Describing and comparing pragmatic language skills of Turkish students with typical development and inclusive education students with mild intellectual disability

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Abstract

The purpose of this study is to describe and compare pragmatic language skills of Turkish students with typical development and inclusive education students with mild intellectual disability. Participants included 152 primary school students (75 students were students with typical development-STD, and 77 students were inclusive education students with mild intellectual disability-IES) aged between 5 and 12. Data were collected via Turkish version of Pragmatic Language Skills Inventory (TV-PLSI, Alev, Diken, Ardıç, Diken, Şekercioğlu and Gilliam, 2014). Results indicated that out of 75 students with typical development (STD), 58 (77,4 %) had average or above average pragmatic language skills whereas out of 77 inclusive education students (IES), only 17 (22,1 %) showed average or above average pragmatic language skills. More specifically, 60 (77,9) IES had below average, poor and very poor pragmatic language skills. Results on comparisons of two groups also revealed that students with typical development showed higher pragmatic language skills than inclusive education students with mild intellectual disability on total score and three subtest scores of the TV-PLSI. Suggestions were provided.

Keywords: Pragmatic language skills, Turkish students with intellectual disabilities, inclusion, typical students.

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INTRODUCTION

Describing and comparing pragmatic language skills of Turkish students with typical development and inclusive education students with mild intellectual disability Introduction

As pragmatics is an application area where the rules of the language are applied in social interactions with the purpose of communication and it involves applying the rules of the language and expressing communicative intentions during the conversation (Kuder, 1997), pragmatic language skills can be defined as the use of language according to the context (Bishop, 2000). Rather than the grammar rules and the content components of the language, pragmatic language skills involve the individual's ability to know exactly with whom, where, when and how to speak, conversational organization, topic maintenance, recovering the pauses/discontinuities in the conversation, the ability to take conversational turns and expressing communicative intentions clearly (Hatton, 1998; Ketelaars, 2010; Owens, 1999)

Spekman and Roth (1982) categorized pragmatic skills into three groups: communicative intentions, presupposition and conversational organization. While communicative intentions involve both the use of certain structures to express these intentions and understanding and expressing these intentions properly, presupposition involves determining the knowledge and social needs of the listener exactly and adaptation to the style and content of the message. Conversational organization involves topic maintenance, recovering the pauses/discontinuities in the conversation, and the ability to take conversational turns. The acquisition and use of pragmatic language skills in our daily lives continues to improve. The improvement of these skills taking root in infancy accelerates especially in preschool years and this improvement continues during the school years and the rest of our lives. Pragmatic language skills influences the quality of life directly in many ways such as the initiation of interaction and its maintenance, making new friendships, finding a job, leisure time activities and social acceptance.

Pragmatic language skills concern the acquisition and display of the ability to know when to speak or not to speak, when to speak to whom, where and how to speak rather than more formal language skills such as grammar and meaning. Moreover, in addition to being an individual right of those with intellectual disability, pragmatic language skills deal with these people's quality of life and problems related to the services offered to them. Cognitive ability has an important role in the acquisition and display of the advanced/sophisticated pragmatic language skills. There are some evidences indicating that cognitive factors play a more important role than linguistic factors in the acquisition of pragmatic language skills. The limit and effect of intellectual disability in the acquisition of pragmatic language skills is not clear for the time being. However, the majority of the individuals with intellectual disability cannot fulfill their true potential for pragmatic language skills. The studies about the pragmatic language skills of the individuals with intellectual disability show that these people can acquire the basic pragmatic language skills but they cannot acquire advanced/sophisticated/complex pragmatic skills (Hatton, 1998).

Many studies reveal that children with intellectual disability can acquire basic pragmatic language skills, reorganize their expressions properly if they are asked to explain them again and that they can acquire and display conversational sufficiency, but they usually cannot display the fine details of being competent in conversational skills (Hatton, 1998). Nonetheless, the quality of the child's communication environment can be limiting/restrictive in the acquisition and use of pragmatic language skills. Individuals with intellectual disability have difficulty in understanding communicative intentions. Communicative intentions include wanting, rejection, asking questions, describing, etc. and when asked the question "Can you open the window?", an individual with intellectual disability, in comparison with his/her peers, is slower to understand the intention of "Do you have the ability to open the window" and "I want you to open the window". Their reactions are similar to those given by children at the same intelligence age and they are observed to have all basic verbal action categories in adulthood. There is also evidence demonstrating that children with intellectual disability use various conversation strategies depending on their conversation partners. They determine the status of their

conversation partners and ask for service and information accordingly or diversify the situations of asking for request or knowledge directly. On the other hand, it has been pointed out that when the problem about the conversation continues, children with intellectual disability cannot continue to reorganize their words and when they take turns during the conversation, they participate in the conversation by confirming what has been said rather than by initiating a topic and giving additional information. Moreover, they were observed to be slow in recovering conversational pauses/discontinuities and satisfying the demands of additional knowledge made by the listener (Kuder, 1997).

Studying pragmatic language skills of individuals with intellectual disability provide us greater insights when evaluated their developmental domains and when developed individualized education plans as pragmatic language skills are one of the most important language abilities when being included into society. Therefore, studies focusing on pragmatic language skills of individuals with intellectual disability and comparing their skills with their peers with typical developments are needed. This study comes from this need and aims at comparing pragmatic language skills of Turkish students with typical development and inclusive education students with mild intellectual disability. Since there seems no study describing and comparing pragmatic language skills of Turkish students with typical development and inclusive education students with mild intellectual disability, this study will add insightful information and fill a gap on this era. The following questions were addressed for this purpose: (1) What is the pragmatic language skill levels of students with typical development and inclusive education students with mild intellectual disability?, (2) Is there a significant difference between pragmatic language skill scores of students with typical development and inclusive education students with mild intellectual disability with regard to gender and group?

METHOD

Participants

Participants of the study included 152 primary school students aged between 5 and 12. Out of 152, 75 students were students with typical development (STD), and 77 students were inclusive education students with mild intellectual disability (IES). Ages of STD ranged from 63 to 156 month with a mean of 95.60 month (SD=15.72) whereas ages of IES ranged from 71 to 152 month with a mean of 101.50 month (SD=14.86). Out of 75 STD, 12 (16%) were first grade , 21 (28%) were second grade, 15 (20%) were third grade, and 27 (36%) were fourth grade students. Thirty-eight (51%) were male, 37 (49%) were female students. Out of 77 IES, 10 (13%) were first grade, 24 (31%) were second grade, 19 (25%) were third grade, and 24 (31%) were fourth grade students. Thirty-four (44%) female, 43 (56%) were male students. Regarding teachers of STD, 50 (%67) female and 25 (33%) were male. Regarding teachers of IES, 50 (65 %) were female, 27 (35%) were male. Table 1 provides information about demographics of participants.

Measures

Pragmatic Language Skills Inventory (PLSI, 2004). Pragmatic Language Skills Inventory was created by James Gilliam and Lynda Miller in 2004 in United States of America. It is a tool consisted of 45 items, and is norm referenced, based on teacher evaluation. PLSI is comprised of three subscales (Classroom Interaction Skills, Social Interaction Skills, Personal Interaction Skills) with 15 items in each, and a total of 45 items. Evaluation category is pragmatic language development of 5-12 years old children. It uses 9 points Likert type scale and can be applied in mere 5-10 minutes. Evaluating teacher scores the child in three sub-categories from below normal to normal and above normal that divided between 1 to 9 points in total. Total score then is converted to Pragmatic Language Skills Index indicating level of pragmatic language skills compared to the norm of the corresponding child's same age and same gender.

Pragmatic Language Skills Inventory (PLSI) was adapted into Turkish and standardized in Turkey by Alev, Diken, Ardıç, Diken, Şekercioğlu and Gilliam (2014) with 1383 students (1st, 2nd, 3rd, and 4th grade students) aged between 5 and 12. V-Conventional item analysis of Turkish Version of Pragmatic Language Skills Inventory (TV-PLSI) showed that all values fall into the acceptable range. Correlation of TV-PLSI Subscale Standard Scores were between .71 and .81 while correlation of TV-PLSI Subscales with Pragmatic Language Skills Index were between .76 and .84.

Table 1: Demographic information about participants

	Group			
	STD*		IES**	
	n	%	n	%
Gender (Students)				
Female	37	49	34	44
Male	38	51	43	56
Total	75	100	77	100
Grades				
1st Grade	12	16	10	13
2nd Grade	21	28	24	31
3rd Grade	15	20	19	25
4th Grade	27	36	24	31
Total	75	100	77	100
Gender (Teachers)				
Female	50	67	50	65
Male	25	33	27	35
Total	75	100	77	100

*STD: Students with Typical Development, **IES: Inclusive Education Students with mild intellectual disability

Discriminant validity analysis of TV-PLSI showed that TV-PLSI discriminated students with autism, students wit intellectual disabilities from those with typical development. Confirmatory Factor Analysis ($\chi^2/sd_{(2412.67/938)}$=2.57; p<.01, RMSEA=.089, NNFI=.96.validated three-factorial patterns of TV-PLSI. Regarding internal reliability, Cronbach Alpha coefficients ranged from .95 to .98 for subscales and total score while test-rest reliability analysis revealed .99 correlation coefficient for all scales. Reliability of TV-PLSI rechecked for the current study with the current sample, Table 2 shows the results indicating TV-PLSI has reliable Cronbach Alpha coefficients to be used in this study

Table 2: Cronbach Alpha Coefficients of TV-PLSI with the current sample

Genders	Classroom Interaction Skills Subscale	Social Interaction Skills Subscale	Personal Interaction Skills Subscale	Pragmatic Language Skills Index (Total Score)
Female	.99	.99	.98	.99
Male	.98	.98	.98	.99

Data collection and analysis

Data were collected from Eskişehir, Turkey. Before carrying out the study, author contacted with Eskisehir Tepebaşı Guidance and Research Center, a state center coordinating special education services affiliated with Ministry of National Education and the Province of Antalya Education

Directorate in Turkey in order to find out how many current inclusion classrooms at the first, second, third and fourth grades of primary schools in Tepebaşı, Eskişehir there were and to get legal permission. There were a total of 103 grades at the first, second, third and fourth grades of primary schools in Tepebaşı, Eskişehir. Eskisehir Tepebaşı Guidance and Research Center distributed TV-PLSI to teachers working in these classrooms. Teachers were informed about the study and signed a consent form to be part of study. Teachers were also informed about how to fill out the form. Regarding filling out the forms, teachers were asked to fill out forms for IES and STD in their classrooms. They were informed to fill out one form for IES students, and then choose tenth STD in their regular classroom name list. If they had two IES students, they filled out two forms; one for tenth and the other for twentieth STD in their regular classroom name list. After filling out the forms, Eskisehir Tepebaşı Guidance and Research Center collected them. After removing unfilled/inappropriate forms, a total of 152 forms were remained for data analysis.

RESULTS

Pragmatic language skills levels of participants

Following scoring guidelines of TV-PLSI, standard scores gathered from TV-PLSI converted to Pragmatic Language Skills Index indicating level of pragmatic language skills compared to the norm group. As can be seen from Table 3, out of 75 students with typical development (STD), 58 (77,4 %) had average or above average pragmatic language skills whereas out of 77 inclusive education students (IES), only 17 (22,1 %) showed average or above average pragmatic language skills. More specifically, 60 (77,9) IES had below average, poor and very poor pragmatic language skills.

Table 3: Level of Pragmatic Language Skills

		Groups			
		STD*		IES**	
Level of PLS***	TV-PLSI****	f	%	f	%
1. Very Poor	<63	-	-	25	32.5
2. Poor	64-76	7	9.3	22	28.6
3. Below Average	77-89	10	13.3	13	16.9
4. Average	90-110	35	46.7	14	18.2
5.Above Average	111-117	14	18.7	3	3.9
6. Superior	118-122	8	10.7	-	-
7. Very Superior	>123	1	1.3	-	-
Total	-	75	100	77	100

*STD: Students with Typical Development, **IES: Inclusive Education Students, ***PLS: Pragmatic Language Skills, ****TV-PLSI: Turkish Version of Pragmatic Language Skills Index

Comparison of pragmatic language skills total scores of participants with regard to gender and group

A two-way between-groups analysis of variance was conducted to explore the impact of group and gender on levels of pragmatic language skills, as measured by the Turkish Version of Pragmatic Language Skills Inventory (TV-PLSI). Levene's Test of Equality of Error Variances was checked and found as .34 indicating that not violating the homogeneity of variances assumption. Results revealed that there was a statistically significant main effect for group [F(1, 148)=101.64, p=.00]; the effect size was large (partial eta squared=.41).

Table 4: Descriptive results for comparison of pragmatic language skills total scores of participants with regard to gender and group

Group	Gender	N	Mean	SD
STD	Female	38	29.84	7.82
	Male	37	30.89	8.43
	Total	75	30.36	8.09
IES	Female	34	13.21	10.11
	Male	43	17.98	9.52
	Total	77	15.87	10.01
Total	Female	72	21.99	12.22
	Male	80	23.95	11.07
	Total	152	23.02	11.63

As can be seen at Table 4, descriptive statistics indicated that the mean score for the STD group (M=30.36, SD=8.09) was higher than the mean score for the IES group (M=15.87, SD=10.01). Results also revealed that there was a statistically significant main effect for gender [F(1, 148)=31.94, p=.04]; the effect size was small (partial eta squared=.03). Descriptive statistics indicated that the mean score for females (M=21.99, SD=12.22) was lower than the mean score for males (M=23.95, SD=11.07). The interaction effect [F(2, 429)=1.61, p=.20] did not reach statistical significance (Table 5).

Table 5: Results of two-way between-groups analysis of variance on total scores with regard to gender and group

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8429.79*	3	2809.93	34.67	.00	.41
Intercept	79696.58	1	79696.58	983.32	.00	.87
Group	8237.72	1	8237.72	101.64	.00	.41
Gender	319.60	1	319.59	3.94	.04	.03
Group* Gender	130.61	1	130.61	1.61	.20	.01
Error	11995.16	148	81.05			
Total	100971.00	152				
Corrected Total	20424.94	151				

*R Squared = .413 (Adjusted R Squared = .401)

Comparison of pragmatic language skills sub-test scores of participants with regard to gender and group

In order to explore the impact of group and gender on levels of pragmatic language skills, as measured by the Turkish Version of Pragmatic Language Skills Inventory (TV-PLSI), three two-way between-groups analysis of variance were conducted to for classroom interaction skills sub-test, social interaction skills sub-test, and personal interaction skills subtest as three sub-tests of the PLSI. Since three different two-way between-groups analysis of variance would be carried out, Bonferroni adjustment was applied (.05 divided by 3) and .017 alpha level was used (Tabachnick and Fidel 1996, p. 51).

Comparison of classroom interaction skills scores of participants with regard to gender and group

A two-way between-groups analysis of variance was conducted to explore the impact of group and gender on levels of pragmatic language skills, as measured by the Turkish Version of Pragmatic Language Skills Inventory (TV-PLSI). Levene's Test of Equality of Error Variances was checked and found as .08 indicating that not violating the homogeneity of variances assumption. Results revealed that there was a statistically significant main effect for group [F(1, 148)=93.21, p=.00]; the effect size was large (partial eta squared=.39). Descriptive statistics (Table 6) indicated that the mean score for the STD group (M=10.19, SD=2.78) was higher than the mean score for the IES group (M=5.38, SD=3.56). Results also revealed that there was a statistically significant main effect for gender [F(1, 148)=65.59, p=.01]; the effect size was small (partial eta squared=.04). Descriptive statistics (Table 5) indicated that the mean score for females (M=7.22, SD=4.20) was lower than the mean score for males (M=8.23, SD=3.77). The interaction effect [F(1, 148)=1.48, p=.22] did not reach statistical significance (Table 7).

Table 6:Descriptive results for comparison of classroom interaction skills scores of participants with regard to gender and group

Group	Gender	N	Mean	SD
STD	Female	38	9.84	2.80
	Male	37	10.54	2.75
	Total	75	10.19	2.78
IES	Female	34	4.29	3.53
	Male	43	6.23	3.39
	Total	77	5.38	3.56
Total	Female	72	7.22	4.20
	Male	80	8.23	3.77
	Total	152	7.75	3.99

Table 7:Results of two-way between-groups analysis of variance on classroom interaction skills scores with regard to gender and group

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	959.53*	3	319.84	32.53	.00	.40
Intercept	9012.19	1	9012.19	916.72	.00	.86
Group	916.33	1	916.33	93.21	.00	.39
Gender	65.59	1	65.59	6.67	.01	.04
Group* Gender	14.50	1	14.50	1.48	.22	.01
Error	1454.98	148	9.83			
Total	11544.00	152				
Corrected Total	20424.94	151				

*R Squared = .397 (Adjusted R Squared = .385)

Comparison of social interaction skills scores of participants with regard to gender and group

A two-way between-groups analysis of variance was conducted to explore the impact of group and gender on levels of pragmatic language skills, as measured by the Turkish Version of Pragmatic Language Skills Inventory (TV-PLSI). Levene's Test of Equality of Error Variances was checked and found as .91 indicating that not violating the homogeneity of variances assumption. Results revealed that there was a statistically significant main effect for group [F(1, 147)=105.53, p=.00]; the effect size was large (partial eta squared=.42). Descriptive statistics (Table 8) indicated that the mean score for

the STD group (M=9.51, SD=2.91) was higher than the mean score for the IES group (M=4.49, SD=3.28). Results also revealed that there was statistically significant main effect for gender [F(1, 148)=4.30, p=.04]. The interaction effect [F(1, 148)=2.29, p=.13] did not reach statistical significance (Table 9).

Table 8: Descriptive results for comparison of social interaction skills scores of participants with regard to gender and group

Group	Gender	N	Mean	SD
STD	Female	38	9.37	2.78
	Male	37	9.65	3.06
	Total	75	9.51	2.91
IES	Female	34	3.50	3.17
	Male	43	5.29	3.17
	Total	77	4.49	3.28
Total	Female	72	6.60	4.17
	Male	80	7.33	3.79
	Total	152	6.98	3.98

Table 9: Results of two-way between-groups analysis of variance on social interaction skills scores with regard to gender and group

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1012.59*	3	337.53	36.26	.00	.43
Intercept	7253.80	1	7253.80	779.27	.00	.84
Group	982.33	1	982.33	105.53	.00	.42
Gender	40.05	1	40.05	4.30	.04	.03
Group* Gender	21.27	1	21.27	2.29	.13	.02
Error	1368.35	147	9.31			
Total	9738.00	152				
Corrected Total	2380.94	151				

*R Squared = .425 (Adjusted R Squared = .414)

Comparison of personal interaction skills scores of participants with regard to gender and group

A two-way between-groups analysis of variance was conducted to explore the impact of group and gender on levels of pragmatic language skills, as measured by the Turkish Version of Pragmatic Language Skills Inventory (TV-PLSI). Levene's Test of Equality of Error Variances was checked and found as .12 indicating that not violating the homogeneity of variances assumption. Results revealed that there was a statistically significant main effect for group [F(1, 147)=67.78, p=.00]; the effect size was large (partial eta squared=.31). Descriptive statistics (Table 10) indicated that the mean score for the STD group (M=10.67, SD=2.96) was higher than the mean score for the IES group (M=6.06, SD=3.93). Results also revealed that there was no statistically significant main effect for gender [F(1, 148)=1.20, p=.28]. The interaction effect [F(1, 148)=.93, p=.34] did not reach statistical significance (Table 11).

Table 10: Descriptive results for comparison of personal interaction skills scores of participants with regard to gender and group

Group	Gender	N	Mean	SD
STD	Female	38	10.63	2.93
	Male	37	10.70	3.04
	Total	75	10.67	2.96
IES	Female	34	5.41	3.99
	Male	43	6.58	3.85
	Total	77	6.06	3.93
Total	Female	72	8.17	4.33
	Male	80	8.49	4.04
	Total	152	8.34	4.17

Table 11:Results of two-way between-groups analysis of variance on personal interaction skills scores with regard to gender and group

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	830.62*	3	276.87	22.80	.00	.32
Intercept	10477.45	1	10477.45	862.79	.00	.85
Group	823.09	1	823.09	67.78	.00	.31
Gender	14.52	1	14.52	1.20	.28	.01
Group* Gender	11.38	1	11.38	.93	.34	.01
Error	1797.27	148	12.14			
Total	13189.00	152				
Corrected Total	2627.89	151				

*R Squared = .316 (Adjusted R Squared = .302)

DISCUSSION

As the current study aims at describing and comparing pragmatic language skills of students with typical development (STD) and inclusive education students with mild intellectual disability (IES), several significant differences were found between two groups as well as genders. Results in general showed that IES had lower pragmatic language skills in total score and all subdomains than STD group. In addition, males in both groups had higher levels of pragmatic language skills in total score and sub-domains except for personal interaction skill scores. Several authors (e.g., Green, Johnson, & Bretherton, 2013; Rispoli, Franco, Meer, Lang, & Camargo, 2010) including Diken (2014) in her study with Turkish individuals with Developmental Disabilities reported that children with intellectual disability had lower levels of pragmatic language skills than children with typical development and pragmatic problems such as conversational taking-turn problems, following the needs of listener, problems with reading others' verbal or nonverbal cues, problems with understanding sarcasm, jokes and metaphors are common in individuals with developmental disabilities (DD). More specifically Diken (2014) found that although both students with intellectual disabilities and students with autism had lower level of pragmatic language skills, students with intellectual disabilities had higher level of pragmatic language skills than students with autism. Regarding differences found on gender, males were found that they had higher level of pragmatic language skills in each group and in total, we may discuss this result from a developmental perspective in which males mostly show externalizing behaviors whereas females show internalizing behaviors. Being naturally motivated as externalizer, males have more chances to use pragmatic language skills

than females who naturally motivated as showing internalizing behaviors. With understanding this limited explanation of this result, the author believes that more studies are needed to understand why males in both group of typical development and intellectual disabilities show higher levels of pragmatic language skills than females. In addition to exploring this result in depth in other studies, more studies are needed to understand well pragmatic aspects of Turkish children with developmental disabilities since pragmatic language skills need to be considered closely when planning intervention or education plans for these students as pragmatic language skills are essential skills to be included in the society. Having more quantitative and qualitative studies on pragmatic language skills of children with developmental disabilities will also improve international knowledge base and provide info for cross-cultural or cross-language studies.

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