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# EFFECTS OF RECREATIONAL THERAPY ON EMOTIONAL ADJUSTMENT OF STUDENTS WITH INTELLECTUAL DISABILITIES

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***ABSTRACT***

*Emotional adjustment behaviours of individuals with mild intellectual disabilities were not adequately measured after a therapeutic recreation intervention. This qualitative experimental research aimed to determine the effect of a recreational therapy programme on the emotional adjustment of individuals with intellectual disabilities at Meram Melike Hatun Special Education Vocational School in Konya, Turkey between March 2019 and May 2019. Thirty-four parents of students with intellectual disabilities were recruited. The participating parents were allocated to an experimental group (n=17) or a control group (n=17). Demographic characteristics of the participants were collected with a personal information form developed based on relevant literature. The Hacettepe Emotional Adjustment Scale (HEAS) was used to collect emotional adjustment data. A pretest–post-test experimental design was used. Therapeutic recreation was applied in 16 sessions as 2 sessions per week, presented by the researchers and each lasting about 1 hour. No significant difference was found between the post-test HEAS total and sub-dimension mean scores in the experimental and control groups (p>0.05). HEAS measurements in the experimental and control groups revealed no significant difference in total and sub-dimension scores (p>0.05). Our study suggests that implementing therapeutic recreation activities in 16 sessions is insufficient, with longer-term programmes required to solve problems of emotional adjustment.*

***Keywords:*** Emotional adjustment; Intellectual disabilities; Recreational therapy; Therapeutic recreation.

## INTRODUCTION

Emotional adjustment is defined as the harmony of individuals' selves with the environment. This is not always easy for individuals with intellectual disabilities (Kumar & Panday, 2019; Schalock & Luckasson, 2021). It is stated that people with intellectual disabilities experience more emotional problems than people who do not have a disability, and these can affect behaviour, manifesting as lack of truthfulness, irritability, anxiety and rule breaking (Yavuzer, 2012). Thus, it can be said that individuals with intellectual disabilities experience emotional adjustment problems (Kumar & Panday, 2019). As physical activity is an effective method for improving mental health (Rosenbaum e*t al.*, 2014; Rodriguez *et al.*, 2019), recreational therapy

may be beneficial to overcoming emotional adjustment problems. The American Therapeutic Recreation Association (ATRA) defines recreational therapy as the application of therapeutic recreation using a systematic method that uses recreation and other activity-based interventions to meet the psychological health, physical health and well-being needs of individuals with illnesses and/or disabilities (ATRA, 2019).

Adjustment behaviour includes independent living skills, physical development, self-management, individual responsibility, academic competence and language development. In this sense, the self-determination and entertainment model can be an effective way to develop emotional adaptation behaviours (Gresham & Reschly, 1981). Self-determination involves autonomy, the flexibility and ability to choose options, and the ability to adjust to situations when only one option is available (Deci, 1980). For these reasons, the Self-Determination and Enjoyment Model is thought to be one of the most effective determinants in planning the most appropriate therapeutic recreation programmes for developing the emotional adjustment skills of intellectually disabled students.

In this model, the person develops the ability to express themself based on the degree of pleasure they receive (Dattilo *et al*., 1998). Pleasure is felt deeply by participants during recreational therapy. It increases the individual's motivation to participate in the therapy and helps make best use of physical, social and emotional conditions (Carter & Glen, 2012). Mannello *et al*. (2020) reported that recreational sports activities are important to enabling individuals with special needs to adapt to the environment. People with disabilities need to lead an active life physically and mentally so that they do not have problems and they adapt to society (Beyazıt & Öztürk, 2016). Some studies have revealed that individuals with intellectual disabilities participate less in sports activities (Robertson *et al*., 2018; Scott, 2021;), which negatively affects socialisation and may cause adaptation problems.

In their systematic review with meta-analysis, Koslowski *et al*. (2016) reported no convincing evidence supporting the interventions aimed at improving mental health problems in people with mild and moderate intellectual disabilities. The number of trials available, including exercise-based activities, was too few to draw firm conclusions. This study implemented a game-based intervention programme, based on the self-determination and entertainment model.

When the national and international literature is reviewed, it is seen that studies on the effects of therapeutic activities on the emotional adjustment of individuals with intellectual disabilities are limited. Previous research shows that when recreational therapy is implemented as an educational programme, it reinforces optimal recreational support for the health and educational development of students with disabilities within the school system (Green *et al*., 2018).

Thus, this study aimed to reveal the effect of recreational therapy programme participation, applied in a school, on the emotional adjustment of individuals with mild intellectual disabilities.

## METHODS

### Research design

The study was a randomised controlled trial using two parallel forms in one experimental and one control group, with a pretest–post-test design, according to the Consolidated Standards of Reporting Trials (CONSORT) statement guidelines (Schulz *et al.*, 2010).

### Population and sampling

The study was carried out at the School for Individuals with Mild Intellectual Disabilities in Meram Melike Hatun Special Education Vocational School, affiliated with the Ministry of National Education in Konya, Turkey. The study was conducted between March and May 2019. As it is thought that the best way to evaluate the effect of a therapeutic recreation programme applied to students is through the observations of the parents closest to them, their parents were determined as the target population. Thus the target population of the research consisted of the parents (mother or father) of 86 students with mild intellectual disabilities who enrolled in Meram Melike Hatun Special Education Vocational School and who continued their education in the School for Individuals with Mild Intellectual Disabilities. Meram Melike Hatun Special Education Vocational School accepts only individuals with mild intellectual disability, meaning that student IQs are between 50 and 70. Parents of the students with physical disabilities were excluded from the study (five students).

The sample size was determined using the G-Power 3.01 program (G*Power 3.1 Manual, 2017) and the method of analysis selected was ANOVA for repeated measurements within repeated factors of the F test type. Power analysis was based on a type I error of 0.05, power of 0.95 and effect size *f*=0.55. Based on this calculation, the sample size was determined as at least 10 people. As the study had a pretest–post-test control group design and any data loss may have reduced internal validity, it was decided to have 20 participants in each group (the experimental and control groups). A simple random numbers table from the school's general list of students was used for recruitment. The data of the families of the students who attended at least 14 sessions during the programme were evaluated in the experimental group. In the control group, three parents who did not consent to the final data collection were excluded from the evaluation because of a lack of data for them.

The Hacettepe Mental Adjustment Scale was applied to the target population before the recreational therapy programme to ensure the experimental and control groups were similar and the groups were equivalent. The obtained data were analysed using the Mann–Whitney U test. The results of the analysis revealed that there was no significant difference between the sub-dimensions of Neurotic Problems, Behavioral Problems and Other Behavioral Problems and the total pretest scores of the experimental and control groups. This finding shows that the pretest scores of the groups were similar and the groups were equivalent. Based on the demographic data of the parents, it can be said that the groups were equivalent in terms of variables such as income, education and place of residence.

#### *Randomisation*

In line with the sample size determined by a power analysis, the study group (n=40) was randomly selected from the population (N=86) by excluding the students (n=6) who could not be included in the study according to the exclusion criteria and by using a simple random

numbers table. In this context, the participants were randomly assigned to the experimental and control groups by a statistician who did not know the names and characteristics of the students. The parents of the 40 randomly selected students from the population were randomly assigned to the experimental and control groups (20 parents in each group). The researcher did not know who was in the experimental or control group until the interventions started.

### *Blinding*

Blinding was applied to the data collectors and statisticians, and in the reporting. This way, detection bias, statistical bias and reporting bias were controlled.

### Intervention

The recreational therapy programme was administered with the experimental group between March and May 2019 in 16 sessions. The participants had two therapy sessions per week, lasting approximately 1 hour. The second researcher implemented the programme and the first researcher was the thesis supervisor/advisor.

The therapy programme was planned according to the Self Determination and Entertainment Model, which aims to foster personal development and well-being by creating an enjoyable environment with therapeutic recreation (Dattilo *et al*., 1998). The recreational therapy programme included entertaining games played with simple rules.

Given the model, the programme was prepared with the aim of developing, in students with intellectual disability, behaviours that overlap with emotional adjustment, such as making friends, playing games in harmony with their groupmates, obeying the rules, expressing themselves, controlling their emotions when they lose, learning to share, coping with the feeling of jealousy, learning to listen, doing things on their own, refraining from lying, accepting the consequences of doing something wrong, avoiding hurtful and damaging behaviours, and taking responsibility. For the programme, games that would improve emotional adjustment skills were selected.

At the beginning of the programme, the children in the experimental group were introduced to the researchers in the school gymnasium, and they were informed about the purpose of the study. In this introductory session, the students gave their verbal consent to participate in the study. During one session of the programme, the second author played warm-up games with the students. Games with simple rules were implemented by the second author so that the students learned how to play them. As the first author had sufficient professional experience and the study was within the scope of a thesis, a supervisor provided support during the implementation process. The researchers were in constant contact with the students, with encouragement and support given during the interventions. The researchers observed that the students were very enthusiastic and had a lot of fun during the interventions. This was something that the researchers paid the most attention to. Students who participated in fewer than 14 sessions owing to an illness or a disability were excluded from the study.

### Control group

The parents in this group were administered the scale twice – once pretest and once post-test. No intervention was provided to the control group, who continued with the routine school programme. After the study was completed, the programme was administered to the parents and students in the control group.

### Research instruments

#### *Personal information form*

A personal information form was administered consisting of 11 questions – 5 to determine the demographic characteristics of students with mild intellectual disabilities and 6 to determine the degree of closeness and demographic characteristics of the family member (mother or father) who filled out the scale.

#### *Hacettepe Emotional Adjustment Scale*

Gökler and Öktem developed the Hacettepe Emotional Adjustment Scale in 1985 (Kaner *et al*., 2012) at Hacettepe University, Faculty of Medicine, Department of Child and Adolescent Psychiatry. The questions were selected from various scales used to evaluate emotional adjustment. In selecting the questions, suitability to Turkish culture was given importance, and Turkish validity and reliability studies were carried out. The reported internal consistency coefficient of the instrument was .87. Additionally, the Cronbach's alpha coefficients for the scale were neurotic subscale .82 and behavioral subscale .83 (Gökler & Öktem, 1985; Coşkun, 1994). Construct and content validity of the instrument were also reported as satisfactory. The scale consists of 32 items, including mental symptoms that may occur in any child. There are None (0), Some (1), and Many (2) options for each item. The total score is calculated by adding the points obtained from each item. Odd-numbered items indicate neurotic problems, and even-numbered items display behavioural problems. Scores up to the 25th item are added up. A total score of 13 or higher is associated with a "mental problem".

The scale includes three factors to determine the emotional adjustment levels of children: neurotic problems, behavioural problems, and other behavioural problems. Neurotic characteristics are tested with 12 questions, which include characteristics such as shyness, inhibition and insecurity, cowardice and timidity, selfishness and not being willing to share, inability to do anything by oneself, being afraid and unable to sleep alone at night, being anxious and delusional, having no friends and playing alone, being reluctant to go to school, being stagnant and withdrawn, being joyless and unhappy, and being careless. Behavioural disorders are also tested with 12 questions. They include characteristics such as hyperactivity and restlessness, irritability and quick temper, jealousy, stubbornness and disobedience, lying, taking things that do not belong to them without permission, not getting along with peers, not being affected by punishment and not being well-behaved, being quarrelsome and aggressive, being hurtful and harmful, being irresponsible and not able to do one's work, and being unnecessarily rigorous. Other behavioural problems are tested with seven questions: stuttering, tics, nail-biting, thumb-sucking, incontinence, bed urination and school failure. The internal consistency coefficient of this study was found to be $\alpha$=.80 for pre-measurements and .81 for post-measurements.

### Data collection procedures

An information meeting was held for the parents of the students in the experimental group. The parents were informed about the programme and the measurement tool for research purposes only. On 1 March 2019, before the randomisation process and following the information meeting, the researchers applied the pretests to the parents who volunteered to participate in the study. The researchers also administered the Personal Information Form and Hacettepe Emotional Adjustment Scale as pretests. The post-tests were administered by a blinded researcher between 22 and 24 May 2019, by inviting the experimental and control groups to the school. The Hacettepe Emotional Adjustment Scale was administered to the experimental and control group parents as the post-test.

### Data analysis

Data were analysed using the IBM SPSS Statistics 23 program (IBM Corp., Armonk, NY, USA). Frequency distributions (number, percentage) were calculated for categorical variables, and descriptive statistics (mean, standard deviation, median, minimum, maximum) were calculated for continuous variables. The normality of the numerical variables across the groups was examined using the Shapiro Wilk test of normality, and it was observed that they were not normally distributed. Non-parametric statistical methods were thus used, as the assumption of normal distribution was not met and the number of people in the groups was less than 30. The relationship between two independent categorical variables was examined with chi-square analysis. Fisher's Exact test was used in cases where the expected value assumption was not accepted in the chi-square analysis. The differences between the two independent groups were examined using the Mann–Whitney U analysis. The differences between the two dependent numerical variables were controlled using Wilcoxon analysis. The level of significance was set at $p<0.05$ for the analyses.

### Ethical considerations

This study was registered on 23 October 2019 on ClinicalTrials.gov with the Identifier, NCT 04102683, titled "The Effects of Recreational Therapy on the Emotional Adjustment of Individuals with Intellectual Disabilities". The data were collected after obtaining approval from the ethics committee (40990478-050.99/21). Permission was also obtained from the institution and the authors of the scale. The informed consent of the participants was also obtained. To avoid bias in the data collection process, the post-tests were administered by a researcher who was informed about the research but had no knowledge about the group allocations.

## RESULTS

Table 1 indicates that the proportion of girls in the experimental group was 35.3% and that it was 23.5% in the control group. The proportion of mothers who were illiterate was 17.6% in the experimental group and 11.8% in the control group. Mothers who had finished primary school were 64.7% of the experimental group and 82.4% of the control group. The mothers who had finished secondary school rate were 17.6% of the experimental group and 5.9% of the experimental control group. As far as fathers' educational status was concerned, fathers who had finished primary school were 88.2% of the experimental group and 76.5% of the control

group. Fathers who had finished secondary school were 5.9% of both the experimental and control groups. None of the fathers had finished high school in the experimental group, whereas 5.9% of the fathers in the control group had finished high school. Fathers with university education comprised 5.9% of the experimental group, and none of the fathers in the control group had a university education.

In the experimental group, 41.2% of the families had an income below the minimum wage, whereas this proportion was 29.4% in the control group. Of the groups, 29.4% of the families in the experimental group and 52.9% of the control group earned the minimum wage as their monthly income, and 23.5% of the families in the experimental group and 11.8% of the control group earned twice the minimum wage monthly. Whereas no family in the experimental group had an income three times higher than the minimum wage or higher, 5.9% of the families in the control group had an income three times higher than the minimum wage or more.

***Table 1.*** **DISTRIBUTION OF THE CHARACTERISTICS OF THE CHILDREN OF THE PARTICIPANTS IN THE EXPERIMENTAL AND CONTROL GROUPS**

| | **Experimental** (n=17) n (%) | **Control** (n=17) n (%) | **Chi-square** | ***p*** |
|---|---|---|---|---|
| **Gender** | | | | |
| Female | 6 (35.3) | 4 (23.5) | 0.567 | 0.452 |
| Male | 11 (64.7) | 13 (76.5) | | |
| **Mother's level of education** | | | | |
| Illiterate | 3 (17.6) | 2 (11.8) | 1.552[F] | 0.554 |
| Primary school | 11 (64.7) | 14 (82.4) | | |
| Secondary school | 3 (17.6) | 1 (5.9) | | |
| **Father's level of education** | | | | |
| Primary school | 15 (88.2) | 13 (76.5) | | |
| Secondary school | 1 (5.9) | 1 (5.9) | 2.142[F] | 0.858 |
| High school | 0 (0) | 1 (5.9) | | |
| University | 1 (5.9) | 0 (0) | | |
| **Income level** | | | | |
| Below minimum wage | 7 (41.2) | 5(29.4) | | |
| Minimum wage | 5 (29.4) | 9 (52.9) | 3.015[F] | 0.398 |
| Twice the minimum wage | 4 (23.5) | 2 (11.8) | | |
| Three times the minimum wage and above | 0 (0) | 1 (5.9) | | |

[F] Fisher's Exact test (used when the expected value assumption is not met in the chi-square analysis).

The statistical analyses revealed no statistically significant differences between the experimental and control groups for the gender of the child, educational status of the mother, educational status of the father or family income status ($p>0.05$). Accordingly, it can be stated that the experimental and control groups were homogeneous in terms of the variables of child gender, mother's education level, father's education level and family income.

The flow chart of the experimental and control groups prepared according to CONSORT 2010 is given in Figure 1. The parents of 40 students in the sample were randomly assigned to the experimental and control groups (20 parents in each). Prior to the intervention, three parents in the experimental group withdrew from the study as their children did not attend regularly, and three parents in the control group withdrew from the research at their own request. The inclusion of each participant in the analysis in the group to which they are assigned, without considering any justifications such as separation, non-compliance, treatment/intervention after randomisation defined as intention to treat (ITT) analysis. A method based on the exclusion of those who dropped out of the study without any intervention at the beginning of the study is identified as modified ITT (MoITT) as well (Akın & Koçoğlu, 2017). MoITT was applied to the study findings. In addition, an ITT analysis was performed for control purposes, and no differences between the findings were observed.

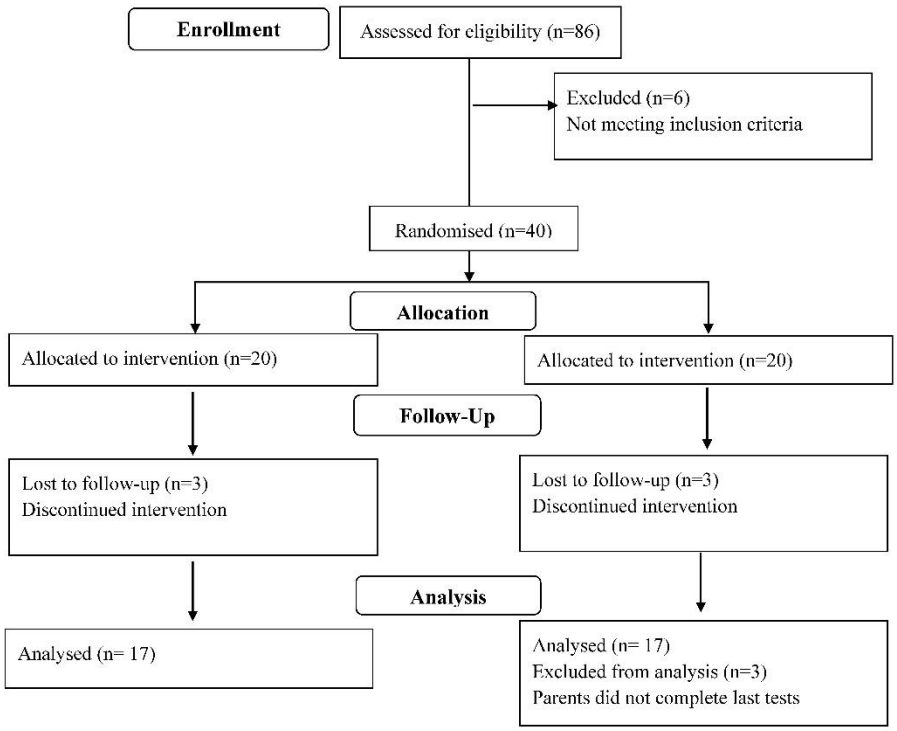


***Figure 1.*** **THE CONSORT (2010) FLOW CHART OF THE PARENTS IN THE EXPERIMENTAL AND CONTROL GROUPS (Source: http://www.consort-statement.org/consort-2010).**

Table 2 indicates that the pretest score for neurotic characteristics of the experimental group was 7, whereas this was 5 in the control group. The post-test neurotic score for both groups was 4. The experimental and control groups' pretest behaviour scores were 5 and 6, respectively. The post-test behaviour scores of the experimental group increased to 5.5,

whereas it remained at 6 in the control group. The pretest and post-test score for other behavioural problems was 1 for both groups. Whereas the total pretest score of the experimental group was 12, it was 11 for the control group. The post-test total score of the experimental group was 9, and it remained at 11 in the control group.

The statistical analyses revealed no statistically significant difference between the experimental and control groups in pretest and post-test neurotic characteristics, behavioural problems, other behavioural problems and total scores ($p>0.05$). The statistical analyses further revealed that the experimental group's pretest and post-test neurotic, behavioural, other behavioural and total scores did not vary significantly ($p>0.05$). Moreover, the pretest and post-test behavioural, other and total scores of the control group did not show a statistically significant difference ($p>0.05$). In contrast, the neurotic scores did demonstrate a statistically significant difference ($p<0.05$), with the neurotic score of the control group decreasing post-test.

***Table 2*. COMPARISON OF THE PRETEST AND POST-TEST SCORES ON THE EMOTIONAL ADJUSTMENT SCALE ACROSS GROUPS AND WITHIN GROUPS**

| | **Experimental** | | **Control** | | **Inter-group differences** | |
|---|---|---|---|---|---|---|
| | Mean ± SD | Median (range) | Mean ± SD | Median (range) | $Z^a$ | *p* |
| Neurotic pretest | 6.47±4.78 | 7 (0–14) | 5.35±2.91 | 5 (1–12) | -0.501 | 0.616 |
| Neurotic post-test | 4.06±3.73 | 4 (0–12) | 4.53±3. | 4 (0–11) | -0.555 | 0.579 |
| Inter-group differences | $Z^b$=-1.57 | p=0.116 | $Z^b$=-1.980 | p=0.048* | | |
| Behavioral pretest | 6.00±3.81 | 5 (1–13) | 6.06±3.56 | 6 (0–14) | -0.208 | 0.836 |
| Behavioral post-test | 5.50±3.61 | 5.5 (0–13) | 5.88±4.11 | 6 (0–14) | -0.217 | 0.828 |
| Inter-group differences | $Z^b$=-0.200 | p=0.842 | $Z^b$=-0.594 | p=0.553 | | |
| Other pretest | 1.65±1.90 | 1 (0–7) | 1.41±1.06 | 1(0–4) | -0.160 | 0.873 |
| Other post-test | 1.29±1.86 | 1 (0–7) | 1.53±1.42 | 1(0–5) | -0.967 | 0.334 |
| Inter-group differences | $Z^b$=-1.144 | p=0.253 | $Z^b$=-0.333 | p=0.739 | | |
| Total pretest | 12.47±7.59 | 12(1–27) | 11.41±5.29 | 11(3–22) | -0.224 | 0.822 |
| Total post-test | 9.81±6.09 | 9(1–25) | 10.41±6.13 | 11(1–22) | -0.416 | 0.677 |
| Inter-group differences | $Z^b$=-0.912 | p=0.362 | $Z^b$=-1.606 | p=0.108 | | |

[a] Mann–Whitney U [b] Wilcoxon analysis * significant $p<0.05$.

## DISCUSSION

According to the findings of the Wilcoxon test, there were no significant differences between the Hacettepe Emotional Adjustment Scale pretest and post-test total scores or sub-dimension scores for the experimental group. Although the differences were not significant, decreases

were observed in the Hacettepe Emotional Adjustment Scale total and subdimension scores. Because the scale's items is negative higher scores on this scale indicate more behavioural problems.

When planning the recreational therapy programme in the study, it was anticipated that participating in fun games with simple rules would increase students' emotional adjustment, with the experience of feeling joy and satisfaction. The implemented programme appeared to be a comprehensive intervention, when compared with studies in the literature (İlhan, 2007; Ataman, 2010; Güvendi & İlhan, 2017;). However, creating a permanent change in psychological behaviours, especially in groups such as the intellectually disabled, is difficult and cannot be considered separately, from a sociological perspective. Ataman (2010) found that a sportive recreational activity programme applied to a mentally handicapped group in 24 sessions led to a significant difference in the subdimension scores for Neurotic Problems and Behavioural Problems on the Hacettepe Emotional Adjustment Scale. However, no significant difference was observed in the other sub-dimensions. Güvendi and İlhan (2017) implemented a physical activity programme that included 24 sessions of warm-up exercises, paired exercises, circuit-training tracks, educational games, group competition and games, and found a significant difference in the Neurotic Problems and Behavior Problems sub-dimensions of the Hacettepe Emotional Adjustment Scale. İlhan (2007) demonstrated significant reductions in neurotic and behavioral problems in intellectually retarded children as a result of a programme that included 40 sessions of warm-up exercises, functional exercises (individual, paired, group relay races, station tracks) and sportive games (paired, cooperative, group competitions and games with rules). Bayazıt and Öztürk (2016) conducted a sportive recreational programme in 36 sessions (darts, mini volleyball, petanga, dance, bowling, primitive skating, fun athletics, basketball, badminton, table tennis, mini-golf, step) and observed significant improvements in the emotional adjustment levels of intellectually disabled children. When the intervention programmes of these studies are examined, it is seen that the entertainment element is prominent. These studies' results indicate that our intervention programme was developed with a practical purpose. However, the number of sessions might not have been enough to change the psychological behaviour of the individuals with intellectual disabilities. Changing social behaviours requires the purposeful planning of therapeutic recreation programmes through clinical evaluation (Austin, 2020). What makes therapeutic recreation different from other intervention programmes is that they are planned with a purpose and consider the individual characteristics of the included people (Stumbo *et al.,* 2017). Although the APIE/D acronym may not be used explicitly in research, the concepts of assessment, planning, implementation and intervention are common practices.

The increase in the psychological adjustment score of the control group in our study suggests that although they did not participate in the therapeutic recreation programme applied in the school, they were indirectly affected by the process. Although the control group did not follow the programme applied to the experimental group, it is thought that they interacted with the students from the experimental group, such as talking to each other and hearing from others. This interaction may be why no significant difference was observed between the control and experimental group post-test scores. Green *et al.* (2018) stated that a therapeutic recreation programme applied in a school affects students' awareness of recreational activities, which supports our finding.

The literature suggests that the health and well-being of individuals with disabilities is positively affected when they participate in recreational therapy programmes (Austin *et al.*, 2020). Mannello *et al.* (2020) reported that participating in recreational sports activities is important for individuals with special needs, to be in harmony with their environment, integrate with society, gain social acceptance and make friends. Çevik and Kabasakal (2013) also reported that sports positively affect the socialisation process of individuals with special needs; therefore, studies should be carried out to ensure that children with special needs participate in sportive recreation activities. Studies have shown that recreational sports activities help individuals gain experience and a sense of achievement and have the opportunity to express their feelings and thoughts through games and exercises. Furthermore, through recreational sports activities, feeling such as anger (Bielinis *et al.*, 2019), aggression (Trajkovic *et al.*, 2020), and shyness (Webb & Karlis, 2019; Karagün *et al.*, 2020), which affect emotional adjustment, are discharged. Engaging in recreational sports contributes to the individual's self-development and physical development. By playing games, the individual has the opportunity to compare themselves with other individuals and observe differences. Weaknesses and strengths are observed (Mannello, 2020), reflecting positively on their emotional adjustment level.

The study was limited to the experimental and control group students studying at Meram Melike Hatun Special Education Vocational School in 2018–2019, and was limited to the data obtained from the Hacettepe Emotional Adjustment measurement tool.

## CONCLUSION AND RECOMMENDATIONS

Although no significant differences in the measured emotional adjustment of intellectually disabled students were observed following the application of recreational therapy, improvements were observed in the evaluation. The applied intervention programme was limited to 16 sessions, which may not have been sufficient. Lengthier programmes may enhance emotional adjustment and eliminate behavioural problems. Future research directions should include studies on interventions with individualised and purposeful plans based on the principles of therapeutic recreation. Such studies will provide ample evidence on the effectiveness of recreational therapy programmes. Future studies should also employ programmes with more sessions, and across different sample groups.

### Conflict of interest

The authors have no conflicts of interest to declare.

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