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Comparison of Psychomotor Skills and Social Adjustment in Elementary Students with and without Preschool History

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Abstract

Purpose: The present research was conducted with the aim of comparison of psychomotor skills and social adjustment in elementary students with and without preschool history.

Methodology: This research in terms of time was cross-sectional, in terms of purpose was applied and in terms of implementation method was causal-comparative. The study population was the first to third grade students of Shiraz Kodak Afarin Educational Complex in the academic years of 2019-2020, which according to the Krejcie and Morgan table number of 144 people (90 people with preschool history and 54 people without preschool history) were selected as a sample by simple random sampling method. Data were collected by psychomotor skills test (Lincoln Oseretsky, 1950) and adaptive behaviors inventory (Lambert et al, 1974) and analyzed by independent t-test in the SPSS software.

Finding: The results showed that elementary students with preschool history in compared to elementary students without preschool history significantly had a more favorable situation in terms of psychomotor skills (and all its components including touching, bending on the toe, harmonious tapping of the foots, standing on one foot, walk backwards and finger skills) and social adjustment (and all its components including violent behavior, antisocial behavior, rebellious behavior, unreliable behavior, avoidance, stereotyped behavior, inappropriate social behaviors, bad voice habits, bad or strange habits, hyperactivity tendency and psychological distress) ($P<0.01$).

Conclusion: The results indicated the effect of preschool on psychomotor skills and social adjustment in elementary students. Therefore, to improve the characteristics of students is necessary to use a preschool education course.

Keywords: Psychomotor Skills, Social Adjustment, Elementary Students, Preschool

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Introduction

Childhood is the first and most important period of human life, because there is a critical period for the development of neuropsychological processes, which underlies excellent cognitive functions and social and emotional behaviors (Kracht, Webster & Staino, 2020). Research shows that a high percentage of the brain is formed in the first six years of life, and many neuroscientists believe that synaptic connections to brain development in early childhood are far higher than in later periods (Melvin Chung, Cheah & Hazmi, 2021). Preschool is one of the most important years for cognitive, physical, psychological, motor and social development, and most educational systems in the world believe that public education should start from this period (Palmer, Chinn & Robinson, 2019). Preschool children have a high potential for better and faster learning of basic knowledge and skills due to their mental and psychological flexibility, which become the basis of the basic skills of later periods (Prodan, Grosu & Muresan, 2016). If children are given little attention in preschool and not properly guided in their growth and development, it will cause many behavioral disorders and inconsistencies in other periods. Inattention and inattention cause incompatibility and adaptation to the environment and provide the ground for the occurrence of various deviations in various dimensions (Rojas, Yoshikawa, Morris, Kamboukos, Dawson-Mcclure & Brotman, 2020). Purposeful movement programs and games along with other educational activities are a good platform for practicing and repeating some mental and cognitive concepts in preschool. Being in the preoperative period makes it impossible for the child to understand mental concepts. However, research suggests that organized games play an important role in a child's ability to think well because of the association they have with physical activity and cognitive abilities (Romero Martinez, Ordonez Camacho & Madrona, 2018).

The current conditions of society have confronted the social life of children with special issues and complexities and have caused the growing growth of behavioral and personality problems in children. For this reason, preschool is a good time to diagnose children's problems, prevent problems and intervene in a timely manner (Zacok, et al, 2020). One of the most important and measurable variables in preschool students is psychomotor skills (Arman, et al, 2021). Childhood is an important and appropriate stage for learning psycho-motor skills so that children develop their abilities and abilities, and these skills are later reflected in professional work and activities, daily life tasks, driving, music, art, sports, etc. (Giagazoglou, et al, 2012). Psychomotor skills refer to a person's interpretation, response, and response to a stimulus (Plummer, Smith, Cornforth & Gore, 2021) and are a combination of physical and mental activities designed to influence mental activity. Conversely, mental activities affect physical activity and together form activities or psychomotor skills (Peyre, et al, 2019). Psychomotor skills in preschool include all observable voluntary movements that are taught by the instructor as the learning objectives of the course and are performed by children (Marin-Mendez, et al, 2017). Psychomotor skills play an important role in learning and play a role in the development of other important learning skills, including academic and social skills (Pereira-Cerro, et al, 2020).

One of the most important and measurable variables in preschool students is social adjustment (Tan, Mikami & Hamlin, 2018). Social adjustment means the relationship that exists between the individual and the environment, especially the social environment, and allows the individual to express their needs and motivations (Eslinger, et al, 2021). This structure refers to functional abilities such as self-care, social ability and self-management that are essential for independence in daily life. In other words, it includes a combination of understanding social situations, interacting with others in a desirable way, the ability to solve everyday problems, self-help skills and independent functioning (Gunduz & Alakbarov, 2019). Social adjustment is manifested in activities such as social role-plays, role-plays, engaging in relationships with others, and satisfaction with multiple role-plays (Olivier & Dupere, 2018). A person is considered adaptable when he can establish a healthy and appropriate relationship between himself and the social environment in order to be able to meet his physical, emotional, social and psychological needs (Corradi & Levrau, 2021).

The results of research on the role and impact of preschool education are different, although the results of some studies showed the superiority of students with preschool history, but the results of some studies showed that there is no difference between students with and without preschool history. For example,

Golshirazi & Sadeghi (2021), while researching the effect of the home-school programmer on the social-emotional readiness of preschool students, concluded that the intervention program increased the social-emotional readiness of preschool students. Martinez-Moreno, Gimenez & Suarez (2020) while researching the psychomotor profile of preschool children in preschool education concluded that the level of psychomotor skills of children with preschool history was higher than children without preschool history. Maleki, et al (2019) in a study entitled Social skills in home and preschool children concluded that the level of social skills in home and preschool children was moderate and there was no significant difference between them. Gol Mohammadnejhad & Yekanizad (2017), while researching the comparison of psychomotor skills and social adjustment in preschool and non-preschool students, concluded that preschool students had better mobility and social status in terms of physical, motor, and motor skills than non-preschool students. They stated that preschool education can be used as an effective method to increase psychomotor skills and social adjustment. Yasami, Kian & Geramipour (2016), while comparing the social skills of preschool children aged 4 to 6 years, concluded that the level of social skills of these children was significantly higher than the social average. Asareh, Ahmadi & Abaspour (2014), while researching preschool education on academic achievement and social adjustment, concluded that students participating in preschool education had higher academic achievement and social adjustment than non-participants. Gunindi (2013) in a study entitled Assessment of social adjustment skills of children with and without preschool education based on mothers' opinion concluded that the level of social adjustment skills of children with preschool education history was significantly higher compared to children without preschool education. Shingjerghi (2013), while researching psychomotor education as an aspect of the general formation of preschool children, concluded that preschool psychomotor education improved many aspects of psychomotor skills in preschool children. Ruhi & Behnam Heshjin (2011) while researching the effect of preschool education on the development of oral skills of first grade students concluded that pre-school students passed the level of oral skills development compared to non-pre-school students. Ahmadi & Shahi (2010) while researching the effect of perceptual motor exercises on motor and math skills in autistic children concluded that perceptual motor exercises improved motor skills of autistic children but did not have a significant effect on their math. Hamidpour, Hoseinaei & Pajouhandeh (2009) in a study entitled the role of preschool education in learning psychomotor skills and social adjustment concluded that there was no difference between students who had or did not receive preschool education in terms of psychomotor skills and social adjustment There was no significance. Regarding the importance and necessity of the present study, it can be said that in Iran, passing the pre-school course to enter primary school is still optional, although some schools consider it necessary. Another important point is that some studies have been done to compare the different characteristics of preschool children, but the results of the studies have been different. Although the results of most studies indicate the impact and effective role of preschool, but the results of some studies indicate that there is no difference between the characteristics of students who have passed or not passed preschool. Therefore, comparing characteristics such as psychomotor skills and social adjustment in students with and without preschool history is necessary to decide on the role of preschool. As a result, the present study aimed to compare psychomotor skills and social adjustment in elementary school students with and without preschool history.

Methodology

This research was cross-sectional in terms of time, applied in terms of purpose and causal-comparative in terms of implementation method. The study population was the first to third grade students of Shiraz Child-Creating Educational Complex in the academic year 2019-20, which according to Krejcie and Morgan table, 144 people (90 people with preschool history and 54 people without preschool history) by simple random sampling method as a sample were chosen. In this sampling method, first a list of all students was prepared and statistics of students with a history of preschool and no history of preschool were determined and the number of each student was prepared and a code was assigned to each of them and then with the help of a table of random numbers 90 students with preschool background and 54 students without preschool background were selected as the sample.

The research was conducted in such a way that after coordination with the Education Department of Shiraz and the officials of the Shiraz Children-Creating Educational Complex, a list of students was prepared and sampled by preschool history or lack of history. For the samples and at least one of their parents, the importance and necessity of the research was stated and they were asked to sign the consent form of informed participation in the research and respond to the research tools about their children. After the completion of the tools by the participants, while reviewing the complete response of the participants, appreciation was given and the data were prepared to enter the computer.

This study had two tools for testing psychomotor skills (Lincoln Oseretsky, 1950) and the list of adaptive behaviors (Lambert et al, 1974), which are described below.

Psychomotor skills test: This test was designed by Lincoln Oseretsky (1950). The instrument contains 36 materials designed for children 5 to 14 years old and measures the seven skills of touching, flexing the toe, tapping the feet, standing on one foot, jumping, walking backwards, and finger skills. The validity of the instrument was obtained by correlating the score of components with the total score of confirmation and the total reliability of its components using Spearman Brown formula for girls and boys above 0.70 (quoted in Gol Mohammadnejhad & Yekanizad, 2017). In Iran, Cronbach's alpha reliability for touching skills was 0.82, bending on the toe 0.79, coordinated tapping of the feet 0.76, standing on one foot 0.83, jumping 0.96, walking backwards 0.94 and Finger skills were 0.93 (Gol Mohammadnejhad & Yekanizad, 2017). In the present study, the Cronbach's alpha reliability for the whole instrument was 0.93 and for the touching skills 0.85, bending on the toe 0.83, coordinated tapping of the feet 0.72, standing on one foot 0.79, jumping 0.88, backward walking was calculated 0.92 and finger skills were calculated 0.90.

List of adaptive behaviors: This list was designed by Lambert et al (1974). This tool contains 260 articles designed for 7 to 13 year old students and eleven components of violent behavior, antisocial behavior, rebellious behavior, unreliable behavior, withdrawal, stereotyped behavior, inappropriate social behaviors, bad voice habits, bad habits, strange Measures hyperactivity and mental disturbance. Its convergent validity with other forms was confirmed and its total reliability and components were obtained by Cronbach's alpha method above 0.70 (quoted by Kajbah, Arizi & Rafiei, 2005). In Iran, content validity for all components was confirmed by carcass method by 10 professors and 10 teachers and ranged from 0.33 to 0.90 with an average of 0.54 and Cronbach's alpha reliability for components in the range of 0.47. Up to 0.93 and 0.87 for the whole instrument (Kahbaf, et al, 2005). In the present study, the reliability of Cronbach's alpha method for the whole instrument was 0.92 and for the components of violent behavior was 0.87, antisocial behavior was 0.85, outburst behavior was 0.73, unreliable behavior was 0.94, withdrawal was 0.91, stereotyped behavior, 0.86, inappropriate social behaviors 0.79, bad voice habits 0.85, bad or strange habits 0.90, hyperactive tendency 0.84 and mental disorder 0.91. Data were analyzed by psychomotor skills test and the list of adaptive behaviors by independent t-test in SPSS software at a significance level of 0.05.

Findings

Participants in this study were 144 first to third grade students, of whom 90 had a preschool background and 54 had no preschool background. Table 1 reported the mean and standard deviation of psycho-motor skills and social adjustment of elementary students with and without preschool history.

Table1. Mean and standard deviation of psycho-motor skills and social adjustment of elementary students with and without preschool history

Variable	With a history of elementary school		No history of elementary school	
	Average	Standard deviation	Average	Standard deviation
Touch	12/05	2/78	11/13	2/84
Leaning on the toe	11/63	2/54	9/92	2/40
Coordinated tapping of the legs	12/10	2/26	10/75	1/98
Standing on one foot	10/24	2/35	9/12	2/21
to jump	13/16	2/76	11/95	2/70

Walk backwards	14/24	3/02	12/75	2/86
Finger skills	14/76	2/58	12/93	2/60
Total psycho-motor skills	88/18	10/83	78/55	9/64
aggressive behavior	2/61	0/53	2/78	0/55
Anti-social behavior	2/54	0/57	2/73	0/53
Rebellious behavior	2/78	0/61	2/99	0/59
Unreliable behavior	2/15	0/48	2/28	0/51
Withdrawal	2/43	0/39	2/68	0/48
Stereotyped behavior	3/58	0/48	3/81	0/53
Inappropriate social behaviors	3/27	0/51	3/49	0/55
Bad voice habits	3/86	0/52	4/24	0/49
Bad or strange habits	3/38	0/59	3/59	0/57
Incremental tendency	3/36	0/56	3/57	0/57
Psychological disorder	1/86	0/38	2/15	0/40
Total social adjustment	2/89	0/42	3/08	0/46

Table 1 shows the mean and standard deviation of psychomotor skills and their components (touching, flexing the toe, tapping the legs, standing on one foot, jumping, walking backwards and toe skills), and social adjustment and its components (behavior). Violence, antisocial behavior, rebellious behavior, unreliable behavior, withdrawal, stereotyped behavior, inappropriate social behaviors, bad voice habits, bad or strange habits, overactive tendencies and mental turmoil) are present in elementary students with and without observable background. Before analyzing the data with independent t-test, its hypotheses were tested. The results showed that based on the values of Kolmogorov-Smirnov test, the assumption of normality was not rejected due to a significant value greater than 0.05 for all variables in both groups. Levin test did not reject the assumption of homogeneity of variances for all variables due to the significant value greater than 0.05. As a result, there were conditions for using the independent t-test.

Table 2 reported the results of the independent t-test to compare the psycho-motor skills of elementary students with and without preschool history.

Table2. Results of independent t-test to compare psycho-motor skills of elementary students with and without preschool history

Variable	Mean difference	Statistics t	Significance level
Touch	0/92	2/86	0/005
Leaning on the toe	1/71	3/86	0/001
Coordinated tapping of the legs	1/35	3/40	0/001
Standing on one foot	1/12	3/12	0/002
to jump	1/21	3/24	0/001
Walk backwards	1/49	3/52	0/001
Finger skills	1/83	4/02	0/001
Total psycho-motor skills	9/63	3/71	0/001

In Table 2, the results of the independent t-test for comparing the psycho-motor skills of elementary students with and without preschool history can be seen. Psychomotor skills and all its components including touching, bending on the toe, tapping the legs in a balanced way, standing on one foot, jumping, walking backwards and toe skills were in a more appropriate and desirable condition ($P < 0.01$). Table 3 reported the results of the independent t-test to compare the social adjustment of elementary students with and without preschool history.

Table3. Independent t-test results to compare social adjustment of elementary students with and without preschool history

Variable	Mean difference	Statistics t	Significance level
aggressive behavior	-0/17	-2/88	0/005
Anti-social behavior	-0/19	-2/95	0/003
Rebellious behavior	-0/21	-3/18	0/002
Unreliable behavior	-0/13	-2/66	0/008
Withdrawal	-0/25	-3/57	0/001
Stereotyped behavior	-0/23	-3/31	0/001
Inappropriate social behaviors	-0/22	-3/25	0/001
Bad voice habits	-0/38	-5/12	0/001
Bad or strange habits	-0/21	-3/18	0/002
Incremental tendency	-0/21	-3/18	0/002
Psychological disorder	-0/29	-4/36	0/001
Total social adjustment	-0/19	-2/95	0/003

In Table 3, the results of the independent t-test for comparing the social adjustment of elementary students with and without preschool history can be seen. And all its components including violent behavior, antisocial behavior, rebellious behavior, unreliable behavior, withdrawal, stereotyped behavior, inappropriate social behaviors, bad voice habits, bad or strange habits, overactive tendency and mental disorder were more appropriate and more favorable (P<0/01).

Conclusion

Research on preschool education and the impact of its education is essential by examining the differences in the psychological characteristics of elementary students with and without preschool history. As a result, the present study aimed to compare psychomotor skills and social adjustment in elementary school students with and without preschool history.

The results of the present study showed that elementary students with preschool experience compared to elementary students without preschool experience were significantly more psycho-motor skills and all its components including touching, bending on the toe, stepping on the foot, standing on the foot, standing the back and the finger skills were in a better position. These results are in line with the results of Martinez-Moreno, et al (2020), Gol Mohammadnejhad & Yekanizad (2017), Shingjerghi (2013), Ruhi & Behnam Heshjin (2011) and Ahmadi & Shahi (2010) and the results of Hamidpour, et al (2009) were inconsistent. In explaining the discrepancy between the results of the present study and the results of Hamidpour, et al (2009), as they themselves stated, it can be said that one of the effective factors in the development of psychomotor skills is the size of the school space that can affect children's free play. Psychological-motor skills are further developed and enhanced when school spaces are large and children can play freely compared to when schools are small and unable to play freely. Perhaps these differences have led to differences in the results of the present study with the results of Hamidpour, et al (2009). Also, in explaining the difference between psycho-motor skills and its components in elementary students without preschool history, it can be said that the movement of environmental stimuli and the possibility of sensory-motor and mental experiences in preschool have favorable effects on the development of psycho-motor skills. The environment is richer and the relationships between people are more intimate. The child's perception of the environment is more appropriate and richer, which in turn increases the psycho-motor skills and its components.

Other results of the present study showed that elementary students with preschool history compared to elementary students without preschool history were significantly more socially adapted and all its components including violent behavior, antisocial behavior, rebellious behavior, unreliable behavior, withdrawal behavior, withdrawal behavior, social behavior. Inadequate, bad voice habits, bad or strange habits, overactive tendencies and mental disorders were more appropriate and desirable. These results are in line with the results of Golshirazi & Sadeghi (2021), Gol Mohammadnejhad & Yekanizad (2017), Yasami, et

al (2016), Asareh, et al (2014), Gunindi (2013), and in line with the results of Maleki, et al (2019) And Hamidpour, et al (2009) were heterogeneous. In explaining the discrepancy between the results of the present study and the results of Maleki, et al (2019) and Hamidpour, et al (2009), the type of teacher's relationship with preschool children can be mentioned as a determining factor in social adjustment. The quality of communication in school is one of the factors influencing the development of students' self-esteem and adjustment, which are the root of most problems in the education system, and preschool teachers or primary school teachers should try to address children's shortcomings as much as possible in school. Preschool education was expected to play an effective role in social adjustment. Perhaps these differences have led to differences in the results of the present study with the results of Maleki, et al (2019) and Hamidpour, et al (2009). Also, in explaining the difference between social adjustment and its components in elementary school students without preschool history, it can be said that the relationship of preschool children in school is one of the effective factors in developing self-esteem and social adjustment of children in recent years. What principles and foundations are taught in these centers and improving the level of communication between teachers and students has greatly improved the relationship between children and teachers and this improvement can play an effective role in increasing social adjustment and its components.

One of the limitations of the present study is the use of causal-comparative method, so this study has all the limitations of this research method. Other limitations include limiting the research community to first- to third-grade students at the Shiraz Child-Creating Educational Complex and the use of self-report tools. When the variables of psychomotor skills and social adjustment or any other variable are completed by teachers and parents of students, the results can be expected to be different due to its biases. Therefore, it is recommended that observation or interviewing be used to measure or evaluate psychomotor skills and social adjustment or any other variable. Another research proposal is to conduct this research on students from other complexes and cities and compare their results with the results of the present study. The latest research proposal compares psychological variables such as psychomotor skills and social adjustment in first grade students with second grade elementary students who all have a history of preschool education. In general, the results of this study showed that having a preschool background had an effective role in increasing psycho-motor skills and social adjustment, which may be due to the possibility of more sensory-motor experiences and a richer school environment compared to home. These results have practical implications for preschool administrators, professionals, and planners, who should strive to provide a rich environment for preschool children and, if the conditions are right, including creating a rich environment for a variety of experiences, declare preschool a mandatory course for all children.

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