Poles According to Euclidean Distance Model

4. Conclusion

There are many researches related to Holland's personality types theory, the measurement tools developed on the basis of this theory and the hexagonal structure pointed out by theory, but research on the conceptualization of environmental models remains limited (Spokane & Cruza-Guet, 2005). With this research, the environmental characteristics of the ISCED broad fields in relation with the interest areas and competence beliefs have been revealed in order to serve as a guide to the career counselors who will assist the clients while choosing a higher education program in the future. At the end of the research, a visual representation including the core education and training fields of ISCED-2013 classification system is described which might be helpful when Holland's theory (1997) based measurement tools used during the transition to higher education.

Educational fields are found to be characterized by their general characteristics, including interests and competence beliefs, and are located in regions consistent with Prediger's D/I - T/P dimensions and Holland's RIASEC typology explanations to a certain extent. However, particularly in Conventional and Realistic type regions, some of these positions have been found to be incongruous, and this finding might be a result of relatively broad structural definition of RIASEC and ISCED education fields. With the data of the second research sample, in which it was investigated if the actual state reflects the ideal state or not in terms of both interests and competence beliefs, two-dimensional representation showed a poor fit and inadequate positioning which is not in accordance with the theoretical explanations. It is concluded that, currently interests and competence beliefs are not the key considerations for students when choosing a higher education program and the current environmental models partly correspond with their respective theoretical explanations.

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Some other suggestions especially for field practitioners may be presented, which point out the results of this study. The findings of the research point to the mismatch between college students' interests and abilities and the program they are in. This differentiation between interests and perceived skills shows that a single feature (eg entrance exam score) is not sufficient in the selection of programs in higher education, and all relevant factors should be evaluated together. For this reason, it is beneficial to consider other characteristics (interests, values, etc.) of the candidates by psychological counselors.

Another suggestion can be considered regarding the interpretation of the scores of interest inventories. Determining an environmental model such as ISCED in this study in directing to the selection of the area on a visual structure can help the clients to make more accurate decisions. With this in mind, while evaluating the results obtained from clients' interest inventories, instead of directing the client to a definite or single program or profession, it may be more beneficial to use broader vocational fields as they were mapped in this research

This study also has some important limitations. First of all, there are many factors that may affect vocational choices, as well as some participant characteristics that may affect the findings of this research. As reported, characteristics of the sample may also lead to differentiation in Holland's RIASEC structure (Rounds and Tracey, 1993). Although the parameters such as college entrance year and grade level are important to affect the findings, such data collected in the study were excluded from the scope of the research because they were not in a sufficient number to demonstrate the generalizability of these variables. For this reason, these research results should be used cautiously especially considering that grade level can affect the differentiation of students' interests and abilities.

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Validity and Reliability Study of the Negative Maintenance Scale to the Turkish Young Adults

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Abstract
The purpose of this work is to carry out the Turkish validity and reliability study of the Negative Maintenance Scale (NMS) developed by Dainton and Gross (2008). The research was conducted with a total of 505 students, 352 female and 153 male, who are first, second, third, and fourth year students enrolled in various departments of the Faculty of Education of Dokuz Eylül University. The six-factor structure of the scale was tested by confirmatory factor analysis. The obtained findings validated the six-factor structure of the NMS. The language validity of the scale was also examined. The reliability of the NMS was measured with test-retest reliability and internal consistency methods. Results indicated that the NMS is a valid and reliable measurement tool for assessing the maintenance strategies of negative relationships in young adults.

Keywords: negative, relationships, maintenance, confirmatory factor analysis, reliability

1. Introduction

Maintaining a relationship has been defined as behavioral dynamics that help preserve a relationship (Dindia, 2000, pp. 287-299). The maintenance of relationships is deemed as comprising intertwined behaviors in order to ensure the continuity of a valuable relationship, to prevent the weakening of a relationship, and to improve or repair and restore a relationship (Stafford, 1994). These behaviors are separated into two categories of routine and strategic (Dainton & Stafford, 1993). Routine behaviors are behaviors involving daily interactions that implicitly serve the purpose of the relationship maintenance function without the intention of maintaining the relationship. However, strategic behaviors are behaviors that have a certain intention of maintaining the relationship (Dainton & Strafford, 1993). According to Canary and Stafford (1992), relationship maintenance behaviors consist of five main behaviors. These are positivity (being joyful and positive behaviors towards the partner, not criticizing), openness (self-expression and talking about the relationship), assurances (commitment, love, and loyalty), social networks (providing support and making the relationship more fun), and task-sharing (responsibilities for the continuance of the relationship) (Canary & Stafford, 1992). Stafford, Dainton and Haas, (2000) later expanded these behaviors by adding two more. The first one of these behaviors is giving advice, defined as expressing the thoughts and feelings that partners have regarding each other. The second behavior is conflict management, which refers to the use of unifying behavior against conflict.

Over the course of about 30 years, research has focused on maintaining relationships in different contexts such as marriage (Adams & Baptist, 2012; Dainton, 2015; Ramirez, 2008; Weigel & Ballard-Reisch, 2008), gay couples (Gutierrez, 2004; Haas & Stafford, 2005; Ogolsky, 2009), friendships (Messman, Canary & Hause, 2000; Oswald & Clark, 2006), and sibling relationships (Myers & Goodboy, 2010). In addition, the results of other research on the subject indicated that maintaining relationships strongly presumes important relationship features such as loyalty, relationship satisfaction, relationship stability, interest, and love (Canary, Stafford & Semic, 2002; Ogolsky & Bowers, 2013; Weiser & Weigel, 2016). In studies that examined the relationships between attachment styles and relationship maintenance behaviors, there was a positive relationship between the attachment style and relationship-maintaining behaviors (Dainton, 2007), and there was a negative relationship between disinterested attachment, anxious attachment styles, and relationship-maintaining behaviors (Adams & Baptist, 2012; Dainton, 2007).

However, not all relationship maintenance behaviors are positive social behaviors. Some antisocial behaviors may be functional for couples to maintain their relationships. Previous research results on the subject revealed that individuals use avoidance and antisocial strategies to maintain their relationships (Ayres, 1983; Dainton & Stafford, 1993; Dindia & Baxter, 1987; Guerro & Chavez, 2005; Messman, Canary & Hause, 2000). Ayres (1983) identified avoidance as one of these behaviors. Later, Dainton and Stafford (1993) determined that couples use avoidance and antisocial behavior strategies (lack of discussion, self-expression) to maintain romantic relationships. In addition, Messman, Canary, and Hause (2000) found that avoidance and indirect behaviors are used as two strategies by individuals in order to maintain their platonic friendships. Guerrero and Chavez (2005) determined that antisocial behavior is used to maintain opposite-sex friendships. Dainton and Gross (2008), as a result of their work with 188 undergraduate and graduate students, discovered that couples use 6 negative behaviors to maintain their relationships: jealousy induction (trying to make their partner jealous), avoidance (avoiding their partner or certain issues), destructive conflicts (starting a fight), allowing control (allowing the partner to plan or decide), spying (looking for specific information about their partners), and infidelity (having another relationship). The couples that maintain their relationships by using such behaviors usually report a lower level of liking, satisfaction, respect, mutual control, and fidelity (Goodboy, Meyers & Communication Research Members, 2010).

Most of the research that concentrates on interpersonal relationships has focused on negative behaviors such as abuse, rape, destructive conflict, and cheating, but has neglected the fact that such behaviors are also used to maintain the relationship by some couples (Goodboy, Myers & Communications Research Members, 2010). However, previous research did observe that couples use antisocial behaviors such as arguing, over-testing, and giving ultimatums to maintain their relationships (Baxter & Dindia, 1990; Dindia & Baxter, 1987).

The negative behaviors revealed by Dainton and Gross (2008) mean that individuals use these negative behaviors with the desire of maintaining their current relationships. Previous research indicated that jealousy can be used as a tactic of occupying the partner's mind (Buss, 1988). Destructive conflict beliefs are associated with self-centered or partner-centered relationship goals (Simon, Kobielski & Martin, 2008). Spying can be a method of dealing with uncertainties in the relationship (Bevan & Tidgewell, 2009). Avoidance of partners may increase partner satisfaction (Caughlin, 2002). Allowing oneself to be controlled by one's partner can allow the partner's need for interpersonal control to be met (Schutz, 1966). Infidelity, on the other hand, can help one of the partners fulfill their physical and emotional needs outside of the relationship (Roscoe, Cavanaugh & Kennedy, 1988). When all these research results are considered together, it is observed that although these negative behaviors are labeled as antisocial behaviors, they also help maintain relationships.

Dainton and Gross (2008) not only determined that there are inverse relationships between negative relationship maintenance behaviors and satisfaction. They also established that there is an inverse relationship between negative relationship maintenance behaviors and positive relationship maintenance behaviors. However, they found that negative relationship maintenance behaviors are a determinant of low-quality relationships.

Close relationships are influenced by the common beliefs, norms, and symbols of societies. Therefore, it is necessary to understand cultural foundations and values in order to comprehend relationship maintenance behaviors. Low-context cultures (e.g., Japan, China) place much greater importance on personal relationships and indirect communication exists more in these cultures than in higher-context cultures (e.g., Germany, Sweden). There are clear messages and strategies in high-context individualist cultures and these are used more than in collectivist cultures (Canary & Yum, 2016, pp. 1-9). Considering all these points, it is important to examine the studies on relationship maintenance in different cultures.

There is no study in the related literature on relationship maintenance in Turkey, except for the adaptation of the Positive Relationship Maintenance Scale to Turkish culture (Öz Soysal, Uz Baş & Aysan, 2019). It is therefore believed that it is important to introduce a measurement tool related to the maintenance of negative relationships in Turkey. The purpose of this work is to carry out the validity and reliability study of the Negative Maintenance Scale developed by Dainton and Gross (2008) and adapt it to Turkish.

2. Method

2.1. Study Group
The participants of the study consisted of first, second, third, and fourth year students from various departments of the Dokuz Eylül University Buca Faculty of Education, who were continuing their education and training in the 2019-2020 academic year. The ages of the participants ranged between 19 and 25, with 367 students (average age = 21.03, SD = 0.05), of which 352 (69.7%) were female (average age = 20.08, SD = 1.3) and 153 (30.3%) were male (average age = 21.17, SD = 1.25).

2.2. Instrument

2.2.1. Negative Maintenance Scale
The scale developed by Dainton and Gross (2008) consists of 20 items. Scale items are Likert-type and are scored between 1 (strongly disagree) and 7 (totally agree). The scale has six factors. These are jealousy induction (two items, e.g., "I flirt with others to make my partner jealous"), avoidance (four items, e.g., "I avoid matters that cause controversy"), spying (three items, e.g., "I check my partner's email and telephone messages"), infidelity (three items, e.g., "I flirt with others to avoid getting bored"), destructive conflict (four items, e.g., "I fight with my partner when I am sad"), and allowing control (five items, e.g., "I quit the activities I enjoyed because my partner did not like them") (Dainton & Gross, 2008). The scale was applied to 151 people with an average age of 39.4 (SD = 12.78). The results according to the Cronbach alpha coefficients of each individual factor were respectively found as 0.89 for jealousy, 0.86 for avoidance, 0.77 for spying, 0.80 for infidelity, 0.77 for destructive conflict, and 0.74 for allowing control (Dainton & Gross, 2008).

2.3. Process
First of all, permission was requested from the researchers who developed the scale in order to adapt it to the Turkish culture. Later, the scale was translated into Turkish by the researcher. These translations were reexamined by three faculty members who had at least a PhD in Psychological

Counseling and Guidance and who had a good command of both their mother tongue and English. The items of the scale were rearranged in line with the feedback obtained. The scale was then re-delivered to these faculty members for re-assessment. The scale was finalized by taking into account the final assessments of the faculty members and the compliance with the items. The adapted Turkish form and the original form of the scale were applied with 3-week intervals to 60 individuals, who were fourth year students of the Dokuz Eylül University Buca Faculty of Education, Department of English Teaching, in order to determine the language validity of the Negative Maintenance Scale (NMS). The scale was also reapplied to another group of 132 people with 2-week intervals in order to investigate the reliability of the scale and the reliability of test repetition.

It took about 10-15 minutes for students to complete the scale. The implementation was carried out by the researcher.

2.4. Data Analysis
The data obtained from the scales were transferred to SPSS 23.0 in order to conduct the reliability and validity analysis of the Turkish version of the NMS. Confirmatory factor analysis (CFA) was carried out in order to determine the validity of the structure of the scale. The AMOS 24 package program was used in the CFA analysis. The Cronbach alpha coefficient of each factor was calculated first in order to analyze the reliability of the scale. SPSS 23.0 was used to calculate the Cronbach alpha coefficient.

3. Findings
Before analyzing the validity and reliability of the NMS, some descriptive statistics were calculated, as shown in Table 1.

Table 1. Descriptive Statistics on the Overall and Individual Factor Scores of the Negative Maintenance Scale

Factors					Skewness		Kurtosis	
	n	$\overline{X}$	S_x	$S_x{}^2$	Coefficient	Se	Coefficient	Se
Jealousy	505	5.5	0.1	0.01	1.1	0.1	0.5	0.2
Avoidance	505	16.3	0.2	0.04	-0.2	0.1	-1.2	0.2
Spying	505	9.9	0.2	0.04	0.7	0.1	-1.0	0.2
Infidelity	505	9.1	0.1	0.01	-0.2	0.1	- 1.0	0.2
Destructive conflict	505	12.9	0.2	0.04	1.1	0.1	0.7	0.2
Allowing control	505	21.1	0.2	5.29	-0.5	0.1	-1.1	0.2

When Table 1 is examined, it is observed that the average scores of the scale vary between 5.5 and 21.08. The coefficients of skewness are between -0.2 and 1.1 and the coefficients of kurtosis are between -0.5 and -1.2. According to Tabachnic and Fidell (2015, pp. 78-82), the coefficients of skewness and kurtosis being ±1.5 indicates that the data are normally distributed. When the obtained values are examined, it is concluded that the data meet the normal distribution assumption.

3.1. Language Validity
The adapted Turkish form and the original form of the scale were applied with 3-week intervals to 52 individuals who were fourth year students of the Dokuz Eylül University Buca Faculty of Education, Department of English Teaching, in order to determine the language validity of the NMS. The correlation coefficient obtained as a result of the two applications was 0.83. This indicates that the adapted form of the scale and the original form measure the same structure.

3. 2. Structural Validity

The original scale developed by Dainton and Gross (2008) has six factors. One of the aims of this study is to test the structural validity of the Turkish form of the original six-factor structure. Therefore, CFA was used and the first analyses were carried out to test the original six-factor structure.

Based on the data of 505 respondents, t-values and model-data fit indices were calculated to test the significance of the diagram and standardized factor loads and significance of factor loads for the six-factor model. The indexes showing the model-data fit for the six-factor structure of the scale are provided in Table 2.

Table 2. Values for Negative Maintenance Scale Goodness of Fit Indices

χ^2/SD	NFI	IFI	CFI	GFI	AGFI	RMSEA
1.9	0.90	0.95	0.94	0.94	0.92	0.04

The chi-square (χ^2/SD) value of the fitness indices given in Table 2 being between 0 and 2 can be interpreted as evidence of the model being good (Schermelleh-Engel & Moosbrugger, 2003). In this case, the calculated chi-square value ($\chi^2/SD = 3.6$, $p < 0.05$) can be interpreted as the model having a good fitness level. On the other hand, fit indices of NFI, IFI, CFI, GFI, and AGFI being larger than or equal to 0.90 also indicates a good fitness level. If the value of the RMSEA index is less than or equal to 0.05, it means good fitness, while values between 0.05 and 0.10 mean an acceptable fit (Haigh, Moore, Kashdan & Fresco, 2011; Schermelleh-Engel & Moosbrugger, 2003). According to this information, it can be stated that the model has a good fitness level according to the NFI (0.90), IFI (0.95), CFI (0.94), GFI (0.94), AGFI (0.92), and RMSEA (0.04) indices calculated related to the six-factor structure of the NMS. A diagram of the CFA applied within the scope of the NMS validity study is shown in Figure 1.

3.3. Reliability of the NMS

Reliability is defined as a measurement tool to give precise, consistent measurements that are also free of random errors (Yurdabakan, 2008, pp. 38-66). In the current study, the reliability of the NMS was examined by test repetition and Cronbach alpha internal consistency estimation methods. For this purpose, the scale was applied to a group of 132 individuals at 2-week intervals by providing the necessary conditions, and the test repetition reliability coefficient was calculated as 0.84 ($p < 0.01$). Cronbach alpha reliability coefficients calculated according to the internal consistency estimation method of the scale were calculated separately for both the total scale and its six factors, and the results are presented in Table 3.

Table 3. Negative Maintenance Scale Reliability Coefficients

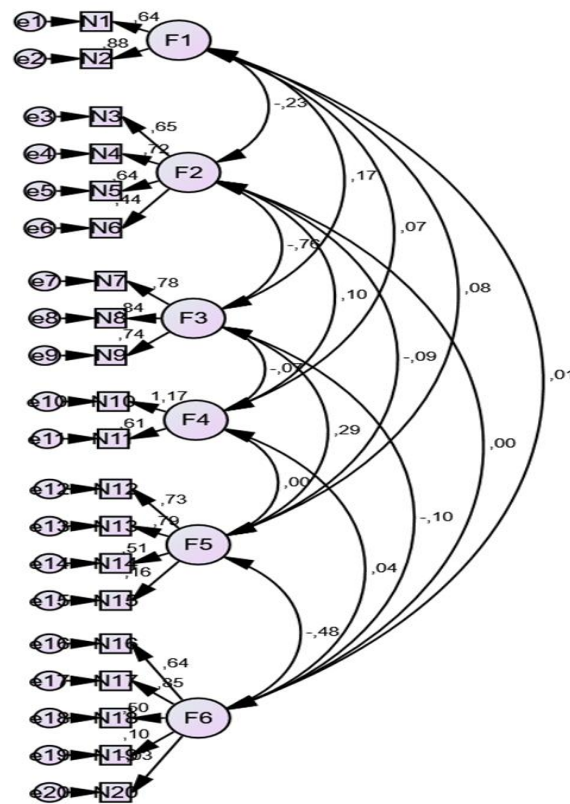| Factors	Internal Consistency Reliability Coefficient
Jealousy	0.72
Avoidance	0.70
Spying	0.82
Infidelity	0.83
Destructive conflict	0.78
Allowing control	0.74

Figure 1. . Negative Maintenance Scale Path Diagram

4. Discussion and Conclusion

The purpose of this study was to establish the validity and reliability of the NMS developed by Dainton and Gross (2008) and to adapt it to Turkish. Structural validity and language validity studies were conducted in order to achieve this goal. Internal consistency and test-retest reliability coefficients were calculated to determine the reliability of the scale.

CFA was conducted in order to obtain evidence of the structural validity of the scale. As a result of this analysis, acceptable levels of model-data fit indices were obtained. The original six-factor structure of the scale was confirmed by Turkish students at the same time that the CFA was carried out. In the study conducted for the language validity of the scale, the coefficient obtained as a result of two applications was determined as 0.83. This indicates that the adapted form of the scale and the original form measure the same structure.

The internal consistency coefficient of NMS, consisting of a total of 20 items, was calculated according to its six factors, yielding a coefficient of 0.72 for jealousy, 0.70 for avoidance, 0.82 for spying, 0.83 for infidelity, 0.78 for destructive conflict, and 0.7 for allowing control. The obtained values indicate that the scale has high internal consistency. In addition, the correlation coefficient of 0.84 obtained as a part of the test-retest study was evaluated as another indicator that the scale was reliable.

In this study, some psychometric characteristics of the NMS were examined and the findings showed that the tool is usable. However, this research has some limitations. The subjects included in the sample are only unmarried students studying in the Dokuz Eylül University Faculty of

Education. In future studies, sample groups with different ages and different marital statuses in different provinces would help offer more information about the NMS.

The NMS can be used by psychological counselors and marriage and family counselors. It can contribute to experimental studies being carried out with individuals about maintaining relationships, especially in the pre-marital counseling process. At the same time, it can facilitate the examination of the purpose of the relations between subjects, as well as their attachment and communication styles. In addition, more research can be suggested on the most frequently used negative relationship maintenance behaviors in different types of relationships (such as sibling relationships or friendships).

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Healthful Behaviour During the Pandemic: Physical Distancing

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Abstract
The purpose of this naturalistic observation study was to observe, in a natural setting, the actions of shoppers at retail outlets. In doing so it was hoped that numerous behaviors could be observed that would indicate a level or extent of observance of physical distancing guidelines. It was found that the observed sample was often in compliance with physical distancing guidelines and avoiding contact with others while shopping in retail contexts. The wearing of masks was noted and the cleaning of hands upon entry and exiting was commonplace. Overall, the sample demonstrated an informed and obedient behavioural mode observing the advice from various levels of government.

Keywords: Naturalistic observation, COVID-19, physical distancing, shopping behaviour

1. Introduction

In North America people awoke to the news on January 30, 2020, that the World Health Organization had declared an outbreak of COVID-19. In Canada, the BC Centre for Disease Control (2020), a program of the Provincial Health Services Authority, providing provincial and national leadership in disease surveillance, detection, treatment, prevention and consultation stated that the,

> coronaviruses are a large family of viruses found mostly in animals. In humans, they can cause diseases ranging from the common cold to more severe diseases such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). The disease caused by the new coronavirus has been named COVID-19. (p.1)

The word pandemic was not commonplace in Canada, nor was the term COVID-19, yet in early 2020 the words were introduced to all, when the Government of Canada (2020) announced that COVID-19 is a public health event of international concern. On January 25, Canada confirmed its first case of COVID-19 related to travel in Wuhan, China (Government of Canada, 2020). The next day the government delivered a position in the media reporting that, Canada has implemented screening requirements of COVID-19 for travelers returning from China to major airports in Montréal, Toronto and Vancouver (Government of Canada, 2020). As the virus spread in other countries, and deaths occurred, governments around the world were alerted, and here in Canada on February 9, Canada expanded the "COVID-19 screening requirements for travelers returning

from affected areas to 10 airports across 6 provinces" (Government of Canada, 2020, p.1). This was necessary since the "worldwide COVID-19 pandemic, and efforts to contain it, represent a unique threat" (Galea, Merchant & Lurie, 2020, p. 1), to our health and well-being.

It was almost full month since the first COVID-19 was identified in Wuhan, China, that Canada confirms its first case related to travel outside mainland China on February 20, 2020 (Government of Canada, 2020). It was February 22 that this author travelled to Las Vegas to present at a conference in the United States and noted no safeguards in place at the Toronto, Ontario or Las Vegas, Nevada airports. Even upon return no precautions were seen at these same airports on February 27th, 2020. The provincial governments observed numbers of cases grow and then began to act yet it wasn't until March 30, 2020, that the Chief Medical Officer of Health, for all Ontario public health units strongly encouraged Ontarians to stay home, limit essential trips and obey physical distancing.

Over two months since the first reported case in Canada, the Government of Ontario announced on April 3rd, 2020 that they are issuing a new emergency order under the Emergency Management and Civil Protection Act, effective immediately, to provide public health units the authority and flexibility they need to make staffing decisions that support their ongoing fight against the outbreak of COVID-19, despite any collective agreements. As a result, public health units will be able to significantly expand their capacity to implement critical public health functions, such as case and contact management, through the use of volunteers, including the thousands of retired nurses and medical students who have signed up through the province's website.

The month of April saw all levels of Canadian government move quickly to flatten the curve of COVID-19 cases. Indeed, it was the provincial government action that allowed the Ministry of Health to move quicker and assertively to respond to the growing pandemic. Health Units would now be able to "significantly expand their capacity to implement critical public health functions, such as case and contact management, through the use of volunteers, including the thousands of retired nurses and medical students who have signed up through the province's website" (Government of Ontario, 2020, p.1). The pandemic which begin in China swept into all parts of Canada, and as of April 6, 2020, "280 deaths were reported in Canada with 16 probable cases and over 15,496 confirmed cases out of 324,791 people tested" (Government of Canada, 2020, p.1).

During this time of uncertainty, Canadians began showing more concern in how they shopped, dressed (wearing masks) and some remained in self-isolation. Terms such as lockdown, isolation and physical distancing became well known as all types of media sent cautionary messages to all Canadians. Physical Distancing (PD) means "limiting close contact with others. When outside of your home, practicing social distancing by keeping two meters (six feet) away from one another is something we can all do to help stop the spread of COVID-19" (British Columbia Centre for Disease Control, 2020, p.1). PD then became something that needed to be practiced and obeyed while out of doors and one enforcement team reported a decrease in the number of gatherings spotted in 20 high-use public parks during this weekend's enforcement blitz. After focusing on educating the public about physical distancing rules – any two people who don't live together and fail to stay two metres apart in a park or public square will be fined up to $1,000. (Now Staff, 2020, p.1)
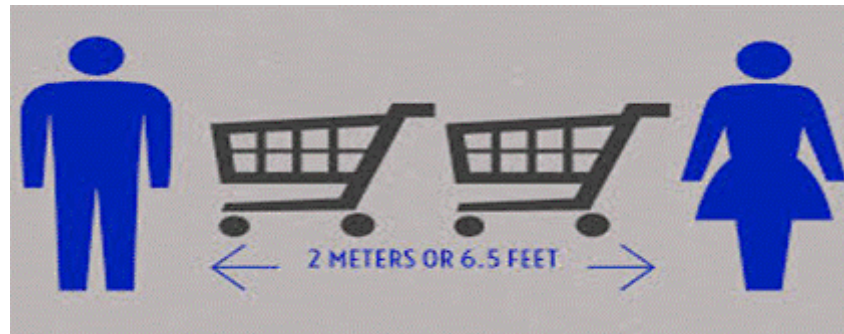
Figure 1. Physical Distancing (PD) – Essential shopping guidelines (Okotoks Online, 2020, p.1).

This enforcement it is believed heightened concern and the directive impacted Canadians, some of whom seemed to move online to shop, socialize and work, if possible, yet others enacted PD and a small minority were ticketed (fined) for not observing PD.

In addition to its impact on individuals and communities, "Coronavirus (COVID-19) has notably impacted retailers, 85% of Canadian consumers say their shopping behaviour has been impacted by Coronavirus" (Government of Canada, 2020, p.1). More than half (62%) experienced product shortages in the past week and Canadian consumers are most worried about job losses, product shortages, ability to go about normal routines (North Bay Parry Sound Health Unit, 2020, p.1). This is because the Ontario provincial government, following advice from Ontario's Chief Medical Officer of Health, on April 3, 2020, "Ontario updated the list of essential businesses that can remain open. The restrictions are aimed at further reducing contact between people and stopping the spread of COVID-19" (Government of Ontario, 2020b).

The Government of Canada (2020) claimed that Canadian consumers "cited impacts not previously listed, and the majority of these were related to "shopping less," "making fewer trips overall," or "only shopping for groceries" (p.1). This was a welcome reality since only essential businesses would be able to stay open and if people did not change shopping habits the remaining businesses would be overwhelmed by face-to-face consumers. Indeed, the provincial Government of Ontario (2020b) explained:

> For the purposes of this order, businesses include any for-profit, non-profit or other entity providing the goods and services described herein. This does not preclude the provision of work and services by entities not on this list either online, by telephone or by mail/delivery. This also does not preclude the operation or delivery of services of any publicly funded agency or organization that delivers or supports government operations and services, including operations and services of the health care sector. (p.1)

As well, in light of "Coronavirus, 29% of Canadian consumers say they are making online purchases when they normally would have shopped in-store" (Government of Canada, 2020, p.1). Of interest is that shoppers went online becoming digital as "nearly 1 in 10 Canadian consumers (9%) who made an online purchase in March said it was their first time ever or first time in the past six months shopping online" (Government of Canada, 2020, p.1). Yet, there was a continued need to shop for essential goods and services face-to-face, and this is where this study focused.

2. Purpose
The purpose of this investigation was to observe and decode consumers obeyance, interpretation, and shopping behaviour while in the midst of a pandemic; who were directed by various levels of

government to only shop for essential items while observing physical distancing guidelines as well as other safety protocols.

2.1. Questions
The principal research question asked: What is the impact of PD directives on the behavior of consumers? As well sub-questions asked: Would consumers obey and observe PD directives? Would consumers move to function in this pandemic as directed to PD?

2.2. Context
Context is linked to the purpose and perspective; the analyst "cannot avoid relying on inherited background assumptions, and these provide the context for what is observed" (Hammersley, 2008, p. 122). The current Naturalistic Observation (NO) qualitative study unfolded over four weeks and was situated within a small urban centre in Northern Ontario. The city and surrounding area tops 100,000 people and have a regional airport as well as a Trans-Canada highway running through the middle of the city. The city is home to a University, College and a military base while serving as a social service and health centre for the region.

Community-based studies often consider only do short-term effects of interventions (PD) however, being a qualitative NO there is a need to remind oneself and others that,

> the knowledge generated from a specific setting appears to be context specific and unique, it is often dismissed as too subjective and not useful for other settings; however, the specificity of the setting and the results that emerge from within can be informative rather than detracting. (Hammersley, 2008, p. 123)

Within this NO study and observing recent statistics put forward from regional health authorities in Ontario conclusions emerge wherein the tracking curve is flattening and eventually diminishing indicating policy measures such as physical distancing is have an impact on this pandemic. Physical distancing measures,

> are being put in place throughout Canada to help prevent and slow the spread of COVID-19 from person-to-person. This is important so a large number of people do not get sick at the same time. We all share in the responsibility to keep one another healthy. Physical distancing involves taking steps to limit the number of people you come into close contact with. This will help to limit the spread of COVID-19 in the community. The earlier these social actions start the better protected we will all be. Physical distancing does not mean you must stay in your home. You can still go outside to take a walk or walk your dog. If you need groceries, go to the store. We simply recommend that while outside you make sure to avoid crowds and maintain a distance of 2 meters (6 feet) from those around you. (North Bay Parry Sound Health Unit, 2020, p.1)

Again, physical distancing (PD) was observed in this study in a naturalistic mode.

2.3. Methodology
Historically, naturalistic observation (NO) has been described as the recording of behavior in natural settings by trained observers who describe what is observed and recorded (Jones, Reid, & Patterson, 1979). NO, may not interfere with the people observed (Angrosino 2005), and is often used as a pilot study leading to future investigation. Many famous researchers such as "Piaget showed the importance of naturalistic observation. . . he took detailed notes and filled journals, . . . continuing with the naturalistic approach with thousands of other children throughout his career "(Johnson, 2017, p.1). Piaget was demonstrating that observational research is actually a,

type of correlational (i.e., non-experimental) research in which a researcher observes ongoing behavior. . .. It is a social research technique that involves the direct observation of phenomena in their natural setting…. Naturalistic (or nonparticipant) observation has no intervention by a researcher. It is simply studying behaviors that occur naturally in natural contexts . . .. Importantly, in naturalistic observation, there is no attempt to manipulate variables. It permits measuring what behavior is really like. However, its typical limitations consist in its incapability exploring the actual causes of behaviors, and the impossibility to determine if a given observation is truly representative of whatnormally occurs. (Atlas.ti, 2018, p. 1)

This explanation by Atlas.ti (2018) is echoed by the Government of Canada (2017a) who believe NO is "does not include collecting personal information that will be disseminated with visual materials; and . . . there is no reasonable expectation of privacy among those being observed" (Government of Canada, 2017a, p. 1). This NO was completed over a four-week period (March 25th to April 25th, 2020) and did not require ethics approval.

One of the most popular modes of recording what is observed is to construct an anecdotal record of what is observed (Russell et al., 2011). Observers can impact what is observed if the sample population is aware, they are being observed (Creswell, 2007; Patton 2002). Although this can be a limitation, NO has a place in the development of both theory and praxis (Hintze, Volpe, Shapiro, 2008, p.993). NO excludes researcher impact and participant inaccuracy that may affect certain variables, since NO has social validity and "by noting the frequency of their occurrence in the natural setting, their relationship to important environmental antecedents and consequences can be examined systematically (Hintze, Volpe, Shapiro, 2008, p.996). NO has limited generalizability, doesn't seek to control variables and does not attempt to introduce cause-effect outcomes (McLeod, 2015). Data were recorded using a chart as displayed in Table one.

Table 1: Data Recording Chart – Two days (A-D & E-H)

Distancing Behavior	Frequency Person A	B	C	D	E	F	G	H	Total
Obeys 2 metre rule									
Touching face									
Cleaning Hands									
Mask (safety clothing)									
Touching others									
Stands with others									
Invades bubble of other									
Leaves line									
Sits–slow to move as line does									

The NO required the observer to record behaviors and events in a written fashion chronologically as they appeared in real time (Ryan, 2019). The interpretation was "limited to a descriptive account of the types of behaviors and events observed and their temporal ordering in time" (Hintze, Volpe, Shapiro, 2008, p.995). Because of the past experiences of the observer the notion of expertise was assigned to the observer (Ryan, 2019). The direct observation "does not suffer from selective recall and is considered the "gold standard" for assessment in medical and psychological research studying behavior in natural settings" (Intille et al., 2003 p.157). NO and its inherent direct observation provided a means to collect both qualitative and quantitative data (Intille et al., 2003).

2.4. Method

Within this community-based NO study I visually selected customers who were waiting in line outside four different essential businesses since all other non-essential businesses were ordered closed by our provincial government. I observed from my vehicle while parked in a parking lot approximately 50 meters from each participant. I chose to observe during peak times (9a.m. & 2 p.m.) when lines would be longest and observed the last four people in each line to ensure I could observe each person for the full five minutes; and each observed line moved in a measured and deliberate fashion.

The selection of participants aligns with the criterion-based purposeful sampling mode wherein the selection of cases satisfies an important criterion (Gall et al., 2007). Each of the observed waited in line and the measured and deliberate entry was ensured by door-people who controlled entry of each person. Essential businesses indicated PD on sidewalk line-up areas (chalk, tape, stickers), so it was easy to observe PD behaviour in relation to the sidewalk markings. Observations propose a firsthand account of the context investigated and the actions of participants (Merriam, 2009).

From the onset of this qualitative study my coding emerged from previous observations, which is common in NO studies, and these became a classification system (Glaser & Strauss, 1967), which were eventually used in each Table and Figure. Each consumer was observed during five-minute intervals and all four consumers at each site were observed over a four-day period for a total of 20 minutes of observation. I observed on a Wednesday, Thursday, Friday, and Saturday which proved to be busy shopping days. All data were complete and resulted in over 20 minutes daily at each of the four locations; equaling 80 minutes per day over four days for a total of 320 minutes of naturalistic observation with 32 people being observed (N=32). The research structure focused my attention while providing objectives, as I purposefully observed in a passive yet goal-oriented manner (Jones & Somekh, 2006).

As well as Tables, the first two days of observation were combined and in doing so allowed me to compare and contrast over time the PD behaviour of those observed on the first two days with data from the second two days, creating two Figures that highlight change.

2.5. Limitations

One of the limitations posed by naturalistic observation is the inclination to "over interpret" the data or make inferences (Hintze, Volpe, Shapiro, 2008, p.995). NO is often conducted on a small scale and may be biased (age, gender or ethnicity); this limits generalizability as variables cannot be controlled. This makes replication improbable as cause and effect relationships cannot be established (Creswell, 2007; McLeod, 2015). Given the purposeful sample size, the small scale of the sample may produce either an over or under representation of specific observations (Patton, 2002; McLeod, 2015).

3. Results

Overall, this research determined that NO of behaviors and interactions between individuals (N=32) was able to realize highly accurate data (Katz-Buonincontro & Anderson, 2018; McLeod, 2015). The naturalistic observation mode has played a significant role in the study of PD social behaviors, as this means of inquiry has generated important data (Beins, 1999), as was the case in this examination of PD. Observing from my vehicle approximately 50 meters from the line-up to enter an essential business, the sample (n=4) was observed and recorded as shown in Table two.

Table 2: Wal Mart Observation Day One and Two

Distancing Behavior	Frequency Person A	B	C	D	A	B	C	D	Total
Obeys 2 metre rule – 6.5'	yes	y	y	y	y	y/n	y	y	8y1n
Touching face	Yes 3x	1x	6x	no	1x	2x	1x	no	14y2n
Cleaning hands	no	yes	n	n	n	n	yes	no	2y6n
Mask (safety clothing)	yes	no	no	yes	no	no	yes	yes	4y4n
Touching others	Yes (partner)	no	no	no	no	no	Yes child	Yes child	3y5n
Stands with others	yes	no	no	no	no	no	Yes child	Yes child	3y5n
Invades bubble of other	no	no	no	no	no	no	Yes child	Yes child	2y6n
Leaves line	no	no	no	no	no	no	No	Yes Trade	1y7n
Sits–slow to move as line does	Yes 1x	no	no	no	no	no	no	Yes Child	2y6n

Examining Table two it is apparent that at the first NO site, eight of the observed seemed to obey the PD protocol (8y1n) with the six- and one-half foot perimeter in place as marked on the sidewalk of the essential business. Over-time most people observed did touch their face (14y2n) and only a few cleaned their hands while being observed (2y6n). Of the eight observed over the first two days mask wearing was 50/50 with half wearing a mask and half not wearing a mask (4y4n). Physical contact with others via touch was limited (3y5n) even though a few stood with others (3y5n) while in line. Of the observed some moved into the bubble of others (2y6n) while very few left the line during observation (1y7n). On occasion it was noted during the observation that people failed to move as the line moved forward (2y6n) however in each instance people moved quickly to establish PD once they were aware of the line movement.

Table 3: Canadian Tire Store Observation Day One and Two

Distancing Behavior	Frequency Person A	B	C	D	A	B	C	D	Total
Obeys 2 metre rule	yes	no	y	no	y	y/n	y	y	5y3n
Touching face	no	1x	no	no	1x	no	1x	no	3y5n
Cleaning Hands	yes	n	n	n	n	n	Y	no	2y6n
Mask (safety clothing)	no	no	no	yes	no	no	no	yes	2y6n
Touching others	no	no	no	no	no	no	no	yes	1y7n
Stands with others	Yes child	no	no	no	no	no	no	no	1y7n
Invades bubble of other	no	no	no	no	no	no	no	yes	1y7n
Leaves line	no	no	no	no	no	no	No	Yes Trade	1y7n
Sits–slow to move as line does	Yes 1x	no	no	no	no	no	no	Yes	2y6n

Examining Table three site two, eight of the observed maintained the PD protocol (5y3n) as marked on the sidewalk of the essential business. Over-time most did not touch their face (3y5n) and only a few cleaned their hands while being observed (2y6n). Of the eight observed over the first two days mask wearing few chose to wear a mask (2y6n). Physical contact with others via touch was limited (1y7n) even though a few stood with others (1y7n) while in line. Of the

observed some moved into the bubble of others (1y7n) while very few left the line during observation (1y7n). On occasion it was noted during the observation that people failed to move as the line moved forward (2y6n) however in each instance people moved quickly to establish PD once they were aware of the line movement.

Table 4: No Frills (Grocer) Day One and Two

Distancing Behavior	Frequency Person A	B	C	D	A	B	C	D	Total
Obeys 2 metre rule	yes	y	y	y	y	y/n	y	y	8y0n
Touching face	Yes 2x	1x	1x	no	no	2x	1x	no	7y3n
Cleaning Hands	no	yes	n	n	n	n	yes	no	2y6n
Mask (safety clothing)	yes	no	no	yes	no	no	yes	yes	4y4n
Touching others	no	no	no	no	no	no	no	yes	1y7n
Stands with others	yes	no	no	no	no	no	Yes child	Yes child	3y5n
Invades bubble of other	no	no	no	no	no	no	no	yes	1y7n
Leaves line	no	no	no	no	no	no	no	Yes Trade	1y7n
Sits–slow to move as line does	Yes 1x	no	Y1	no	no	no	no	Yes Child	3y5n

Examining Table two it is apparent that at the first NO site, eight of the observed seemed to obey the PD protocol (8y0n) with the six- and one-half foot perimeter in place as marked on the sidewalk of the essential business. Over-time most people observed did touch their face (7y3n) and only a few cleaned their hands while being observed (2y6n). Of the eight observed over the first two days mask wearing was 50/50 with half wearing a mask and half not wearing a mask (4y4n). Physical contact with others via touch was limited (1y7n) even though a few stood with others (3y5n) while in line. Of the observed some moved into the bubble of others (1y7n) while very few left the line during observation (1y7n). On occasion it was noted during the observation that people failed to move as the line moved forward (3y5n) however in each instance people moved quickly to establish PD once they were aware of the line movement.

Table 5: Food Basics (Grocer) Day One and Two

Distancing Behavior	Frequency Person A	B	C	D	A	B	C	D	Total
Obeys 2 metre rule	yes	y	y	y	y	y	y	y	8y0n
Touching face	Yes 1x	1x	1x	no	1x	3x	1x	no	8y2n
Cleaning Hands	no	no	n	n	n	n	yes	no	1y7n
Mask (safety clothing)	yes	no	no	yes	no	no	no	yes	3y5n
Touching others	Yes 1x	no	no	no	no	no	Y1 child	no	2y6n
Stands with others	no	no	no	no	no	no	Yes	Yes	2y6n
Invades bubble of other	no	no	no	no	no	no	no	yes	1y7n
Leaves line	no	no	no	no	no	no	No	No	8n
Sits – slow to move as line does	no	no	no	no	no	no	no	Yes	1y7n

Examining Table two it is apparent that at the first NO site, eight of the observed seemed to obey the PD protocol (8y0n) with the six- and one-half foot perimeter in place as marked on the sidewalk of the essential business. Over-time most people observed did touch their face (8y2n) and only a few cleaned their hands while being observed (1y7n). Of the eight observed over the first two days mask wearing was 50/50 with half wearing a mask and half not wearing a mask (3y5n). Physical contact with others via touch was limited (2y6n) even though a few stood with others (2y6n) while in line. Of the observed some moved into the bubble of others (1y7n) while none left the line during observation (8n). On occasion it was noted during the observation that people failed to move as the line moved forward (1y7n) however in each instance people moved quickly to establish PD once they were aware of the line movement.

The following figures illustrate summed PD observations. Figure two suggests most observed obeyed the PD protocol (29y4n). Most observed touched their face (32y12n) and few cleaned their hands (7y25n) while being observed in line. Mask wearing was frequent while over half did not wear a mask (13y19n). Physical touch of others was limited (9y23n) even though a few stood with others (11y21n) while in line. Some moved into the bubble of others (6y26n) while very few left the line (3y29n). Some failed to move as the line moved forward (7y25n) however people eventually moved to establish PD once they were aware of line movement.
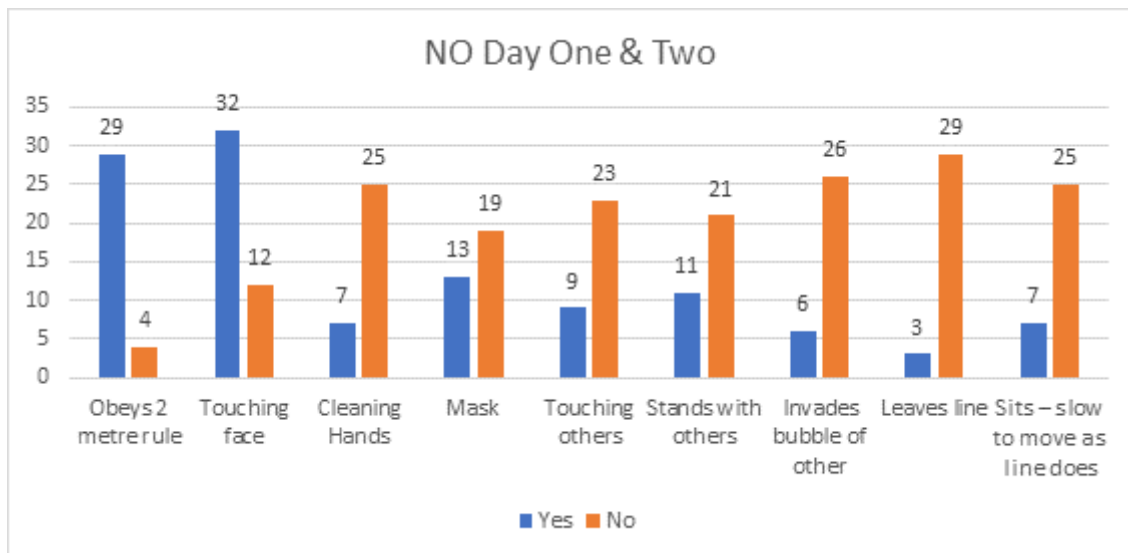

Figure 2. Summed Data (4 sites) First two days of observation

Figure three displays day three and four and indicates most obeyed the PD protocol (21y6n). Most observed touched their face (6y2n) and few cleaned their hands (3y28n). Mask wearing was frequent while over half did not wear a mask (7y15n). Physical touch of others was limited (5y29n) even though a few stood with others (3y25n) while in line. Some moved into the bubble of others (2y26n) while very few left the line (2y31n). Some failed to move as the line moved forward (3y28n) however people eventually moved to establish PD once they were aware of line movement.
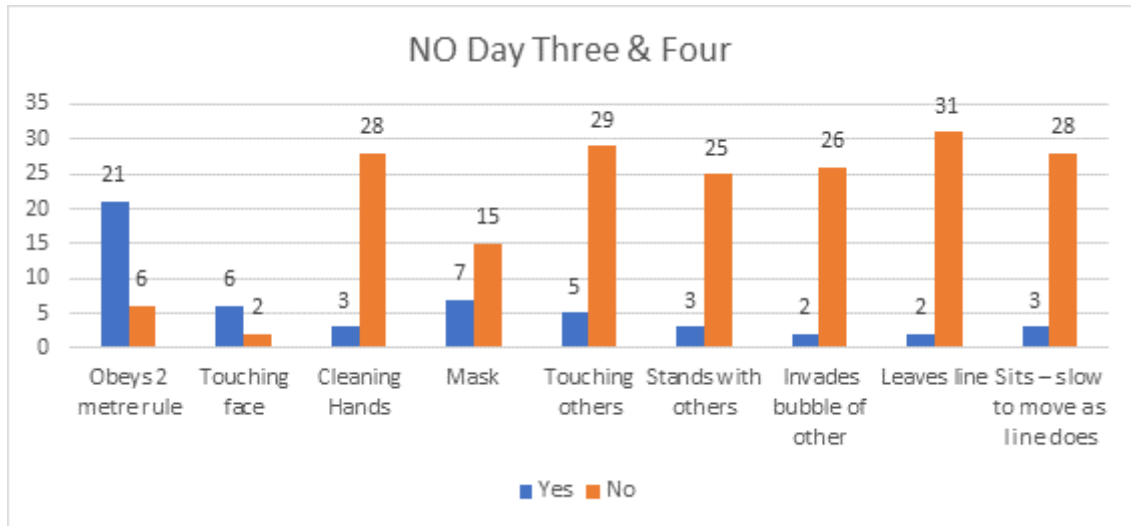
Figure 3. Day three and four Summed Data Note. Four sites - last two days of NO.

Figure four displays all four days of NO data. Most obeyed the PD protocol (50y10n). Most observed touched their face (38y14n) and few cleaned their hands (10y53n). Mask wearing was infrequent while over half did not wear a mask (20y34n). Physical touch of others was limited (14y52n) even though a few stood with others (14y46n) while in line. Some moved into the bubble of others (8y52n) while very few left the line (5y60n). Some of those observed failed to move as the line moved forward (10y53n) however, people eventually moved to establish PD once they were aware of line movement.
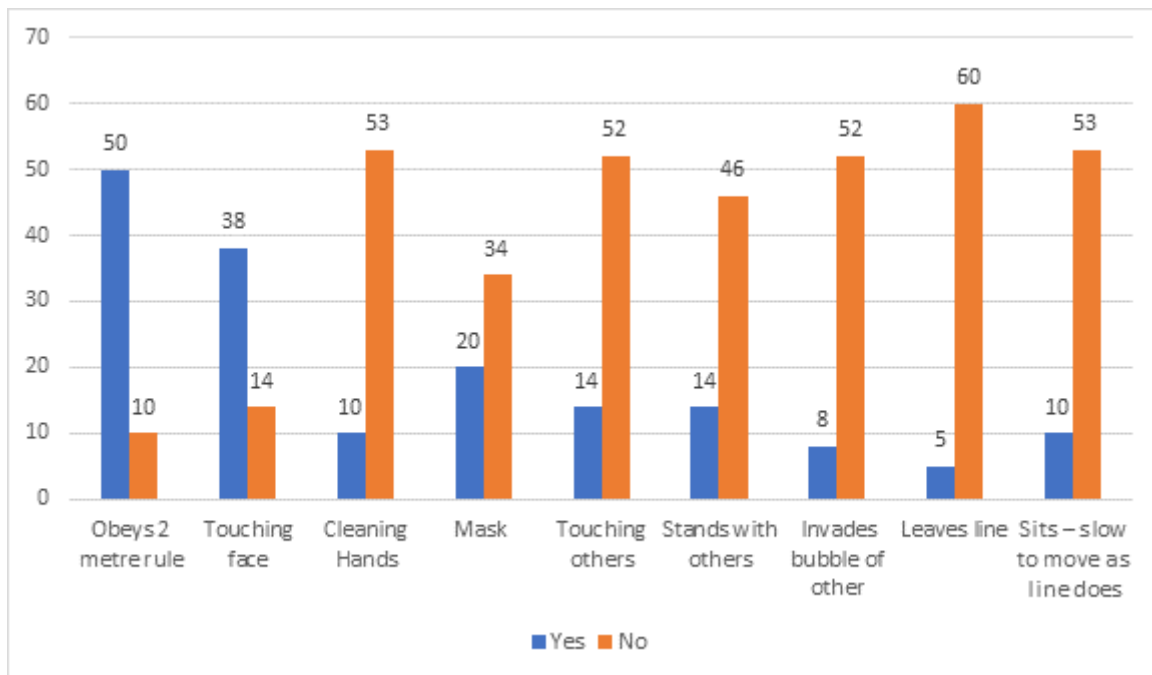

Figure 4. Summed NO Data of all Four Days - Note. All four sites and All four days of NO.

4. Discussion

This NO revolved around three questions. The first question asked: What is the impact of PD directives on the behavior of consumers? The second question asked: Would consumers comply and observe PD directives? Third, question asked: Would consumers grow to function in this pandemic as directed to PD? In order to address each of these questions NO data were collected in order to better understand this pandemic which "has brought unprecedented efforts to institute the practice of physical distancing (called in most cases "social distancing") in countries all over the world, resulting in changes in national behavioral patterns and shutdowns of usual day-to-day functioning" (Galea, Merchant & Lurie, 2020, p. 1).

Herein the purpose of this NO research was to observe consumers (N=32) interpreting and observing PD while in the midst of a pandemic. People were directed by various levels of government to only shop only for essential items while observing PD guidelines as well as observing other safety protocols mentioned in all modes of media. For instance, the Government of Canada (2020) requested that people "avoid touching your eyes, nose, or mouth with unwashed hands" (p.1), and people were reminded regularly: physical (social) distancing is a "provincial public health order — not a suggestion . . .. People ignoring the order, . . . could each be handed the $1,000 fine" (MacPherson, 2020, p.1).

The accumulated NO data led to the creation of Tables and Figures used herein, and these data were laid out (labelled) and organized according to what was observed. In particular Figure four indicates most people obeyed the PD protocol (50y10n) which addresses the third question looking at people functioning in the era of COVID19. This is a key finding since distancing and handwashing are critical behaviours (Cheng, Lam, Leung, 2020). As well, most did not heed the advice to avoid touched their face (38y14n) during this pandemic as COVID19 moved into the body via face touching, if the virus was on the hands. Due to the need to keep hands clean and virus free a few people in this NO were observed inline cleaning their hands (10y53n) before entry to the essential business.

Globally, countries, such as Canada, South Korea, and the Czech Republic, require and advise all to wear masks in public places. Research supports mass masking in this pandemic (Cheng, Lam, & Leung, 2020). Within this NO mask wearing was infrequent and over half did not wear a mask (20y34n) which addresses the first question within this study. Physical touching of others was limited (14y52n) even though a few stood with others (14y46n) while in line. These behaviours indicate that people are observing directives and responding as necessary. Some people, as observed, moved into the bubble of others (8y52n) while very few left the line (5y60n): Again, this evidence provides answers to the NO research questions leaving the impression that people are responding appropriately while PD. Some of the observed seemed to hesitate to move as the line moved forward (10y53n) however, people eventually moved to establish PD once again as they became aware of line movement. As the COVID-19 pandemic progresses, numerous debates emerge concerning human behaviour and the growing pandemic as it seems the health policy is evolving.

Human behaviour can be slow to change and implementation of PD demands abrupt change in behaviour which has been difficult for some, for instance: "This weekend, Municipal Licensing & Standards (MLS) officers issued 48 tickets to people using closed park amenities and not practising physical distancing – or 32 per cent of the total number of tickets issued since enforcement began on April 3" (Now Staff, 2020, p.1). While this study only looks at a select number of people, it can be suggested that most people were learning and becoming more observant of PD. For example, "officers spoke with 286 people regarding . . . social distancing, an 83 percent decrease from Friday [and] complaints. . . about people not following the rules. . . went down. . . by almost 39 percent from the previous day" (Now Staff, 2020, p.1). This is a trend

that seems to be evidenced in both Figure one and Two as behaviour is shifting toward PD obedience and other healthful behaviour.

Moving forward it is important to recall the response to the pandemic. Factually, on January 25, Canada confirmed "its first case of COVID-19 related to travel in Wuhan, China" (Government of Canada, 2020, p.1). The next steps for future research would be to explore and examine what was done and what could have been done to impacts outcomes. Our country did react quickly following the first case noted, in fact, the next day the government delivered a position in the media reporting that, "Canada implements screening requirements related to COVID-19 for travellers returning from China to major airports in Montréal, Toronto and Vancouver" (Government of Canada, 2020, p.1). Future research could observe what these next steps actually looked like in airports, and elsewhere to realize if early directives were being acted upon to the extent necessary. This is not the first serious virus to spread and take lives globally as history details past outbreaks, actions taken and outcomes.

5. Conclusion

Within the Northern Ontario context our region population is low and spread out with smaller urban areas. As well no area was not declared a COVID19 hotspot, yet people were careful in response to Health directives offered by three levels of government in the province of Ontario. Seeing people cover up with masks, businesses close and only essential services continue to operate over the past few months prompted this research. The objective was to observe in a natural setting the actions of consumers while shopping at essential businesses. The NO which unfolded over a period of days seems to indicate that consumers in this small (N=32) purposeful sample were observing directives and enacting PD protocols. Specifically, PD (social distancing) was observed by most people possibly due to the fact that it was widely reported that PD was having a positive impact on the region, Dr. Jim Chirico, medical officer of health with the health unit, claimed (Wilson, 2020). Moving forward, people should be confident that as long as others are behaving as required by law, the pandemic will further diminish in size in this region.

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