

# The Effectiveness of a Sports Program in Developing the Social Skills of Deaf Individuals in a Jordanian Sample

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**Abstract:** In this paper, we examine the impact of a sports program on the social skills of deaf individuals. The sample consisted of 60 deaf individuals in Zarqa Governorate, with 40 individuals randomly selected for the study. The sample was divided into an experimental group of 20 individuals and a control group of 20 individuals. The effectiveness of the sports program in developing social skills was evaluated using a scale specifically designed for deaf individuals. The results, analyzed using statistical methods, demonstrated that the sports program effectively improved the social skills of the deaf individuals. These findings were consistent with previous studies, and several recommendations were made to aid in the integration of deaf individuals into society.

**Keywords:** social skills, deafness, sports program.

## 1 Introduction

The sense of hearing is one of the important senses in human language learning and social development, any defect in the auditory system hinders the child's linguistic and social development [1]. Hearing loss affects the social and emotional development aspects of children, which makes them tend to be isolated and withdrawn, and makes them suffer from feelings of anxiety, frustration, and a sense of inferiority [2]. The sense of hearing is considered one of the basic requirements for the acquisition of spoken language, as this sense is the only entrance to the linguistic sounds of the brain, and the loss of the sense of hearing means the inability to reach the auditory stimuli to the brain and translate them into understandable messages, and thus the inability to acquire and learn the linguistic sounds and produce them to form an appropriate language to communicate with others, as the spoken language is the most widespread, easiest, and fastest way of human communication, and therefore not acquiring this method leads to many problems in communication and social interaction.

Deaf people suffer from introversion, withdrawal, poor self-confidence and self-centeredness, poor social maturity, and limited interaction with others [3]. They also suffer from a low level of social skills necessary for their interaction with others, and they lack the ability to self-direct and are more dependent on others in fulfilling their needs [4], they also indicated that deaf individuals tend to be alone, not participating, aggressive and socially anxious, so the deaf individual enjoy social relationships, the more social competence they have. Some studies have shown that deaf individuals are less mature than their peers in social terms, and the difficulty of their social adjustment leads to the emergence of emotional symptoms such as anxiety, shyness, selfishness, quick anger, and difficulty in integration [5]. Social problems occupy the first place among the problems of the hearing impaired. Both [6] and [7] agreed that deaf individuals suffer from poor social skills [8], and deaf children need social interaction with their normal peers to enhance their social skills [9].

Many studies have indicated the importance of play in building and developing social relations for deaf individuals, and among these studies is the study of [10], which showed the importance and role of play as a treatment and a psychological need for deaf individuals to avoid frustration, and it is a method used in developing the social skills of deaf individuals. The study of [8] also indicated the effectiveness of small games in developing some social skills among deaf students integrated with their regular peers in the primary stage. [4] used in his study an integrated sport program as an input to improve the social skills of deaf adolescents. His study showed the effectiveness of the program in alleviating psychological disorders such as social anxiety and reducing the severity of maladaptive behaviors.

The study of [11] also showed that play has an important impact on the development of social interaction in deaf children, as quasi-sports games were used in his study, and the results of the study indicated that quasi-sports games have an effective impact on the development of social skills As for [12], his study dealt with the role of adapted sports activities

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in developing the social skills of deaf individuals, and the results of the study showed the importance of exercising for deaf individuals and its effective impact on the physical, psychological, social and cultural aspects. And through sports, deaf individuals can exploit their abilities to develop behaviors that reflect positively on deaf individuals in order to integrate and achieve social harmony. In a study of [13], which aimed to know the impact of physical and sports activity on the development of basic motor skills for deaf individuals, the results showed an increase in the level of development of motor skills, psychological balance and social interaction.

The results of the study of [14] showed the positive role of sports activity in developing the social skills of deaf individuals and mute, represented in the skills of social communication and cooperation. Sports activity helps to develop all personal, psychological, social, motor, cognitive and health aspects. The stage of building personality and acquiring social skills is one of the most important things that maintain psychological compatibility and social integration of deaf individuals. A study of [15] indicated that sports activity encourages the development of social skills and reduces isolation and self-isolation. It achieves harmony and agreement among individuals. Sitting in the center or stadium leads to an exchange of views, which leads to strengthening social relations. Sports for deaf individuals develop self-confidence and cooperation. The study [16] indicated the positive impact of sports and recreational activities in improving the social and personal adaptation of deaf individuals. Sports, especially football, witnessed a significant development, as it kept pace with the global development in sporting achievements, and the fact that football for deaf individuals is one of the most important collective games in the world, which is special for its players [17].

The football game is the first popular game and has excitement, fun and suspense, and for deaf individuals it has also received attention and care from deferent institutions in the world, and this game has been subject to the laws of the International Federation of Football, taking into account the amendment arbitration laws to suit deaf individuals [18]. Sports activities depend on cooperation and synergy between the players, and the success of the activities results from the positive cooperation between the leadership and team managers, and cooperation on the field brings positive results if cooperation is the basis of play [5], and cooperation is a manifestation of social interaction, and a pattern of human behavior [10]. Play-based programs are important because of their vital role in helping deaf individuals to social growth and increase initiative behavior [19].

Despite the interest of many previous studies in the development of social skills for deaf individuals, there were no studies available to the extent of the researchers' knowledge that specifically targeted football as a social sport that depends on the performance of an integrated team, and because it is the most popular and widespread sport in the world, and therefore It is easy to use this sport in different environments. In addition to the foregoing, the sport of football does not need many expensive equipment or expensive tools, which parents may find difficult to provide in other programs, and this sport also does not require registration or affiliation with a sports club or service entity to implement the social program. As it is a popular social sport whose rules can be learned easily and can be played anywhere and anytime.

Through the previous presentation, it is clear to the researchers that most of the previous foreign and Arab studies showed the importance of programs in developing the social skills of deaf individuals. Some of these studies describe the situation of deaf individuals and their characteristics, and some of it deal with the aspect of the impact of sports on social aspect of them, and some of it deal with the effectiveness of planned sports program and its impact on controlling psychological stress, and some of it deal with playing in general, but these studies and programs did not deal with football in a comprehensive and integrated manner, especially for children in the ninth grade. Here, the researchers chose to study the effectiveness of a sports program in developing the social skills of deaf individuals, and many studies indicated the necessity of establishing many training programs that serve deaf group.

## The study Problem:

The problem of the study lies in the presence of large numbers of deaf people in the community, there are no programs available for them that facilitate their independence even in the simplest matters, and many of them cannot pay the costs of service in centers, private institutions, or home service, or reach them from a distance. Considering the need for this group to special care, as they view life in a different way from others, and their view of life is affected by their circumstances, and the support they receive from others, whether from the family or from the community, this group needs counseling and training services that help them develop their social skills that they need [20]. Sports and other programs offered in this category are among the important indicators of the quality of services. In pursuit of this goal, this study attempts to develop a sport program to develop the social skills of deaf individuals, specifically answering the following question:

What is the effectiveness of a sport program in developing the social skills of deaf individuals?

**Study hypothesis:** There are no statistically significant differences at  $(0.05 \geq \alpha)$  between the average performance of the experimental sample and the control sample in favor of the experimental sample on the post-measurement.

**The importance of the study:**

The importance of the current study lies in the fact that:

1. Shedding light on the importance of caring for deaf individuals.
2. Improving the necessary social skills for deaf individuals.
3. Preparing a scale of social skills for deaf individuals.
4. Building a sport program to develop social skills for deaf individuals.

**Objectives of the study:**

Knowing the role of a sport program in developing the social skills of deaf individuals.

**Study limitations:**

The limitations of this study are limited to the following:

**Spatial boundaries:** This study deals with deaf individuals in Al-Amal School for the Deaf in Zarqa Governorate in Jordan.

**Human Limitations:** The study was limited to (20) deaf individual in Al-Amal School for the Deaf in Zarqa Governorate.

**Time limitations:** The study was applied in the period between 1-9-2021 to 30-5-2022.

**Study terminology:**

Operational definitions of terms:

- **First, the deaf:** every student who is genetically deaf in the ninth grade and is enrolled in the Al-Amal School for the Deaf.
- **Second, Social skills:** A group of behavioral patterns and personal skills that include social interaction, cooperative behavior, self-efficacy, and personal responsibility for deaf individuals.
- **Third, the support program:** A set of specific and organized steps based on the theories, techniques and principles of psychological counseling, and includes a set of information, experiences, skills and various activities, which are provided to individuals during a specific period of time with the aim of helping them modify behaviors and acquire new skills that lead them to achieve developing social skills and helping them to overcome the problems they face in the arena of life. These steps aim to achieve the goal of the program, which is to help deaf individuals to adapt to the surrounding environment.
- **Fourth: Sports Activities:** A set of soccer activities and sports exercises, such as dribbling, passing, shooting and warming up.

**2 Methods and procedures:**

The procedures include a description of the study sample, the tools that were applied to the sample, the research steps, its procedures, and the statistical design that the researchers followed in processing the data.

**Study population:** The current study population consisted of (40) deaf individuals in Zarqa Governorate in Jordan, and the sample was randomly distributed into two groups, the experimental group (n = 20) and the control group (n = 20).

**Study tools:**

**First:** The scale of the social skills for deaf individuals. (Prepared by the researchers).

Method of designing the social skills scale for deaf individuals:

1. The researchers reviewed the literature, studies, and previous research that focused on the field of study, as well as examining the measures that were designed in this field, including the measure of social skills for young people, [21] developed this measure under the title of Mattson's Assessment of Social Skills For children, the social skills test of Ronald Riggio [22], the scale was adopted as a comprehensive measure to assess social communication skills such as emotional expression, emotional sensitivity, social expression, social sensitivity, and social control [23], and measure of social development [24].
2. Preparing the scale in its initial form in light of the dimensions included in the program.

3. Presenting the scale to a group of specialized arbitrators to ensure the suitability of the scale items. The percentage of agreement between the arbitrators reached (84%).
4. Modifying the scale according to arbitrator's opinions.
5. The scale of social skills for deaf individuals consists of (36) items distributed to (3) levels.

**Scale Description:** A scale of social skills for deaf individuals

**Scale Validity:** The indications of the validity of the scale were verified as follows:

**Content Validity:** The scale was presented to a group of specialists in the field of special education and psychology, and the results showed that the arbitrators agreed with a percentage of (80%) of the extent to which the paragraphs of the scale corresponded to its content and objectives.

**The validity of the internal consistency:** the internal consistency was calculated for the three domains, so the result was the average correlation coefficient for the dimension of communication with others is (0.78), for the dimension of cooperation is (0.842), and for the dimension of taking responsibility is (0.841). Table (1) shows these values.

**Table 1:** Correlation coefficient of the social skills scale for deaf individuals

No.	Domain	Correlation coefficient	significance level
1	Communication	0.78	0.1
2	Cooperation	0.854	0.1
3	Taking Responsibility	0.841	0.1
	Total score	0.821	0.1

It is clear from Table (1), that all the paragraphs in each level are statistically significant at 0.1, as well as the level on the total score is statistically significant, which indicates that the scale has a high degree of consistency.

**Scale stability:** The stability of the scale was verified in two ways:

1. **The Method of calculating the stability coefficient:** The stability coefficient was calculated to determine the value of the internal consistency of the scale, where the (Cronbach's alpha) coefficient was calculated for the scale, and the value of the Cronbach's alpha for the scale was (0.758), which is an acceptable value, and confirms the consistency of the scale paragraphs.
2. **Split-half method:** The items of the scale were divided into two groups, the first is the odd paragraphs group, and the second is the even paragraphs group, and the correlation coefficient was calculated between the degrees of the sample members in the two groups, and the correlation coefficient between the degrees of the sample members in the two groups reached ( $r = 0.078$ ), which are high correlation coefficients.

**Table 2:** Stability coefficient of the social skills scale for deaf individuals

No.	Domain	Correlation coefficient	Spearman Brown
1	Communication	0.623	0.768
2	Cooperation	0.831	0.908
3	Taking Responsibility	0.630	0.773
	Total score	0.667	0.800

It is clear from Table (2), that the values of the Spearman-Brown equation are high, which indicates that the scale is characterized by a high degree of stability by the split half method.

**Scale correction key:**

For each item of the scale, there are two responses (yes) or (no), then the scores for the responses are calculated so that the deaf individual gives a score of (1) for each response (yes) and zero for each response (no), then the raw scores are collected for each dimension separately and then for the scale as a whole.

**Sources for building the measurement tool:**

The researchers benefited from reviewing educational literature and previous studies in this field.

The two researchers reviewed and looked at the scales of social skills that were previously designed in this field, including the scale of social skills for young people. This scale was developed by Matson [8] under the title of Mattson's assessment of the social skills of young people, and the test of social skills for Ronald Riggio [17], this scale adopted as a comprehensive measure to assess social communication skills such as emotional expression, emotional sensitivity, social expression, social sensitivity, social control and others.

Consult experts and trainers who work with deaf individuals.

Collection of previous studies conducted in this field.

Collecting programs prepared for deaf individuals in the field of social skills.

**Second:** A sports program for improving social skills for deaf individuals. (Prepared by the researchers)

**Program application time:** The implementation of the program took nine months, with two sessions per month, and the implementation took place in the period from 1-9-2021 to 30-5-2022 AD.

**Program sample:** The current study includes a sample of (20) deaf individuals in Zarqa Governorate – Jordan. The conditions for selecting the sample were as follows:

1. The deaf individual must be a student at Al-Amal School for the Deaf in the ninth grade.
2. He should not suffer from any other disabilities.
3. He must be male.

**Program content:** The sports program in this study consisted of eighteen sessions that were implemented in a logical and sequential manner. The program was presented to a group of specialists, to verify the validity of the content, and the arbitrators' notes were taken into account, and the program was finally prepared. Program was implemented in a period of nine months. At the rate of two sessions per month, the scheduled session was a full day, and the following techniques were used during the implementation of the program:

1. **Dialogue:** A method is used by managing the conversation between the two researchers and the participants. The participants are given the opportunity to talk about their ideas and opinions in a way that is organized and facilitated by the two researchers, to develop the idea that he wants to deliver to them. The researchers used this technique as a method through which developing an appropriate and productive dialogue style with the participants to find out what they have of ideas and opinions.
2. **Modeling:** A method that is used by making a direct or imaginary model available to the individual, so that the goal is to deliver information about the model presented to the individual, with the intention of changing something in his behavior, giving him a new behavior, or increasing or decreasing his existing behavior. The researchers used this technique as a method through which the positive aspects of the personality of the participants are developed, as well as ways of accepting themselves, and developing their independence and ambition.
3. **Discussion:** A method that is used by giving the participants an opportunity by presenting some situations that need to be discussed by the participants to provide them with an opportunity to exchange ideas for solutions proposed and directed by the researchers. The researchers used this technique as a method to develop solving problems facing the participants to help them develop their ambition.
4. **Reinforcement:** A method that leads to strengthening the desired behavior of the participants through reward, based on the behavior conditioned on its performance. The researchers used moral reinforcement during the program sessions by reinforcing positive thoughts and behaviors appropriate to the nature of the participants.
5. **Emotional discharge:** A method that takes place by helping the individual to speak freely, without restrictions, about a written event, whether they are experiences, motives, or emotional conflicts, and when the individual discharges them, the symptoms of neurosis disappear. The researchers used this technique to help the participants empty their feelings, experiences, motives and struggles in their lives, where they are then helped to overcome those ideas and conflicts, and then develop their technical aspects.
6. **Cognitive confrontation:** Focuses on the importance of the cognitive and mental side in determining the stress response more than its interest in the environment and its various stimuli, by reducing the severity of the stress experienced by the individual, if we can change the way he thinks about the stressful situations, and thus change his response to that situation, then we help the individual creates new consensual responses instead of thoughts that are characterized by frustration and lack of self-confidence.

#### Summary of the program sessions:

**The first session:** It aimed to establish an interactive relationship between the researchers and the sample members, so that the researchers explain to them the idea of the program that will be presented in the next sessions. The researchers explained the most important procedures and basic rules that will be followed in the upcoming sessions. The researchers distributed copies of the program containing the timelines, the content of each session, the name of the researchers, their address, the nature of their work, the phone number or mobile, the e-mail of the researchers, the place of application of

the sessions. The dates and contact numbers of the researchers, the university, and the bus driver also were given to the participants. The session ended thanks to the attendees.

**The second session:** The two researchers dealt with the psychological pressures that deaf individuals are exposed to, their internal and external causes, and methods of treatment. The session ended thanks to the attendees.

**The third and fourth sessions:** The two researchers and the accompanying team listened to the biographies of all participants, and the technique of emotional discharge was used. Each student discussed the obstacles that he feels are the cause of his current condition, the types of psychological pressures they are exposed to, methods of treatment, or the means that can be used. To reduce its stress, the technique of dialogue was used, to help the participants in expressing their feelings.

**The fifth session:** Dividing the students into two equal teams, and a space of freedom was given for each of the participants to choose his team, then a lecture was given by the accompanying sports teacher about the positives of playing in terms of health, physical, mental, and social aspects. Discussion technique was used to increase self-confidence and understand some laws in the game. The personal purposes that the student must bring and the role of each person in the game were clarified by the two researchers. The sports teacher presented the rules and laws of the football game, then the students' notes were listened to as a kind of emotional discharge on the one hand and intended social participation that arranged with the team to raise unintentional questions from the participants during their interventions. The sports teacher explained the requirements for playing football such as possessing a set of skills to reach the ability to run and change direction in addition to maintaining balance, these skills can be acquired through continuous training and repeated practice, they are in fact 5 famous skills that must be learned then the player can play in teams on the field. notes are taken.

**The sixth session:** Variety of exercises: These different presentations aimed, in their entirety, to show the importance of diversifying exercises to obtain movement balance and muscle strength to withstand running and stress, including juggling and the ability to control curling and improve reactions, and it is recommended to practice them daily for at least 10 minutes, it is done by trying to keep the ball in the air for as long as possible, the exercise can be implemented in several ways, including holding the ball with the hands and then dropping it towards the feet, after that one of the feet is used to hit the ball and return it to the hands, then the process is repeated several times, the ball can be hit twice, three or more. The exercise aims to keep the ball between the hands and the feet, and thus creates some understanding and integration with the ball. A dialogue was conducted between the two teams and the sports teacher. The reactions were considered during the training, and notes were recorded.

**The seventh session:** Preparation for matches: The students were transported to the Al-Furqan School stadium in Russia, where it has the characteristics of a suitable stadium, and a program was prepared inside the bus in the manner of contest for the sake of entertainment and increasing social interaction through competition. The technique of reinforcement was used to remove some manifestations of fear and shyness from dealing with others, and coordination was made with the school to prepare to receive and welcome the participants and try to get to know them to build friendship to increase their feeling of reassurance from others. The sports teacher conducted the preliminary exercises, then the two teams entered the stadium, and it was fortunate for them that there was a trained referee for the football match for the deaf, which is held annually in the deaf clubs in Jordan. After the end of the match, each team was given an opportunity to discuss with their team first and then discuss with the other team. Notes were taken by the researchers.

**The eighth and ninth sessions:** Emphasis on ignoring mistakes.

This session aimed to involve deaf individuals in society, where the sports teacher and the referee were asked not to scrutinize the mistakes committed by the players during training or match so as not to frustrate them and refrain from interacting with others. Some errors were discussed in general without specification, and the technique of emotional discharge was used. The students were allowed to express freely what is going on in themselves, and the researchers took all the notes.

**The tenth session:** Training on walking skills and light exercises: This session aimed at training and mastering the skills of walking and light exercises, where people were lined up in the stadium square, and instructions were given about the starting line and the finish line. The importance of walking on health was explained, no matter how simple and regular it was, as well as the effectiveness of light exercises in muscle development, and it was agreed that this sport should become part of the daily program for students at school, which helps reduce the pressures they suffer from, and at the end of the exercise they sat and listened to Their observations about this experiment, and the researchers recorded the observations as well as the sensations while they were talking to reassure the safety of the program.

**The eleventh and twelfth sessions:** Cooperation: This session aimed to enjoy the game and inculcate the virtue of cooperation, where the two researchers divided the roles between him and the sports teacher in showing models of matches and displaying them on a large screen in the school yard, and commenting on the importance of cooperation in winning

the team in the match, and focusing on that non-cooperation and selfishness are a way to losing the match. The researchers used the model technique to root and consolidate the idea of cooperation and its importance in success, and the importance of teamwork and its positive impact on building society. After the match, elements of cooperation that were made by the two teams were discussed. Notes were taken by the researchers.

**The third and fourteenth sessions:** Focusing on relaxation. This session aimed to educate and train deaf individuals on the importance of relaxation after exerting effort during the match. The sports teacher gave a full explanation of the importance of relaxation from a health and psychological point of view, where he asked all participants to talk about their feelings and the importance of relaxation after the match, in order to cultivate health and psychological concepts that relieve the player from the trouble of fatigue and loss. All notes were taken by the two researchers.

**The sessions fifteen to seventeen:** Self-control training: These sessions aimed at training deaf individuals to self-control during training, play and discussion with the trainer or players. A student provided a simplified explanation of the importance of patience and behavior control, control methods, and their role in enriching social skills, especially when the child is exposed to provocative situations. The researchers encourage the participants to express themselves because it's role in comforting the soul and relieving worries. The researchers used the emotional discharge strategy to reduce the intensity of emotions such as shyness, introversion, and isolation. The researchers took notes.

**The eighteenth session:** a general evaluation of the program and the closing ceremony. It aimed at a general evaluation of the program sessions after applying it to the deaf participants, where the participants and the team reported that they benefited from the ideas presented during the sports program sessions. The sports teacher, the school principal and the referee expressed the state of psychological comfort that they noticed on the participants during and after applying the program within the study sample, who in turn they thanked the staff in charge of the study for the good opportunity for the deaf to get out of the qualitative isolation that accompanied them for a long time and had repercussions on their psyche. A detailed guide was distributed that includes all the skills and cautions that must be taken by the school and families in order for the benefit to prevail, and construction and development continues for these children or those who come after them. At the end, the researchers thanked the school staff and children, education officials, and everyone who supported this group and who provided financial and moral support to the participants and the researchers. The two researchers thanked also the participants for the active and serious participation, punctuality, bearing the burden of attendance, and continuous follow-up to achieve the lofty humanitarian goals for them and the community. Symbolic prizes were presented to the participating children and the supporting team after the final match with a generous donation from Al-Furqan Schools in Rusaifa.

## Study procedures

To achieve the objectives of the study, the following was carried out:

**Determining the theoretical framework for the research:** by reviewing the educational literature, studies and previous research related to the variables of the current research.

**Building the scale:** After examining the scales used in evaluating the social capabilities, and after reviewing a group of previous studies that deal with the sub-fields of the scale, the scale of the social capabilities of the deaf was constructed.

**Validity of the scale:** The indications of the validity of the scale (content validity) were reached by presenting the scale to a group of arbitrators with experience in speech, language and special education from university academics and from the field ( $n = 10$ ), and the opinions of what was agreed upon (80%) were taken into account. The results of the internal consistency were obtained for the three domains, as it was the result of the average correlation coefficient for the dimension of communication with others (0.78), for the dimension of cooperation (0.0842), and for the dimension of responsibility (0.841).

**The stability of the scale:** The indications of the stability of the scale were found through the Cronbach alpha equation, which amounted to (0.758), which is an acceptable value, and confirms the consistency of the scale items. Stability was also calculated through the semi-partition method: the items of the scale were divided into two groups, the first is the odd paragraphs group, and the second is the even paragraphs group. The correlation coefficient was calculated between the scores of the respondents in the two groups, and the correlation coefficient between the scores of the respondents in the two groups was ( $r = 0.078$ ), which are high correlation coefficients.

**Selection of the sample:** The research sample was selected through the intentional method, depending on the criteria adopted by the two researchers, which are appropriate to the research conditions.

**Building the training program:** By examining the training programs offered to deaf individuals, and the programs based on the development of social skills, the training program was built.

**Application of the scale:** The scale was applied to the study individuals to obtain the results of the tribal performance and to identify the strengths and weaknesses of each child by the researchers.

**Application of the program:** The application of the program has been initiated on the experimental sample.

**Trainers:** The training program was applied to children by researchers.

**Duration of training:** The implementation of the program took nine months, with two sessions per month, and the application took place in the period from 1-9-2021 to 30-5-2022 AD.

**Statistical treatment:** The necessary data was entered, the appropriate statistical treatment was used, and the results of the study were obtained. In light of these results, they were discussed, and recommendations were made based on the findings of the results.

## Study application procedures:

### Experimental design:

- The experimental design of the study is based on two groups, one experimental and the other a control group.
- The tools used in the study were applied to the two groups before the start of the experiment.
- The experimental group is exposed – alone – to the experiences of the proposed program (n = 20).
- The control group (n = 20) is left without applying the proposed program.
- At the end of the proposed program period, the study tools re-applied to the two groups.
- Pre-measurement and comparison between the two groups.
- Post-measurement and comparison between the two groups.
- Pre- and post-measurement and comparison for each group separately of the effectiveness of each independent program.

**Table 3:** Experimental design used in the study.

Post-measurement	proposed program	Pre-measurement	Group	random distribution
O2	X	O1	G	R
O2	X	O1	G1 Experimental	R
O2	No intervention	O1	G2 Control	R

### Equivalence of the experimental and control groups:

The researchers made equivalence between the members of the experimental and control groups in terms of social skills variables, and the researchers also verified the equivalence of the experimental and control groups in the degrees of social skills on the pre-measurement, and the arithmetic mean and standard deviations of the social skills degrees of the members of the experimental and control groups were calculated before applying the program. Table (4) shows the results of this.

**Table 4:** Comparison between the arithmetic mean of the control and experimental sample before applying the program

	Variable 1	Variable 2
Arithmetic mean	5.2	5.2
Variance	9.78	7.3
Sample volume	20	20
Pearson correlation coefficient	0.42	
Degrees of freedom	19	
t statistic	0.16	
Critical t value	1.76	
Statistical significance level (observed t-value)	0.87	

It is clear from Table (4) that there are no statistically significant differences between the degrees of social skills among the members of the experimental and control groups at the level of significance ( $\alpha \leq 0.05$ ), and this indicates that the members of the two groups are equal in the degrees of social skills before applying the program.

## Statistical methods:



1. Arithmetic mean.
2. T-test to calculate the significance of differences between two related averages.
3. Pearson correlation coefficient.
4. Spearman Brown equation.
5. Cronbach Alpha.
6. Standard deviations.

**Study methodology:**

The current study follows the experimental approach: it is the scientific method that uses experiment to verify the validity of hypotheses. Therefore, the type of study helps accuracy in controlling the various aspects whose impact on the subject of the study must be excluded. Therefore, the following method was used in the study:

- Selecting the sample members randomly, which will be applied to.
- Fixing some factors that may affect the results of the study, such as the absence of associated disabilities, so that the results of the study are attributed to the application of the program on the sample, and thus the program and its activities are the independent variable in the study, and the change that occurs to the sample is the dependent variable.

**Study variables:**

**The independent variable:** It is the proposed program that was applied to the respondents according to sessions containing various activities and training strategies.

**Dependent variables:** They are the changes that occur in the performance of the respondents in social skills as a result of applying the proposed program as measured by the social skills scale.

**3 Study results and discussion:**

The researchers will present the results of the study that have been reached.

**Presentation of results:** The current study aimed to identify the effectiveness of a sports program in developing the social skills of deaf individuals.

**Results related to the hypothesis:** The hypothesis states that (there are no statistically significant differences at the level of  $(\alpha \leq 0.05)$ , between the mean scores of the experimental and control group members on the social skills dimension due to the effect of the program). In order to answer this hypothesis, the researchers calculated the arithmetic means and standard deviations of the degrees of psychological stress among the members of the experimental and control groups based on the post-measurements and the follow-up, table (5) illustrates this.

**Table 5:** The results of the mean scores of the experimental and control sample members on the pre and post measurement on the social skills scale for deaf individuals

Number of items (36), social skills for deaf individuals							
Control Group				Experimental Group			
case number	Pre-measurement score	post-measurement score	Differences between pre and post measurement	case number	Pre-measurement score	Post-measurement score	Differences between pre and post measurement
1	8	18	10	1	8	7	1
2	6	14	8	2	6	5	1
3	6	26	20	3	6	6	0
4	5	25	20	4	5	7	2
5	7	16	9	5	7	9	2
6	10	27	17	6	10	9	1
7	13	29	16	7	3	2	1
8	9	20	11	8	9	8	1
9	5	25	20	9	5	6	1
10	4	27	23	10	4	5	1
11	6	26	20	11	6	5	1
12	8	23	15	12	4	3	1

13	5	27	22	13	5	5	0
14	2	23	21	14	2	2	0
15	5	26	21	15	5	3	2
16	3	24	21	16	3	3	0
17	8	21	13	17	7	5	2
18	4	26	22	18	4	3	1
19	5	25	20	19	3	6	3
20	6	27	21	20	6	5	1
Arithmetic mean	6.25	23.75	17.5	Arithmetic mean	5.4	5.2	1.1
Standard deviation	3.712	4.444	3.568	Standard deviation	3.852	4.267	0.766

**Table 6:** Comparison between the arithmetic mean of the control and experimental sample before applying the program

	Variable 1	Variable 2
Arithmetic mean	5.2	5.2
Variance	9.78	7.3
Sample volume	20	20
Pearson correlation coefficient	0.42	
Degrees of freedom	19	
t statistic	0.16	
Critical t value	1.76	
Statistical significance level (observed t-value)	0.87	

**Table 7:** Comparison between the arithmetic mean of the control and experimental sample after applying the program

	Variable 1	Variable 2
Arithmetic mean	5.06	22.5
Variance	9.78	7.3
Sample volume	20	20
Pearson correlation coefficient	0.42	
Degrees of freedom	19	
t statistic	0.16	
Critical t value	1.76	
Statistical significance level (observed t-value)	0.87	

**Table 8:** Comparison between the arithmetic mean of the control sample before and after applying the program

	Variable 1	Variable 2
Arithmetic mean	5.2	6.53
Variance	7.3	10.6
Sample volume	20	20
Pearson correlation coefficient	0.98	
Degrees of freedom	19	
t statistic	6.32	
Significance level (observational t value) in one direction	9.38	
Critical t value	1.76	
Statistical significance level (observed t-value)	1.88	

It is clear from Table (5) that the arithmetic mean of the social skills scores of the experimental group on each of the two pre and post-measurements is much greater than the arithmetic mean of the control group, where it is clear that the differences between the two groups were very small in the pre-measurement, while in the post-measurement and follow-up, significant differences appeared between the members of the two groups, and the differences remained constant during the follow-up period. This indicates the effectiveness of the sports program in developing the social skills of deaf individuals among the members of the experimental group.

It also indicates the continued effectiveness of the program even after the completion of its application, and the researchers attributed the existence of differences in this result to the effectiveness of the sports program in developing the social skills of deaf individuals as appropriate techniques were used for the participants during the application of the program sessions, and it included mutual dialogue between the participants and researchers about social skills for deaf individuals in society, as well as the modeling, technique in order to help them be influenced by the personalities of others, which

helped develop their personalities in proportion to those distinguished personalities. The technique of discussion was used during the sessions, in order to identify the obstacles facing deaf individuals in their daily lives, and this helped them on how to properly deal with these obstacles, and the technique of reinforcement was used in order to promote positive ideas and behaviors during the sessions, for those who showed distinctive ideas during difficult situations they go through, Through the use of the technique of emotional discharge, the participants were given the opportunity to freely express what was going on in themselves, in order to identify the painful things in their lives, and this resulted in their feeling of psychological comfort during the sessions, and through the technique of cognitive confrontation, where they were trained to confront negative thoughts that they carry about themselves and others, and through which many of those ideas were corrected, which helped them develop social skills, and all of this helped increase their social balance in developing social skills, because they felt that it was a new experience for them.

The study of [10] agreed with this result, which showed the importance and role of play as a treatment and a psychological need for deaf individuals to avoid frustration, and it is a method used in developing the social skills of deaf individuals. The study of [8] also indicated the effectiveness of small games in developing some social skills for deaf individuals. Deaf students integrated with their regular peers in the primary stage, and [4] used in his study the integrated mathematical program as an input to improve social skills for deaf adolescents, and the study showed the effectiveness of the program in alleviating psychological disorders such as social anxiety, and reduced the severity of maladaptive behaviors, The study of [11] also showed that play has an important impact on the development of social interaction in deaf children, as semi-sports games were used in his study, and the results of the study indicated that semi-sports games have an effective impact on the development of social skills. He studied the role of adapted sports activities in developing the social skills of deaf individuals, and the results of the study showed the importance of exercising for deaf individuals and its effective impact on the physical, psychological, social and cultural aspects. Through sports, deaf individuals can exploit their abilities to develop behaviors that reflect positively on them to integrate and achieve social harmony.

In a study of [13], which aimed to know the impact of physical and sports activity on the development of basic motor skills for deaf individuals, the results showed an increase in the level of development of motor skills, psychological balance, and social interaction. The results of the study of [14] showed the positive role of sports activity in developing the social skills of the deaf-mute represented in the skills of social communication and cooperation. Sports activity helps to develop all personal, psychological, social, motor, cognitive and health aspects. The stage of building personality and acquiring social skills is one of the most important things that maintain psychological compatibility and social integration of deaf individuals. The study of [15] indicated that sports activity encourages the development of social skills, reduces isolation and self-introversion, and achieves harmony and agreement among individuals. Sitting in the center or the stadium leads to an exchange of views, which leads to the strengthening of social relations. Sports deaf individuals develop self-confidence and cooperation.

The study of [16] agreed to the same result and showed the positive impact of sports and recreational activities in improving the social and personal adaptation of deaf individuals. What helped the success of the program was the availability of a sports stadium and sports equipment for students, which helped their social interaction, and also helped give students periods of time for free activity, and helped them to express their tendencies and attitudes towards football, where [5] indicated that playing is a therapeutic and preventive means for deaf individuals, and playing is a means of self-expression for the normal and the disabled, and it is a means of creativity and innovation. From the foregoing, the positive impact of the sports program on the development of social skills for deaf individuals and their level of adaptation to society is evident. These results did not differ from the results of previous studies that researchers have access to, as all these studies agreed with the results of the current study in the effectiveness of the sports program in developing social skills. It can be said quite simply that had it not been for the financial, moral, and voluntary support of institutions, personalities and charities, this work would not have been possible, and I extend my sincere thanks to all of them.

#### **4 Recommendations:**

1. Work to improve the services provided to deaf individuals and give them the opportunity to participate in public life and make decisions related to achieving their future.
2. Benefiting from the playgrounds and tools available in schools and public playgrounds to support deaf individuals.
3. Arranging communication programs with the community and social institutions for deaf individuals.
4. Adoption of the proposed program by institutions and schools concerned with the deaf to enhance the partnership between research and application.

#### **Research recommendations:**

1. Studying the effectiveness of a social program to improve the psychological adjustment of deaf individuals.

2. Studying the correlation between social support for deaf individuals and raising their self-concept.
3. Studying isolation and anxiety and its relationship to self-concern among deaf individuals.
4. Studying the quality of life and its relationship to social skills.
5. Carrying out studies targeting different age groups of deaf individuals.
6. Participation of deaf individuals in sports with hearing persons to promote the principle of integration of this category with society.

### Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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